



2.4 Finland

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2.4.1 *Introduction*

The ISAK unit (a development centre for assistive technology for independent living in Outokumpu) was involved in the inventory phase of the FORTUNE project via NUH (Nordic Development Centre for Rehabilitation Technology). The task for ISAK was to survey the participation of users in the research and development of assistive technology and services in Finland.

We regard users in this context as elderly and disabled persons using certain products and services, like technical aids, special furniture, accessible houses and environment.

There are over one hundred enterprises in Finland producing technical aids, some of them making also individually adapted technical aids. Some of the companies are manufacturing and importing their products. The pure importing companies are left outside this survey because it was considered too complicated to review the procedures of user participation applied by the manufacturers abroad.

This inventory included representatives of assistive technology companies, associations of disabled and elderly people, ministries, EU projects, standardisation and testing.

The concept of association of disabled and elderly people includes all the organisations which work for these people and as representatives of them.

2.4.2 *Methods of approach in carrying out the inventory*

A basic list of organisations to be interviewed, given by NUH, was completed with contacts of ISAK and some companies sampled from the Apudata database of Stakes. I interviewed altogether 50 persons.

I asked the interviewees if they offer services or products for elderly or disabled people. The product or the service had to be produced in Finland. I found out if the end-users had been involved in the development of a service or a product and requested a short description of the product. Additional information was also



received in writing (brochures, internet, etc.). I collected information about different approaches and experiences of participation of the end-users (recruiting, educating and organising the users). I also wanted to identify the phases of the development process in which the users were involved and how the participation was funded. Finally, I asked for references and information on other relevant contacts.

The interviewees gave many tips on references to the literature, in addition I made a search of Finnish literature in the internet, using combinations of keywords like technical aids, design, research, development, user-oriented design, user participation, elderly people and disabled people.

After gathering the information (interviews, literature, brochures, etc.) I analyzed it. When describing the results I use examples to illustrate the issues concerned. The material gathered can only depict the user participation in a very general level. The resources available in terms of time and staff were too limited for a comprehensive study which would require wider enquiries, more interviews and deeper research of the literature in order to draw profound conclusions.

2.4.3 *Inventory: institutions, organisations, actors*

The following list includes organisations connected to the issue which I contacted during the short period of the inventory task and which have a practice of involving users in the research, development and design.

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2.4.4 *Methods and experience*

There are big differences between companies and organisations as to the participation of elderly and disabled people in the R&D (research and development) in Finland. Quite many of the organisations contacted involve users in one or two of the development phases, very few have taken users in all the phases.

The inventory includes companies and organisations which have disabled employees as developers. In these cases the participation goes through the whole development and production chain. A good example is the Airlift hoist developed by Peter von Walzel, a wheelchair user, of Ultra-Air Oy Ltd. Esteetön matkailu (Accessible Tourism) project can be taken as another example. The project develops nature tourism services for disabled people and a person with motor disabilities works as a research assistant of the project making inventories and plans for the resorts.

Some of the associations have a company manufacturing assistive technology and the members then represent users in the R&D. An example of this is Inva-Apuväline owned by the National Association of the Disabled, which in addition to the imported technology manufactures seats and backrests for electric wheelchairs.

STAKES organises user panels. In these cases, users are mostly involved in product analysis, needs assessments, analysis of user activity network (in product context and environment analysis), and in usability testing.



VTT Information Technology and STAKES participated in a TIDE funded project, ACCESS, where end-user, their relatives and their therapists participated during the whole project (user centred design), from identification of user requirements to design and evaluation. The benefits were notable by all partners.

The stages of the value chain surveyed regarding user participation were: definition of the problem and the need, analysis and specification, development and testing.

2.4.4.1 User participation in R&D and related issues

Participation in the different stages of the value chain

Problem definition

The extent of user participation in the problem definition varies from an organisation to another. There are companies and associations which tell that a product or a service was developed directly from the needs and ideas of users. On the other hand, some companies develop a product with the help of experts and look afterwards if there are appropriate users. Quite frequently, the customers of the companies are not end-users but representatives of other organisations (e.g. central hospitals or the social care system) and the need of a user may have faded behind other needs (e.g. economic or political needs).

In the organisations of elderly and disabled people ideas and problems come up from the members of the organisation. Some manufacturing companies have found this user reserve of the associations and use it in their research and development work. Unfortunately, this means quite often the testing phase before launching the product.

On local level, elderly and disabled people can participate through different kind of councils and committees. The councils of disabled and elderly people are representing and influencing in the communes and cities. The councils bring forward needs and expertise of these people and work as channels to the decision-making bodies. However, how the subjects proceed in the official system, depends on the activity and interest of the politicians.



The participation methods also vary. The companies may use direct feedback and ideas which are then used in the development. Other methods used are common discussions and ventilations, interviews and observations.

A good example of a combination of research and design is Keiski Arkkitehdit Oy and the Accessible Environment Project (accessible kitchen, bathroom and environment). The design is user based as interior designer Sirkka-Liisa Keiski has an opinion that a user knows what she/he wants, therefore she/he has to participate and also get what she/he wants. Through her research Ms. Keiski has created contacts to the users and by means of common discussions and interviews developed e.g. the x-kitchen.

Analysis and specification

This is the stage where the participation of users is the lowest. Although users are involved in the research and development the analysis phase is carried out by the designer him/herself, almost without exception. The biggest problem seems to be the different languages of the researchers/designers and the users. Instead of guiding and educating users to research theories and methods they are excluded from the phases where the researchers consider their competence insufficient. This is also often seen in the results of the research: they have been written in the language which is understood only by researchers and designers.

An example is a furniture company manufacturing, among other products, also products aimed especially for elderly and disabled users. When asked about the user involvement the designer answered: "It is so difficult to get new ideas from the elderly people as they cannot put forward their opinions. If you ask twenty persons you get twenty different answers, how do you make a product out of that?" The designer's point of view is that the trouble is the elderly people, not a designer who cannot utilize the expertise of a user. A common deliberation with these twenty users could help to develop a socially useful product which corresponds to the needs of several user groups.

An opposite example chosen is the Adaptation Training Centre in Lahti. The designer Anssi Autere surveys the problems and the needs together with the respective customer. They design or choose an appropriate device, evaluate its



usability and make individual adaptations needed. The user thus participates in every stage of the value chain.

The practise of the councils of disabled and elderly people is diverse: in some municipalities the councils are involved in the decision-making and consulted as well in the analyses of problems, as other municipalities have councils only as formalities.

Development and testing of assistive technology

This is the stage where users are involved mostly. Most companies and organisations want users in the testing of a product or a service before it is launched. Concerning products, this means that users test a prototype which then is improved and redeveloped according to the feedback before the start of a mass production. The products on the market are also improved according to a user feedback. A company manufacturing aids for mobility has a diverging method in its development and testing: the designers use the products of the company on a daily basis. The products are regarded as "products for all", not only products for disabled people. Suggestions for improvements, tips and new ideas are, however, gathered from this user group.

ISAK is a good example of involving users in all the above-mentioned stages. ISAK is a unit for development of assistive technology for independent living and it provides consultation and training, develops and produces new devices and services which help people in their independent daily lives. The most central sector of ISAK is development of new devices with end-users in the core of the work. The needs for new solutions grow from a practical design work done in the municipalities of Eastern Finland. The basis of the surveys and planning is a co-operation with users of the facilities and devices, local professionals, decision-makers, and manufacturing and marketing companies. The target is a product which is socially functional, competitive, estetic and a solution respecting the individual.

ISAK is one of the nine sub-projects of The North Karelian Social Technology Development Project (1995-1999). The most Eastern welfare-cluster of EU is funded by the EU regional and social funds, and nationally by the Ministry of Social Affairs and Health, the Federation of municipalities in Northern Karelia, the North Karelian labour district and several municipalities, societies and associations in North Karelia. The project involves development of the living environment, housing, instruments,



products, services including research and training. The goal is to provide a barrier-free living environment and equal opportunities for everybody to participate in the public life with the help of technology.

Other welfare clusters related to this subject are the Accessible World project of Sitra, the Finnish National Fund for Research and Development, and the local development network of Oulu region.

NUH - Nordic Development Centre for Rehabilitation Technology has initiated a Nordic RIT (Rheumatism and IT) project which is a co-operation between the Nordic Rheuma Council, Nordic national rheuma associations and some of the national institutes for assistive technology. The aim of the project is to produce guidelines for planning of a good computer worksite for people with rheumatic diseases. Persons chosen to the user group participate in the whole value chain, starting from the idea and evaluation of needs all the way to the testing. The knowledge from different countries is combined and elaborated into a proposal on a CD-ROM and in the internet in all the Nordic languages. The target groups, both the users with rheumatic diseases and the professionals, test the product and fill in an evaluation form. The revision of the guidelines is made according to the wishes and comments. The final guidelines are tools for user organisations, rheuma clinics, rehabilitation centres and technical aid centres for illustration of possibilities of information technology.

Description of methods of approach in the different stages

Identification of user selection strategies

A uniform method for selecting users to R&D was not found by the interviews. A general way is to select users via an organisation of disabled or elderly people or via local social and health care systems. How the participants are selected, depends on the product or the service. The development of one product involves long-time wheelchair users, another takes persons on the basis of a certain disability, the third case involves people with as many various disabilities as possible.

STAKES has a panel of elderly and disabled people, who are contacted when a new development activity is starting. STAKES also has good contacts with national



organisations for disabled and elderly people, and they are contacted in search for volunteers.

In some projects, there are service centres as partners of projects, and the service centre clients form one user “pool”, from which the service centre personnel recruit users for the particular project.

Some companies use persons who have long-time customer relations: individuals with whom the company has worked before are asked to participate when needed.

Co-operation with user organisations

The term user organisation is used for organisations of elderly and disabled people. As stated before, some companies co-operate with these organisations in order to involve users in the development or testing of a product.

An example of a user organisation is the Marjala Multiservice Model in Joensuu. It includes networking for the development of the services of the residential area, reformation of working methods and development of telematics to improve the accessibility of services. The goal is accessible living, services and social interaction. Following branches have representatives in the Marjala Team: resident activities, the service co-operation, the planning and administration of the basic services, social welfare, administration of technical services and the city planning. The members of the group have participated in the New Knowledge and Networks education programme which have been used to create this multiactor working model.

The basic dwellings in the area have been designed for all (wide doors, no thresholds) and accessibility is the basic standard for the planning. A versatile network of service producers has also been developed and it works in a constant interaction with the residents of the area. The fora for residents’ own activities are the house committees, the residents’ association and the service co-operation. The residents can bring forward their opinions about the development of the area and the language of planning is thus made more understandable for the citizens.

The other example is also related to dwelling. The real estate service center of the social and health care in Helsinki has in co-operation with RASPYY (Ruoholahti Home Care Association) developed a mixed house including both owned and rented



flats. The residents were selected in the phase of planning of the rooms. The initiative came from the disabled persons and they also formed the group. The representative of the group participated continuously in the construction meetings. Everyone could have an influence on the design of his/her own home and the rooms were individually tailored. Nine severely disabled person are living in the house.

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

Standardisation

Standardisation and harmonisation work is still quite unstructured in Finland and the survey revealed uncertainty among the companies. Many of them did not know the requirements set for the products. Very little user participation was found.

The National Agency for Medicines, NAM has been authorized by SFS, the Finnish Standards Association to work with standards for medical devices and materials. A national reference group supports the standardisation of assistive devices. NAM appoints experts to international working groups and collects comments for draft standards.

A standard defines the technology (requirements and test methods) used in design and production of assistive devices. Thus it is mainly the users who can benefit from a standard. For a manufacturer, a standard is an important way to show the compliance with the essential safety and performance requirements of the EU directives and legislation. The users participate in working groups directly (a representative of NAM is a wheelchair user) or indirectly via a user organisation (e.g. the Threshold Association). A user must have certain knowledge of the products before he/she is appointed to a working group.

Testing

Nordic co-operation is used in the testing of assistive devices: certain products are allocated to certain countries. The responsibility of requirements and testing of environmental control systems has been given to Finland and the Technical Research



Centre of Finland. At the moment the work has been halted because of lack of funding. Stakes funded the work earlier, last year the funding was finished, and the discussions are unfinished today. As the funding problems are solved, the testing will include technical tests related to the equipment as well as usability tests. User panels appointed by a user organisation (e.g. the National Association of the Disabled) are going to be used in the usability tests.

SEL, the Laboratory of Applied Ergonomy is active in ergonomic product development and testing, the speciality being aging and technology. User based ergonomics, multidisciplinary utilization and application of it for the needs of aging people is the work area of the laboratory. Users are involved in every stage of the value chain and the methods used are user research, user tests, observation, user panels and teams. The work started as a project but has now been organised under Segel.

2.4.5 *Overview about user training*

The survey did not find any special training targeted to users and their participation in the research and development. Various kind of education is arranged but it is related e.g. to introduction of devices, use of services, empowerment, etc. The associations of elderly and disabled people arrange education for the members to support them to find new resources of their own and enable them to participate in the decision-making.

ISAK also gives education the aim of which is to support independent living. Disabled people as well as professionals have participated in the education. Also manufacturing companies demonstrate their products during the courses. Indirectly, the education encourages people to participate in the R&D. As the courses give people knowledge about existing technology they also help them to better define their own needs. The companies also benefit: they can get valuable feedback from users and ideas for new products.

When starting up a project, STAKES explains the meaning of user participation, the purpose of the current activity, and the financial frameworks so that the users are



able to decide if they want to participate or not. Some details on the project objectives, and project work are being described. Likewise, the role of user involvement.

2.4.6 *Overview of organisational framework for user participation*

Very little organisational framework was found for user participation in R&D, design, testing and standardisation. RASPY and Marjala (3.1.2) are important, in addition there are some project reference groups including users.

The associations of elderly and disabled people have to be counted because they involve members in the development of organisational work either directly at local associations or indirectly via central organisations. Larger associations also have their own research and publication activities (e.g. the Central Union for the Welfare of the Aged, the National Association of the Disabled, the Finnish Federation of the Visually Impaired).

Financial framework in practice

Any special funding system supporting participation of users in R&D was not found. Within projects the participation is supported by the project funding. The users are paid a small reimbursement mainly to compensate the expenses. Some companies have a compensation, - not all, however. The sums are not significant and they are a part of general costs.

In the case of STAKES, the financial frameworks are being clarified before any user participation take place.

2.4.7 *Summary of findings*

The following table is a summary of results of the survey. It is a plain story about the users' share of R&D of assistive technology in Finland: too many none's and very little's in the columns, although there are a few positive exceptions.

	User participation	Methods	User training	Financial aspect
Problem definition	quite often	some	very little	very little



Analysis, specification	very seldom	none	none	none
Development	a little	some	none	very little
Testing	often	some	very little	very little

2.4.8 Literature

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