



2.3 Denmark

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2.3.1 *Methods of approach in carrying out the inventory*

To find cases and methods in user participation in Research and Development in Denmark the following methods have been used:

Literature survey at the Danish Centre, the Danish Design Center and a local library

Internet-search in Danish

The words used for searching have been, user involvement, design, research, qualitative research methods, design management, disability and design, disability and research, disability and development, assistive technology and design, assistive technology and research, assistive technology and development.

Request to all staff members (60 persons) in Danish Centre :

“Are any of you in possession of knowledge regarding user participation in product development or research in Denmark within the field of disabled and elderly people?.

With participation is meant all forms of participation such as reference groups, focus groups, ad hoc groups, control group members, expert member etc., however with the exception of users working as examination objects.

I need the following:

- names on the companies or organisations working with user participation
- literature
- other comments or tips on where I can obtain knowledge regarding user participation in product development or research.”

I need the information to write a status on user participation in Denmark and compile relevant addresses and literature to a European project named FORTUNE (Forum for user-Organisations Training for Usability and Networking in Europe).”

- Telephone interviews of
- Research institutions in the social area
- The Danish Council of Organisations of Disabled People and 2 other organisations of disabled people



- manufactures of assistive devices
- One manufacturer in the ordinary market
- institutes in the area of design, disability
- Studying and analysing the information obtained from the above mentioned activities.

To get a more complete and detailed picture of user participation in research and development it is necessary to make the inventory more thorough by having more time for collection and analysing information.

2.3.2 *Institutions, organisations, actors*

Here follow addresses of institutions, organisations and other actors reflected in this inventory.

AKF-Amternes og Kommunernes
Forskningsfond
Nyropsgade 37
1602 København V
tel. +45 33 11 03 00 fax +45 33 15 28 75

Bang & Olufsen A/S
Peter Bangsvej 15
7600 Struer
tel. +45 96 84 45 00
fax +45 97 85 39 20

Center for Ligebehandling
af Handicappede
Bredgade 25
Sct. Annæ Passage, opg. F, 4 sal
1260 København K
tel. +45 33 11 10 44
fax +45 33 11 10 82

Center for Tilgængelighed (Center for
Accessibility)
Graham Bells vej 1A
8200 Århus N
tel. +45 87 41 24 24
fax +45 87 41 24 24

Coloplast
Kokkedal Industripark
2980 Kokkedal
tel. +45 49 11 11 11

Dansk Forening for Produktudvikling
Rathsacksvej 8
1862 Frederiksberg C
tel. +45 33 25 78 38
fax +45 33 25 86 95



Dansk Design Center (Danish Design Centre)
H.C.Andersens Boulevard 18
1553 København V
tel. +45 33 14 66 88
fax +45 33 32 00 48

Dansk standard (Danish Standards Association)
Kollegievej 6
2920 Charlottenlund
tel. +45. 39 96 61 01
fax +45. 39 96 61 02

Dansk Sensorik Center
Tørslevvej 31
3630 Jægerspris
tel. +45 47 52 24 42

De Samvirkende Invalideorganisationer
(The Danish Council of Organisations of Disabled People (DSI))
Sekretariatet
Kløverprisvej 10 B
2650 Hvidovre
tel. +45 36 75 17 77
fax +45 36 75 14 03

Forbrugerstyrelsen
Rådgivningen
Amagerfælledvej 56
2300 København S
tel. +45 32 96 07 00
fax +45 32 96 02 32

Forsknings- og Udviklingscenteret
for Hjælpemidler og Rehabilitering
Gregersensvej, indgang 38
2630 Taastrup
tel. +45 43 99 40 35
fax +45 43 99 40 79

Gerontologisk Institut
Aurehøjvej 24
2900 Hellerup
tel. +45 39 40 10 10
fax +45 39 40 40 45

Gigtforeningen
Hauchsvej 14
1825 Frederiksberg C
tel. +45 31 31 12 13
fax +45 31 31 06 14

HT Handicap Service
Gl. Køge Landevej 3
2500 Valby
tel. +45 36 44 36 36
fax +45 36 44 07 74

Landsforeningen Ældresagen
Vesterbrogade 97
1670 København V
tlf. 31234411

Muskelsvindfonden (Muscular Dystrophy Association of Denmark)
Kongsvang Allé 23
8000 Århus C.
tel. +45 89 48 22 22
fax +45 89 48 22 38

Pressalit A/S
Pressalitvej 1
8680 Ry
tel. +45 87 88 87 88
fax +45 87 88 86 69

Scandinavian Mobility A/S
Sdr. Ringvej 39
2605 Brøndby
tel. +45 43 45 67 00
fax +45 43 45 67 01



Statens Byggeforskningsinstitut (Danish
Building Research Institute)
Dr. Neergårds Vej 15
Postboks 119
2970 Hørsholm
tel. +45 42 86 55 33
fax +45 42 86 55 94

TeleDanmark
Handicapservice
Teglnholmsgade 1
0900 København C
tel. +45. 80 80 80 80, lokal 92626
fax +45 33 20 11 01
Intercity afdelingen
(før: Passager divisionen DSB)
Bernstorffsgade 22, 2. sal
1577 København V
tel. +45 33 14 04 00, lok 14823

Ældremobiliseringen
Nyropsgade 26, mezz.
Postboks 1790
1602 København V
tlf. 33972600
fax. 33972604



The following actors are also reflected in this inventory: Social consumer committees, advisory disability committees, reference-groups of quality insurance projects.

2.3.3 *Definition of research and development in this inventory*

In this inventory “research and development” is defined as:

- Research and development of assistive technology
- Research and development in the field of social and health service especially on issues of living and activities of disabled and elderly people and rehabilitation

2.3.4 *Methods and experiences*

The inventory shows that it is very difficult to get accurate knowledge about user involvement strategies and routines in research and development in the area of disability and assistive technology. Neither the research institutions nor the most of the manufactures have common agreements and planed user involvement in their development and research, so documentation or descriptions are not available. But the big manufactures do almost always use one or another sort of user involvement in product development, and manufacturers of mainstream products for everybody very often have routines and methods for user involvement.

On the other side in official areas we find formal user involvement where the users participate as members of steering committees, reference groups, working groups etc. The official areas are institutions such as municipalities (councils of disabled and elderly), standardisation (working groups) and quality assessment in social institutions (ISO 9000).

2.3.4.1 *User participation in R&D, and related issues*

Here follows a description of user participation in the different stages of the value chain:



Problem definition

The achieved information of this inventory gave the clear conclusion, that the users were not involved in defining the problems in the primary stages of research and development. In the social research area the professional researchers always define the problems and start the analyses in order to design the actual research.

When talking about user-participants in steering- and consulting boards in the municipalities, standardisation and quality assessment projects, the users very seldom take part in defining the problems.

In product development the users are involved to assess the problems in special areas and new ideas, which the manufacturers have pointed out. The users then describe the needs and the development starts. But it must be pointed out, that this is only the case for big manufactures. Mostly the smaller manufactures get an idea and start straight away to make a prototype, and first here the users are included to test the product.

Organisations of disabled people often get ideas from their members, and if they find them interesting they might contact a manufacturer to develop a new product from the idea. In the same way it might happen in the service delivery system. The users and the therapists find out that they need some special changes or devices. They tell the dealers of assistive technology about their ideas and a product development again might start. Some times a disabled person and his family or the county technical aid centre have produced a given device or other solutions of problems of activity for disabled persons themselves, and relevant manufacturers start to produce the device as a technical aid.

The conclusion is that the users are not involved in problem definition unless they themselves have taken the initiative.

At last it has to be mentioned, that Danish Building Research Institute (SBI) has edited a book, which describes methods to evaluate housing and their surroundings. Here methods of user participation are described and SBI recommend to have user participation because it is important to improve the future housing and their surroundings.



Analysis and specification

In the stage of analysis and specification of the identified problems there are very few and often none described strategies or routines for the whole area at large.

In research and develop projects in the social and rehabilitation area, the users are not participating at this stage. They are often subject for the research-project, but they are not involved in the process of an analysis or specification of the problem area. The professionals take care of this, and the researchers are often of the opinion that the users are not able to take part because of their lack of general knowledge of the area and their lack of knowledge of methodology in research.

In the area of research and development of products of assistive technology it is more common that the users are involved at the stage of analysis and specification. Especially large manufactures work professionally with user participation in order to reach a qualitative and specific analysis of the problem and then get a detailed description of the needs, which the product has to correspond to. In this area “design-management” methods are described, and some of the bigger firms have elaborated their own methods. Private designer institutions also have user participation in the developing process, especially concerning technical aids.

When it comes to the user consulting boards in municipalities they are very seldom used as consultants in analysing and specifying the problems. This process is taken care of by the professionals in the area, and the solutions are then presented to the userboard to comment on.

To analyse and specify quality-requirements to a special issue/assistive technology the Danish Centre often uses focus-groups of users. The user organisations, municipalities and institutions are asked to find users with special competence in the focus area. These users are invited to take part in one or more focus-groups in order to analyse and specify quality-requirements to a certain product-area, a working method, testing, design of research etc.

Development and testing assistive technology

At this stage of developing assistive technology and other new products, it is more common that end-users take part as assessment-measure-tool, and in testing the



products before they are sent on the market. Also the users take part in testing and assessing the products after they have been introduced in the market. These tests which are performed after the products have entered the market are often done by independent institutions or by organisations of disabled people themselves.

Executing and finalising a research in the social area

Many research schemes have a “reference-group”, which mostly is composed of professionals in the area. There might though sometimes be representatives of the end-users, but this is very seldom even though the research is concentrated on vital issues in the end-users daily life. The results of the research are seldom distributed in a form where the end-users are the target group. The results are almost always presented in a research- report and in the research magazines.

Developing and executing social service in the counties and the municipalities

In the counties and the municipalities the members of steering committees, reference groups and councils of disabled and elderly are presented for the decisions and solutions, the planned buildings and changes in the organisation etc. to comment, but they have no formal right to change the decisions. They can only argue and hope that the politicians and the professionals understand.

User selection strategies and co-operation with user organisations

The Danish Council of Organisations of Disabled People (DSI) is an umbrella organisation of 26 member organisations. DSI has a regional branch in each of the 15 counties in Denmark. These branches appoint local representatives of disabled people in county committees and municipal councils. Furthermore DSI designates members to the National Handicap Council and members to other ministries and national and local organisations. DSI represents blind, deaf, hard of hearing and mobility impaired people, mentally retarded, mentally ill and a substantial number of other groups of persons with various disabilities. So the users involved in design and research are often picked from the central or local user organisations in connection with DSI, or from a specific disability-group.

In the area of elderly people there are different organisations, which are gathered in Ældremobiliseringen, an umbrella organisation, which is often contacted in order to participate in steering-, reference- and working groups. Another organisation which



often represent the elderly in Denmark is Ældresagen, which is a national policy-organisation in the field of elderly in which anybody can be a member.

Researchers and developers often use these organisations to designate users for participation in the research area. But it is also common that you find the wanted end-users yourself from people you know, from the local elderly center or from knowing one disabled person, who then helps you to find the number of persons you need.

If you are making research in a local area or in a specific branch of the social area, of course it is obvious to find your end-users in these areas e.g. from a local part of the town or from a picked group of institutions.

The inventory have not found any scientific elaborated methods of recruiting users for participating in research and development except when the end-users are almost the subject of research themselves.

To find methods of professional recruiting of users for research and development one has to look at how producers of mainstream products plan and execute their designprocess and study their design-management.

Center of Accessibility in Denmark has started studying these methods in order to work professionally in the research and development of products for all - including products for disabled people.

Examples of good practice

In 1991 the Danish Centre carried out an assessment of standard telephones available on the Danish market. The assessment was conducted on the basis of a standardised evaluation profile, compiled by the Danish Centre. The profile was not based upon traditional technical testing but on extensive and detailed knowledge of the requirements of the various user groups as to easy operation and functionality. The profile has been developed in close cooperation with the user organisations. Assessments have been carried out in two phases. Firstly, the telephones were examined and rated by an interdisciplinary team consisting of technical consultants and occupational therapists from the Danish Centre. Secondly, all telephones were



then examined and evaluated by five user panels representing various disability groups.

In 1995 the Danish Centre carried out an assessment of mobile telephones in order to give the disabled people a tool to use in choosing a mobile telephone. 17 different types of mobile telephones were tested by users from different groups of disability. Before the testing was carried out representatives from different usergroups helped identifying which problems were the most important to concentrate on.

The Danish Centre has, as mentioned earlier, used focus groups of end-users in order to analyse and specify the problems in different areas such as beds for disabled people, information on assistive technology and design of houses.

The Danish Design Center has in the start of the 1990'es made a development process, where a design vision has been used to create better tools and surroundings for persons who are blind or partially sighted. The goal was to develop tactile maps based on individual needs. All solutions were tested in direct contact with many types of users.

The Danish Centre for Research and Development of Assistive Technology and Rehabilitation make all their research-programmes with user-participation and the Centre have end-users in all the reference groups of the different research- and develop-projects.

The organisations of disabled people, which take initiatives themselves in research and developing often have good methods and very wide user-participation. Especially the Muscular Dystrophy Association of Denmark and the Danish Association of the Blind are to be mentioned. They have for example built institutions, which have a high quality coming to use for all.

The producer Coloplast, which manufactures products for incontinent people has the philosophy, that it is in close dialogue with end-users and professionals the development flowers and gives good quality. They use among other methods focusgroups and they make networking with users and professionals.



Danish Railways (DSB) and Copenhagen bus company (HT) both have standardised user consulting boards, which comment and discuss the development in their future plans.

In this inventory the producer Bang and Olufsen and Danish Sensory Institute has been interviewed about user participation in research and development. They do not produce assistive technology, but they work very seriously with user involvement in research and development, which many other manufactures in main stream products do. They have elaborated adequate methods and they have education of end-users in participating in research and developing new products.

2.3.4.2 User participation in standardisation work, and in comparative testing by testing agencies

The way of user-participation in standardisation and testing is like the description in the former chapter: The end-users may take part in standardisation, if they take the initiatives themselves. The problems of disabled people are seldom taken into account in the tests carried out by private test companies.

The HEART report Line A makes the conclusion that users do not have knowledge about and do not participate in standardisation. This is true for Denmark too. There are no good practical examples to highlight but it is worth to mention that consultants from Danish Council of organisations of disabled People take part in some standardisation of assistive technology and they have a close coordination with Danish Centre in these matters.

2.3.5 *Overview about user training*

The training of users in order to get competence to participate in research and development of assistive technology or in research in the social area does not exist organised. Most users come with the knowledge they have, because they are users themselves and therefore knows the problems very detailed in specific areas.



This inventory of user participation in research and development has not found any descriptions or practised training programs for end-users in the area of assistive technology or social research.

As mentioned before the big manufactures of mainstream products may have training programs for end-users in order to educate them for taking part in developing and evaluating products.

2.3.6 Overview of organisational frameworks for user participation

The organisational frameworks which have been set up for user participation in R&D, design, testing and standardisation in Denmark are shortly described like this:

Some private manufactures and designers have elaborated their own original method of user-participation aimed at the special products or tasks, with which they are concerned.

Counties, municipalities and other official institutions have often projects-, reference-, council- groups, where end-users participate.

In other areas of relevance the user-participation varies in degree and frequency, and it is by chance if, when and how the end-users are involved. There is no organisational framework.

The user-organisations are themselves active and try often to get influence and take initiative in order to be involved in research and development in the area of assistive technology and rehabilitation.

Special methods are not found in this inventory, but they exist especially in the area of manufacturing main-stream products and in the area of theories of design-management.

Financial framework in practice

The financial aspect for end-users to participate in research and development of assistive technology and the social area is almost not existing!

When a user takes part in a consulting board in the county, the municipality, in official or semi-official institutions etc. the user will get the accommodation and



transport paid for and no more. Sometimes the board has a little budget for taking initiatives and getting relevant information on the actual issues.

Sometimes the users take part without getting even the transport paid. However, the users participate anyway because they feel the work important. The organisations of disabled people also pay the participation themselves in some groups.

2.3.7 *Summary of findings*

This table shows the summary of findings in this inventory about user-participation in research and development in the area of assistive technology and research in the social area:

	User-participation	Methods*	User-training*	Financial aspect
Problem definition	very seldom	none/unknown	none/unknown	none/unknown
Analysis, specification	very seldom	perhaps	none/unknown	perhaps/very little
Development	happens	perhaps	none/unknown	perhaps/very little
Testing, evaluation	more often	Yes	perhaps/ very little	perhaps/very little

There seem to be methods and user-training in some areas of developing main-stream products

To get a more complete and detailed picture of user-participation in research and development it is necessary to make the inventory more thorough by having more time for collection and analysing information.

2.3.8 *Literature*

At designe forbrugerinterfacet -
 Beskrivelse, undersøgelse og udvikling.

Author: Sonnichsen, Anne-Mette

Editor: Arkitektskole Århus, 1991

Is written in Danish

Design'et før design'et



(The Design before the Design)

Editor: Danish Design Center, 1996

Is written both in Danish and English



Design Management in Practice

Danish Design Center 1987

Find vej, med øre, hånd og fod

(Finding the way by ear, hand and foot)

Editor: Dansk Design Center, 1996

Is written both in Danish and English

Fornuften i højsædet

Autor: Poul Østergård

Editor: Christioan Ejlers forlag, 1994

Ledelse af produktudvikling,

temahæfte nr. 10, september 1997

Editor: Dansk Forening for Produktudvikling

Metoder til evaluering af boliger

og boligbebyggelser. En antologi.

SBI-rapport 262.

Statens Byggeforskningsinstitut. 1997.

Mobile Telephones, the disabled persons'

guide to choosing a mobile telephone

Danish Centre, 1993

Smart Home - for ældre og handicappede

Hjælpemiddelinstittet 1995

Telefoner til alle -

Guide til et handicaprigtigt telefon valg

Hjælpemiddelinstittet 1992 (Danish Centre)