Analysing and federating the European assistive technology ICT industry

Final Report
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Jennifer Stack
Leire Zarate
Carmen Pastor
ROBOTIKER-TECNALIA

Niels-Erik Mathiassen
The Association for the Advancement of Assistive Technology In Europe AAATE

Ricard Barberà
Institut De Biomecànica De València IBV

Harry Knops
Hugo Kornsten
Next Generation For All NG4ALL

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1. EXECUTIVE SUMMARY

There are currently approximately 45 million people in Europe who report a long standing health problem or disability[1]. Further, the aging population means that more people will have to live with some sort of disability. Recent figures from the 2008-based national population projections EUROPOP2008[2] show that the share of people aged 65 years or over in the total population is projected to increase from 17.1% to 30.0% and the number is projected to rise from 84.6 million in 2008 to 151.5 million in 2060.

Many assistive technology devices are allocated to the elderly and the needs will not be smaller with an aging population. For example, in Sweden, around 70% of assistive devices prescribed go to people aged over 65[3]. These demographic shifts are going to be an important driver behind increases in demand, as well as increases, or changes in the types of demands for more accessible products, including some forms of assistive technology.

This report represents the final report of the study, "Analysis of the Assistive Technologies Information and Communication Technologies (AT ICT) industry in Europe" for the European Commission. The global objective of the study has been to gain information as to the state of the EU AT ICT industry and develop conclusions and recommendations to what steps can be taken to improve the competitiveness of the companies which form this industry.

To carry out this study, the study team employed a variety of techniques and sources of information in order to gain as complete and accurate a view as possible on the AT ICT industry in the 27 Member States of the EU. However, before entering into detail about the techniques used, it needs to be explained that given the breadth of the AT ICT industry in terms of products and players, the study team from the outset made a decision to focus the study around the following five product groups: Hearing Instruments, Braille Displays, Environmental Control Systems, Software, Communication devices.

To gather information on these product groups, in addition to other, general AT ICT industry information, initially, database analysis and desk research were done. Study team members also attended industry events to network with industry players. In addition, interviews were done with selected companies to carry out detailed case studies on these AT ICT firms. This first range of activities resulted in comprehensive information on how the industry functions in terms of AT ICT, from which initial hypotheses regarding the AT ICT industry in Europe were formed.

This led to the following phase, hypotheses testing, which also was carried out in various lines: extensive structured telephone interviews with 25 companies in the EU AT ICT industry; a workshop at an industry event to gain direct feedback on the study team's initial conclusions; a final questionnaire sent to over 58 representative companies of the AT ICT industry in Europe.

What we can conclude is that the AT ICT industry in the EU certainly is not a simple one. It is complex in various aspects, for example for the large number of products, for the large number of small firms, and for the different service provider systems that are used to get AT ICT products to disabled end-users.

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1 "Men and women with disabilities in the EU", Applica, CESEP and Alphametrics, 2007.

2 http://epp.eurostat.ec.europa.eu (Population Projections) EUROPOP2008, convergence scenario, national level (04 November 2008)

3 Provision of Assistive Technology in the Nordic Countries, Second Edition. May 2007.

However, one area common to the vast majority of firms is the marketing challenge: how to get the right product, via the right person, and with the right instructions and training to the disabled end-user who needs it. To some extent, this is a distribution and marketing challenge common to any industry, but in the AT ICT industry in Europe, the complexity of the different service provider systems is an extremely potent force in the marketplace.

Furthermore, these challenging circumstances are not static, but rather, there are additional factors affecting the AT ICT industry. One of these is the never-ending pace of ICT development. And the basic problem of merely trying to keep up with the technology is made much more complicated by the small size of AT ICT firms compared to the multinational ICT firms setting the pace.

An additional force of change in the industry is coming from standardisation, universal design, and mainstreaming. In part because of corporate social responsibility motives but largely because of potential market size, more companies are incorporating accessibility into their products and services. In some aspects, these trends offer plenty of opportunity for companies, but this also will result in new competition to some AT products from new, more accessible mainstream products.

Also, public policy is being increasingly used to dictate accessibility, and thereby improving the lives of people with disabilities. After considering the situation of legislation affecting AT and accessibility in Europe, Japan and the U.S., there seem to be three main lines on which public policy has been enacted:

- Legislation to directly subsidise or otherwise support the purchases of assistive technology for disabled end-users.
- Legislation which dictates that all public procurement purchases of goods and services must be accessible. This type of legislation also ties closely to work on standardisation to better define what makes something accessible (i.e., Universal Design).
- Anti-discrimination laws that protect the rights of people with disabilities, especially in terms of their access to goods and services.

In the U.S., the approach of public policy has been to work on the second and third of these areas, and not generally the first of these, at least at a national level. This is due in large part to the U.S. not having a national health system through which the entire population (not just older people, or low-income, or veterans) is entitled to service. The results of the U.S. approach have been notable, with plenty of visible changes in the design or public spaces, transport and workplaces. However, there remains concern that because end-users bear the largest part of the responsibility to access, select and finance their AT solutions, that some people who could benefit from these types of products and services, are not able to.

For its part, the EU and Japan have had more in common in terms of their legislative approach to AT and disability. In both governments, traditionally more legislative emphasis has been put on programs to finance and help access to assistive technology for disabled end-users. However, relatively little has been done to date in legislation that affects public procurement or basic anti-discrimination law. That said, this is changing, as can be seen through the work on the European M376 legislation that has as its goal to harmonise and facilitate the public procurement of accessible ICT products and services by identifying a set of functional European accessibility requirements for public procurement of products and services in the ICT domain[4]. Such legislation will no doubt be a welcome development for people living with disabilities in Europe.

Further, in terms of actions that the EC can take to help promote and strengthen the AT ICT industry in Europe, we return to one of the basic questions of this study: whether a federation or other type of industry association would be useful to and welcome by industry. From the responses received by industry, there does seem to exist clear support for an industry organisation. Furthermore, the scope of

[4] http://www.jtc1access.org/documents/swga_330_ETSI_STF_333_Report.ppt#316 , 4, EC Standardisation Mandate M376 - Objectives

this organisation should be focused on AT ICT and the activities that it should carry out would be centred along three lines: networking; professional development / knowledge building; and, public policy.

For an association of this character to work and achieve the objective of promoting and strengthening the EU AT ICT industry, the following basic tenets should be followed:

- *Network members should include both large and small industry players. It needs the voices of both multinationals and SMEs to be successful.*
- *Geographical coverage should cover all EU member states, for example via connections to existing national organisations, such that representatives of national organisations becoming members of the EU level network.*
- *Strong support for the implantation and start-up of the network, for example on the form of specific EC policy support action and/or a type of grant to off-set initial start-up costs.*
- *Good operational financial structure to guarantee continuity. This would be principally financed through member fees and income from network events, activities and services.*
- *And most importantly, that the EC recognises this network as the key point of contact with the AT ICT industry, and likewise, that the industry values and recognises the network as their voice to the EC.*

In sum, that such an organisation be the principal voice for the AT ICT industry in Europe to the European Commission.

2. INTRODUCTION

There are currently approximately 45 million people in Europe who report a long standing health problem or disability[5]. Further, the aging population means that more people will have to live with some sort of disability. Recent figures from the 2008-based national population projections EUROPOP2008 show that the share of people aged 65 years or over in the total population is projected to increase from 17.1% to 30.0% and the number is projected to rise from 84.6 million in 2008 to 151.5 million in 2060.

Many assistive technology devices are allocated to the elderly and the needs will not be smaller with an aging population. For example, in Sweden, around 70% of assistive devices prescribed go to people aged over 65[6]. These demographic shifts are going to be an important driver behind increases in demand, as well as increases, or changes in the types of demands for more accessible products, including some forms of assistive technology.

This report represents the final report of the study, "Analysis of the Assistive Technologies Information and Communication Technologies (AT ICT) industry in Europe" for the European Commission. The global objective of the study has been to gain information as to the state of the EU AT ICT industry and develop conclusions and recommendations to what steps can be taken to improve the competitiveness of the companies which form this industry.

There are inherent difficulties in working towards this objective given the fragmented level of information in Europe. The lack of homogeneity and comprehensive information gathering makes it virtually impossible to analyse data, especially quantifiable market and economic data, in a reliable, credible fashion. However, plenty of useful insight was gained from using other techniques to get closer to industry and best understand the challenges and opportunities that it faces.

The work presented in this report constitutes an overview of the AT ICT Industry, including identification and analysis of its structure, how it operates and its main actors. This report represents a summary of the knowledge generated throughout this study, as well as the study team's extensive professional experience. This report also includes recommendations as to an organisation structure that would be most useful and effective for promoting the AT ICT industry in Europe, and by extension, improving the lives of millions of disabled end-users.

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5 "Situation of disabled people in the enlarged European Union: the European Action Plan 2006-2007"

http://ec.europa.eu/employment_social/index/com_2005_604_en.pdf, page 4.

6 Provision of Assistive Technology in the Nordic Countries, Second Edition. May 2007.

3. METHODOLOGY

3.1. INTRODUCTION

To gather information on the AT ICT industry, initially, a selection of five product groups within the AT ICT industry was done. This selection was basis various factors in the AT ICT industry such as the product representing a classic AT segment technology (Braille readers), a product's potential for mainstreaming applications (ECS, communication devices), the type of players in the product group industry (software, hearing aids), and of course the overall size of the market (hearing aids, ECS) for the different product groups. This selection is explained in greater detail in the following section.

Following the selection of the product groups, database analysis and desk research were done. In addition, study team members attended industry events to network with industry players. Also, interviews were done with selected companies to carry out detailed case studies on these AT ICT firms. This first range of activities resulted in comprehensive information on how the industry functions in terms of AT ICT, from which initial hypotheses regarding the AT ICT industry in Europe were formed.

These initial hypotheses were further complimented by information gained through the national contact points of the Association for the Advancement of Assistive Technology in Europe (AAATE) who are in an excellent position to comment on the service provider systems in their respective countries.

This led to the following phase: hypotheses testing, which also was carried out in various lines. Firstly, the study team realised extensive structured telephone interviews with 25 companies in the EU AT ICT industry. Following this, a workshop was held within an industry event to gain direct feedback on the study team's initial hypotheses. Finally, a questionnaire was developed and sent to over 58 companies in the AT ICT industry in Europe to which we received responses from 30 (52% response rate). The selection of these companies is described in detail in the following section. In general the companies were selected in accordance with the five product groups used in this study, as well as to best balance the sample in terms of company size and geography.

The following section explains in greater detail the sources used, events attended, and companies interviewed and surveyed.

3.2. SELECTION OF 5 KEY AT ICT PRODUCT GROUPS

To carry out this study, the study team employed a variety of techniques and sources of information in order to gain as complete and accurate a view as possible on the AT ICT industry in Europe. However, before entering into detail about the techniques used, it needs to be explained that given the breadth of the AT ICT industry in terms of products and players, the study team from the outset made a decision to focus the study around the following five product groups:

- *HEARING AIDS*
- *BRAILLE DISPLAYS*
- *ENVIRONMENTAL CONTROL SYSTEMS*
- *SOFTWARE*
- *COMMUNICATION DEVICES*

Brief descriptions of these product groups as well as the reasoning for why these have been selected for this study are as follows:

3.2.1. HEARING AIDS

This group of products is defined as devices for concentrating and/or amplifying and/or modulating sound for a person with hearing problems. Included are hearing aids with built in tinnitus masking, induction coil devices, and induction loop devices.

This product group has been selected because it represents one of the biggest (in terms of expenditure), oldest and most widely used forms of assistive technology. In Germany alone, the market for hearing aids was over €200 million in 2006.[7] Also the hearing aid market is quite well-developed and leading players are multinational companies, a reality which is quite different from the more typical SME dominated AT industry.

3.2.2. BRAILLE DISPLAYS

Braille Displays are electronic devices that are used to read text that a computer sends to a monitor. The device is connected to the computer by a serial cable and produces Braille output on the Braille display. Refreshable Braille displays only read one line of text at a time. These displays generally include directional keys which allow the user to navigate through a document. Larger displays (80 cells) also include a cursor routing function. Each cell contains eight small pins, allowing eight dot computer Braille rather than the six dot Braille we are used to seeing.[8] It is necessary to understand Braille in order to use this product.

This product group has been selected due to their encompassing the basic need of reading. Also, this group has been included because Braille readers exemplify an AT product with little mainstream potential. It is important to remember that certain AT market needs will likely always be met by specific AT technology, and which cannot be adequately served through more mainstream market options.

3.2.3. ENVIRONMENTAL CONTROL SYSTEMS

Home environment control and automation systems can be extremely useful in applications to include the disabled population. Disabled people often have difficulties using traditional home environment controls or conclude that they are unable to use it at all. This needs to be overcome as the key philosophy behind home environment control system is to enable users to feel more independent and thus increase the quality of their life. [9]

These products are designed to enable independent living in people's homes, therefore installations designed for hospitals, senior residences, etc are not included. This is an especially interesting product

7 German anti-trust 2006 court ruling on Sonova acquisition of GN ReSound

8 Adaptive Technology Research Centre, Faculty of Information Studies, University of Toronto

9 Home Environment Control System – Implementation for the disabled, P. Serafinavicius, V. Lauruska, Department of Electronics, Siauliai University, Lithuania. 2004.

group because it can be seen as a feasible and attractive solution for national health and social systems in their goal to develop less costly and otherwise more optimal solutions to having to institutionalise people.

Further, this is a product group where the potential for mainstreaming is quite evident – for example, one leading company in this product group defines their target market for environmental control systems as "anyone who feels vulnerable in their home." Further, the market is potentially so large and attractive that different players are entering it from different areas: for example, technology push specifically to AT needs, or home security firms adding tele-care elements to their basic security service business model. At the same time, developments for the elderly market also have clear synergies with the disabled end-user segment. In summary, environmental control systems is a particularly dynamic field with great mainstreaming potential and where developments are evolving from various directions.

3.2.4. SOFTWARE

In the 21st century, software is a critical market for just about everyone, and disabled people are no exception. Rather, in many cases, these groups of end-users may be even more dependent on software developments and other technological developments as new tools to improve their accessibility to the world.

Software developments can range from that developed to make a specific AT product (Braille display) work with traditional non-AT products (a PC), as well as software 100% dedicated for specific AT use, such as environmental control systems based on software which enabled a quadriplegic person to control his / her environment using only voice commands.

Software is also especially important in the AT sector because at present, about 80% of the software that is available for AT applications is available only in English. Language is also an important issue because it serves as an important barrier between the different country markets of the EU AT ICT industry. Therefore, companies dedicated to software products in the AT market are often very small firms, with a limited product offering as well as perhaps being quite limited in their geographical scope.

3.2.5. COMMUNICATION DEVICES

This product group includes devices for assisting a person who has insufficient voice power to speak using his/her own voice. The concept of communication however is not limited to voice communication. Rather it is any kind of signalling or other method used to enable a disabled person to communicate with others.

One of the most powerful applications to have been developed and later mainstreamed from this field of communication devices was "text-to-speech" technology and products. This technology was initially developed for disabled users, but has since found extensive mainstream applications such as voice recognition software in mobile telephones.

Communication device solutions for disabled users are very specific, individual solutions given that in many cases, the exact communication problems that a disable end-user has are quite unique. However, these products also have great potential for mainstream applications, as seen in the text-to-speech example.

3.3. PART I – INFORMATION GATHERING

3.3.1. DATABASE ANALYSIS

With regard to the database analysis, the main sources used were EASTIN[10], HANDICAT[11], etc. These were chosen for the breath of their coverage in terms of AT companies and AT products. The EASTIN database is a network of resources related to assistive technologies and combines the assistive technology resource databases of six European countries including Italy (SIVA), Denmark (HMIBASEN), Germany (REHADAT), Great Britain (DLFDATA), Spain (CEAPAT) and The Netherlands (Hulpmiddelen Wijzer). The companies included in the HANDICAT database, which covers France were an additional key source of information. Data on the other European countries has not been included because it is not readily available in English or because it simply does not exist in any systematised format.

3.3.2. DESK RESEARCH

Since the use of databases is somewhat complex due to the fragmentation and lack of a unified and complete database source for AT ICT in Europe, additional desk research was of course necessary. Of particular use were market studies on the relevant product groups, and their leading manufacturers. Some of the most important reference documents that were used include:

- Towards a Common Language for Functioning, Disability and Health ICF. International Classification of Functioning, Disability and Health (ICGF). World Health Organisation[12]
- Consensus Creation and Awareness for R&D Activities in Technology for Disabled and Elderly People (CORE), TIDE projects [13]
- Horizontal European Activities in Rehabilitation Technology (HEART), TIDE Study[14]
- Study in Technology Trends and Future Perspectives within Assistive Technology[15]
- Access to Assistive Technology in the European Union[16]

In general, specific and objective company information on AT ICT product manufacturers (i.e., beyond their own websites) is somewhat difficult to find. Part of this is due to most of the industry being composed of SMEs which are privately held companies. Given their private status, and the specific nature of the products they produce, company management is rather reluctant to share useful and

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10 http://www.eastin.info

11 http://www.handicat.com

12 http://www.who.int/classifications/icf/training/icfbeginnersguide.pdf

13 TIDE 213 - *CORE*-II 1/8/1993 - 31/1/1995

14 The HEART Study. http://www.hi.se/templates/Page____821.aspx

15 Price-Partnership and IRV (2000): Study on technology trends and future perspectives within assistive technologies. European Commission, Information Society Directorate General

16 http://ec.europa.eu/employment_social/publications/2004/cev503003_en.html

meaningful insight on their company's particular situation in the industry, as well as their opinions as to the industry as a whole.

An exception to this general rule is the hearing aid market which is dominated by large, publicly traded multinationals. Although in the case of some manufacturers, such as Siemens with a very wide range of activities, it can be difficult to get information specific to only the relevant product area, for other important hearing aid manufacturers, information was reasonably readily available.

3.3.3. INDUSTRY EVENTS

One of the most relevant events for gathering information on the industry was the REHACARE convention celebrated in October 2007 in Dusseldorf. This leading annual trade fair for the AT industry saw a total of 47,000 visitors, including people with special needs or requiring care as well as industry experts, to explore the latest in rehabilitation products and assistive devices presented by 809 exhibitors from 32 countries. [17]

Another important event was the 9th European Conference for the Advancement of Assistive Technology (AAATE) celebrated in San Sebastian, Spain in October 2007.

This event saw a total of more than 400 visitors. In addition, the study team made special use of the conference to realise a "World Café" workshop where key issues on the industry were discussed and debated between over 30 people who participated in the activity.

3.3.4. COMPANY INTERVIEWS

In addition to the information gathered via database searches, market reports, industry articles, and company information, specific and more detailed information about several manufacturers was gathered through telephone interviews with key people from these companies (head of R&D, general director, director of regional markets, etc.). The results of these interviews were case studies which cover such issues as the company's history in the AT ICT industry, the types of products sold, research and product development processes, distribution network strategies, as well as their opinions on the major challenges facing the company, as well as the industry as a whole. The information and insight gathered via these case study interviews was extremely useful. However, because of a need to respect the confidentiality of those companies interviewed, we cannot include these case studies in this report.

The profiles of the companies interviewed are the following:

- Very large company in the hearing instruments segment
- Large company in the Braille display segment
- Large mainstream company in the environmental control systems segment
- Small company in the software segment
- Small company in the communication devices segment

In addition to these examples, further interviews were realised with the following companies:

- Medium-sized AT company in environmental control system

17 http://www.messe-duesseldorf.de/rehacare_ca/media/2007_REHACARE_FinalReport_en.pdf

- Very large mainstream telecommunications company
- Joint venture between a large European university and a European multinational corporation

This first hand information provided excellent insight into the strategies of some of the leading companies in the European AT ICT industry, and provided detailed accounts of how issues such as mainstreaming, standardisation, the role of national procurement systems, industry consolidation are being addressed. In addition, it deserves to be included that attempts were made to contact and interview other companies. However, several firms were not willing to be interviewed due to concerns about the confidentiality of their company's strategy and role in the marketplace.

3.3.5. AAATE NATIONAL CONTACT POINTS QUESTIONNAIRE

In order to obtain more specific information on the state of the AT ICT industry in different European countries, the study team developed and disseminated a questionnaire to the National Contact Points of the Association for the Advancement of Assistive Technology in Europe (AAATE). This questionnaire was quite useful as it served to identify country specific information based on a common format or structure. The questionnaire covered the following issues and is included in its entirety as Annex 12.2.

- *Procurement and reimbursement models for AT ICT products*
- *Key regulatory entities with responsibility for certification and standardisation*
- *Main associations related to AT ICT*
- *Key trends that are affecting the AT ICT industry*

The questionnaire was sent to all the national Contact points in the AAATE, a total of 22 people, representing the following countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Portugal, Slovenia, Slovakia, Spain, Sweden, UK, Croatia, Iceland, Israel, Norway, and Serbia. Of these, eighteen questionnaires were returned, a good response (18/22, 82%) and does include information from the largest markets in Europe on economic terms[18].

3.4. PART II – HYPOTHESES TESTING

As an output from the initial extensive data gathering explained above, the study team developed several hypotheses with regard to several key themes, including the following:

- The importance of knowledge of end-users to EU AT ICT companies
- The levels of relative power between the different agents of the EU AT ICT value chain
- The principal types of barriers that EU AT ICT companies face
- The importance of mainstreaming, standardisation and Design for All to AT ICT companies
- The need for companies in the EU AT ICT to form an industry organisation

This is not an exhaustive list of all of the hypotheses considered by the study team, but this does serve to indicate the main lines developed in the hypothesis testing phase.

[18] The countries which did not respond are Croatia, Serbia, Norway, Iceland.

3.4.1. TELEPHONE INTERVIEWS WITH COMPANIES

For these interviews, a questionnaire was elaborated, possible interviewees identified, these people were contacted and interviewed and finally results were tabulated. Since the questions used were virtually all open-ended, the results are qualitative in nature and thus required careful review to make sure the ideas are correctly captured in the analysis.

The companies were selected on the basis of the following four key characteristics:

- *Country of origin*
- *Size of company (Multinational or SME)*
- *Main product offer*
- *Type of market (Mainstream or Assistive Technology)*

It needs to be included that the main product offer was limited to the five product group structure which has been used in this study. Those five product groups are:

- *Hearing aids*
- *Environmental Control Systems*
- *Communication Devices*
- *Software*
- *Braille readers*

Great attention was paid to try to make as balanced an interview sample as possible in terms of these four different characteristics. The sources used for identifying possible interviewees were the contacts made at REHACARE 2007, national data base searches, and industrial and professional contacts of the different study team members with key players in the AT ICT industry.

In terms of how the interviews were carried out, virtually all were done by phone as it was impossible to reach a broad geographical mix in the time and cost structure permitted by the study. The interviews took approximately 45 minutes and were structured around a questionnaire which is included as Annex 12.3. In general we did not send the questionnaire to the interviewees prior to realising the interview. The reason for this was that based on prior experience from the case study interviews, due to the complexity and nature of the questions involved, many people who initially agree to do the interview, decide not to participate after seeing the actual questions. To avoid this from happening, when scheduling the interviews, we only told people the general types of issues to be covered (i.e., standardisation, service delivery and national procurement systems, etc.).

It should also be included that when conducting the interviews, we explained to the people interviewed that their answers were not going to be presented separately, but rather would be combined together with all of the other interview results to then form general conclusions. We feel that this was a necessary condition to ensure a useful and sincere level of participation in the interviews.

Further, the questions used served as a structured guide to make sure that the same themes were covered in each interview with essentially the same focus. However, it was not realistic to think that the type of issues covered in these questions could be treated under a highly structured format. Therefore, it was left to the professional judgement of the study teams conducting the interviews to adequately direct the interviews in such a manner as to make sure that the defined themes were covered correctly.

The questions and themes treated in the questionnaire were developed taking into account the objectives of the study as well as the hypotheses generated from earlier work. A total of 25 interviews were carried out.

3.4.2. WORKSHOP AT ICCHP 2008

The third main dissemination event led by the study team was a workshop which was included in the program of the 11th International Conference on Computers Helping People with Special Needs (ICCHP 08) celebrated 9-11 July 2008 in Linz, Austria. The ICCHP event was chosen for a workshop presentation for various reasons. The central motivation was that the ICCHP is an important reference to this field for mainstreaming issues. Although the event does have a largely scientific context, AT industry does participate, in particular larger companies which may be more active in mainstream activity. The ICCHP has been supporting for more than 20 years the advancement of Information and Communication Technology and Assistive Technology for people with disabilities and elderly people.

In addition, a key reason for choosing the ICCHP was that the event coincided with the final months of information gathering by the study team. As such it provided a good opportunity to test preliminary conclusions with key players active in the AT ICT industry in Europe. Therefore, the objective of this workshop was to present a summary of the main conclusions generated to date, and debate these with representatives from the AT ICT industry.

3.4.3. QUESTIONNAIRE FOR INDUSTRY

Unfortunately, the level of participation on the part of the European AT ICT industry was quite limited at the ICCHP and thus did not generate a sufficient level of confidence in terms of validating the study hypotheses. Because of this, a final questionnaire was prepared (Annex 12.6) and sent to over 58 companies. The companies contacted were those that we had been working with throughout the study (case study interviews, telephone interviews, industry events, etc.

The following tables indicate the specific characteristics of the companies and individuals contacted and interviewed as part of the telephone interviews as well as for this questionnaire.

TYPE OF COMPANY	**COMPANY INTERVIEWS**		**QUESTIONNAIRE**	
	companies contacted	*companies interviewed*	*companies contacted*	*responses received*
Large Company	9	5	12	8
SME Company	35	19	46	22
Individual Expert	6	1	–	–
TOTAL	**50**	**25**	**58**	**30**

Table 1. Companies contacted/answered – Type of company
Source. *Own elaboration*

PRODUCT GROUP	**COMPANY INTERVIEWS**		**QUESTIONNAIRE**	
	companies contacted	*companies interviewed*	*companies contacted*	*responses received*
Hearing aids	6	1	7	3
Com. Devices	12	7	18	9
Software	6	7	15	10
ECS	6	5	8	4
Braille Readers	8	5	10	4
TOTAL	**44**	**25**	**58**	**30**

Table 2. Companies contacted/answered – Product group
Source. *Own elaboration*

	COUNTRY	COMPANY INTERVIEWS		VALIDATION QUESTIONNAIRE	
		companies contacted	*companies interviewed*	*companies contacted*	*responses received*
Member States of the EU	UK	8	2	10	6
	Germany	6	4	9	3
	Spain	6	5	5	4
	Finland	5	2	4	2
	Italy	3	1	3	2
	The Netherlands	3	3	3	1
	Belgium	3	1	3	1
	Sweden	2	1	3	2
	Austria	1	1	1	
	Cyprus	1		1	1
	Denmark	1	1	1	1
	France	1		2	2
	Hungary	1		1	
	Ireland	1		1	
	Poland	1	1	1	
	Portugal	1	1	1	1
	Czech Republic	1		1	1
	Greece	1		1	
Other European Countries *	Iceland	1		1	
	Norway	1	1	2	2
	Switzerland	2	1	4	1
	TOTAL	**50**	**25**	**58**	**30**

** NOTE: In case of Switzerland, Iceland and Norway the questionnaire was used for the opinion and not representativeness purpose.*

Table3. Companies contacted/answered – Country

Source. *Own elaboration*

TYPE OF COMPANY	COMPANY INTERVIEWS		QUESTIONNAIRE	
	companies contacted	*companies interviewed*	*companies contacted*	*responses received*
Mainstreaming	8	4	45	21
AT Industry	36	21	13	9
TOTAL	**50**	**25**	**58**	**30**

Table 4. Companies contacted/answered – Type of company
Source. *Own elaboration*

3.4.4. INTERNATIONAL COMPARISON

A final component of the study is the international comparison of the EU AT ICT industry to those of the U.S. and Japan. In the case of the U.S. market, a visit to the U.S. was done to complete in-person interviews, in addition to desk research. For information on the Japanese industry, information was gathered from desk research where possible (somewhat limited due to language issues), and interviews with relevant persons contacted at industry events.

In summary, this robust combination of methodologies and techniques employed by the study team in the realisation of this study provide credibility to the information presented, and especially to the conclusions and recommendations made. It has been our intention to reflect as best as possible the situation of the diverse and broad-reaching European Assistive Technology ICT industry.

4. GENERAL CHARACTERISATION OF THE AT ICT INDUSTRY

4.1. DEFINITION OF AT ICT ASSISTIVE PRODUCTS

According to the definition provided in ISO 9999:2007 "Assistive products for persons with disability -- Classification and terminology"[19], Assistive Products are understood to be any product (including devices, equipment, instruments, technology and software) specially produced or generally available, for preventing, compensating for, monitoring, relieving or neutralizing impairments, activity limitations and participation restrictions. Assistive Technology is technology used by individuals with disabilities in order to perform functions that might otherwise be difficult or impossible. Assistive technology can include mobility devices such as walkers and wheelchairs, as well as hardware, software, and peripherals that assist people with disabilities in accessing computers or other information technologies.

This study is centred on Assistive technology in the area of Information and Communication Technologies (AT ICT). According to the definition provided by the Class 22 of ISO 9999:2007 "Assistive products for communication and information" [20], AT ICT products are understood to be devices for helping a person to receive, send, produce and/or process information in different forms. Included are, e.g., devices for seeing, hearing, reading, writing, telephoning, signalling and alarming, and information technology.

4.2. SYSTEMATISATION OF THE AT ICT INDUSTRY

As explained throughout this document, the AT ICT industry is quite complex, and not an especially transparent, easily understood industry. The value chain in and of itself is particularly complex due to the key role of Service Provider organisations which assume key responsibilities including product assessment and financing, and in most products serve as the principal agent between end-users and AT product manufacturers. Further, the exact scope of this service provider role is not something standard between all geographical markets but rather changes and evolves in function of a country's public policy decisions, public budgeting allocation, technological developments, etc.

Given this set of challenges, it is necessary to have a set of structures from which one can understand the key dynamics of this industry, as well as draw conclusions. This study presents the systematisation of the EU AT ICT industry in terms of its Products, Processes, Actors and Organisations.

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19 http://www.iso.org, (ISO) International Organization for Standardization

20 http://www.iso.org, (ISO) International Organization for Standardization

4.2.1. PRODUCTS – WHAT IS INCLUDED IN THE AT ICT INDUSTRY

When discussing products included within the AT ICT industry, at least three classification systems could be relevant:

- ISO – organized according to the intended use, purpose, and functionality of products
- Service Delivery related classifications – since this is specific to each country's service provider system, there may be few points in common between the different countries' systems on how to group and structure AT ICT products
- Technology classification – where the structure is according to how the functionality is achieved (i.e., MP3 or Bluetooth-based solutions, etc.)

Given these alternatives, we estimate that the most correct structure to use in terms of product is the ISO system. The main reason for this is that the ISO classification structure is understood and used worldwide, which is a necessary feature in an industry with an important number of global players.

The national service provider classification systems are difficult to use due to their lack of homogeneity between the different countries of the EU and therefore are not an ideal alternative. Lastly, in terms of a technology-based structure, a key difficulty is the very pace of change within technological developments. With such rapid advances, any kind of classification system would risk being out of date as soon as it was published. However, a system based on product functionality, such as the ISO format, is more likely to remain constant in time: i.e., a blind person will likely always have a need for reading solutions.

As to the ISO system, the ISO 9999:2002(E) edition has been technically revised and there is an updated fourth edition, the ISO 9999:2007(E), which cancels and replaces the previous version. In this fourth edition, the title has been changed to Assistive products for persons with disabilities — Classification and terminology. Hence, what was formerly referred to as Technical aids are now referred to as Assistive products.

In the new ISO 2007(E) edition, the former class 21 has been revised and replaced by a new class 22 for Assistive Products for Communication and Information.

The following figure highlights the first and the second levels of ISO group 22.

ISO 9999:2007(E)

04	ASSISTIVE PRODUCTS FOR PERSONAL MEDICAL TREATMENT
05	ASSISTIVE PRODUCTS FOR TRAINING IN SKILLS
06	ORTHOSES AND PROSTHESES
09	ASSISTIVE PRODUCTS FOR PERSONAL CARE AND PROTECTION
12	ASSISTIVE PRODUCTS FOR PERSONAL MOBILITY
15	ASSISTIVE PRODUCTS FOR HOUSEKEEPING
18	FURNISHINGS AND ADAPTATIONS TO HOMES AND OTHER PREMISES
22	**ASSISTIVE PRODUCTS FOR COMMUNICATION AND INFORMATION**
24	ASSISTIVE PRODUCTS FOR HANDLING OBJECTS AND DEVICES
27	ASSISTIVE PRODUCTS FOR ENVIRONMENTAL IMPROVEMENT, TOOLS AND MACHINES
30	ASSISTIVE PRODUCTS FOR RECREATION

22 03	ASSISTIVE PRODUCTS FOR SEEING
22 06	ASSISTIVE PRODUCTS FOR HEARING
22 09	ASSISTIVE PRODUCTS FOR VOICE PRODUCTION
22 12	ASSISTIVE PRODUCTS FOR DRAWING AND WRITING
22 15	ASSISTIVE PRODUCTS FOR CALCULATING
22 18	ASSITIVE PRODUCTS FOR HANDLING AUDIO, VISUAL AND VIDEO INFORMATION
22 21	ASSISTIVE PRODUCTS FOR FACE-TO-FACE COMMUNICATION
22 24	ASSISTIVE PRODUCTS FOR TELEPHONING AND TELEMATIC MESSAGING
22 27	ASSISTIVE PRODUCTS FOR ALARMING, INDICATING AND SIGNALLING
22 30	ASSISTIVE PRODUCTS FOR READING COMPUTERS AND TERMINALS
22 36	INPUT DEVICES FOR COMPUTERS
22 39	OUTPUT DEVICES FOR COMPUTERS

Figure 1. ISO 9999:2007(E). Class 22
Source. *Own elaboration*

4.2.1.1. ISO CLASSIFICATION

Class 22 of ISO 9999:2007 is defined as devices for helping a person receive, send, produce and/or process information in different forms. Included are devices for seeing, hearing, reading, writing, telephoning, signalling and alarming and information technology. This ISO Classification was selected as the correct system to use given that the study is centred on Information and Communication Technology in the Assistive Technology Industry. Further, according to the "Provision of Assistive Technology in the Nordic Countries", the use of the ISO classification system for assistive devices in the provision system and database ensures that there are opportunities for comparing the provision of assistive technology across national borders.[21]

However, despite the logic behind using the ISO structure, it does not necessarily follow that the EU AT ICT industry actively uses ISO 9999:2007 Class 22 classification. According to interviews realised with industry (a total of 25 companies), results indicate that the ISO 9999:2007 system is in use, although not extensively. The majority (70%) of companies replied to the question of whether they use ISO 9999:2007 Class 22 in their businesses along the lines of "I've heard of it", but of these, only 35%[22] responded as an active user i.e., "we use it in our country and/or in my company." In the cases where companies are experienced with the system, the reasons cited for using it were pragmatic ones such as that a public system dictates that products be presented under the ISO 9999:2007 system.

In conclusion, it is the study team's recommendation that the best way to consider the structure of the Products of the AT ICT industry is according to the ISO 1999:2007 classification system. This structure is certainly not without its difficulties, such as the ISO update and changing or adaptation of some codes, but in general, this system is the most effective way to talk about products for the AT ICT industry on a global level. Further, although this classification system is updated, it is not as likely to change as would a system based around the underlying technology used to achieve the desired product functionality.

A detailed description of the ISO 9999:2007 Class 22 is provided in the Annex 12.1 to give a list of products that are included within AT ICT. This Annex has been reproduced from "ISO 9999:2007 Assistive products for persons with disability – Classification and terminology" with the permission of the International Organization for Standardization, ISO.

In 2003, the AAATE stated that The EU AT industry was comprised of over 20,000 products available in the EU.[16] According to EASTIN, the principal Assistive Technology Information Network in Europe, the number of Assistive Products available in the EU has increased to more than 39.221 products[23]. This network is composed of six national information systems (Germany, Italy, Spain, Denmark, UK, The Netherlands), and basically serves as a link into each of these six national databases. According to EASTIN, within the Class 22 of the ISO 9999, Assistive Products for Information and Communication, there are 3982 products.

However, it is important to include that the total number of AT ICT products included in the six national databases is not available directly through EASTIN but rather was calculated by the study team from each of the national databases. Using the search engine of EASTIN, only 3910 products are identified, and based on only four of the databases which compose EASTIN.

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21 Provision of Assistive Technology in the Nordic Countries (Second Edition, May 2007)

22 See Methodology Annex Questionnaire Interviews

23 EASTIN http://www.eastin.info

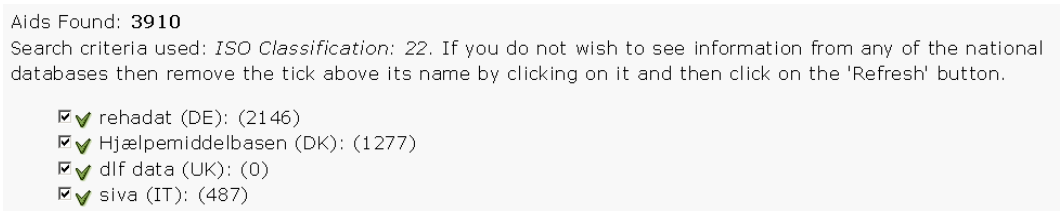

Figure 2. EASTIN Database: (ISO 9999:2007(E). Class 22) assistive products found
Source. *http://www.eastin.info/, November 2008.*

The following are the individual totals of number of AT ICT products (ISO 9999:2007 Class 22) included from each national database within EASTIN, as calculated by the study team.

- **SIVA** (Italy) = 487 products
- **REHADAT** (Germany) = 2146 products
- **HJÆLPEMIDDELBASEN** (Denmark) = 1350 products
- **HULPMIDDELEN WIJZER** (The Netherlands) = 255 products
- **CEAPAT** (Spain) = 0 products
- **DLF Data** (UK) = * it doesn't use the ISO Classification

Figure 3. Individual totals of AT ICT products (ISO 9999:2007 Class 22) from national databases that form part of the EASTIN database.
Source. *National databases that form part of the EASTIN, November 2008.*

In addition, the following are individual totals of AT ICT products (ISO 9999:2007 Class 22) from national databases that do not form part of the EASTIN database.

- **HANDICAT** (France) = 1366 products
- **HANDYNET** (Austria) = 880 products
- **HJÄLPMEDELSINSTITUTET HIDA** (Sweden) = 886 products

Figure 4. Individual totals of AT ICT products (ISO 9999:2007 Class 22) from national databases that do not form part of the EASTIN database.

Source. *National databases that do not form part of the EASTIN, November 2008.*

4.2.2. PROCESSES – HOW THE AT ICT INDUSTRY FUNCTIONS

As in most industry analysis, the principle structure used to understand and discuss the key processes of the industry is the value chain concept. The unique value chain for the European AT ICT industry has been portrayed in this "two chain" manner to best highlight how some steps of the chain are driven more from the supply side whereas other aspects are pulled from the market or demand side. This depiction of the value chain also includes the key actors who are responsible for carrying out these various steps along the chain. These actors are shown in the diagram between the "Supply" and "Demand" chains, and are explained in the following chapter on Actors in the AT ICT industry.

Analysis of the AT ICT value chain

As shown in the preceding section, the number of AT ICT products catalogued by European databases is well over 20.000. However, despite this level of product diversity, it is possible to speak of a global value chain for the AT industry, including the AT ICT industry, which is presented as follows:

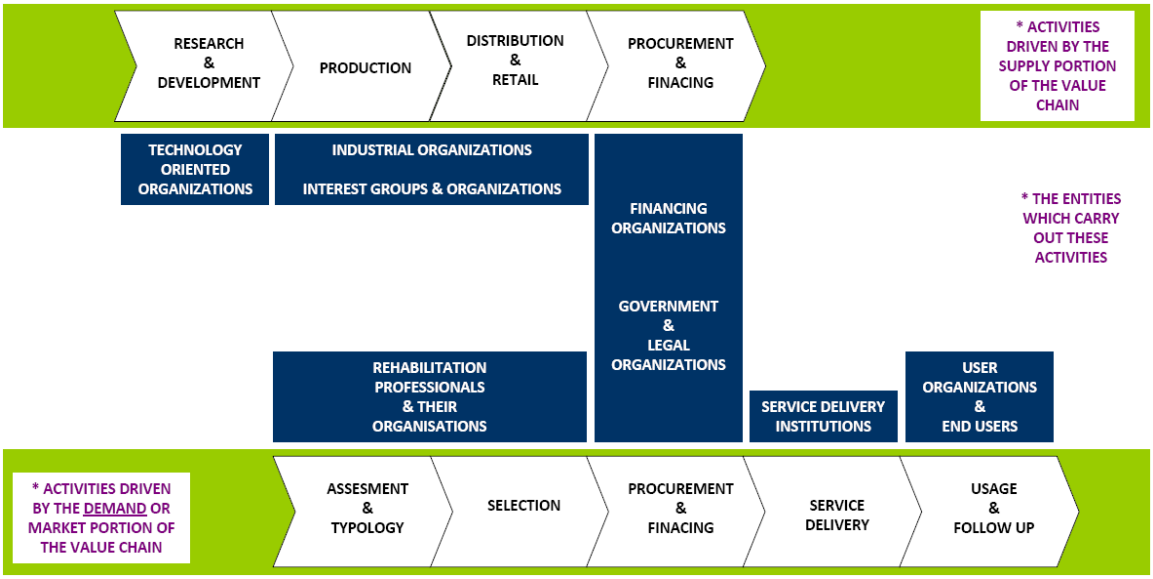

Figure 5. The AT ICT Value Chain
Source. *Own elaboration*

The following is a brief summary of the types of activity and roles carried out in these different stages of the value chain.

Research & development

R&D includes both basic and applied research and is the domain of technology oriented organisations: companies, research centres, universities, and collaborations between these entities. An example of such collaboration is the C-Lab project which is a joint venture between Siemens AG and Paderborn University. Another example of collaboration in R&D involving the AT ICT industry is the Continua Health Alliance which began in June 2006 and has over 100 members, several of whom are large ICT companies such as Cisco Systems, IBM, etc.[24] This alliance has as its stated mission to work together globally to establish interoperability standards for personal health care products and services, to enable new models of healthcare for people worldwide.

These types of collaborations can be especially useful in AT ICT technology and product development since AT ICT research is largely dependent on R&D from other sectors such as telecommunications and electronics.

However the AT ICT industry is not entirely technology push driven, and market needs for correctly serving the disabled and elderly populations must also be incorporated into the R&D process. The presence of the disable end-user's voice is absolutely critical in order to best direct the types of solutions

24 http://www.continuaalliance.org

and functionality needed by the market. According to questionnaire results[25], 28/30 responses agree that knowledge of the disabled end-user is an important driver for the success of their business in the AT ICT industry.

Q4 – *Important barriers to the development of our business in the EU are:*

- ***Q4a*** *– Knowledge of the disabled end-user. (24/30 very much agree; 4/30 somewhat agree; 0/30 somewhat disagree; 2/30 very much disagree)*

In terms of specific ways in which the end-user's voice is incorporated into new products, different companies use different models, but popular options include the use of test launches, as well as focus groups to determine user needs, and other groups for testing new products prior to launch. It also needs to be included that several of those companies contacted ensure end-user contact by having disabled people as part of company staff.

The AT ICT industry shows examples of both Technology Push characteristics as well as Market Pull characteristics. An example of a technology push business model was the creation of a spin-off dedicated to AT ICT from a multinational corporation. The technology which forms the base of the products and services sold by the new spin-off was developed by a non-AT related business group within the multinational. When a clear application and business case could be developed for serving the AT market, the activity was spun-off.

However, other developments in the AT ICT industry have much more of a Market Pull nature. For example, in the world of Electronic Control Systems, many specific product solutions are developed with a process such as "we need an alarm that signals when XX happens." with the technological solution based around essentially the same three components: a type of sensor + radio signal + receptor/monitoring device.

In sum, we conclude from the interviews realised with industry[26] that clearly both technology push and market pull are important, and both sides have their logic. For those arguing that technology is what marks product development, they explain that the companies know what the market needs and/or wants but the problem is that the technology is not yet providing the correct solution. For example in hearing aids, it was explained that it is quite clear what the market wants: a hearing aid that no one can see. But the problem is that technology has not yet sufficiently developed to make this a reality.

As for the counter argument that the AT ICT industry is based on market pull, from the manufacturers' perspective, the market decides what is available and purchased and therefore has ultimate power over what products are developed.

Finally, in terms of whether the AT ICT industry feels that their efforts towards product development result in superior, more competitive products, the response were split right down the middle: 13/30[27] companies agree that European Assistive Technology ICT companies' product development and product offering is superior to that of companies from North America, while the other 14 responses do not agree with this statement.

Q1– *European Assistive Technology ICT Industry characteristics:*

- ***Q1h*** *– European Assistive Technology ICT companies' product development and product offering is superior to that of companies from North America. (3/30 very much agree; 10/30 somewhat agree; 11/30 somewhat disagree; 3/30 very much disagree; 3/30 no answer)*

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25 See Methodology Annex, Validation Questionnaire

26 See Methodology Annex, Questionnaire Interviews

27 See Methodology Annex, Validation Questionnaire

Production

In terms of the activities related to the production process within the AT industry, in some cases this work is subcontracted to third parties, but in many cases, due largely to the lack of production unit volume and consequent economies of scale, there are few economic gains to be had through subcontracting production.

Within the Production stage of the value chain, are also included companies' marketing activities. This marketing area is quite important in that it traditionally includes setting the commercial and distribution strategy for products. As is argued throughout this report, the distribution and retail element in the AT industry is extremely important and therefore requires careful attention as to how a firm markets its products to end-users.

Distribution & retail

The distribution and retail function is an absolutely key part of the AT ICT value chain. This function, essentially the connection between the manufacturer, the service provider, and the end-user, can be composed of wholesalers, dealers, importers and retailers, the exact mix of which is determined by the type of product sold and the country involved. This complexity of having to understand and work through various types of agents and policies makes it absolutely necessary for companies to have local knowledge and a strong positioning with the relevant agents.

Within Europe, each country has its own service provider system, which means that the client, meaning the entity who selects and pays for the AT product, may be different from country to country: public health systems, public social systems, private organisations and associations dedicated to the AT sector, or individual end-users. In addition, language differences also dictate that a local presence is necessary, especially in the training or installation phase of a product sale.

Distribution to several geographical markets is important for AT ICT companies because it should lead to greater sales volume, thus being a primary way in which these companies try to gain greater scale economies. However, because of the differences that exist within the different countries, companies need to have a local presence to have the best chance of successfully navigating and selling to the national service providers.

In a manufacturer's home market, manufacturers usually have a good knowledge of how the service provider system works and how to successfully navigate it, and distribution is not subcontracted to third parties.

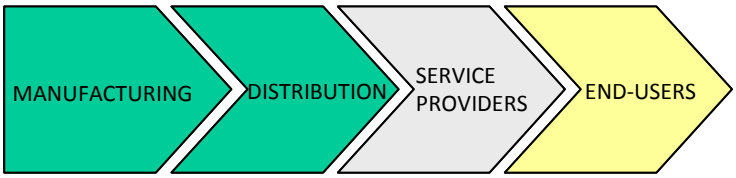


Figure 6. The process in a manufacturer's domestic market

Source. *Own elaboration*

However, in other markets, manufacturers usually work with distributors who have the responsibility to know how each market works, thus separating the manufacturer from service provider and end-users.

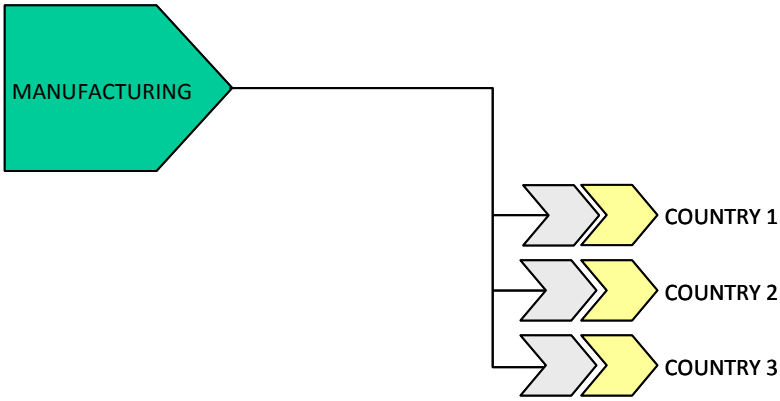


Figure 7. The process in a manufacturer's export markets

Source. *Own elaboration*

Companies have to bear the costs of building and maintaining such extensive decentralised distribution networks. Even if a manufacturer does not own the distribution chain, there is a cost of selecting and maintaining the correct distributor as well as possibly financing additional warehousing facilities.

According to our questionnaire, 24/30 [28] companies agreed that maintaining a European-wide distribution network represents an important cost for European Assistive Technology ICT companies. However, 22/30[29] disagree that selling to the North American market is more profitable (excluding exchange related risk) than to selling to the European market. From this it can be concluded that EU companies' investment in their European distribution networks is the relatively most attractive marketing option.

Q1– *European Assistive Technology ICT Industry characteristics:*

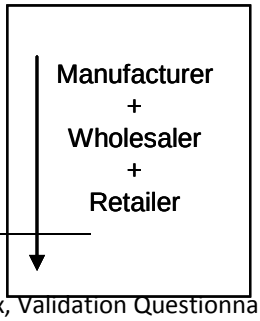
- ***Q1i –*** *Maintaining a European-wide distribution network represents an important cost for European Assistive Technology ICT companies. (11/30 very much agree; 13/30 somewhat agree; 4/30 somewhat disagree; 0/30 very much disagree; 2/30 not relevant).*
- ***Q1j –*** *For European Assistive Technology ICT companies, it is more profitable to sell product to the North American market than to the European market (excluding exchange rate risk). (0/30 very much agree; 5/30 somewhat agree; 11/30 somewhat disagree; 11/30 very much disagree; 1/30 not relevant; 2/30 no answer).*

When considering the types of distribution structures used in the European AT ICT industry, we can highlight three different distribution channel models:

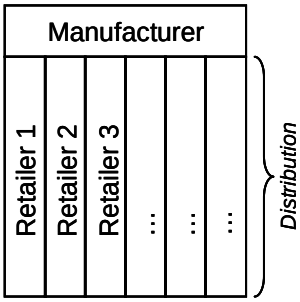
Figure 8. Principal Distribution Channel Models.

Source. *Own elaboration*

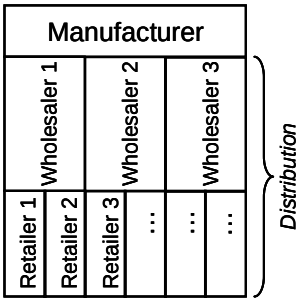
Model 1: Fully integrated. Where the manufacturer owns the entire distribution chain (retailer, warehousing, etc.) and hence maintains the control from manufacturer to end-user



Model 2: Retail centred. Where the retailer is a distinct business from the manufacturer, and where the retailer has important market leverage through his/her access to the end-user.



Model 3: Wholesaler centred. Where wholesalers exist between retailers and manufacturers and hold an important level of power.



[28] See Methodology Annex, Validation Questionnaire

[29] See Methodology Annex, Validation Questionnaire

Regarding these different models, it is important to note that a company does not necessarily use the same distribution model for all of its products or for all geographical markets. Rather, companies will use a mix of channels driven largely by the particular characteristics of each market, in particular the structure of the Service Provider as well as overall market size. For example, if the market is quite small, a manufacturer probably cannot economically justify owning the entire distribution network, and it is more probable that a combination of retailers and / or wholesalers is used. Such a structure minimises the fixed costs of owning retailers and warehouses. However, in cases where the full control of brand identity and reputation is vital, or where the fixed costs of owning retailers and warehouses can be spread over a wide range of products and/or brands, an integrated model can be logical alternative.

As for how the five different product groups considered in this study use their distribution channels:

- Hearing Instruments is generally a market where Retailers play a very important role, thus corresponding to Model 2. However, in the U.S. market, a leading hearing aid manufacturer owned by an EU firm has an entire chain of retail stores within the company structure, thus corresponding to Model 1. For this company, one particular brand is sold through its own retailers but other brands go through third party retailers.
- Within the Braille reader product group, several of the leading EU manufacturers use a Model 1 structure where they own their own distributors.
- For Environmental Control Systems or Tele-Health / Tele-Care products, the leading EU companies own their distribution channels, also corresponding to Model 1.
- Communication device companies are a good example of companies that use Model 3, largely because they need to have access to various components though wholesalers to create individual solutions demanded by their type of end-user client.
- Finally, Software companies generally follow the Model 1 distribution channel structure, although these companies are often so small that they don't sell through retailers. Still, we consider them as Model 1 because the companies do control their distribution through to the final end-user, although that might be through freeware or shareware open distribution via the internet.

It is important to understand that these distribution models are not in conflict with the value chain presented earlier, but rather explain three common distribution models which are used by manufacturers for getting their product to market. They represent an additional level of detail within the overall AT ICT value chain.

These initial stages of the AT value chain are essentially activities driven by the Supply side of the industry. However, the next stages, as is presented, are driven by Demand or the Market, where key actors form part of a service delivery system which is responsible for carrying out various functions.

Service delivery

Service Delivery refers to professional advice and treatment activities, as well as the physical delivery of the technical aid to the disabled person, including training and setup if required. In the Assistive Technology industry, the term Service Delivery is used to identify the set of facilities, procedures and processes that act as intermediaries between the AT product manufacturers and AT end-users.

Each country has a different service delivery system, and in most cases more than one single system is in place, so it is impossible to describe in general terms how a service delivery system works. Depending on the overall welfare strategy underpinning national or regional legislation, there may be major procedures that have general validity throughout a country (as happens in countries with a national health service), or specific procedures that apply to narrow bands of population (as happens in special sector-based social security provisions). Furthermore, service delivery procedures often change in response to political evolution, legislative development, or modification in the availability of public resources. Also, it can also

happen that national service provider policy is not set at the national level but rather at the regional or state level. Several EU countries fall into this category (Spain, Italy, Belgium), especially if one considers that although a national policy for disabled access to AT may exist, the implementation and financing of this policy is done at the regional level.

Nevertheless, the following basic procedural steps can be identified that are common to every service delivery system:

- **INITIATIVE**: initiation of the overall service delivery process, the first contact between the client and the service delivery system.
- **ASSESSMENT**: recognition of the need for an assistive product, evaluation of needs.
- **TYPOLOGY**: recommendation for a type of assistive product, identification of solution typology, i.e. the appropriate kinds of AT for meeting needs.
- **SELECTION:** selection of the specific set of assistive devices and services, final choice of the assistive product among the different types available.
- **PROCUREMENT/FINANCING**: authorisation by the financing body, since private and public funds pay most of the products that are purchased.
- **USAGE**: actual delivery of AT to the user, also including installation, personalisation and training for the end-user and his/her supporting environment (family, employer, teacher, caregiver, etc.).
- **FOLLOW-UP**: subsequent follow-ups. Maintenance and, for the longer term, continuous monitoring that the technical aid is still the appropriate one for the individual requirements of the disabled person.

A service delivery system provides important benefits since it can compensate for the users' lack of technical competence and financial resources. However, it can also generate technical and financial dependence. For instance, the AT market in Europe cannot really be described as user-driven, since these service provider systems are really the "client" to manufacturers, establishing what products are made available as well as how much they will be financed.

As recognition of who is really driving the AT ICT market, according to our questionnaire, 27/30 responses agree that the service delivery function (assessment, product selection and financing) has the greatest level of power in the AT ICT value chain.

As explained, there is an important level of difference in the structures and policies of the service provider systems which impact the AT ICT industry at national and regional levels among the 27 member states. The corresponding complexity of trying to sell to these different requirements works against companies achieving an effective level of economies of scale, especially in terms of sales and distribution.

The solution by industry to deal with this service provider reality is to have decentralized distribution networks as explained in the above section. This solution comes at an important cost for companies, in addition to any costs companies may have to incur for completing specific product adaptations to individual markets.

In this chapter, we will present various basic elements of public systems such as procurement models, reimbursement policies and regulatory entities with information from the national, member state level which effectively illustrates the difficulty and complexity in navigating the entire process, especially at the EU level.

i. SERVICE DELIVERY MODELS

Who the responsible agents are for carrying out the different Service Delivery functions depends essentially on the type of Service Delivery Model used in each country, a model which can potentially change depending on the relevant AT product. The three types of classes which exist within this Service Delivery Model are a **Medical Oriented model**, a **Social Oriented model** or a **Consumer Oriented Model. The use of these models to describe disability is not new. For example, the United Nations described these models as follows in their Enable Bulletin (Nº2) of 1999:**

"The medical model views disability as a personal problem, directly caused by disease, trauma or other health condition, which requires medical care provided in the form of individual treatment by professionals. Management of the disability is aimed at cure or the individual's adjustment and behaviour change. Medical care is viewed as the main issue, and at the political level the principal response is that of modifying or reforming healthcare policy.

The social model of disability, on the other hand, sees the issue mainly as a socially created problem and principally as a matter of the full integration of individuals into society. Disability is not an attribute of an individual but rather a complex collection of conditions, many of which are created by the social environment. Hence, the management of the problem requires social action, and it is the collective responsibility of society at large to make the environmental modifications necessary for the full participation of people with disabilities in all areas of social life."[30]

As for the Consumer model, the concept as it is included here was published in 1999 in an article of the The Journal of Rehabilitation: "Consumer direction can exist in differing degrees and may span many types of services. It ranges from the individual independently making all decisions and managing services directly to the individual using a representative to manage services"[31]

The following is a schematic representation of the Medical and Social models where a service provider exists who sits between the retailer and the con sumer. This role may be one of advice or prescription/diagnosis as to the type of product that the consumer needs. The arrows represent lines of communication and feedback.

[30] ENABLE, United Nations Disabled Persons Bulletin, Bulletin Nº2 of 1999, p. 4/6. http://www.un.org/esa/socdev/enable/dpb19992c.htm

[31] John F. Kosciulek, «Consumer Direction in Disability Policy Formulation and Rehabilitation Service Delivery", The Journal of Rehabilitation, Vol. 65, 1999.

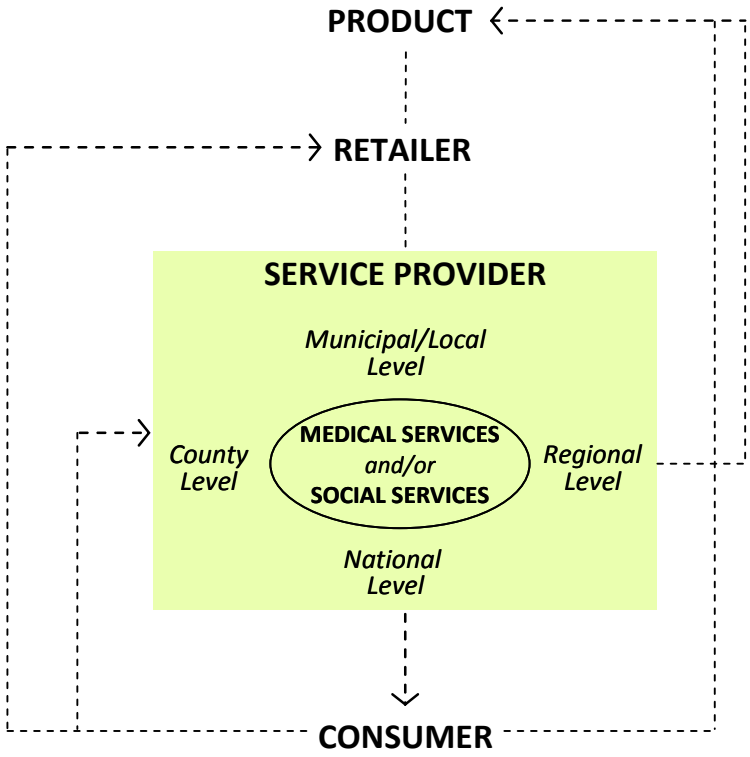


Figure 9. Medical and Social oriented service delivery models
Source. *Own elaboration*

a) Characteristics of the Medical Oriented Model

The main characteristic of this service delivery system is that the starting point is the "illness or handicap" where the physician initiates necessary procedures. This physician must approve the need for AT based on medical arguments. Such functioning represents a lack of influence by the users and the system is top-down, where the physician is at the top and the end-user, at the bottom. The AT which is available from the system is often listed as part of an administrative procedure to approve and manage different AT covered by the system.

b) Characteristics of the Social Oriented Model

This system is based upon national legislation and local and decentralised execution. This system is ostensibly closer to the user and can take personal situations more into consideration by providing AT to the users, and is a system more directly based on the new paradigm of what is a disability as defined by the International Classification of Functioning, Disability and Health. As local authorities are involved in the execution of system policy, they are responsible for the quality of service provided to AT users. In general, costs play an important role in this model and the end-user does not enjoy freedom of choice with regard to the selection of AT.

A difference between the Medical and Social model, in addition to the specific agents involved, is that the Social model is supposedly more oriented towards improving someone's quality of life for example, through independent living whereas the Medical model is centred around health issues such as the correction of low vision, poor hearing, etc.

c) Characteristics of the Consumer Oriented Model

In addition to these two models, is the Consumer Oriented Model which is growing in importance in Europe.

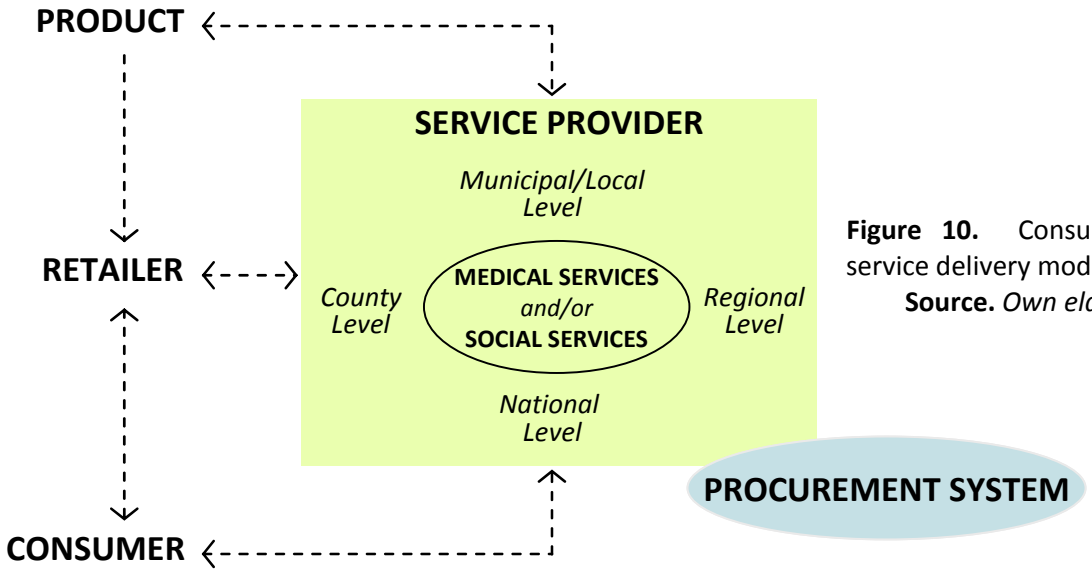


Figure 10. Consumer oriented service delivery model
Source. *Own elaboration*

In this model, the end-user consumer has direct contact with a retailer in order to get his/her AT product and no other intermediaries are involved to limit the solution selected. This system has been gaining in importance in Europe driven largely by the growing costs and bureaucracy generated by the Medical and Social Model systems. For example, in the UK government strategy and the 2006 White Paper, 'Our Health, Our Care, Our Say'[32]. The central concept is that end-users take and have more responsibility for deciding on their AT solutions. Instead of being told by a third party (physician, rehabilitator, social worker) what is his/her AT product solution, the end-user has the freedom of choice, and corresponding responsibility, as to the products that he/she wants to use.

However, this figure still includes the Service Delivery function, and specifically the Procurement aspect, because this Consumer model is also to some extent financially supported by service delivery systems via taxes, insurance premiums, etc. The service delivery function still exists through this indirect financing, although not as an evident link in the chain between the AT product and the end-user. Also the role of an advisor, technician or personal assistant, who can explain the different solutions available, will likely always be necessary, especially in cases where mental and/or intellectual disability leaves the end-user unable to adequately judge what would make the best solution. The difference between this type of role and that of the Social model, is that this advisor or personal assistant should *counsel* as to the different options, but is not *selecting* the solution for the end-user from a predetermined list of available products.

In terms of which of these models industry would most like to see in use, 25/30[33] responses agree that the assessment and selection of different product solutions should be the right and responsibility of the disabled end-user, and not of the national service provider systems (i.e., the consumer model).

[32] http://www.dh.gov.uk/en/Healthcare/Ourhealthourcareoursay/index.htm

[33] See Methodology Annex, Validation Questionnaire

***Q1–** European Assistive Technology ICT Industry characteristics:*

- ***Q1b** – The assessment and selection of different product solutions should be the right and responsibility of the disabled end-user, and not of the national service provider systems. (10/30 very much agree; 15/30 somewhat agree; 3/30 somewhat disagree; 2/30 very much disagree).*

As to which are the most common models (Medical, Social, Consumer) in the EU for the five product groups considered, according to a survey of National Contact Points of the Association for the Advancement of Assistive Technology in Europe (AAATE), the following global picture was established.

	HEARING AIDS	BRAILLE READERS	APPLS FOR VOICE COMMUNICATION	SOFTWARE FOR COMMUNICATION	ENVIRONMENTAL CONTROL SYSTEMS
AUSTRIA	medical	social	social	social	social
BELGIUM	medical	social	social	social	social
DENMARK	social	social	social	social	social
FINLAND	medical	medical	medical	medical	medical
FRANCE	medical	social	consumer	social + consumer	social + consumer
GERMANY	medical	social	social	social	social
GREECE	medical	consumer	consumer	consumer	consumer
HUNGARY	medical	consumer	consumer	consumer	consumer
IRELAND	medical + consumer	medical + consumer	medical + consumer	medical + consumer	medical + consumer
ITALY	medical	medical	medical	medical	social
NETHERLANDS	medical	social	social	social	social
PORTUGAL	medical	consumer	medical + social	social + consumer	consumer
SLOVAKIA	medical	social	social	social	consumer
SLOVENIA	medical	medical	medical	social + consumer	social + consumer
SPAIN	medical *	consumer	social + consumer	social + consumer	social
SWEDEN	medical	medical	medical	medical	medical
UK	medical	social	social	consumer	social

Table 5. Procurement models by country for the five AT ICT product groups selected
Source. *Own elaboration – Questionnaire to AAATE NCPs*

As is easy to appreciate from this table, there is little homogeneity across the European countries in terms of their procurement models, and this table actually simplifies somewhat the true situation. For example, in the case of Hearing Aids, it seems that virtually all countries use a medical model (exception being Denmark). However, in Spain the medical model is valid, but only until a person is 16 years of age. Once a person older than 16 needs any kind of hearing instrument, he or she must consult with his or her social services provider (i.e., the social model).

In addition, as was commented earlier, in some countries, there is not a true nationwide policy tin terms of what products are covered and to what extent. Instead, the implementation and financing of specific policies is done at the regional level. Examples of countries where this occurs are Spain, Italy, and Belgium. As to how significant of an obstacle this regionalism is to the industry, according to results[34] regarding important barriers to the development of their business in the EU, it appears that there is a high level of agreement that regionalism is an important barrier.

***Q4 –** Important barriers to the development of our business in the EU are:*

- ***Q4c –** The different interpretations of national service provider systems at the regional level (thereby fragmenting a national market into regional markets) (13/30 very much agree; 13/30 somewhat agree; 4/30 somewhat disagree; 0/30 very much disagree)*

[34] See Methodology Annex, Validation Questionnaire

ii. SERVICE DELIVERY SYSTEM ACTIVITIES

a) Assessment and Typology

Many of the EU countries have adopted, in principle, or in practice, the "Medical Model" where advice and decision making is largely dependent on the professionals in the field (medical doctors and therapists / advisors). These professionals play a crucial role in bringing together the needs and available assistive technology, however in reality, these professionals all too often have insufficient knowledge as to the latest technology advances and available solutions.

Alternatives to the Medical model, such as the Social or Consumer models, (explained above), mean that the agent responsible for selection may change, for example to a social worker, insurance company, family members of a disabled end-user or the end-user himself, but the basic function remains the same: evaluate the needs of the end-user and determine what kind of solution is best-suited, as well as assessing products and services to know what types of solutions are available.

b) Selection

This activity is where the precise selection of a particular product or service is made. This activity generally forms a key part, the continuation, of the above Assessment and Typology phase, in that specific products are selected to form part of a particular solution for an end-user.

In cases where an approved list of products is used, for example as a part of a national procurement system, this selection means that products which have been "approved" and selected, are added to such a list. Just as in any industry which uses approved products lists (auto industry, space industry, etc.), to be included on these lists is a necessary condition for a company's products to even be considered for a possible sale.

As was seen in the different types of models used by the service provider systems in the EU, there is also a strong degree of variance in the regulatory entities that form a part of service provider system. A summary of the most important agents, once again for the five product groups considered in this study, has been generated basis the expertise and local knowledge of the AAATE national contact points and is included as Annex.

From the responses provided by the national contact points as to how their key regulatory entities are structured, at least as regards the five product groups considered[35], we determined that the most common situation is that countries have a nationwide, homogenous system for the classification of AT ICT products, however the procurement policy of these products is set at the regional level. This reality is a complication for industry because the price received for the different products and hence the profitability of selling these products, differs at the regional level. Of the countries represented in Table 5, those whose systems can be described in this way include Belgium, Ireland, Sweden, Austria, Denmark, Spain and Italy.

In terms of whether or not these various selection entities act as a type of barrier to new products being introduced into a country, companies from 15 different European countries answered the validation

[35] See Methodology Annex, Questionnaire to AAATE NCPs

questionnaire[36] and most of them (86,7%) agree that the lack of knowledge by the marketplace of the types of solutions available still remains one of the most important barriers to the development of their company.

Q4 – *Important barriers to the development of our business in the EU are:*

- ***Q4a –*** *The lack of knowledge by the marketplace of the types of solutions available (i.e., not all possible AT ICT solutions are included in national service provider systems) (15/30 very much agree; 11/30 somewhat agree; 4/30 somewhat disagree; 0/30 very much disagree)*

In terms of the difficulty of different regulatory systems, an additional complication can exist for companies whose ICT products which may be considered as medical devices as opposed to an assistive technology product. This designation can result in a more lengthy or at least a separate regulatory process, and thus as an even greater market barrier.

In summary, the current market for assistive technology in Europe is regulated principally by national legislation and procedures. As shown in Table 5, these policies are by no means homogenous across the EU, and result in fragmented national or in some cases regional-level markets. As seen in the results from our questionnaire with industry[37], these factors negatively affect the EU AT ICT industry.

Q4 – *Important barriers to the development of our business in the EU are:*

- ***Q4d –*** *The lack of a coherent social policy for subsidising/reimbursing assistive technology products and the lack of coordination between the stakeholders involved is an important barrier to the development of your business in the EU. (19/30 very much agree; 7/30 somewhat agree; 4/30 somewhat disagree; 0/30 very much disagree)*
- ***Q4c –*** *The different interpretations of national service provider systems at the regional level (thereby fragmenting a national market into regional markets) is an important barrier to the development of your business in the EU. (13/30 very much agree; 13/30 somewhat agree; 4/30 somewhat disagree; 0/30 very much disagree)*

As explained above, this fragmentation keeps industry players relatively small and unable to take advantage of economies of scale that would come from greater product volume, i.e., through international sales. It has been argued that for the inclusion of the disabled to fully occur, initial discrimination legislation needs to be followed up with single market standardisation which would be legally binding to ensure that industry and service providers comply. Experiences from the U.S. have shown that legally binding standards ensuring accessible products and services in combination with the Americans with Disabilities Act, has had a vast impact on the everyday lives of disabled users.

c) Procurement and Financing

This stage of activity determines specifically which products are to be covered and financed as AT products and which are not, as well as the specific level of financing to be applied (100% financed, 50%, price caps, etc.), in accordance with system provider policy.

As was highlighted in terms of Assessment and Selection, the Procurement and Financing activity also varies significantly between the different EU countries. As in the other two areas, we used the expertise input of the national contact points of the AAATE for determine the financing policies for the five product groups considered, as reflected in Annex 12.5.

36 See Methodology Annex, Validation Questionnaire

37 See Methodology Annex, Validation Questionnaire

As can be appreciated from these tables, the significant differences between countries show the relatively complex procurement and financing procedures that make up the EU AT industry. Further, when added to the different procurement models and selection processes used, it is clear that it is all quite complex, especially for companies trying to sell these products in various EU countries.

The evident conclusion is that at least in terms of sales, distribution and marketing, there is no common EU market, but rather a combination of national or even regional markets. Given that each national or regional market has its own rules and procedures, a company which wants to sell in more than just one market, must be willing and able to dedicate important resources, including time, to understand and navigate the process.

However, because not every company in the AT ICT industry has the ability and resources to dedicate to such a complex process, the common result is that many companies stay small, and dedicate themselves to just one market. The fragmented system at the public system level is one of the most important drivers to why these small AT ICT companies stay small. They may have started as small firms with a particular solution for a disabled family member or friend, but so many of these companies remain small because of the resources needed to serve the various and complex European service provider systems which in general serve as companies' principal client base.

d) Usage & Follow-up

Some efforts have been made to increase end-user participation in the product development and design process, although much remains to be done. The presence of end-user associations (i.e., ONCE, AAATE, etc.) often have the leading role in working directly with the end-users and then, passing any feedback back up the chain (to manufacturers, to service delivery organisations) to try to best incorporate the voice and needs of the end-user in product development and availability.

It is important to include that the concept of end-user covers not only people with disabilities or the elderly but also other people in their primary network such as family members and/or care providers, particularly in those cases where AT will be used by care givers to make assistance easier.

If the AT industry were one based upon free market model principles, the activities of the value chain from Typology to Usage and Follow-up would be covered by industry companies (although not necessarily the manufacturers) and end-user consumers. Under such a system, the consumer is the agent responsible for making decisions as to products and can choose from an unlimited selection. The consumer counts on product information in order to make his/her selections as well as being responsible for financing his/her own products. However, as explained, current functioning of the AT industry counts heavily on the role of national service providers to cover these activities.

With consideration for the variety of activities carried out along the European AT industry value chain, it is clear that the most common activities realised on the part of industry are the manufacturing, distribution and product development activities.

This result was seen from analysing the information provided in the national databases which comprise the EASTIN database, as well as other national databases outside of EASTIN. Additional sources of information were the interviews performed with EU AT ICT companies as a part of this study. For the U.S. industry, a key report was the 2003 report on the U.S. AT industry conducted by the US Department of Commerce. From this wide mix of sources, the overall result is that the activities most frequently carried out by companies in the AT sector are manufacturing and distribution.

It is also important to note that companies can be hesitant to share this type of information with others. For example, in the case of the Danish database, all companies are listed as manufacturers because companies specifically requested to the Hjaelpemiddel-instituttet (managers of the database) that their other lines of activity not be specified.

Companies included in the EASTIN database, and the national databases for Belgium, France, Ireland and Sweden:

	Manufacturing	Distribution		
Belgium	**16**	**4**	Kennis-en Ondersteunings Centrum	www.koc.be
Denmark	**141**	**4**	Hjaelpemiddel-instituttet	www.hmi.dk
France	**71**	**27**	Handicat	www.handicat.com
Germany	**201**	**251**	Rehadat	www.rehadat.de
Ireland	**2**	**0**	Assist Ireland	www.assistireland.ie
Italy	**45**	**41**	Siva	www.siva.it
Spain	**32**	**128**	Ceapat	www.ceapat.org
Sweden	**15**	**3**	Hjälpmedelsinstitutet (Webb-HIDA)	www.hi.se
The Netherlands	**9**	**3**	Handy-Wijzer	www.handy-wijzer.nl
UK	**136**	**287**	Disabled Living Foundation	www.dlf.org.uk
TOTAL	**668**	**748**		

Table 6. Companies included in the EASTIN database, and the national databases for Belgium, France, Ireland and Sweden.
Source. *Own elaboration – National Databases, November 2008.*

These databases only include information on whether companies are active in manufacturing and distribution. They do not include information on companies' activities in product development.

- **Companies contacted for this study** (may coincide with companies included in EASTIN): Of the 28 companies who provided detailed information regarding their activity, all 28 were shown to be active in manufacturing, distribution, as well as product development.
- **U.S. AT industry:** 80% of companies surveyed report manufacturing to be a primary or secondary activity. Further, 85% of those manufacturers stated that product distribution is also a key activity. 46% of respondents indicated that product assembly to be a key activity, whereas 39% reported to be involved in applied R&D (i.e., product development) as a primary or secondary activity. [38]

The conclusion to be gained from this is that the majority of companies in the AT ICT industry are involved in manufacturing and distribution, as well as product development. However, because of the difficulty in comparing data sourced from different, national-level information sources that do not share common criteria, specific percentages cited are unlikely to be entirely reliable.

4.2.2.2. UNITED STATES

Service Delivery Systems

In recent years, the world has witnessed continuing technological advances such as the development of new materials and composites with improved weight, strength, durability, and/or other characteristics; sophisticated electronic circuitry that continues to shrink in both size and cost; growth in the types and effectiveness of wireless communication systems; and design innovations that take advantage of these developments.

However, despite these advances, it is not clear if the potential of assistive technologies' is being fully realized in the U.S. to assist people with disabilities better function. There is substantial evidence of unmet need. For example, a recent survey of persons age 50 and older with disabilities found that, among those who do not use any special equipment or assistive technologies to help with daily activities, 22 percent believe that some type of special equipment or technology could help improve their quality of life.[39]

[38] U.S. Dept of Commerce Report on the Assistive Technology industry in the US, 2003

[39] Freiman, M. "Public Funding and Support of Assistive Technologies for Persons with Disabilities." Public Policy Institute, AARP. Jan 2006.

With the quickening pace of technological innovation, assistive technologies are increasingly important as both substitutes for and complements to assistive services. However, in the U.S. public programs frequently do not cover assistive technologies, and when such technologies are funded, it may be through separate programs that limit flexibility in resources use. As a result, most people pay for assistive technologies out-of-pocket, which results in unmet need among those who cannot afford it.[40]

The following is a summary of the most important entities that make up the public service provider system in the U.S. affecting assistive technology.

Medicare

Medicare is the health insurance program that covers persons age 65 and older, some disabled persons under age 65, and individuals with end-stage renal disease. If covered, assistive technologies are generally covered under Medicare as "Durable Medical Equipment, Prosthetics, Orthotics, and/or Supplies" (DMEPOS), and are typically paid for under Part B, which is an optional, supplemental plan that covers health care costs outside of the hospital. Individuals enrolled in Medicare Part B typically must pay a monthly premium. For Medicare to cover an assistive technology in the DMEPOS category, it must satisfy specific criteria, which include a physician's prescription and, in some cases, a "certificate of medical necessity" that must be obtained before furnishing the equipment.[41] It is clear that the Medical model is the clear basis of Medicare policy on financing assistive technology.

A number of assistive technologies are not covered by Medicare. By statute, Medicare generally excludes coverage of eyeglasses and other low-vision aids (except for one pair of conventional eyeglasses or contact lenses furnished after cataract surgery), hearing aids, as well as other items.[42]

According to 2002 data on Medicare payments, Medicare paid almost $95 million for hearing, vision, speech, and augmentative and alternative communication technologies, however this amount represented only 5% of the total Medicare expenditure on AT.[43] Of the amount spent on hearing, vision, speech, and augmentative and alternative communication devices, almost the entire amount was for vision AT. While the data do not provide this information, these payments were most likely after cataract surgery. There was no data found for Medicare payments in the following AT categories: cognitive assistive technologies, building modifications (such as ramps or elevators), or adaptive transportation.[44]

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[40] Freiman, M. "Public Funding and Support of Assistive Technologies for Persons with Disabilities." Public Policy Institute, AARP. Jan 2006.

[41] Freiman, M. "Public Funding and Support of Assistive Technologies for Persons with Disabilities." Public Policy Institute, AARP. Jan 2006.

[42] Freiman, M. "Public Funding and Support of Assistive Technologies for Persons with Disabilities." Public Policy Institute, AARP. Jan 2006.

[43] Freiman, M. "Public Funding and Support of Assistive Technologies for Persons with Disabilities." Public Policy Institute, AARP. Jan 2006.

[44] Freiman, M. "Public Funding and Support of Assistive Technologies for Persons with Disabilities." Public Policy Institute, AARP. Jan 2006.

Category of Assistive Technologies (AT)	Medicare payments	
TOTAL	**2.062.409.976**	**100%**
Personal AT for Activities of Daily Living (ADLs)	**69.437.021**	**3%**
Personal Mobility AT	**1.195.866.211**	**58%**
Canes, walkers, crutches, etc.	80.320.052	
Manual wheelchairs	414.921.414	
Motorized wheelchairs & power scooters	700.624.745	
Hearing, Vision, and Speech AT, and Augmentative and Alternative Communication Technologies	**94.904.018**	**5%**
Vision	87.552.669	
Hearing	410.218	
Speech generation	6.941.131	
Orthotics and Prostheses	**702.202.726**	**34%**
Orthotics	341.850.848	
Prostheses	360.351.878	

Table 7. Medicare Payments for

Table 7. Medicare Payments for Assistive Technology, Calendar year 2002

Source. *Own elaboration*

Medicaid

Medicaid is a federal/state-funded entitlement program that provides medical assistance to low-income persons with limited assets who are aged, blind, disabled, or members of families with dependent children ("categorically needy" categories), and in 35 states and the District of Columbia, for certain individuals with large medical care costs who are "medically needy."[45]

Each state Medicaid plan's coverage of assistive technologies, shows whether specific categories of AT are covered but does not discuss whether special co-payments or payment methodologies are involved. 40 percent of state Medicaid plans do not cover hearing aids. Only about 60 percent cover some type of augmentative communication AT. None of the state Medicaid plans covers home modifications.[46]

[45] Freiman, M. "Public Funding and Support of Assistive Technologies for Persons with Disabilities." Public Policy Institute, AARP. Jan 2006.

[46] Freiman, M. "Public Funding and Support of Assistive Technologies for Persons with Disabilities." Public Policy Institute, AARP. Jan 2006.

Veterans Administration

Eligibility for Veterans Health Care Benefits is primarily determined by a veteran's status (active duty, reserve duty, retired).[47]

The Medical Benefits Package is generally available to all eligible veterans regardless of their priority group. The Medical Benefits Package covers orthotics, prosthetics, eyeglasses, hearing aids, wheelchairs, and some personal AT for assistive daily living devices and communication.[48]

Additional VA benefits are available for home improvements and adaptations, structural alterations, and automobile adaptive AT, depending on the veteran's specific conditions and disabilities.

Spending on Assistive Technology

It is difficult to estimate the overall level of spending on assistive technologies in the United States. As shown, many assistive technologies are not covered by health care programs that focus on medical care and health care services.

With the aim to better estimate the value of money spent on AT in the US, The Medical Expenditures Panel Survey (MEPS) was used. MEPS surveys the civilian non-institutionalized U.S. population for a variety of measures, including health care use and expenditures and sources of payment for these expenditures.[49] The MEPS category considered for analysis is "All Other Medical Equipment and Services," which includes expenditures for the purchase or rental of:

- vision aids, including eyeglasses;
- ambulance services;
- orthopaedic items (includes canes, walkers, wheelchairs, etc.);
- hearing aids and other hearing devices;
- prostheses;
- bathroom aids (includes raised toilet seats, handrails, etc.);
- medical equipment (includes hospital beds, lifts, special chairs, oxygen, etc.);
- disposable supplies (includes bandages, dressings, diapers, IV supplies, etc.);
- alterations/modifications (includes ramps, handrails, elevators, car modifications, etc.); and
- other miscellaneous items or services.

For the year 2002, $18.1 billion was spent on "Other Medical Equipment and Services," as shown in the following. Roughly 57 percent of this spending was paid for out of pocket, with private insurance paying for 20 percent and Medicare paying for only 10 percent.[50]

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[47] Freiman, M. "Public Funding and Support of Assistive Technologies for Persons with Disabilities." Public Policy Institute, AARP. Jan 2006.

[48] Freiman, M. "Public Funding and Support of Assistive Technologies for Persons with Disabilities." Public Policy Institute, AARP. Jan 2006.

[49] Freiman, M. "Public Funding and Support of Assistive Technologies for Persons with Disabilities." Public Policy Institute, AARP. Jan 2006.

[50] Freiman, M. "Public Funding and Support of Assistive Technologies for Persons with Disabilities." Public Policy Institute, AARP. Jan 2006.

POPULATION	TOTAL EXPENDITURE (US$ BILLION)	PERCENT DISTRIBUTION OF TOTAL EXPENSES BY SOURCE OF PAYMENT				
		Out of pocket	Private insurance	Medicare	Medicaid	Other (includes VA)
Total	18.1	57.1	19.8	9.8	6.9	6.3
Age 65 and over	6.4	50.9	11.7	24.1	4.0	9.3

Table 8. Other Medical Equipment and Services
Source. *2002 Medical Expenditure Panel Survey*

From this data, it can be estimated that spending on assistive technologies for 2001 would fall in an approximate range of $15 billion to $20 billion.

As said, 57 percent of the MEPS expenditure category that includes most AT was paid for out of pocket. This high percentage indicates that assistive technologies are poorly covered by the major public health care programs and by the other sources as well.

Additional data was gathered from the Consumer Assessments Study (CAS), a longitudinal study of the coping strategies of older persons with disabilities that focuses on their use of AT. This was conducted by the Rehabilitation Engineering Research Center on Aging and further additional evidence of the out-of-pocket burden of assistive technologies.

WHO PAID FOR THE DEVICE	Nº OF DEVICES	PERCENT
Self	5,049	55.6
Gift	1,399	15.4
Other*	1,047	11.5
Medicare	934	10.3
Medicaid	276	3.0
Supplemental insurance	169	1.9
Borrowed	117	1.3
Rental-Medicare/Medicaid	47	0.5
Rental-Self/ Medicare/Medicaid	25	0.3
Rental-Self	17	0.2
Total Devices	9,080	100%

**AT purchased by VA, vocational rehab, and others that may involve a combination of out of pocket and Medicare or Medicaid funding.*

Table 9. Summary of financing entities in U.S. AT market
Source. *The Consumer Assessments Study (CAS)*

In summary, the biggest element to highlight after looking at the U.S. service delivery system for AT is that coverage of assistive technologies is fragmented among a range of programs. Only a few cover a broad range of AT, and many cover only selected technologies as part of broader program objectives. Furthermore, some programs are separate from health care programs and also from programs that provide nonmedical assistive services to persons who need them. This high level of segmentation among health programs, assistive technologies programs, and some assistive services programs complicate the ability to determine and provide in a coordinated fashion the specific combination of services and technologies that most efficiently and cost-effectively assists individuals in functioning, given their preferences, needs, and environment.

4.2.2.3. JAPAN

In terms of the service delivery model used in Japan, the medical model is still what is most widely used. In Japan, medical doctors have the diagnosis role to declare someone disabled according to nationally set definitions and criteria. The end-user then goes to his or her local city hall to receive the stamp that

entitles product reimbursement. The end-user has to pay the initial out of pocket expense for the AT product, and then receives reimbursement from the state.[51] From an AT company's point of view, this is a better system than what often occurs in Europe because the AT company does not have to wait for state reimbursement – the end-user does. This lessens the problem of financing the difference in payment terms between customers and suppliers that can be so hard for SMEs.

There are limits to getting a medical certificate. For example, the not so severely hearing impaired have to pay for the hearing aid. Also persons suffering from one-side-deafness cannot receive a disability certificate.[52]

The level of financial reimbursement provided by the government is, in most cases, 90% with the disabled user paying 10% of the price. The level of reimbursement depends on income level so for the extremely low-income, reimbursement is higher.[53]

However, there does exist some spirit of change in the system driven greatly by the cost pressures of Japan's aging society. Based on concepts of Normalization, respect for the decision of the disabled, and an equal relationship between the service providers and users, the mechanism for using welfare services is being revised. The system is moving from the conventional system of the administrative office deciding the services offered to users including the welfare facilities and home helpers, to a new system in which the user selects services and directly contacts service providers[54].

Also there is a push for home-based care and consequently a move to making Japanese homes more accessible and affordable. For example, within the Japan's Long-Term Care Insurance System, people can receive a once-in-a-lifetime subsidy of up to $1800 for covering home remodelling costs. The recipient must pay 10% of the remodelling costs. According to a survey of the Ministry of Health, Labour and Welfare, the insurance benefit for modifying housing, paid under the scheme of the Long-Term Care Insurance has increased significantly. In Fiscal year 2000, the total expenditure was 159 Mill€ (15,952,243 Thousand Yen), which increased to 315 Mill€ (40,959,616 thousand yen) in 2003, an increase of 150%[55].

4.2.2.4. SUMMARY OBSERVATIONS ON THE TYPES OF PROCESSES USED IN THE AT ICT INDUSTRY IN EUROPE, THE UNITED STATES AND JAPAN

In summary, while looking at the European structure of Technology organisations in comparison to those of the U.S. and Japan, all three markets show a mixture of the medical, social and consumer models. The U.S. market can be considered to have the most developed consumer model market, and this is largely related to the lack of a national health system policy that is not based on age (Medicare), wealth (Medicaid) or veteran status (Veterans' Administration benefits) requirements. Specifically, in the U.S. it was estimated that 56% of assistive technology products are financed by the end-users themselves.

The service delivery system in Japan, traditionally quite based on a Medical model, is moving towards a Consumer model, in much the same way that is happening in Europe. This trend in Europe, including specific examples as to how this is coming about, is developed in greater detail in chapter 8.3, "Aging Population and Related Cost Pressures."

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51 Interview with T. Hirotomi and S. Shimada.

52 Interviews with M. Kobyashi.

53 http://www.dinf.ne.jp/doc/english/law/japan/selected38/chapter10.html

54 Institutional Framework Japan. International Labour Office.

55 "Long term Care Trends: Interview with Mr. Tatsuo Honda" AARP, April 2006.

4.2.3. ACTORS – WHO PARTICIPATES IN THE EU AT ICT INDUSTRY

An appreciation for many of the actors who form part of the European AT ICT industry can be gained from the previously presented Value Chain. However, the industry also includes additional actors, who may not have a direct role in the value chain, but who do have an important role in the industry, for example in helping to generate public and political opinion and policy as to care for the disabled (i.e., European Disability Forum, AAATE).

The following chart is an attempt to group together and present the broad-reaching scope of the variety of actors who participate – directly or indirectly – in the AT ICT industry.

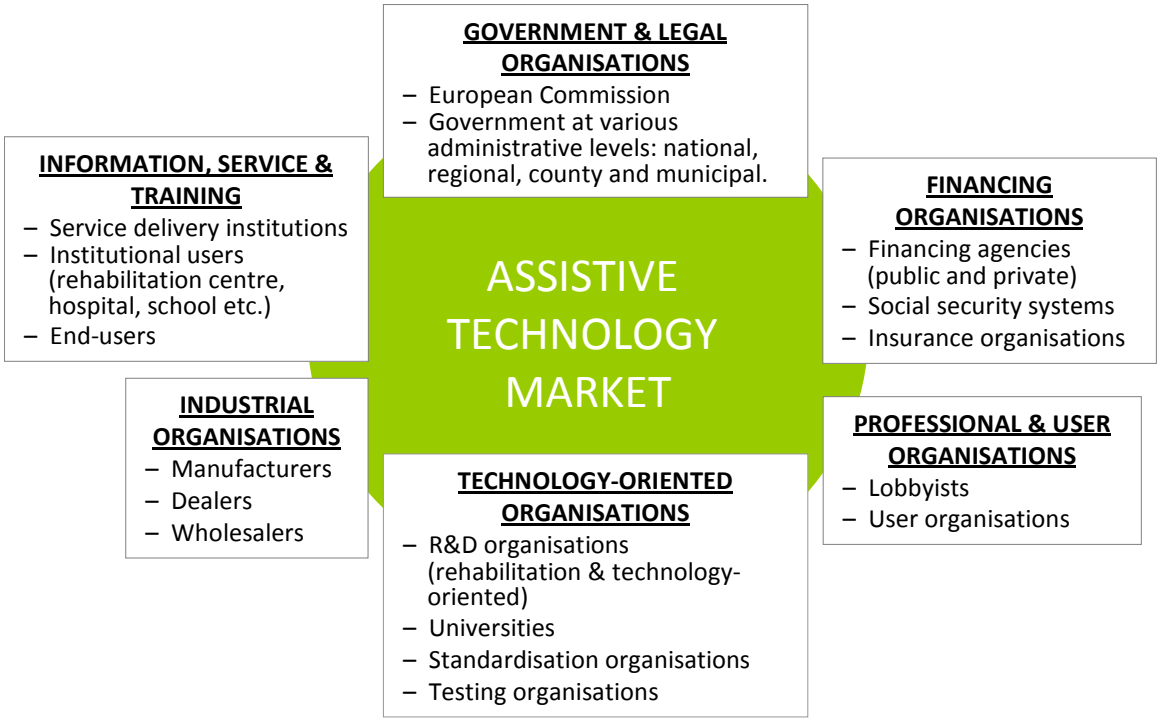

Figure 11. The variety of actors who participate – directly or indirectly – in the AT ICT industry

Source. *Own elaboration*

The scope of activity, size and level of organisation of these different actors active in the world of Assistive Technology ICT in Europe varies in function of the actor considered. In the following section, these actors are briefly explained, with more specific information provided as to examples of the most relevant organisations within each of these groups of actors.

4.2.4. ORGANISATIONS – HOW THE ACTORS ARE ORGANISED

4.2.4.1. EUROPE

In this section the most relevant organisations for the actors in the European AT ICT industry are presented, according to the classification of Actors presented above.

It should be mentioned that organisations are included who do not have a direct link to AT ICT, but rather have their relationship with AT ICT through related themes such as aging and disability and/or disability and employment. For example, it was somewhat surprising to discover an ample mix of organisations involved in the area of disability and employment -- a field that can be especially important to the AT ICT industry given that ICTs can be effective in breaking down barriers in the workplace.

Further blurring the line between where one industry ends and another begins is mainstreaming. For example, there are issues related to environmental control included within the European Platform on Construction, as well as the application of nano-electronics in the development of advanced technical aids.

In summary, these types of lists are always incomplete and this is in part due to this problem of knowing where to mark the limit. In addition, there is the problem of time – networks and working groups can originate essentially every day -- and therefore it is virtually impossible to be continually 100% up to date. Finally, we have used our best judgement to group the various organisations (over 50) included in this report. However and especially given the multidisciplinary approach of many of these organisations, it could be debatable how these organisations have been grouped according to the six agent groups (i.e., information and training vs. end-user vs. technology oriented, etc,).

That said, the following information is presented for each of the agent groups, along the following four lines:

- **OBJECTIVES:** what the organisations say they want to do or achieve.
- **MEMBERS:** the types of members who generally make up the organisations.
- **ACTIVITIES:** they types of activities that the organisations generally carry out.
- **NETWORKS:** other entities with whom the organisations cooperate.

The lists of the organisations themselves are presented as Annex 12.4.

Governmental and legal organisations

These organisations have as their objective to create policy and legal frameworks for determining what products are considered AT, as well as how these products are financed and provided to end-users.

SUMMARY

Within governmental and legal organisations we have included European organisations, but also a few international organisations given that in issues of government, the framework can be set at an international level.

Despite the wide mix of organisations considered, they all do share a common thread in the way that they can influence the AT-ICT industry through general frameworks, as well as by increasing awareness in related topics such as accessibility, disability, disability and employment, equality of opportunities (employment, education, health, social welfare), and aging.

OBJECTIVES

These organisations have as their main objective to create policy and legal frameworks, to promote research to better determine the needs of the sector, including studies on service coverage, costs and efficiency, model benchmarking, etc. The objectives are generally quite global in nature and not specifically or directly applicable to AT ICT industry, and given the broad nature of their activities, it is quite unlikely that specific projects related to AT ICT are conducted. From the listed organisations, the only one with a direct relation to AT ICT is the Nordic Cooperation on Disability (NSH) under the social and health sector of the Nordic Council of Ministers (www.nsh.se). As explained in the introduction, this is an example of where a specific link to AT ICT is at a national or regional level, and not at the European one.

MEMBERS

The members of these organisations are representatives of different countries. The determination of the involved persons depends on the specific institution, for instance the European Parliament is elected directly but the Council of the European Union is formed by ministries from the different countries of the EU.

ACTIVITIES

The most important activity of these institutions is the creation of policy and legal frameworks, as well as the elaboration of reference documents based on specific research. Most of these documents may have not a direct influence on the main links of the AT ICT value chain, but still may indirectly create a positive and supporting environment for the industry.

Some of the most relevant of these are highlighted below:

- The Convention on the Rights of Persons with Disabilities and its Optional Protocol were adopted by the United Nations General Assembly in December 2006, and opened for signature in March 2007. The Convention aims to ensure that persons with disabilities enjoy human rights on an equal basis with others. Within the United Nations there are several working groups in relation to the AT-ICT sector such as those devoted to disability, ageing or Information and Communication Technologies.
- The **Council of Europe** has a partial agreement in the social and public health field in "Integration of people with disabilities". Specifically in the field of ICT it is necessary to highlight the importance of the resolution ResAP (2001)[3] "Towards full citizenship of persons with disabilities through inclusive new technologies". There are also other related resolutions to the AT-ICT sector in relation to education and social inclusion, Disability Action Plan 2006-2015, Achieving Full Participation through Universal Design.
- Several General Directorates of the **European Commission**[56] deal with topics direct or indirectly related to the AT-ICT sector, the most important are the following:
    - Education and Culture
    - Employment, Social Affairs and Equal Opportunities
    - Enterprise and industry
    - Health and Consumer

56 http://ec.europa.eu/dgs_en.htm

- Information society and media
- Research

— The **European Parliament** has several working groups and commissions that relate to this study, and in particular the European Parliament Disability Intergroup should be highlighted. The Disability Intergroup of the European Parliament is an informal grouping of Members of the European Parliament (MEPs) from all nationalities and most political groups who are interested in promoting disability policy in their work at the European Parliament as well as in the national contexts. The Disability Intergroup is one of the oldest Intergroups of the European Parliament; it was established in 1980. It is currently comprised of about 100 MEPs.

  - The **Intergroup on Ageing**, which was established in 1982, is another formally established Intergroup of the European Parliament and provides a forum for discussion and action for MEPs who are interested in policies and issues affecting older people. This Intergroup is quite active as its members work together to increase the visibility of ageing issues and to take appropriate actions on behalf of older people. Over 35 MEPs - representing most of the Member States and all the political parties – support the Intergroup on Ageing. Issues that have been raised in the last several years concern age discrimination in employment; age discrimination in access to goods, facilities and services; health; the right of residence for pensioners in the EU; pension provisions; and the needs and concerns of carers of dependent older people.
  - The **Health and Consumer Intergroup** which provides a forum where MEPs meet regularly with consumer and public health experts from across the EU. It organises discussions on consumer and health issues that touch upon the agendas of several Committees.
  - The **European Consumers' Organisation** (BEUC) and the European Public Health Alliance (EPHA), serve as the Secretariat of the Intergroup.

— The **World Bank** deals with many areas and has over 200 topics listed on its website, Disability being one of these. Within this context, the Global Partnership for Disability and Development (GPDD) is a new initiative to accelerate the inclusion of people with disabilities and their families into development policies and practices.

— WHO, the **World Health Organisation**, is the directing and coordinating authority for health within the United Nations, and as such is responsible for providing leadership on global health matters. Study-related topics in which WHO is involved include the following: ageing, disability and rehabilitation. Within Assistive Technology, WHO works in partnership in areas such as:

  - Developing normative guidelines
  - Organizing regional and country workshops, meetings and seminars to promote and facilitate access to assistive devices
  - Providing assistance for the development of national policies and programmes on assistive devices and technologies with a focus on human resource development
  - Creating a database on availability of appropriate assistive devices and technologies.

Information service and training organisations

This group includes the important Service Provider element. The key role of these agents is to add knowledge to the value chain in order to make informed decisions, as well as to support professional and user development and competences.

SUMMARY

Given that the service delivery systems are very different between and within European countries, the provision of assistive technologies involves very different professionals and organisations, depending on the system involved. They are often multidisciplinary associations with various types of members. A good example of this is the European Health Manager Association (EHMA) which has members from various types of institutions (ministries of health and/or welfare, nurses and physicians associations, hospitals, groups on aging, etc.).

Information service and training is often directed towards professionals, and in general, end-users do not have access to specific product information. However, some organisations do target end-users for product testing, trials as well as product training and in some cases, training sessions also include family members, helpers and personal assistants in those situations where a product impacts the entire primary network around the individual. This type of involvement with the end-user and / or his or her primary network provides important feedback on product design, functionality, etc. In addition, some of the end-user focused organisations work specifically towards the integration of people with disabilities into the workforce.

OBJECTIVES

Information service and training refers to professional advice and treatment activities, as well as the physical delivery of technical aids to disabled people, including training and setup if required.

The main objective of these organisations is to improve the quality of life of disabled people with better rehabilitation techniques and better employment opportunities. These types of organisations are much more operational, and closer to the disabled end-user than are the policy makers in the government and legal group of organisations.

MEMBERS

The members of these organisations are generally researchers (at universities and/or R&D centres), educators and rehabilitation professionals at assistance centres. In some cases there may be disabled end-users as members, but in most instances, the end-user's voice is heard and represented through their contact with rehabilitation professionals, employment trainers, etc.

ACTIVITIES

The most common types of events are those to promote knowledge sharing, especially in terms of best practices and the use of new technologies and approaches in actual practice with the disabled end-user.

Examples include:

- **PUBLICATIONS.** In the case of EHMA, four of their publications all have relevance to the world of AT ICT:
    - Mapping the Potential of eHealth
    - The Impact of the Single European Market on Member States
    - The Impact of Market Forces on Health Systems

— **EVENTS AND CONFERENCES**. In the case of the European Association of Service Providers for Persons with Disabilities (EASPD) they organise a series of events at least three times a year for its members, as well as organizing service provider forums in the new member states and as co-organizer in a number of other events with European and national partners. Topics from 2008 events included: 'Legal Frameworks to facilitate the development of Community Based Settings and Persons Centred Services' and 'Inclusion – Walking the Talk (A Working Conference!)'.

Financing organisations

These organisations can operate at the national, regional, local government levels. The essential function is to finance AT products and their related services.

SUMMARY

The greatest part of financing of AT ICT products in Europe is done by public entities in some form or another with health delivery systems and social services models being the two largest. However, some insurers also exist and help to provide and finance AT products and services.

Three associations were included in this report in terms of financing agents. One of these, the European Financial Management and Marketing Association (EFMA) is a 100% private enterprise, and with a focus very much on business and finance, and nothing specific to disability. However, the other two organisations which are included (AIM, AMICE) represent mutual insurance companies that have as their distinguishing factor, that they are controlled not by shareholders, but rather by their policy holders, thereby essentially operating as a cooperative.

As for the financing agents in national and regional systems, since these are public entities they do not seem to network with other similar agents from other countries, at least at the specific financing stage. EHMA (included in "Information and Training") does include a major number of ministries of health from different European countries, but not the specific procurement or financing agents.

OBJECTIVES

In the case of EFMA, the objective is clearly on networking among the finance and insurance professionals in Europe to improve business and profitability. The mutual insurance associations also promote the interests of their members (in this case, mutual insurers, and indirectly, their policy holder members and families) but these associations have a greater social dimension and in the case of AMICE, is clearly oriented towards the "social economy" and values the promotion of a plural society that provides for greater participation, more democracy and more solidarity.

MEMBERS

Given the different natures of these associations, their membership is also quite distinct. In the case of EFMA, the members are financial entities (banks, consumer credit companies), including insurance companies and distributors. For the other associations, members are European mutual insurers as well as organisations to promote cooperatives and voluntary organisations.

ACTIVITIES

EFMA is all about networking and promoting the interests of its members. It seems less focused on lobbying political authorities, although it is likely that at least some political lobbying activity is carried out. EFMA's activities include the standard mix of events such as seminars and training, but also include an observatory service on important trends in different European countries, including the senior market.

Lobbying activity at the EU level is more apparent in the case of the other two associations (AIM, AMICE) which work to promote the legal recognition of mutual societies on a European level and allow the development of cross-border European mutual societies.

Also, in the case of AMICE there is evidence of a strong policy function, and the group prepares and presents papers on the social economy, including disability. An example is Social Economy Europe - "Guide on Creating an inclusive society: Mainstreaming disability based on the Social Economy example" dated Friday 12 October 2007.[57]

Technology oriented organisations

AT research is largely dependent on the fundamental R&D from other technology sectors while at the same time being led by the specific needs of the disabled and elderly populations. Understanding and incorporating AT needs in R&D is not especially easy and one which is complicated by the size and diversity of the AT ICT markets.

SUMMARY

With regard to this group of organisations, much of their activity is around the issue of technical standards. There are also groups that are more specific to certain technological areas (biomechanics, engineering) where some of their applications and development may include or impact assistive technology (although not necessarily be the principal development objective).

None of the groups are fully dedicated to Assistive Technology, although some address the area more actively than others. For example, the Comité Européen de Normalisation (CEN) has a formal technical committee (CEN TC 293) for "Assistive products for persons with disabilities". Also, within the field of ICT standards, the Information and Communication Technologies Standards Board has the working group, Design for All and Assistive Technologies Standardization Co-ordination Group (DATSCG) which addresses the area of e-Accessibility.

Other organisations, such as the European Construction Technology Platform, are included simply to show the broad reach of AT issues, such as domotica and environmental control systems.

OBJECTIVES

The main objectives of these organisations are generally to discuss technology issues, including those that impact AT. As regards AT, since standardisation is seen as being a key means to overcoming the fragmented market that is the current reality in the European AT ICT industry, the topic of standardisation is quite important and active.

MEMBERS

The main types of members that form these associations are technology developers, engineers, administrators and users. The issue of end-user participation is especially important in standardisation where all too often the participation and interest in standardisation development and legislation is low because people do not see the relevance. However, making end-user's voice heard during the standardisation process is quite fundamental, especially for those users with special needs.

57 http://www.socialeconomy.eu.org/IMG/pdf/Guide_on_Disability_Mainstreaming_and_Social_Economy.pdf

ACTIVITIES

In terms of the organisations dedicated or involved in standards, their main activities are meetings and conferences on the subject, especially with the goal of achieving greater participation in the development process.

The technical organisations also publish reports and journals, and the European Society for Engineering and Medicine also organises student exchanges at the university level.

Networking activities between the different agents to promote common R&D projects including specific applications for the AT market are also important. In the case of the United States' agency NIDRR, their total proposed budget in 2001 was $141 million ($100 million for research; $41 million for technology requirements), from which they supported 344 projects.

Professional and end-user organisations

These actors represent and are advocates for their members. As such they serve as lobbyists for the interests of their members and also can be involved in the policy making process.

SUMMARY

In general, all of the groups included are organized to protect and defend the interests and rights of people with disabilities. Issues included may be similar to those of other associations (new technical developments, practices, etc.), but with these types of organisations, the focus is always be from the end-users' point of view, as opposed to researchers, or service providers, financing organisations, etc. The groups are formed around specific types of disabilities (blindness, neuromuscular, mental illness, etc.)

We have also included several organisations dedicated to the subject of aging because in so many cases (especially mainstreaming), the aging market can be an important driver to solutions for people with disabilities.

OBJECTIVES

The essential objective of these organisations is to improve the quality of life and the level of integration in society of people with disabilities. Included in these concepts are missions such as education, awareness, advocacy and anti-stigma campaigns in order to improve the quality of life for end-users and their families.

The organisations related to aging are especially active in terms of lobbying on public policy. For example, the International Federation on Aging has as a part of their mission to improve the understanding of ageing polices and practice and their impact on the lives of older people.

MEMBERS

The members of these end-user organisations are the disabled end-users themselves, as well as their families and/or other care-givers. In some cases (TASH, GAMIAN) professionals and public sector agents (i.e., advocates) may also participate. For example, GAMIAN included professional organisations as members in order to provide the members with mental illness and their families' opportunities to collaborate and discuss different points of view regarding mental illness in Europe.

ACTIVITIES

The specific types of activities of the organisations included vary, in large part in function of the type of disability and the critical mass involved. For example, in the case of aging, the issue affects millions, and

the European Older People's platform claims to directly represent over 25 million people in the European Union.

As explained above, some groups such as those dedicated to aging, are quite active in terms of lobbying and public policy. Others, such as the autism network, have a strong line of activities (events, conferences) to give support to others dealing with autism.

The scope of activities and the importance of the organisations depend naturally on the spirit and energy of the organisation, but also on the effectiveness of the public system. In general, the weaker or less developed is a formal public system, the more active will be end-user organisations as the only means to adequately protect and represent their interests.

AT ICT industry organisations

The AT ICT industry is largely composed of SMEs however larger firms, including multinationals, do exist and are competitive, for example in the hearing aid market. The biggest determinants to the size of companies in the industry are generally the type of product involved (i.e., software development is largely SME-driven due to smaller national markets, fragmented by language).

SUMMARY

In terms of the situation with industry players in AT ICT, there is currently no single organisation that groups together all AT at the European level. This reality is presumably one of the central motivations behind this study. The absence of such is particularly evident because the U.S. market does have such an organisation, the Assistive Technology Industry Association (ATIA) which has existed for over 10 years and according to people in the industry (Americans as well as Europeans) has been quite an effective organisation.

Meanwhile, for the ICT industry there is in place a powerful industry organisation, the European Information & Communications Technology Industry Association (EICTA) which has 25 national associations and approximately 100 corporate members (virtually all of whom are multinationals). Although their scope is the ICT industry in general, EICTA does to some extent address issues on accessibility, for example through their 2010 white paper on ICT inclusion.

Within specific assistive technology product areas, hearing instruments are one of the most formally organised groups. This is likely because the market is one of the oldest and largest in terms of revenue and the leading industry players are multinational corporations who are generally more accustomed to working through and having resources for associations. However, the smaller assistive technology product groups (communication devices), lack virtually any type of formal organisation, especially at the European level.

OBJECTIVES

The objectives of these organisations are essentially those of any type of industry association: to promote their products and businesses, to increase their competitiveness, and to better serve their clients.

MEMBERS

Associations are formed by companies in the different industrial sectors (ICTs, software, hearing aids, tele-care). Usually these are all industry organisations where formal communications or reports may be generated to present to public authorities in order to promote certain policies.

As described above, EICTA is an extremely large group, and EUCOMED, the European association for medical technology, is similarly powerful with more than 60 companies and 25 national association members.

In general, the members of these associations are large companies – the voice of the SME in assistive technology, if heard, is likely to be at a national level and/or through other types of associations, for example technology-oriented organisations.

ACTIVITIES

As is the case for virtually all industrial organisations (not just those related to AT), the activities of the organisation depend upon the level of interest and implication of the member companies, as well as the situation of these companies in the marketplace. For example, if companies feel that their competitive position is quite threatened due to changing legislation, etc. they are likely to be more active via their representative associations. However, if companies are relatively comfortable, their relevant associations probably will not have a very active agenda. Some examples of the more active associations include the publication of reports as to their sector which may be destined for a public audience as well as end-users.

An extremely diverse and well-known organisation within the European assistive technology world is ONCE. This organisation which began as the Spanish association for the blind has evolved into a behemoth that includes new business creation and extensive funding-raising activities, all to benefit people with disabilities, especially in terms of their employment opportunities.

In terms of a comparison between the European structure of Technology-oriented organisations and that seen in other countries such as the US and Japan, the following provides information on some of the key agents in this group of Actors.

4.2.4.2. UNITED STATES

In keeping with adding an international perspective where possible, the following are some of the most important organizations in the United States.

Research and Development organisations

NIDDR

The National Institute on Disability and Rehabilitation Research (NIDRR) was created in 1978 and is one of three components of the Office of Special Education and Rehabilitative Services at the U.S. Department of Education. The other two components are Rehabilitation Services Administration and the Office of Special Education Programs.

NIDRR has a **two-part mission**:[58]

- to generate new knowledge and promote its effective use to improve the independence of people with disabilities;
- to expand society's capacity to provide full opportunities and accommodations for its citizens with disabilities.

Toward this end, NIDRR conducts coordinated programs of research and related activities to maximize the full inclusion, social integration, employment and independent living of individuals of all ages with disabilities. NIDRR has four **lines of research focus**:[59]

- Employment
- health and function;
- Technology for access and function;
- Independent living and community integration; and other associated disability research areas.

The NIDRR **annual budget** has decreased slightly from 2005-2007 and was kept flat from 2006 – 2007[60].

- 2005: $107.8
- 2006: $106.7
- 2007: $106.7

NIDRR research is intended to contribute to the overall knowledge in rehabilitation medicine, engineering, psychosocial rehabilitation, integration, vocational outcomes and the virtual and built

58 http://www.ed.gov/about/offices/list/osers/nidrr/index.html

59 http://www.ed.gov/about/offices/list/osers/nidrr/index.html

60 Posted letter from NIDRR director, and available at http://www.rehabeducators.org/legislative.htm

environments. NIDRR's also has a role in policy-making to integrate disability research into science and technology, health care, and economics policy.[61]

NIDRR works with other federal agencies that conduct disability research through the Interagency Committee on Disability Research (ICDR), which is chaired by the NIDRR Director. NIDRR also co-sponsors research programs with other federal government agencies and with foreign governments and international agencies.[62]

NIDRR's research is conducted via a network of individual research projects and centres of excellence throughout the country. Most NIDRR grantees are universities or providers of rehabilitation or related services. NIDRR's largest funding programs are the Rehabilitation Research and Training Centers (RRTCs) and Rehabilitation Engineering Research Centers (RERCs).[63]

The NIDRR RERC program constitutes the largest federally funded program for research in rehabilitation engineering. Many of the advancements in rehabilitation technology research can be attributed to NIDRR RERCs. One of the best known RERC is the Trace R&D Center, part of the University of Wisconsin. At the Trace Center in 2007 there were 24 RERC granted projects for technology access and function. The average length of the projects is 5 years and with an average annual budget of $ 900,000 - 950.000. Such project volume calculates to a total of over 5 years of over US$11 Million. (5x24x$925,000= $ 11.100.000) The Trace Center is the largest of the RERC in terms of research budget and was the centre granted 2 projects with a value of US$1,850.000. Both of these projects concern ICT access research[64].

The NIDDR library and is the primary source of rehabilitation and disability information generated by NIDRR funds. NIDRR also produces REHABDATA, an index of disability and rehabilitation literature produced by NIDRR grantees as well as commercial publishers.[65]

To assist covered parties with the understanding and compliance of the ADA, NIDRR has funded 10 regional centres to provide information, training, and technical assistance to employers, people with disabilities, and other entities with responsibilities under the ADA. Each Disability and Business Technical Assistance Center (DBTAC) provides comprehensive resources on ADA issues in employment, public services, public accommodations, and communications.[66]

And specific to Universal Design, NIDRR funds The Center for Universal Design, School of Design, a Rehabilitation Engineering Research Center (RERC) for Universal Design and the Built Environment.[67]

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61 Interview with NIDDR

62 http://www.ed.gov/about/offices/list/osers/nidrr/index.html

63 http://www.ed.gov/about/offices/list/osers/nidrr/index.html

64 Interview with RECR Trace Center, University of Wisconsin

65 Interview with NIDDR

66 http://www.ed.gov/about/offices/list/osers/nidrr/index.html

67 http://www.ed.gov/about/offices/list/osers/nidrr/index.html

ACCESS-BOARD

The Access-Board is a U.S. Federal agency devoted to accessibility for people with disabilities. Created in 1973 to ensure access to federally funded facilities, the Board is now a leading source of information on accessible design. It also provides technical assistance and training on these requirements and on accessible design and continues to enforce accessibility standards that cover federally funded facilities.[68]

The work of the Access-Board can be linked to the Rehabilitation Act of 1998 and also to the Telecommunication Act of 1996. The Access-Board takes a particular level of direction from the Rehabilitation Act to develop access standards for technology that is and/or will be part of the Federal procurement regulations.[69]

The Board is structured to function as a coordinating body among Federal agencies and to directly represent the public, particularly people with disabilities. Half of its members are representatives from most of the Federal departments. The other half is comprised of members of the public appointed by the President, a majority of whom must have a disability.[70]

The Access-Board is a leading resource on design that is accessible to people with disabilities. Through the development of guidelines and standards, the Board establishes what constitutes accessibility in the realms of architecture, transportation, and communication and information technologies. Its design specifications play a critical role in fulfilling the promises of the Americans with Disabilities Act (ADA) and other Federal laws guaranteeing the rights of people with disabilities. The Board promotes accessible design through public outreach, technical assistance, training, published guidance, and research. In addition, it ensures access to facilities funded by the Federal government.[71]

An important issue of the Access-Board concerns the update of the Board's standards for electronic and information technology covered by section 508 of the Rehabilitation Act and section 255 of the Telecommunication Act.[72]

ANSI & NIST

The American National Standards Institute (ANSI) is the coordinator of the U.S. voluntary standardization system and the premiere gateway to the international standards and conformity assessment arena. Through its committees and working groups, the Institute facilitates the development of American standards and formulates the U.S. positions on issues before the International Organisation for Standardisation (ISO) and the Electro technical Commission (IEC). In addition, the Institute maintains close ties to other foreign standards bodies and key regional standards organizations in Europe, the Middle East, Africa, the Americas and the Pacific-Rim.[73]

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68 www.access-board.gov

69 www.access-board.gov

70 www.access-board.gov

71 www.access-board.gov

72 Interview with Access-Board

73 http://www.ansi.org

The American National Standards Institute (ANSI) has developed an extensive collection of services and benefits designed to help its members improve their competitiveness and demonstrate a positive return on their investment. ANSI provides its members with a one-stop resource for all standards information needs.[74]

ANSI's mission is to enhance both the global competitiveness of U.S. business and the U.S. quality of life by promoting and facilitating voluntary consensus standards and conformity assessment systems, and safeguarding their integrity.[75]

NIST is a non-regulatory federal agency within the U.S. Department of Commerce. NIST's mission is to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life.[76]

industry organisations

The following organizations are those most directly related to the AT community in the United States:

- Assistive Technology Industry Association (ATIA)
- Rehabilitation Engineering and Assistive Technology Society of North America (RESNA)
- Alliance for Technology Access (ATA)
- American Association of Retired People (AARP)
- Association of Assistive Technology Act Programs (ATAP)
- American Foundation for the Blind (AFB)

The information presented has been gathered using the websites of each of the organisations included.

ATIA

SUMMARY

The Assistive Technology Industry Association ("ATIA") is a not-for-profit membership organization of manufacturers, sellers and providers of technology-based assistive devices and/or services. (*www.atia.org)*

OBJECTIVES

The principal objective of ATIA is to speak with a common voice for the AT industry, and work closely with Electronics & Information Technology (EIT) companies and government, on matters of common interest such as Section 508 of the Rehabilitation Act, Americans with Disabilities Act (ADA), and comparable continuing issues.

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74 Interview with ANSI

75 http://www.ansi.org

76 http://www.nist.gov

MEMBERS

Members of ATIA include more than 100 respected industry organizations including for-profit, not-for-profit, government, or private organizations located across the globe.

ACTIVITIES

The principal goal of ATIA is to establish and manage an annual Assistive Technology (AT) conference.

- **Showcasing Excellence in Assistive Technology**. This conference features the latest products and services, showcasing more than 125 exhibitors in one of the most comprehensive exhibitions in the industry
- **ATIA Leadership Forum on Accessibility**. The ATIA Leadership Forum on Accessibility is a two-day event designed specifically to help large corporations, government agencies and educational institutions derive business value through accessibility.

ATIA also supports publications, its own as well as those in conjunction with non-profit partners.

RESNA

SUMMARY

RESNA, the Rehabilitation Engineering and Assistive Technology Society of North America, is an interdisciplinary association of people with a common interest in technology and disability. (*www.resna.org*) and is among the premier professional organizations in the field of assistive and rehabilitation technology

In recognition of the potential benefits of collaboration with the membership organizations that promote the field of rehabilitation and assistive technology the Tokushima Agreement was signed in 2000 by RESNA and its sister organizations in Europe (AAATE), Australia (ARATA) and Japan (RESJA). The intent of this agreement is to promote communication, and information exchange. The organizations consider each other as being "sister organizations" in other geographical areas, being not competing, respecting the different characteristics by culture, political environment, membership, mission statement and situation of people with disabilities in their geographical area.

OBJECTIVES

Its purpose is to improve the potential of people with disabilities to achieve their goals through the use of technology. To this end RESNA promotes research, development, education, advocacy and provision of technology; and supports the people engaged in these activities.

MEMBERS

RESNA's membership ranges from rehabilitation professionals to consumers to students. All members are dedicated to promoting the exchange of ideas and information for the advancement of assistive technology.

ACTIVITIES

RESNA administers projects funded under grants/contracts from various federal and non-federal sources. Currently RESNA has a grant from the Rehabilitation Services Administration that funds the National Assistive Technology Technical Assistance Partnership (NATTAP).

- Statewide AT programs
- Alternative Financing programs
- Protection and advocacy for Assistive Technology Programs

In addition, other resources available through RESNA collaborations include a resource on assistive technology and disability-related information (assistivetech.net), as well as a listing of organizations and agencies that recycle, refurbish and re-assign AT devices and equipment for little or no cost.

RESNA also organises and celebrates an annual conference where the areas of participation include the following:

- Instructional courses
- Workshops
- Presentation of scientific papers
- Student design competition

This conference is a key public forum for presenting research, design work, and clinical findings to service providers, researchers, educators and consumers both at the national and international level.

ATA

SUMMARY

The Alliance for Technology Access (ATA) is a U.S. network of community-based resource centres, product developers, vendors, service providers, and individuals that provides information and support services to children and adults with disabilities, and that works to increase their use of technology. (*www.ataccess.org)*

OBJECTIVES

The mission of the ATA is to increase the use of technology by children and adults with disabilities and functional limitations.

MEMBERS

The ATA is a national network of technology resource centres, organizations, individuals and companies. There are currently 41 ATA centres in the US., each with its own particular name, which is to say, these are not “ATA Centre Alabama” but rather the *Technology Assistance for Special Consumers*, in Huntsville Alabama or the *Kern Assistive Technology Center* in Bakersfield, California.

All Members of the ATA provide:

- Information & referral on technology resources
- Outreach & public awareness
- Presentations at conferences
- Training for individuals with disabilities and professionals
- Networking opportunities

ACTIVITIES

The Services offered directly by many ATA Technology Resource Centers include: Guided technology exploration and consultations, Product demonstrations, Telecommunication information, Technical support services, Open computer labs, Assistive technology lending library services, Workshops for consumers and professional training, Newsletters.

In addition, the ATA participates in several initiatives with different funding partners. Examples include:

- "Accessibility Connections" funded by The California Endowment (October 2000 to March 2003)
- "Capacity Building Initiative and Access Fund" funded by Community Technology Foundation of California (2000 to 2003).
- "Family Center on Technology and Disability" funded by US Department of Education (2003 to 2008)
- "Mattel Family Learning Program" funded by The Mattel Children's Foundation (1994 to present).

ATAP

SUMMARY

The Association of Assistive Technology Act Programs (ATAP) was established in 1997 and is a national, member-based organization, comprised of state Assistive Technology Act Programs funded under the Assistive Technology Act (AT Act) to provide support to state AT Program members to enhance the effectiveness of AT Programs on the state and local level, and promote the national network of AT Programs.

ATAP facilitates the coordination of state AT Programs nationally and provides technical assistance and support to its members. ATAP represents the needs and interests of the state AT Programs and is the national voice of the AT Programs. (*www.ataporg.org)*

OBJECTIVES

The mission of ATAP is to promote the collaboration of AT Programs with persons with disabilities, providers, industry, advocates and others at the state and national level and to increase the availability and utilization of accessible information technology (IT) and assistive technology devices and services (AT) for all individuals with disabilities in the United States and territories.

ATAP's goals include the following:

- To promote public awareness of assistive technology at the national level.
- To provide training and education about assistive technology on a national basis for stakeholders, including other national social service and business organizations, members of the insurance and healthcare industry, and public office holders/policy makers.
- To develop positions on a full range of national assistive technology and disability related issues and

to share these positions with other organizations or policy makers, as needed, to ensure that the views of the states and territories and their consumers with regard to assistive technology service delivery are adequately represented.

MEMBERS

The Membership of the ATAP are the state Assistive Technology Act Programs (50 states, plus six U.S. Territories), which pay an annual membership as established by the Board of Directors of ATAP.

ACTIVITIES

ATAP provides support to state AT Program members to enhance the effectiveness of their AT Programs at the state and local level. Therefore, ATAP's activities are more one of coordination and promotion with the AT state programs to best serve the needs of their disabled populations. In general, ATAP does not work directly with the disabled end-users themselves.

AFB

SUMMARY

The American Foundation for the Blind (AFB) is a national non-profit organisation for people with vision loss. AFB's priorities include broadening access to technology; elevating the quality of information and tools for the professionals who serve people with vision loss; and promoting independent and healthy living for people with vision loss by providing them and their families with relevant and timely resources. AFB's work in these areas is supported by the strong presence that the organization maintains in Washington, DC, to lobby the rights and interests of people with vision loss. *(www.afb.org)*

In addition to its New York City headquarters and Public Policy Center in Washington, DC, AFB maintains offices in Atlanta, Dallas, Huntington, WV, and San Francisco.

OBJECTIVES

- To be the One-stop information and referral resource for people who are blind or have low vision, the organizations and individuals who serve them, and the general public.
- To promote literacy skills for blind and visually impaired children and adults.
- To help older Americans experiencing vision loss to maximize their independence.
- To break down barriers for blind and visually impaired job seekers.
- To work with manufacturers to ensure equal access to mainstream technologies and services.

MEMBERS

There are no formal members of the AFB. Its activities are paid through Private contributions, legacies and bequests, Grants from government agencies, Sales, primarily Talking Books and other audio material and publications, Investments and Royalties. According to the Financial Statements of the 2008 AFB Annual Report, the largest sources of income in 2008 for the organisation were Private contributions, legacies and bequests (73%) and Sales of Talking Books and other audio material and publications (28%).

ACTIVITIES

The AFB is a professional organisation with over 85 years of experience working to promote the interests of the visually disabled community. The types of activities which it carries out reflects this. The following are a few highlights from the AFB 2008 Annual Report of the activities that the organisation carried out.

- Establishment of FamilyConnect in collaboration with the National Association for Parents of Children with Visual Impairments (NAPVI). FamilyConnect is an online meeting place that brings together a global community of parents who have asked the same questions, battled the same fears, and overcome the same kinds of obstacles in their efforts to prepare visually impaired children for lives of independence and achievement. Visitors to the site can connect with other parents through videos, articles, and message boards that address every aspect of raising a visually impaired child.

- Establishment in 2007 of AFB Senior Site® a web site that has established itself as the most comprehensive, informative resource for families and individuals dealing with age-related vision loss.

- Launching in 2008 its cell phone accessibility campaign, 255 Action, to pressure the cell phone industry into full compliance with Section 255 of the Federal Communications Act, which requires all phones be made usable for people with disabilities. As part of the campaign, AFB contacted leading cell phone service providers and manufacturers to ask what they are doing to meet the needs of people with vision loss. Also, as an example of empowering consumers, in August 2007 AFB assisted a group of blind and visually impaired consumers in filing access complaints with the FCC about accessible cell phones.

Notable past achievements of the AFB include:

- Invention of Talking Books technology in 1934 and remains a major producer today.
- Standardisation of the Braille code after 15 years of lobbying and networking.
- Establishment of AFB Press, a leading publisher of textbooks and teaching materials in the blindness field.

4.2.4.3. JAPAN

Research and Development organisations

REHAB[77]

The National Rehabilitation Center for the Disabled was established by the Ministry of Health and Welfare in 1979 to contribute to the promotion of the welfare of persons with physical disabilities by providing comprehensive rehabilitation services and by developing rehabilitation techniques.

The **objectives** of REHAB Japan are:

77 http://www.rehab.go.jp/english/page1/index.html#first

- *Comprehensive rehabilitation services:* After the evaluation is made by a rehabilitation team consisting of professional staff, including a doctor, nurse, physical therapist, occupational therapist, remedial gymnast, speech therapist, prosthetist and orthotist, psychologist, social worker, vocational evaluator, and prevocational and vocational instructor the individual rehabilitation program is set up and training is provided for the purpose of re-entry into society.
- *Research and development of rehabilitation techniques:* Survey and research are conducted in various fields of rehabilitation. Prosthetics and orthotics are also developed and produced, and repair services are provided.
- *Training of professional staff:* The Diploma Courses for Rehabilitation Workers for Blind, Speech Pathologists & Audiologists, Sign Interpreters, Prosthetists and Orthotists and Rehabilitation Sports Specialists and the Short-term Training Courses are conducted for various specialists; Rehabilitation Nursing, Specialist of Technical Aid, Sign Language Interpreter, Special Courses in Prosthetists and Orthotists for Physicians.
- *Information service*: Information and materials in rehabilitation fields are collected and disseminated in Japan and overseas.
- *International cooperation*: International cooperation programs are organised for promotion of rehabilitation of disabled persons in the developing countries by training professionals and dispatching qualified specialists as a Collaborating Center of WHO.

NISE

The mission of the NISE, as the National Institute of Special Needs Education is to contribute to Improving the quality of education for children with disabilities and to make educational provision to meet individual educational needs. The institute works with national and government organizations.

The **objectives** of NISE are:

- Research Activities that contribute to National Administrative Needs: to undertake research that contributes to the formulation of National Policy for Children.
- Practical Research that contributes to Educational Site: to undertake advanced and practical research that contributes to educational site.
- Specialized Programs for Teacher Training: to provide systematic and special training for the school staff who plays the role of leadership in special needs education from local public organization and support them.
- Training Programs that Respond to New Challenges: to implement training program for the major issue of National Policy and/or urgent issue at educational site flexibly and promptly.
- Counselling and Consultation Activities that Supports Local Public Organization: to conduct consultation and provide the information for counselling and consultation to the organizations.
- Information for Special Needs Education: to collect, analyze, arrange and make database of the information on special needs education from domestic and overseas and provide comprehensive information to teaching site.
- Cooperation and Partnership with Universities and Organizations in Domestic and Overseas: to collaborate and cooperate with universities and organizations in domestic and overseas through seminars, to share
- Their practical research results in special needs education. Also to research, analyze and evaluate the issues.

NISE is organized into 5 **departments:**

- Department of Policy and Planning
- Department of Educational Support
- Department of Teacher Training and Information
- Department of Counseling and Consultation for Persons with Special Needs
- Information Center of Education for the persons with Developmental Disabilities

2008 Budget of Annual Expenditure

- Business: 7.6 Mill€ (1.2 billion Yen)
- Installations: 307,000€ (47,508,000 Yen)
- Total: 7.9 Mill€ (1,223,198,000 Yen)

Industry Organisations

Based on available information, the three organizations most directly related to the AT community in Japan are:

- Rehabilitation Engineering Society of Japan Association
- The Accessibility Design Foundation of Japan
- Japan Wellness and Welfare Industry Association

The information presented has been gathered using the websites of each of the organisations included.

RESJA

SUMMARY

The Rehabilitation Engineering Society of JAPAN (RESJA) was established in March 1986 and is the sister organization of the AAATE. (*www.resja.gr.jp/eng*)

OBJECTIVES

RESJA describes its purpose as the promotion of mutual understanding among member groups so that they comprehend and serve the actual needs of the people with disability, the end-beneficiaries of rehabilitation engineering.

MEMBERS

Organisation membership is nearly at 1000 people and includes rehabilitation professionals (engineers, medical staffs, teachers for handicapped children ,etc), providers (makers and dealers), and consumers (disabled persons).

ACTIVITIES

Since 1985 RESJA has held an annual conference on the Advancement of Assistive and Rehabilitation Technology. The focus of the event is towards engineers and technical developers in the AT and rehabilitation industry.

ADF

SUMMARY

The Accessible Design Foundation of Japan began in 1991 as volunteers to promote Accessible Design (AD) products and services with the goal of creating a barrier-free society. This group conducted a survey on the inconveniences experienced by people with disabilities and older people. Based on the results of this survey, the group began its work in promoting accessible design and the standardisation work in designing such products and services. The group evolved from volunteers to a foundation in 1999. (*www.jdf.or.jp/eng*)

OBJECTIVES

The mission of the Accessibility Design Foundation of Japan is "to promote accessibility by knowing other people's inconveniences.", in other words, to promote accessibility for all people, including the elderly and disabled.

MEMBERS

Although specific information about the specific composition of its members was not available in English, according to the organisation, ADF Japan collaborates with other organizations to conduct user surveys and research on the needs of various people in order to promote products, facilities and services that are accessible to every member in the society,[78]

ACTIVITIES

According to group literature, the key activities of ADF are:

- Organisation of symposiums and performing surveys to promote the business sector's use of standardisation and co-creation systems.
- Activities to increase the level of awareness of AD to the general public. The general public effort includes a particular emphasis to educate the school age community on AD importance. ADF staff regularly visit elementary schools and junior high schools.
- Work with central and municipal governments to organise research and development to better influence the political process.
- Establishment of network system across Japan with:
- Consumer and citizen groups
- Business circles (ministries, agencies, academic associations, industry)
- International networking (especially with Asia Pacific countries, and participating countries in ISO/IEC Guide 71.

78 http://www.kyoyohin.org/09_foreign/English_ver.pdf

We also include the existence of the publication, “About the Accessible Design Foundation of Japan” by Morikawa Miwa, part of the “Special Issue of the Japanese Society for the Science of Design” in 2006. This publication is only available in Japanese and was not consulted by the study team.

JSRPD

SUMMARY & OBJECTIVES

The Japanese Society for Rehabilitation of Persons with Disabilities (JSRPD) was founded in 1964 to promote the activities of persons with disabilities in every way possible both within and outside Japan.

MEMBERS

Japanese Imperial Highness Prince HITACHI has been the Royal Patron of the Society since 1982.

ACTIVITIES

JSRPD has as its main lines of activity:

- Promoting Awareness and Disseminating Information Concerning Rehabilitation of Persons with Disabilities
- Collection and Dissemination of Information on Disabilities
- International Exchange and Cooperation Concerning Rehabilitation of Persons with Disabilities
- Development of International Human Resource
- Cooperation with Organizations of Persons with Disabilities
- Management of National Welfare Center for Persons with Disabilities (TOYAMA SUNRISE)

4.2.4.4. SUMMARY OBSERVATIONS ON THE LEVEL OF ORGANISATION IN THE AT ICT INDUSTRY IN EUROPE, THE UNITED STATES AND JAPAN

In summary, while looking at the European structure of Technology organisations in comparison to those of the U.S. and Japan, it is evident that the U.S. industry has resources which are more specifically organised to develop solutions for users with disabilities, and the AT industry. Neither Japan nor Europe as a whole has a similarly centralised and specifically dedicated network such as exists in the U.S.

Because of the national (one-market) scope of the U.S. organisations (NIDRR, RERC, and the Access-Board), they can have a more coordinated approach to efficiently and effectively develop solutions that benefit people with disabilities throughout the whole of the U.S. market.

In terms of industry organisation, the key difference between the U.S. AT industry and those of Europe and Japan is the existence of an industry organisation specific to the AT ICT industry, the Assistive Technology Industry Association (ATIA). This organisation has existed for over 10 years, and has grown substantially in terms of its company members (currently at more than 130 firms) as well as the number of attendees at its annual event dedicated to the AT ICT industry (from 815 people in 2003 to 2,600 in 2008).[79] Neither Japan nor Europe has something comparable to ATIA. Rather, the organisations in these two markets tend to be centred around end-users, and/or limited to specific product areas within AT (i.e., hearing aids, blind and low-vision, etc.).

[79] Interview with D. Dikter, Executive Director of ATIA.

5. DESCRIPTION OF THE FIVE PRODUCT GROUPS

5.1. Hearing aids

Before beginning with a detailed presentation of the European hearing instrument industry, it should first be mentioned that the information gathered for this product group is quite superior to that which is available for the other groups considered in this study. The reasons for this are various: many of the leading companies in the industry are publicly traded which means that more information as to market size, profitability, strategy, etc. is readily available. Also, the hearing instrument industry is one of the oldest types of AT market and one in which the leading companies have been strong players for many years, resulting in a large market managed at a global scale.

In terms of what exactly is considered as a hearing aid, the definition used by the German Anti-Trust court in its ruling on the Phonak acquisition of GN ReSound is the following, "Hearing aids are items of electronic equipment that improve the hearing function of the hearing-impaired by amplifying incoming acoustic signals. The hearing aid product market is technically divisible into digital, digitally programmable analogue and analogue hearing aids."

5.1.1. MARKET PLAYERS

The following table presents a summary of the main players in the hearing instruments market in Europe.

MANUFACTURER	TRADEMARK	COUNTRY OF ORIGIN	GENERIC; SPECIALIST*	REGIONAL; GLOBEL**	URL	TRADEMARK; PRODUCT GROUP
Siemens AG	Siemens Audiologische Technik GmbH	Germany	Generic	Global	www.hearing-siemens.com	11
William Demant Holding		Denmark			www.demant.com	
	Oticon	Denmark	Generic	Global	www.oticon.com	5
	Bernafoon	Switzerland	Generic	Global	www.bernafon.com	8
Great Nordic A/S		Denmark				
	Great Nordic Resound	Denmark	Generic	Global	www.gnresound-group.com	5
	Beltone	USA	Generic	Global	www.gnresound-group.com	4
	GN Danavox	Denmark	Generic	Global	www.gnresound-group.com	5
	Interton	Germany	Generic	Global	www.interton.de	5
	Philips	Netherlands				
	Viennetonne	Austria		Global	www.gnresound-group.com	4
Widex	Widex	Denmark	Generic	Global	www.widex.com	5
Sonic Innovations	Sonic	USA	Generic	Global	www.pro.sonici.com	6
Starkey	Starkey	USA	Generic	Global	www.starkey.com	6
Audioservice GMBH	Audioservice	Germany	Generic	Global	www.audioservice.com	4
Sonova AG		Switzerland			www.sonova.com	
	Phonak	Switzerland	Generic	Global	www.phonak.com	9
	Unitron	Canada	Generic	Global	www.unitronhearing.com	6
Hoermann GMBH	Audifon	Germany	Generic	Global	www.audifon.de	6
Hansaton GMBH	Hansaton	Germany	Generic	Global	www.hansaton.de	7
Eurion	Lotus	Switzerland	Specialist	Global	www.eurion.ch	2
RION Co LTD	Rion	Japan	Generic & Specialist	Global	www.rion.co.jp	6
Pureton		England	Specialist	Global	www.puretone.net	1
Micro Tech Hearing	Radius	USA	Specialist	Global 1)	www.MThearing.com	2

Table 10. Main market players in the hearing instruments industry

Source: *Own elaboration*

1) Restricted availability in Europe

** Generic, develops and manufactures a complete assortment; Specialist, develops and manufactures 1-2 product group with specific features.*

All of the manufacturers included in the above table are considered global players in that they are present in 20 to 70 different countries. In general, these companies have their own marketing and sales organisations; several also distribute via wholesalers or directly to large retailers. Buyer associations may also be present where a group of smaller distributors and/or retailers form a buying association to purchase product together and under better conditions (price, financing terms, lot size, etc.) than they would have been able to negotiate as single players.

There is a very high level of concentration in the hearing aid market. The three leading suppliers in Germany (Siemens, Phonak and Oticon) have a joint market share in Germany of more than 80%. The Germany court's decision to block the purchase of GN ReSound by Phonak largely based their decision on their consideration that such a market structure constitutes an oligopoly. The text of this decision also declares that "The three leading manufacturers constitute an oligopoly not only in Germany but also throughout Europe and around the world." At the very least, the market is concentrated between few large, dominant manufacturers and there have been few market entries in recent years.

Main M&A activity in the Hearing Aid Industry 1993-2002: Manufacturing and Retail level

Company	Target	Activities	Country	Year
Manufacturing Level				
Oticon	Bernafon	Manufacturer	Switzerland	1995
Starkey	Qualitone	Manufacturer	US	1997
Siemens	Electone	Manufacturer	US	1999
Starkey	Micro-tech	Manufacturer	US	1999
Phinak	Unitron	Manufacturer	Canada	2000
Resound	Viennatone	Manufacturer	Austria	1993
Resound	3M	Manufacturer	US	1996
GN DanaVox	ReSound Corp.	Manufacturer	US	1999
Beltone	Philips Hearing tech.	Manufacturer	Netherlands	1999
GN ReSound	Belone	Manufacturer/Retailer	US	2000
Distribution - Retail, Wholesale and Wholesale Distributor				
Oticon	Hidden Hearing	Retail	UK	2000
Oticon	Dahlberg	Wholesale	Canada	2000
Oticon	Avada	Retail	US	2000
Oticon	AHAA	Wholesale distributor	US	2001
Widex	Otosonica	Retail	Protugal	1999
Phonak	Laperre	Retail	Belgium	1996
Phonak	Auris	Wholesale	Denmark	2000
Phonak	Indo Laem	Retail	Spain	2000
Phonak	Hansaton	Retail	Austria	2001
GN DadaVox	Italiana Audioprotesi	Retail	Italy	1997
GN ReSound	Ultravox	Retail	UK	2001

Table 11. Main market players in the hearing instruments industry
Source. "*Managing global offshoring strategies: a case approach" (2006), Jacob Pyndt, Torben Pedersen. Chapter 3 GN Resound – The Challenges of Amalgamation, page 78.*

However, an important development in terms of this consolidation trend occurred in 2007 when the German anti-trust court (Kartelambt) blocked the intended purchase of GN ReSound by Phonak. Although the deal had been approved by every other relevant authority, the acquisition was eventually dropped and both companies continue to operate as independent companies in the marketplace.

The market for hearing instruments is generally viewed to attractive with strong growth prospects and attractive gross margins. In terms of profitability, according to a company report by Dansk Equities for William Demant (Opticon brand) dated 10 October 2006, the gross margins of Oticon and Phonak are 69% and 67% respectively.

Growth is driven largely by increases in the aging population, although this is not an exclusive driver to growth. In general, the market sees plenty of growth potential due to the current large variety between the level of hearing instrument penetration, which is to say, the percentage of people who actually have and use a hearing instrument versus the percentage of the population who could be considered a market for such products.

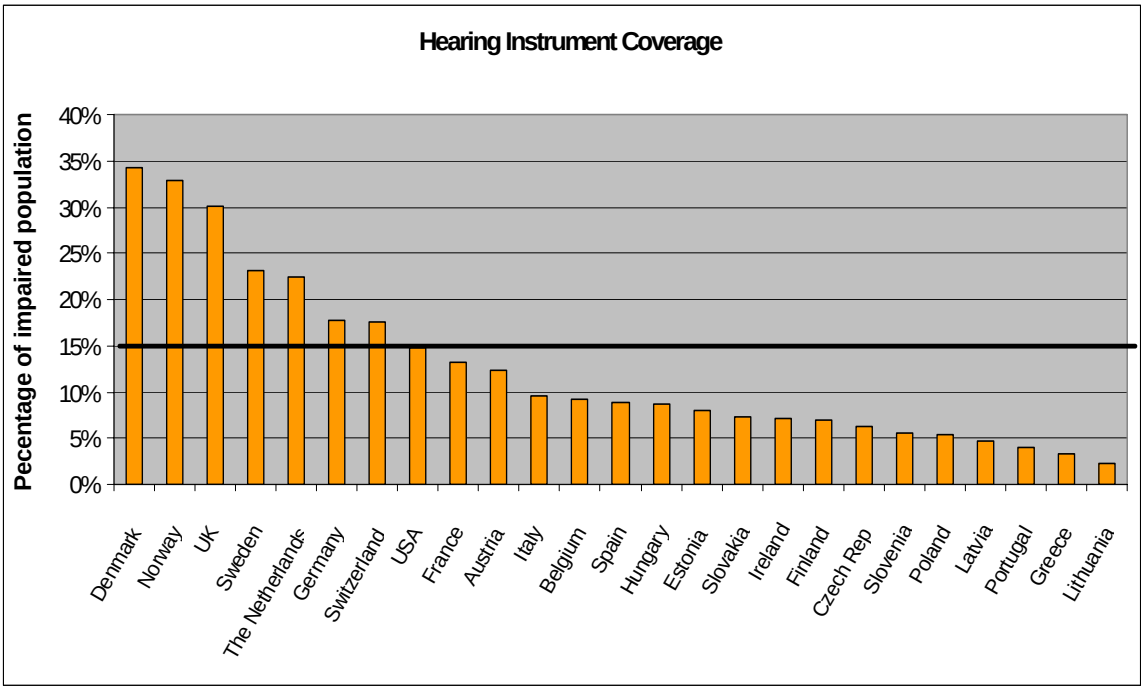

Figure 12. Hearing Instrument Coverage

Source. *"The European Hearing Instrument Market Updated 2007", GN ReSound presentation for the European Hearing Instrument Manufacturers Association.*

This wide range of coverage in hearing instruments can be explained by differences in:

- Gross National Product / Capital as a measure of societal wealth
- Level of subsidy provided from public services (health or social system) or private insurance companies[80]:
  i. No subsidy
  ii. Only children or those with special needs
  iii. Basic level model hearing instrument is free of charge
  iv. Some co-payment from the end-user is required
  v. Hearing instrument is free of charge to end-user

The relationship between hearing instrument penetration and GNP/Capital is not very strong and therefore does not provide a solid explanation for the wide differences in hearing instrument penetration rates.

80 "The European Hearing Instrument Market Updated 2007", GN ReSound presentation for the European Hearing Instrument Manufacturers Association.

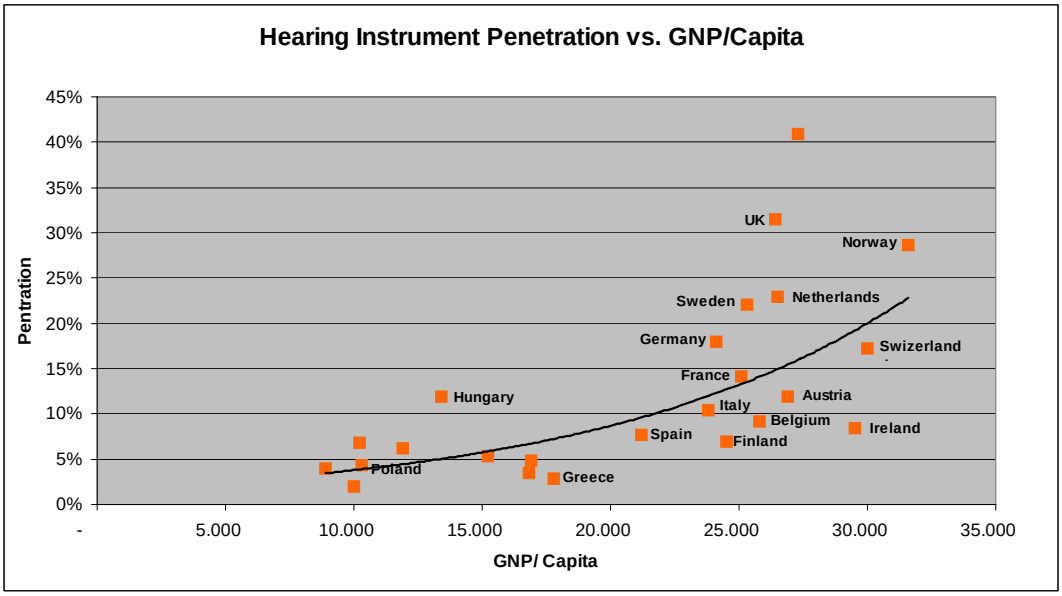

Figure 13. Hearing Instrument Penetration vs. GNP/Capita
Source. *"The European Hearing Instrument Market Updated 2007", GN ReSound*

However, the relationship between the level of subsidy provided and hearing instrument penetration is much stronger.

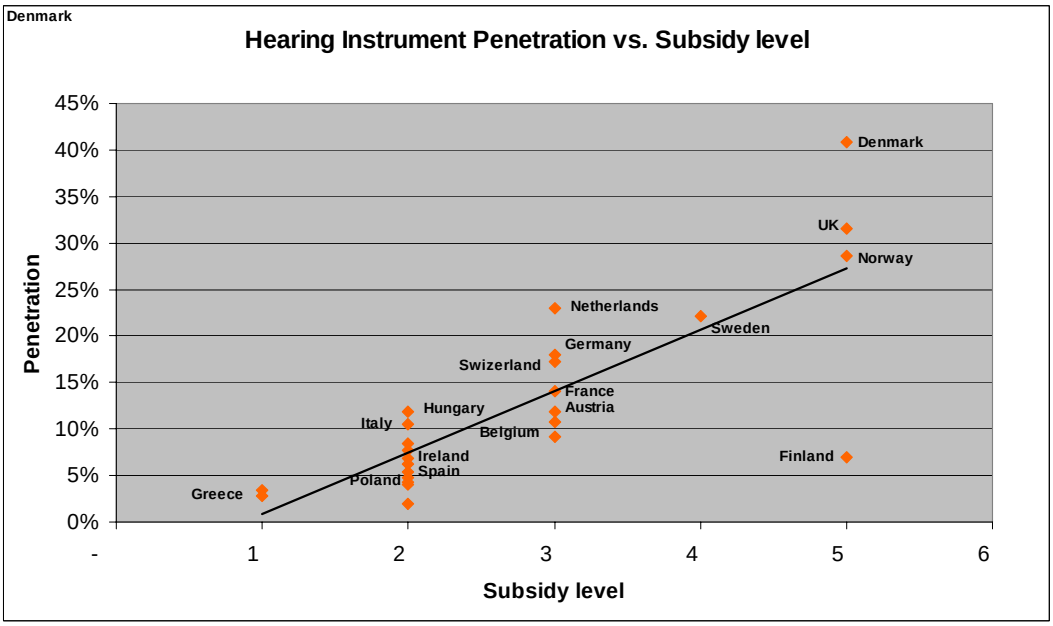

Figure 14. Hearing Instrument Penetration vs. Subsidy level
Source. *"The European Hearing Instrument Market Updated 2007", GN ReSound*

Conclusions from this analysis as to the key drivers of hearing instrument penetration are:

- Penetration rates vary from 2% to 40% in Europe

- Some explanatory effect is related to GNP/Capita
- A stronger explanatory effect is seen from the subsidy level provided
- Some countries (Denmark, The Netherlands, UK) have chosen a political policy that allows full subsidies which should lead to the strongest levels of penetration.

5.1.2. MARKET SIZE

The total market volume for the manufacture of hearing aids and their sale to hearing aid retailers in Germany was approximately 205€ million in 2006.

The companies Great Nordic (GN ReSound brand among others) and Sonava AG (Phonak brand) claim to be the largest hearing instrument manufacturers with 14% (excluding the Interton brand) and 16-17% worldwide market share, respectively. The following tables present how market share has developed in the German market between the major players.

Germany	**2003**	**2004**	**2005**	**2006**
Market volume (€ mill)	**209**	**197**	**201**	**205**
Market share (%):				
SIEMENS	35-40	35-40	32.5-37.5	32.5-37.5
PHONAK	12.5-17.5	12.5-17.5	20-25	20-25
OTICON	15-20	20-25	20-25	20-25
SUBTOTAL	**70.7%**	**72.7%**	**78.5%**	**81.1%**
GN RESOUND	10-15	10-15	7.5-12.5	5-10
WIDEX	7.5-12.5	7.5-12.5	5-10	5-10
BRUCKHOFF	< 2.5	< 2.5	< 2.5	< 2.5
STARKEY	< 2.5	< 2.5	< 2.5	< 2.5
AUDIFON	<1	< 2.5	<1	<1
ACOUSTICON	<1	<1	<1	<1
TOTAL	**100%**	**100%**	**100%**	**100%**

Table 12. German market share development 2003 – 2006
Source. *Germany Anti Trust Office (Bundeskartellamt), 3rd Decision Division, B3 578/06*

Germany	2003	2004	2005	2006
Market share (%):				
SIEMENS	45-50	50-55	40-45	45-50
PHONAK	10-15	10-15	15-20	15-20
OTICON	10-15	10-15	20-25	20-25
GN RESOUND	7.5-12.5	7.5-12.5	7.5-12.5	7.5-12.5
WIDEX	15-20	10-15	7.5-12.5	<5
TOTAL	**100%**	**100%**	**100%**	**100%**

Table 13. German market share development in "economy class" (200€-600€) price segment
Source. *Germany Anti Trust Office (Bundeskartellamt), 3rd Decision Division, B3 578/06*

Germany	2003	2004	2005	2006
Market share (%):				
SIEMENS	25-30	25-30	30-35	25-30
PHONAK	20-25	10-15	30-35	30-35
OTICON	20-25	30-35	15-20	20-25
GN RESOUND	10-15	10-15	10-15	5-10
WIDEX	15-20	15-20	5-10	5-10
TOTAL	**100%**	**100%**	**100%**	**100%**

Table 14. German market share development in "business class"
and "high-end" (750€+) price segment.
Source. *Germany Anti Trust Office (Bundeskartellamt), 3rd Decision Division, B3 578/06*

In summary, the leading manufacturers of hearing instruments are large, global players with important market share. For example, in 2006 81% of the German market was held between three companies: Siemens, Phonak and Oticon. Just 3 years earlier in 2003, the level of combined share between these three firms was 71%.

Product launches are announced only twice a year at two major industry trade fairs: American Academy of Audiology (AAA) in Spring and the European Union of Audiologists (EUHA) celebrated annually in Autumn in Germany. Whenever a new product family is launched, the manufacturers carry out roadshows with important suppliers as well as with service delivery systems, including physicians and rehabilitators. The frequency of customer visits for the purpose of customer care and training is extremely high in the hearing aid market due to the short product cycles, particularly in the upper price segments and due to the annual price negotiations.

The price segments defined for hearing aids places hearing aids into the following price segments:

- List price of over 900€ ("high-end products")
- List price between 751€ and 900€ ("business class")
- List price between 601€ and 750€ ("comfort class")
- List price between 401€ and 600€ ("economy class")

- List price between 201€ and 400€ (“economy class”)
- Less than 200€ (“basic”)

Germany	2003	2004	2005	2006
Average sales price (€):				
List price of over 900€	802	819	811	838
List price between 751€ and 900€	636	637	640	624
List price between 601€ and 750€	518	485	479	462
List price between 401€ and 600€	371	378	361	341
List price between 201€ and 400€	228	225	211	209
List price less than 200€	118	115	106	108

Table 15. Average manufacturers’ sales prices between 2003-2006 (Germany)
Source. *Germany Anti Trust Office (Bundeskartellamt), 3rd Decision Division, B3 578/06*

5.1.3. BARRIERS TO ENTRY

Potential competitors in the hearing aid market are deterred from entering by the cost-intensive and lengthy development processes in order to enter the market. The high costs of developing a digital hearing aid of their own in combination with the economies of scale required to successfully operate in the market impede market entry and have even led in the past to smaller competitors, such as Acousticon, losing all their market significance for the manufacture and sale of hearing aids.

5.1.4. CLIENTS

The demand side is very fragmented in comparison to the concentration at the manufacturer level and is for that reason alone unable to push through strategic purchasing behaviour with the relevant effect on the market. Apart from the few large multiple shops and purchasing groups, the purchasing volumes of the small enterprises characteristic of the demand side are too small to be able to make any promising attempt at developing strategic buying patterns.

Since the digitalisation of hearing aids is the latest, hearing aid retails have not had the competence concerning costs and development to be in a position to initiate competition between the leading suppliers. In adapting the hearing aids, they are largely dependent on the manufacturers’ product quality and effective adaptation software.

Hearing aid retailers are not themselves subject to competition on price. Final customers only receive transparency on the final price after selecting the hearing aid and having it fitted. They do not usually go to a different hearing aid retailer after a comparative adaptation has been completed. For this reason alone, hearing aid retailers have little need to put price pressure on manufacturers. The fact that the average bulk discount on manufacturers’ list prices is approximately 30% does not contradict this. Due to the high profits of hearing aid retailers and the stability of the sales prices of all manufacturers, it is to be presumed that the amount of the list price does not provide any reliable information on the final pricing. This is also highlighted by the fact that a comparison of different manufacturers’ list prices shows them to be largely the same.

The lack of competition at the level of hearing aid retailers is also clear when one sees the retailer's own extremely high margin added to the manufacturer's sales price – margins of approximately 190 – 500% for hearing aid retailers, depending on the manufacturer's sales price. The margins derive mainly from the amount charged by the audiologist for his/her technical work (adaptation of the hearing aid) and the consultancy costs.

5.1.5. DISTRIBUTION

In general you can say that in the more developed western countries (western & central Europe, USA, Canada) distribution is in the hands (of big) retail organisations or purchase-organisation owned by independent retailers or big (nationally and internationally operating) wholesale organisations. These organisations add much know-how and service to the product and their buyers. Therefore they have a lot "purchase power" and influence the whole market.

In the less developments countries the hearing aids are an upcoming market where at the moment still is not a good operating distribution system. Manufactures and big retail and wholesale organisations are in competition with each other to get hold of the distribution channels.

In the distribution market there is also a tendency of concentration. For organisations which have not yet a position in the market relate to distribution or do not need the know-how will it be a big investment to become a substantial player.

5.1.6. FINANCING

The conditions for receiving hearing aids vary from one country to the other. To demonstrate this fragmentation and consequent complexity, a questionnaire was sent to the AAATE national contact points (Annex 12.5). The results of this questionnaire by country regarding the product funding and reimbursement models used in the hearing aids industry are included in Annex 12.5.1 and 12.5.2.

5.1.7. INNOVATION

5.1.7.1. PRODUCT DEVELOPMENT

In Germany, digital hearing aids dominated the market in 2006 with a share of more than 90% of the market volume. The market for hearing aids has been revolutionised by digitalisation. There has been a major improvement in the compensation of hearing loss through wearing hearing aids with digital signal transmission and processing. Digital hearing systems have become the standard in the industry.

The market for hearing aids has meanwhile entered a maturation phase; genuine developments of new products are unlikely. Many in the industry believe that largely unpatented "feel good factors" currently determine the market success of hearing aids, as well as technological innovations such as directional microphones and longer battery life.

These include miniaturised casings (sleek, smooth and feather-light), elegant and modern designs, attractive high-tech colours and visually more attractive hearing aids. This suggests that the hearing aid market has entered a phase of technical and optical optimisation, making revolutionary innovation less likely. There is little difference between the capacities for development of the different hearing aid manufacturers; real technological advances are the exception.

Additional technological drivers are in miniaturisation which results in products being more attractive (less visible), more usable and in general carrying less stigma than current hearing instruments. To this end, a recent article in the New York Times[81] presented a new hearing aid that is actually embedded in the ear canal, and sits just 4 mm from the ear drum. In this way it is completely invisible to other, and with other technological advances, the sound quality is also superior to other hearing aid solutions currently available. In summary, although this is a market where product enhancement is certainly a big driver, technological developments continue to be important.

5.1.7.2. LICENSING OF HEARING AID TECHNOLOGY

The leading hearing aid manufacturers (Siemens, Phonak, Oticon) are closely linked with one another through a number of reciprocal licensing and cross-licensing agreements. This is also true, albeit to a lesser extent, of their nearest competitors (GN ReSound, Widex, Starkey). An increasing number of reciprocal licensing agreements are made because the manufacturers' focus areas of development are very similar, and therefore the danger of patent disputes exists. Usually, the companies agree to reciprocal licensing free of charge. Licenses are issued mainly in respect to features / functions in the signal transmission process and in programming, but also in respect of hardware components, such as the tubes and end pieces used for open ear technology or the injection moulding process for manufacturing hearing aids.

All hearing aids consist of the same major components.

The components are held together in a protective case often made of plastic.

- Microphone: The microphone picks up sounds from the air and converts them into electrical signals.
- Amplifier: The amplifier increases the intensity of the signals from the microphone. Filters modify the sounds, so that only sounds relevant for the user are amplified.
- Loudspeaker: The third basic component is the 'loudspeaker' (receiver). It converts electrical signals into the acoustic signals heard by the user.
- Small computer: In addition to these three common components in all hearing aids, digital hearing aids include a small computer programmed to manipulate the signals to fit the hearing loss of the individual user.

Some hearing aids are equipped with special control functions for individual adjustments. Many hearing aids offer remote control, facilitating adjustments.

Innovations mostly take place in the supply industry of these components.

81 Parker-Pope, T. "Raves (Yes, it's True) for a New Hearing Aid." New York Times, 15 April 2008.

5.1.7.3. CONCLUSIONS

Of the five product groups selected for this study, the Hearing aid product group represents the best example of a fully integrated chain, from R&D through to distribution to the end-user. This is a mature market, especially when compared to other product groups of AT, in that the players are quite established and operate on a global level. This in an industry where consolidation has been an important factor for over 10 years, especially between manufacturers (horizontal integration) as well as vertical integration with manufacturers looking downstream to distribution and retail outlets.

That said, including in the hearing aid market, the part of the value chain with the most relative power continues to be at the distribution and retail level. Indeed it is at the retail level where the greatest portion of value is added for the end-user. These end-user services include advising as to the various solutions as well as fitting the instrument – an absolutely key part of the hearing aid sale process. This aspect of a quality fitting is so important that some leading firms in the industry think that a greater level of professionalism at the retail level would help boost hearing aid penetration levels above the 15% average for the whole of the EU.

5.2. Braille readers

A Braille reader, also known as a refreshable Braille display or a Braille terminal is an electro-mechanical device for displaying Braille characters, usually by means of raising dots through holes in a flat surface. Blind computer users who cannot use a normal computer monitor use such a device to read text output.

The following table indicates some of the most important manufacturers of such devices.

Manufacturer	Brands	Country of origin	Website	Generic or Specialist	Global, Regional or Local
Optelec		Netherlands	www.optelec.com		
Alva	ALVA,			Generic	Global
	Voyager				
Baum Retec AG	VARIO	Germany	www.baum.de	Generic	Global
Audiodata	BM				
BaumSysteme GNBH					
PTS Jena					
Freedom scientific	PAC mate,	US	www.freedomscientific.com	Generic	Global
Blazie Engineering	Focus				
Henter-Joyce					
Arkerstone					
Handy tech Electronic GMBH	Wave,	Germany	www.handytech.de	Specialist	Global
	Star,				
	Evolution				
Papenmeier GMBH& Co.KG	Braillex	Germany	www.papenmeier.de	Specialist	Global
InSoPhil PTE LTD	VersaBraille (1)	Singapore/US	www.insiphil.com	Generic	Global
Telesensory					
MDV Ingegneria Ellectronica	MB408	Italy	www.mbvbologna.it	Specialist	Regional
KTS	Brailleterm 32	Germany	www.kts-braille.de	Specialist	Regional
Hedo Rehatechnik GMBH	MobiLine	Germany	www.hedo.de	Specialist	
B&M Ingenieurburo GMBH	Jumbo	Germany	www.bm-ing.eu	Specialist	Local
Flusoft GMBH	InfoDot	Germany	www.flusoft.de	Specialist	Local
Deininger GMBH (2)	Pegasus	Germany	www.deininger.de	Generic	Local

(1) Versabrialle : Braille laptop computer

(2) Deininger is a trade organisation specialized in 'read & speak devices' and manufactures the Pegasus displays at their own plant.

Table 16. Main manufacturers of Braille Readers
Source. *Own elaboration*

- **GENERIC** manufacturers refer to those who develop, manufacture and deliver (to the Buyer, not necessarily the end-user) a substantial product range of assistive technology for individuals who are blind or have low vision. Within this product range are included Braille readers.
- **SPECIALIST** manufacturers refer to those who develop, manufacture and deliver (to the Buyer, not necessarily the end-user) a limited product range of assistive technology for individuals who are blind or have low vision. Within this product range Braille readers can be considered the most important item.
- **GLOBAL** distribution signifies that products are available in all major western markets, whereas "Regional" distribution indicates that devices are limited to a select few foreign countries. "Local" distribution signifies that national market is the principal market.

All of the global players have their own distribution network. In the case of Optelec, Baum, Papenmeier and Freedom Scientific, these companies' distribution networks extend to over 50 countries. Although Freedom Scientific is an important player in the Braille reader market, these products do not represent the main area of activity for the company, which is centred on software development such as the "JAWS" and "Magic" programs.

5.2.1. TYPOLOGY OF COMPANIES/MARKET

For this study, the following 12 manufactures were identified representing a total of 16 product brands as examples of active companies within the European Braille reader market. The majority of these manufacturers (83%) are European firms, and eight of the ten European firms are included in at least one of the national databases that comprise the EASTIN database, thus demonstrating their relevance in the European marketplace.

National database where company product appears:	Manufacturers included in Table 16.
REHADAT (Germany)	Optelec, Baum Retec, HandyTech, Papenmeir, Hedo, FluSoft, Deïninger, Freedom Scientific (US)
Hjælpemiddelbasen (Denmark)	Freedom Scientific (US)
DLF Data (UK)	Optelec
SIVA (Italy)	HandyTech, Papenmeir, MDV, Freedom Scientific (US)

Table 17. Braille Readers manufacturers included in EASTIN
Source. *Own elaboration*

The largest global manufactures active in this market are generic manufacturers according to the definition explained above. These companies are SMEs with about 100-150 employees, and all are privately owned, in many cases family-owned, enterprises.

In terms of the potential market size for Braille readers, worldwide it is estimated that there are some 45 million people who are blind [82], as well as approximately 135 million people who suffer from low vision[83]. In Europe, there are 12.5 million people with potentially blinding disease.[84]

Although these numbers suggest quite a large potential market, the reality is that only a relatively small group of people actually use or have been taught to use a Braille display. This limitation will keep the market size for these products relatively small, although with an aging population, the total target population with blindness or low-vision problems will continue to grow rapidly.

5.2.2. COMPETITION

The level of consolidation in this product area is not as strong as was seen in the Hearing aids market, although here too there is ample evidence that the biggest players, have been active in their acquisitions strategies. Specific examples include

- Optelec's acquisition of ALVA, a Dutch manufacturer which went bankrupt in 2005.
- Baum Retec AG's 2008 acquisition of Audiodata, a German manufacturer of Braille displays
- Freedom Scientific was formed in April 2000 through the combination of three companies: Blazie Engineering, Henter-Joyce, and Arkenstone. Each of these companies were founded on the basis of using technologies they developed to create practical uses for people who did not — as a result of visual impairment or learning disability — have equal access to information and computing.

Competitive rivalry: The main forms in which the manufacturers in this product area compete is in product development and the subsequent marketing of these products, for example accompanied by a package of services that could include training.

Threat of substitution: As explained earlier, the Braille display product group was chosen for this study as it represents a classic type of AT product that will essentially always be in existence. As long as someone has learned Braille, he/she will be able to use this type of device. Therefore, in terms of a substitution of the Braille reader product group, such a substitution would have to emerge from an entirely different type of technology which enables the same functionality (blind people are able to read and write) but one which is not based on Braille. An example of such a dramatically different solution has been speech-to-text software.

The threat of new entry: The threat of new entrants into the Braille display market is not very severe given that the market size will always be limited to the number of persons who can use Braille. As explained above with regard to substitution, a new entrant may occur with a totally new solution which does not involve Braille, for example with speech-to-text based solutions.

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82 European Commission, 24 March 2006. AGENDA/06/12. http://europa.eu/rapid/pressReleasesAction.do?reference=AGENDA/06/12&format=DOC&aged=1&language=EN&guiLanguage=en

83 World Health Organisation (WHO) 2000. http://ftp.who.int/nmh/Vision2020/eng/contents/3.5.4.htm

84 11th Congress of European Association for Vision and Eye Research (EVER), 3 Oct 2008.

http://ec.europa.eu/commission_barroso/potocnik/news/docs/20081003_speech_ever_en.pdf

5.2.3. DISTRIBUTION

Virtually 100% of the distribution of Braille readers takes place via the traditional rehabilitation distribution channels. In these cases, the key functions of pre-sales advice and after-sales support are strongly connected with the rehab and care sector.

Braille reader manufacturers sell their products through 100% owned branch offices, especially in their home countries. In other countries, the sales to national service providers or rehabilitation centres are usually through 100% owned foreign import offices or through independent distributors.

Given that in most countries Braille readers are eligible to be financed by public service provider systems, there often is a business to business relationship whereby schools or institutions which teach Braille purchase these products and then distribute and/or sell them to blind students. This type of distribution situation represents a classic example of the role of the service providers and where there is essentially no transparency between the end-user and product manufacturer.

5.2.4. FINANCING

Although the specific conditions for receiving a Braille reader may differ from country to country, in general and in most western countries, Braille readers are eligible to be financed entirely or at least in part by a public system.

To demonstrate the differences by country, a questionnaire was sent to the AAATE national contact points (Annex 12.5). The results of this questionnaire by country regarding the product funding and reimbursement models used for Braille readers are included in Annexes 12.5.1 - 12.5.2.

5.2.5. INNOVATION

The biggest driver to innovation in Braille readers is for this product group to keep up with the vast developments occurring in the ICT field, especially in terms of new devices such as electronic agendas, laptop computers, mobile communication devices, etc. to ensure that Braille users can stay compatible and function with these new devices.

Although this push to stay abreast of ICT launches and developments is important, in general, the market segment targeted towards visually impaired people is considered to be a segment that corresponds to a market push scenario in that the overriding philosophy is along the lines of “what can we do, what solutions exist, to help the blind?”

5.2.6. CONCLUSIONS

The Braille displays product group represents a classic AT ICT market, as opposed to market heavily influenced by mainstreaming. This can also be considered a traditional segment in the way distribution is not at all transparent and instead occurs from manufacturers to schools or other institutions for the blind which then make readers available to their end-user students.

Looking ahead, there are two main channels of development. In Europe, the developments are along the lines of Braille technology whereas in other markets such as the U.S., developments are most along the

line of substitute technology such as speech-to-text solutions. These different approaches need not be mutually exclusive, but rather, these two technologies can be complementary and be used together.

This market has seen some degree of horizontal consolidation between the leading manufacturers, although all of these leaders can be considered generic manufacturers in that they have a complete product offer, not just Braille readers, for blind end-users. There is also a strategic choice for companies to consider only the blindness market (inherently more severe and smaller) or to also serve the low-vision market. The advantage of serving both is that clearly the market size is larger, and coincides with aging population trends. Also, the needs of the low-vision market can generally be satisfied through a wider array of product options (magnifiers, etc.) than can be done for the blind population.

5.3. Environmental control systems

Environmental Control Systems (ECS) refer to assistive products for used for controlling from a distance and include functions such as alarming, indicating and signalling. Examples of products include door signals, and door warners, devices either operated by the user or activated automatically in case of personal emergency, monitoring and positioning systems. This is an industry that is closely related to the domotica industry.

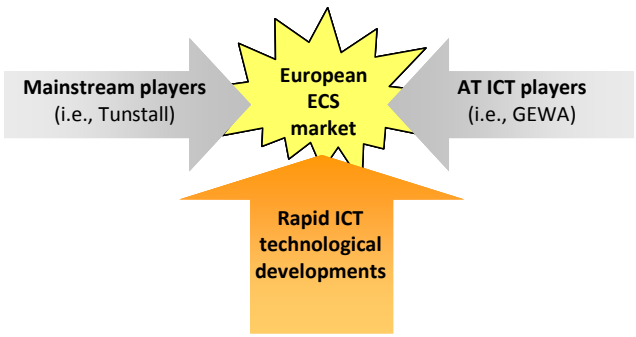
The ECS industry is a worldwide one and led by global players, who can be roughly grouped into the following four categories:

1. **Multinational mainstream hardware companies** that produce ECS. Also produce components for assemblage by other companies. Examples of firms include: Siemens, Philips, Busch Jaeger.
2. **Multinational mainstream Rehabilitation companies** who have ECS as a small part of their product portfolio. Examples of firms include: Otto Bock (Germany), Protéor (France), Possum Group (UK).
3. **Multinational Companies** who provide **technology for the Care Sector**. Examples of firms include: CSSlabs (Germany), Sicare/Dr. Hein (Germany), PikoSytems (Finland), Danish Care (Denmark) CLB Unicare (Netherlands), CUC (UK), Condigi Televagt A/S (Denmark)
4. **Multinational Specialised Companies** who have ECS as the main part of their business activity. Their product portfolio is often combined with Communications devices (product group 5). Examples of firms include: GEWA (Sweden), Assist Tec Europe (Belgium), RTD (Netherlands).

5.3.1. COMPETITION

The situation in terms of competition in the ECS market is quite interesting in that the market is developing from the AT to Mainstreaming direction as well as the Mainstreaming to AT direction. In addition, the market experiences the further complexity of fast moving developments on the technology side. Within the product groups considered in this study ECS is the only one experiencing such a dynamic evolution.

Figure 15. Representation of the dynamic European ECS market
Source. *Own elaboration*



In addition to the Mainstreaming and AT industry players, to some extent additional competition could come from the home security industry in that their business model is somewhat similar to that of the independent living model. Similar aspects include the sensor + receiver + monitor concept. However, in the case of home security, the response is essentially always limited to a real emergency, whereas in independent living end-users can frequently contact the monitoring centre just to make sure someone is there, not only in cases of emergency. Such a different expectation on the part of the end-user indicates important differences between the security industry and environmental control system business models.

The following list includes the leading companies in the European ECS market which have entered the market from the AT industry perspective, as opposed to from the Mainstream perspective.

- NEMO+ (France)
- GEWA (Sweden)
- SiCare (Germany)
- KEO Pilote (France)
- PicoPhone
- Aurora (Denmark)
- Primo (UK)
- TASH (USA)
- James II (USA)
- Easy by Voice (USA)
- SRS Mini / Lite / Intellec (UK)
- Apollo (Denmark)
- InControl
- PEC (Canada)

It is relatively common for ECS systems to integrate communication devices for people with disabilities given that many people who need ECS also have problems with speech or motor (i.e., hand) functions. As a result, some manufacturers have integrated communication devices as a part of their ECS. Examples of these companies include: Mudikom, Lucy, Maxess Products LDT (UK)

Mainstream products with user friendly ECS interfaces are examples of Design for All products. The competition from Mainstream to AT market players is strong, and includes those companies focused on the senior or elderly market. Examples of these types of companies include: Telecommande infrarouge 7T80 (France), Senior light / Pilot (Germany) Falck (Nordic Countries).

An additional way in which ECS combines with other types of products is through ECS integration with electric wheelchairs. The Permobil, Otto Bock and Sunrise Medical companies are three examples of companies that offer ESC systems as a part of an electric wheelchair. The market for these integrated systems is characterised as being niche, and with high margins. For example, most full option electric wheelchairs include ECS.

In terms of market focus, ECS companies active in the European market can be grouped as follows: those which associate themselves closer with the target group end-users or with the entities dispensing the care.

Entities which dispense care refer to companies that are strongly connected with the rehabilitation and care sector, including nursing homes. It is relatively common that therapists in these kinds of institutes develop bonds with ECS delivering companies, given that many of these companies have occupational therapists as staff personnel, and are important sources of information on product developments. Examples of companies that use this type of distribution channel include: Cree (France), HumanSystem (Germany), Anditec (Portugal), Epitech (Germany), ActiveCommunication (Switzerland) Mechatron (Austria), Eoprim (Spain).

The alternative approach to the above distribution strategy is that used by companies who base this "bond" on the disabled clients / target groups. It is important the use of marketing employees in these companies who are disabled. Examples of companies that use this type of distribution channel include: Skil (Belgium), Rehavista (Germany), KMD (Netherlands), FST (Switzerland).

ECS is a type of product strongly connected with other central elements of a person's home or environment. Therefore the ESC industry has strong bonds with companies that deliver door opening systems, curtain systems, etc. (Examples: FAAC (Italia), Goelst (Netherlands), Rademacher (Germany) GIRA (Germany), as well as those that provide electrical installations (i.e., local electricians). Additional competition comes from providers of integrated ICT systems. Examples of companies include: Sensory Software (UK), Speechsoftware Easy by Voice, TipTel.

5.3.2. DISTRIBUTION

The ECS market uses three main routes as distribution channels:

1. Traditional distribution though rehabilitation channels. Characteristics of this channel include the retail, pre- and after-sales, and business to consumer functions. Virtually all EU countries have several ECS specialised companies.
2. A second retail system is selling over the internet. Five companies found to use this channel include: enablemart.com, rehabtool.com, auxilia.it, ablenetinc.com, Dal-Pres.dk.
3. Importers and geographical-based distribution by country. Key characteristics of such a system include: a dealer organisation known to deliver expertise, training, and quality systems. Two European companies found to sell and distribute ECS through such a deliver system: include GEWA Norway (16 local dealers) and Cree France (90 local dealers).

5.3.3. FINANCING

From the end-user perspective, ECS is a difficult product because there is tremendous variability between what is financed by insurance or a health service and what is not. Further, these are not "plug and play" products; installation, connection to a monitoring centre, maintenance, small modifications in carpentry and/or electricity are all types of services which can frequently be required. Since these types of modifications are not technically part of the product itself, it is far from clear who should pay for extra costs related to installation. For example, if some minor carpentry work needs to be done to install a monitor panel, who should pay the carpenter? The ECS manufacturer? The service provider (be that a public authority, an association, or a private insurer)? The end-user and/or his family?

Because these types of costs, as well as the product and ongoing service costs may or may not be covered by different types of systems, the issue of financing can be especially relevant for the ECS group of products.

To demonstrate the level of variation in ECS financing policy in Europe, a questionnaire was sent to the AAATE national contact points (Annex 12.5). The results of this questionnaire by country regarding the product funding and reimbursement models seen in the ECS industry are included in Annex 12.5.1 and 12.5.2.

5.3.4. INNOVATION / R&D

Since most ECS is distributed through rehabilitation centres, at a European level, most innovation and R&D activities in ECS is also connected with these types of centres. Due to the intense contacts with end-users and those who work directly with end-users (patients, clients, therapists, doctors), as well as the gains in the technology itself (i.e., user-friendly, smarter, programmable systems, miniaturisation, improvement of the quality of batteries, intergraded systems, etc.), ESC is a product area that rapidly innovates. Further, some firms active in the ECS product area define themselves via their R&D activities. Examples of such companies include GEWA Sweden, Kajoteca (Finland) CSSlabs (Germany). In general, universities and other more centred in basic research account for little R&D in the ECS area.

New products and technology in ECS are often introduced and demonstrated for professionals in clinics, or at key industry international trade events such as REHACARE (Germany), MEDICAVA (Paris), CSUN (US), Support (Netherlands).

5.3.5. CONCLUSIONS

The ECS product area is especially interesting to consider largely because it is a unique example of development and competition coming from both the Mainstream to AT area, as well as from AT to Mainstream. With so much activity as well as basic developments in the technology itself, this is a competitive, fast-moving field.

ECS is also somewhat unique in that the service portion of a sale is integrally linked to the products themselves given that ECS must be installed and connected to some sort of monitoring agent. Also instruction for the end-user on how ECS is used is very important to making these installations and the use of ECS successful.

Perhaps due to this intense and prolonged direct contact with end-users as well as with their direct care givers, elements such as company reputation and reliability are main factors in which the companies in the business compete. As one industry observer noted, “in ECS one cannot afford to get it wrong the first time.”

5.4. Software

Software is such a large field, that first software in the AT industry must be defined along the following three lines:

- Educational software
- Communication software
- Software to make information more accessible (i.e., website development)

The first two of these groups, Educational and Communication software, are highly dependent on language, which means that companies working in these fields may often be small firms working only in their national, natural language market. Software for making information more accessible, such as website development software, is not so language development in that programming code used to develop or adapt such information (a website) can be a language in an of itself.

The following diagram shows the relationship between how AT software is developed and gets to market. Large firms, such as Microsoft, Siemens or IBM, usually pursue two possible routes to market:

mainstreaming their software to include accessibility features that can be used by the AT market or to directly create spin-offs that are dedicated to AT market needs.

Research centres and institutes may also be a way in which software spin-offs for the AT market are created, although it is also common for these entities to make their software developments available for free through their websites or similar vehicles as shareware or freeware.

Both the creation of spin-offs (usually rather small enterprises, at least at the start), as well as market conditions such as language as a barrier to EU-wide scale mean that SMEs are especially important, essentially forming the backbone, to the AT software market.

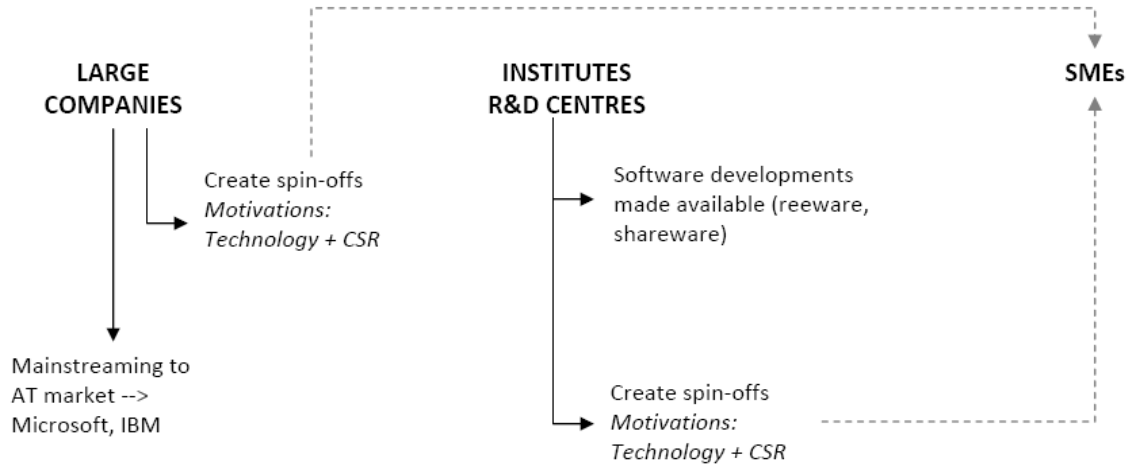


Figure 16. Different types of companies in the European AT software market

Source. *Own elaboration*

Mainstream companies do not have their product development and design activities centred around the visual impaired market, whereas AT-ICT companies do develop and design product specifically focusing on the visual impaired. As indicated by the diagram, there examples exist (Siemens -> Dr. Hein, AT&T -> Wizzard Software) where Mainstream companies spin-off a company which does have a specific AT market focus.

As explained earlier, language accounts for an important barrier in this market, although it needs to be noted that some types of software, for example text to speech, can offer various options that make it easy to switch to various possible languages (for German end-users, Dutch end-users, etc.) in much the same way that one can change the language programming of an GPS device.

5.4.1. PRODUCT CLASSIFICATION

Software products used for training and learning can be classified according to the following types of functionality[85]: Auditory, Communicative, Dyslexic, Cognitive and Visual. A classification system based on functionality is also supported by the structure of the ISO 9999:2007 where software is classified at the class division level by its functionality.

Auditory software is mainly training software for manual communication whereas Communicative software is mainly functional and includes software-based synthesizers, pictogram systems and editing

[85] Support-EAM IST funded Project (Supporting the creation of a e-Accessibility Quality Mark) http://www.support-eam.org/waec/en/02_disabilities.html#dda

software. Software for those with Dyslexia is composed of capabilities such as supportive writing software featuring word prediction (predictive typing), on-screen keyboards, and screen-reader speech feedback (pitch and speed).[86] Cognitive software is that which helps develop an individual's ability to access, process, or remember information. Specific examples include auditory alerts with text messages and programs designed to provide cueing and planning assistance for people with memory and attention disorders.[87]

For the visually impaired, essentially all software is functional: speak synthesis software, magnifiers and screen reading software, "adjustment programs" for Windows, etc. Screen reading software is an example of a product that can also be used for dyslexic and communicative purposes. Likewise, software for the communicative disabled is often also effective for the cognitive impaired.

For this study we will focus at the software for the visual impaired because this is the area with the greatest number of manufactures and the software can be considered 100% functional and has a very clear user group: the blind and those with low-vision. Other types of software, such as communication software, are a less clear market because the user groups can be quite different.

5.4.2. FIRMS IN THE AT SOFTWARE MARKET

The following table presents leading companies in the European market of software for the visually impaired.

[86] http://www.dyslexia-parent.com/software.html

[87] http://www.abilityhub.com/cognitive/index.htm

ORGANISATION	URL	COUNTRY	PRODUCT RANGE
Ai squared	www.aisquered.com	USA	AT-ICT: Integrated Magnifier/screen reader software (ZoomTexT)
Acapela** (Brands: Babel technology, Infovox, Elan speech)	www.acapela.goup.com	Denmark (Belgium, France)	Mainstream manufacture which developed a **toolkit** for generating text in to speech
Dolphin	www.dolpinuk.co.uk	England	AT-ICT; Screen readers, text to speech software (Lunar, SuperNova)
Silvercreations AG	www.silvercreations.de	Germany	Mainstream & AT-ICT: spin off products text to Speech (Audiocharta/ Live Reader)
Vertical – Informatik	www.verticalinformatik.de	Germany	AT&T: magnifier- and screen reader software for the Macintosh computer.
Nuance communications	www.nuance.com	USA	Mainstream manufacture also develop Dragon NaturallySpeaking and Real Speak: Text into speech .
AT&T natural voices **	www.corp.att.com	USA	Mainstream manufacture which developed a **toolkit** for generating text into speech software. Exclusively distributed by: Wizzard Software (www.wizzardsoftware.com
Serotek Connected Technology	www.serotek.com	USA	AT-ICT : screen reader software (System Access)
Code factory	www.codefactory.es	Spain	Mainstream & AT-ICT: Accessibility software to communications devices (PDA , mobile phones): Speak, Magnifier & Braille.
Sensory software LTD (Screenreader)	www.sensorysoftware.com (www.screenreader.net)	England	AT-ICT: also developing communication software (Grid) and screen reader software (Thunder*)
Humanware (Brands: Pulse data, Visu Aid)	www.pulsedata.co.nz	New Zealand (Australia)	AT-ICT: text to Speech/Braille (Maestro)
ELeX GmbH	www.etex.de	Germany	Mainstream & AT-ICT; Text to Speech software (TTS)
Freedom Scientific**	www.freedomscientific.com	USA	AT-ICT: Screen reading software for Windows through speech and Braille displays (Jaws) and magnification software (MAGic)
Baum Retec AG**	www.baum.de	Germany	AT-ICT: Magnifier software (Galileo), screen reader (Virgo)
Technology and Integration	www.tni.be	Belgium	AT-ICT. Doc Reader: Text to Speech.

******* *These companies produce Software Developers Kits (toolkits), which provide the development environment necessary to integrate a given speech technology into an application. They subcontract companies.*

Table 18. Leading companies in the European market of software for the visually impaired
Source. *Own elaboration*

Of the 15 companies included in above Table 18 are manufactures which develop one or two software applications for the blind and /or people with low vision. In addition, two other companies AT&T (USA) and Acapela (Europe), subcontract other as application developers for the visually impaired market. As indicated in the Product column, the majority of these companies can be considered as AT-ICT companies, where the majority of the income comes from the AT market. Fewer of the companies are mainstream companies with the majority of their income coming from non-AT markets (i.e., text to speech software). Mainstream applications for software developed for the visually impaired can include call centres which frequently use text to speech software.

With the exception of AT&T and Nuance, most of the companies mentioned are small firms with less than 50 persons. Sensory Software LTD, Baum Retec AG, and Acapela are mid-sized companies with between 50 and 500 employees.

5.4.3. COMPETITION

This is a fast-moving, technology-driven market where a key driver is to develop software with the greatest possible number of uses, thus leading to a larger potential market. In some fields, such as accessibility to information, standardisation in the technology used and/or legal requirements to make information and websites accessible help drive and facilitate additional companies to enter the market. For example, in Spain where recent legislation states that all public sector websites must be accessible by 2008, a leading software company in this market stated that the number of competitors is always increasing, given that the market is there and the technology necessary is widely available.

5.4.4. DISTRIBUTION

Software programs from England and the US are generally available through the internet (i.e., by downloading from a website) as well as from other "physical" systems of distribution. However, in Europe, most software is sold and made available though more traditional distribution channels such as specialised rehabilitation centres.

All companies distribute their toolkits or applications to developed countries on a global level, and many distribute their software are "freeware" for individual use, and only charge for corporate or institutional use.

Rehabilitation centres and other specialised AT entities (for example the ONCE Foundation) are the key distribution points for these software products accounting, with virtually all software moving through these channels to get to end-users. Up until this point in the value chain, the software developer companies, do the other value chain activities (R&D, production, marketing to the rehabilitation channel).

5.4.5. FINANCING

Although as in most AT products specific conditions may vary from country to country, in most developed western countries, the cost of AT software is subsidised by a public system. Depending on the country, training on how to use the software can also be included in the cost (for example in The Netherlands).

To demonstrate the level of variation in financing policy for AT software in Europe, a questionnaire was sent to the AAATE national contact points (Annex 12.5). The results of this questionnaire by country regarding the product funding and reimbursement models seen in the European AT software industry are included in Annex 12.5.1 and 12.5.2.

5.4.6. CONCLUSIONS

For all types of AT market software (not just for the visually impaired), the market is a mix of both AT only companies as well as mainstreaming companies. Spin-off companies created from larger, mainstream organisations are more readily seen in this market compared to in other AT ICT product groups.

Also because of the small market size as well as few technology or knowledge barriers to entry, virtually anyone with the sufficient knowledge can develop their own software from essentially their home and distribute it via freeware from a website. This type of informal development seems to represent an important part of the overall AT software market, although due to its very informal nature, it extremely difficult to determine the exact dimension of such activity.

5.5. Communications devices

This product group includes devices for assisting a person who has insufficient voice power to speak using his/her own voice. The concept of communication however is not limited to voice communication. Rather it is any kind of signalling or other method used to enable a disabled person to communicate with others. Communication device solutions for disabled users are very specific, individual solutions given that in many cases, the exact communication problems that a disable end-user has are quite unique. However, these products also have great potential for mainstream applications, for example in speech to text technology.

Various types of devices can be included in the scope of the above mentioned category, however, in general terms, these communication devices support disabled people who are have visual and/or speech-language and/or hearing and/or physical disabilities. These devices assist users with communication as well as to manage their environment.

Given the types of disabilities that this product area addresses, solutions are better understood to mean augmentative and alternative communication solutions. Complete products are often a combination of several devices that enable the most complete communication solution for the disabled end-user. These solutions are tailor-made or in other ways customised to the meet the specific needs of an end-user.

The determination of which devices should form part of the solution as well as the assembly of the solution itself is generally done by specialised firms or rehabilitation organisations. Since these agents are the ones developing the specific solution, they can be considered as “manufacturers” although they are generally not producing or manufacturing the different devices used. The different types of basic devices which generally form part of a global end-user solution are:

- Communication aids (including computer access aids)
- Switches
- Environmental controls
- Computer software.

Additional devices or information resources which are often used include:

- Resources books: teaching or learning books and or workshop (training)
- Mounting solutions: to organize and make the communication solutions more physically accessible.

As explained above, entities which design and assemble the different communication solutions can be considered to carry out the manufacturing function. The following list of companies represents key players and manufacturers of the four groups of component devices common to most end-user solutions.

Company name	Website	Country of origin	Communication Aids	Switches	Environmental Controls	Computer Software	Mainstream/ AT
Toby Chuchill Limited	www. Toby-Churchill.com	England	x				AT
Dynavox Technologies	www.dynavoxtech.com	USA	x				AT
Mayer-Johnson	www.mayer-johnson.com	USA				x	AT
Words+	www.words-plus.com	USA	x			x	AT
Technology and Integration	www.tni.de	Belgium	x			x	AT
Attainment company	www.attainmentcompany.com	USA	x			x	AT
Traxsys Input Products	www.assistive.traxsys.com	USA					M*/AT:
AMDI	www.amdi.net	USA	x	x	x	x	AT
Viking Software company	www.viking-oftware.com	Norway				x	AT
Ablenet Inc**	www.ablenetinic	USA	x	x	x	x	AT
Keytools ltd	www.keytools.co.uk	England	x			x	M & AT
Adaptivation inc.	www.adaptivation.com	usa	x	x	x	x	AT
Sensory software ltd	www.sensorysoftware.com	England				x	AT
Gewa sa	www.gewa.se	Sweden	x	x	x		AT
Zygo Industries	www.zygo-usa.com	USA	x	x	x		AT
Inclusive Technology	www.inclusive.co.uk	England	x	x	x	x	AT
Intellitools***	www.intellitools.com	USA				x	AT
Crick Software	www.cricksoft.com	England	x			x	M & AT
Dolphin Technology	www.dolphin-ic.com	usa	x				M
Widgit software	www.widget.com	England				x	M & AT
Saltillo Corporation	www.Saltillo.com	USA	x	x	x	x	AT
LC technologies inc	www. Eyegaze.com	USA	x				M*AT
Tobii ATI Inc	www.assistivetech.com	USA	x	x		x	AT
KMD BV	www.kmd.nl	Netherland	x		x		AT
Qualilife SA	www.qualilife.com	Swiss				x	AT
Blink-twice	www.blik-twice.com	USA	x				AT
Touchspeak	www.touchspeak.co.uk	England				x	AT
SRS Technology ltd	www.srstechnology.co.uk	England			x		AT
Tescol Ltd	www.tescol.co.au	Australia			x		AT
Ability technology Limited	www.ability.co.au	Australia	x		x		AT
Assistive Ware	www.assisitiveware.com	Netherlands	x			x	AT
Origin Instruments corporation	http:// orin.com/company	USA	x	x		x	AT
RJ coopers & associates	www.rjcooper.com	USA	x			X	AT
Anycom	www.anycom.se	Sweden	x			x	AT
Falck SA	www.falckvital.no	Norway	x		x	x	AT

Table 19. Key players in the European Communication Devices market of the four groups of component devices common to most end-user solutions.
Source. *Own elaboration*

Virtually all of these companies have an international distribution network covering the developed western world, which work with independent wholesalers/retailers who serve as the "assembling manufacturers". These independent wholesalers/retailers have a multi-vendor strategy and therefore have different suppliers, products in their total offering to enable the best combination of solutions for end-users. Because these assembling manufacturers serve as both the diagnostician as well as the manufacturer, they are the absolute key link to end-users, and thereby as considered the most value added portion of the supply chain.

The industry as such is still quite young (approximately 20 years of experience) and is concentrated in the US. In Europe, the main point of activity is in the UK. Most companies are quite small businesses because the communication devices market is one based on the need to develop individualised solutions for end-users which therefore essentially eliminates economies of scale. If there are no economies of scale, and companies must also cope with fragmented financing and procurement policy, they are more likely to be small.

Manufacturers-assemblers generally compete on their ability to access the best devices and understand how to combine these to create the best overall communication solution for an end-user. This requires both knowledge, in terms of how to diagnose an end-user's needs, as well as good commercial positioning in order to have the correct mix of devices in a product offering.

This dual set of skills as well as the small market size (essentially individual solutions), makes this not an overtly attractive segment of the AT ICT product market and thus not one in which there are a great deal of new entrants.

5.5.1. DISTRIBUTION

As explained, virtually 100% of the distribution of augmentative and alternative communication takes place at via the traditional rehabilitation centre channel and related care sector.

5.5.2. FINANCING

As in most AT ICT products, the specific conditions vary from country to country, but in most developed western countries, the cost of these types of AT ICT communication solutions are subsidised by a public system.

To demonstrate the level of variation in financing policy for these component products in Europe, a questionnaire was sent to the AAATE national contact points (Annex 12.5). The results of this questionnaire by country regarding the product funding and reimbursement models seen in the European communication device industry are included in Annex 12.5.1 and 12.5.2.

6. IDENTIFICATION OF THE COMMON NEEDS OF THE INDUSTRY

It has been frequently commented, since at least the Horizontal European Activities in Rehabilitation Technology (HEART) from 1993-95, that the European AT ICT industry is fragmented. In part, this is because of the size of the companies and the way in which they originate, often to service or solve the particular need of a friend or family member, and not as a business with growth and profitability as its primary drivers.

However, the issue of fragmentation also is ingrained in the public level in that different countries of the EU have their own policies and structures to attend to the AT world. This complexity and need for specific local attention serves as an important barrier to companies selling outside of their own home market, and hence, growing.

To demonstrate this type of fragmentation and consequent complexity within public systems, a questionnaire was sent to the AAATE national contact points (Annex 2) and for specific information as to procurement and financing models, regulatory entities, and relevant associations used in the five product areas explained in Chapter 3 of this report:

- Hearing aids
- Braille readers
- Environmental Control Systems
- Software
- Communication devices

HEARING AIDS

The Hearing Aids product group represents one of the biggest (in terms of expenditure), oldest and most widely used forms of assistive technology. The hearing aid market is quite well-developed and leading players are multinational companies, a reality which is quite different from the more typical SME dominated AT industry.

The degree of fragmentation within the Hearing Aids market is low. As explained in the preceding chapter, the Hearing Aids market is dominated by multinational corporations and is relatively mature and consolidated (market share figures from Germany 2006: 4 companies with over 90% of market[88]).

88 German Anti-Trust Office (Bundeskartellamt), 3rd Decisión Division, B3 578/06. 2006.

BRAILLE DISPLAYS

The degree of fragmentation within the Brialle Displays product group is Medium or Average. On the one hand, this product group will always be an AT product and therefore a more fragmented market. Braille is not likely to extend to mainstream applications, and only approximately 10% of blind people in Europe are Braille readers.[89]

However some players (Optelec, Baum) are moving somewhat mainstream (thus decreasing fragmentation) with product extensions into the low-vision market, and becoming larger AT firms (i.e., 200 employees).

ENVIRONMENTAL CONTROL SYSTEMS

The Environmental Control Ssytems (ECS) product group has strong potential for the mainstream market. As a result of its large and attractive potential, different players are entering the market from different areas: for example, technology push specifically to AT needs, or home security firms adding tele-care elements to their basic security service business model. At the same time, developments for the elderly market also have clear synergies with the disabled end-user segment.

The degree of fragmentation of the ECS market is estimated to be Low-Medium. This product group is developing rapidly due to activity and new market entrants from various directions. This is a product group with some basic economies of scale which favour forming larger companies (and less fragmented markets). The negotiation of large contracts in tele-health and tele-care with national health services (for example NHS in the UK), favours a larger, reputable firm able to demonstrate an ability to set up a complete, comprehensive solution. However, there is a limit to the economies of scale. Local qualified, properly-trained and qualified service response matters to clients and there is a limit to how many patients one monitoring centre can serve. The aging population and associated cost pressures will continue to be a strong industry driver. Any degree of fragmentation will result from competitors entering from different markets (i.e., disabled or elderly segments), but eventual market consolidation to a few key players is a likely result.

SOFTWARE

Software developments can range from that developed to make a specific AT product (Braille display) work with traditional non-AT products (a PC), as well as software 100% dedicated for specific AT use, such as environmental control systems based on software which enabled a quadriplegic person to control his / her environment using only voice commands.

In the 21st century, software is a critical market for just about everyone, and disabled people are no exception. Rather, in many cases, these groups of end-users may be even more dependent on software developments and other technological developments as new ways to improve their accessibility to the world.

The degree of fragmentation in the software market is estimated as High, *for specific AT solutions*. Within the AT software product area, there are many small players who develop particular solutions, often to achieve interoperability with mainstream ICT devices. In addition, the language factor is important – there may be 10 companies in Europe developing solutions to solve the same problem, but each of them operates exclusively in their local language market.

On the other extreme in terms of the degree of fragmentation are the large mainstream software companies (Microsoft, Adobe) who incorporate accessibility features to their basic products. Within the

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[89] German Pharmaceutical Industry Association, 18 June 2007. http://www.bfarm.de/nn_1232318/SharedDocs/Publikationen/DE/BfArM/publ/praesent/dialog__2007/070618/Vortrag__Brueckner,templateId=raw,property=publicationFile.pdf/Vortrag_Brueckner.pdf

mainstream players, there is very little fragmentation, instead the players are at risk of being sued for anti-competitive practices.[90] It is likely that mainstream players will continue to improve accessibility and develop solutions that achieve 95% degree of accessibility, but that the final 5% of the accessibility solution will be generated by small AT software providers, thus leaving the AT-only market rather fragmented, and application and/or language specific.

COMMUNICATION DEVICES

Communication Devices is a product group that is categorised for a High degree of fragmentation. The reason for this is based on the need for this product group to create and deliver individual solutions for end-users. Because there is no one standard solution, there are virtually no economies of scale. This results in the product group being dominated by small players which then results in a fragmented market.

SUMMARY VIEW

In terms of the relative comparison in the degree of fragmentation in each of these product groups, the following Figure presents a summary comparison. It is useful to think of Fragmentation as the other extreme of Consolidation, in that a Fragmented market is made of many small players, each with a small market share where no one company is especially dominant, whereas a Consolidated market has relatively few players, and each has a larger and more established market share.

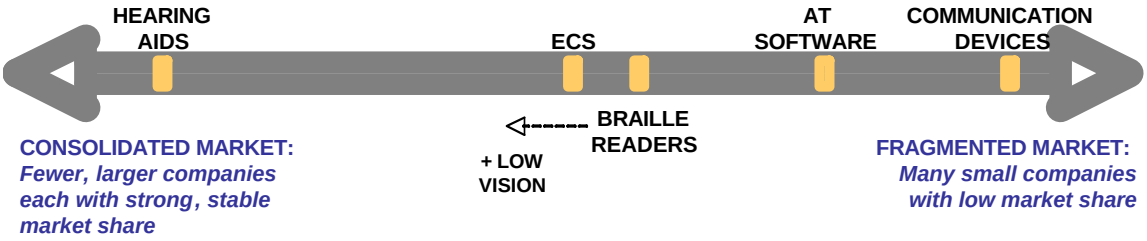

Figure 17. AT ICT Product group summary comparison on fragmentation

Source. *Own elaboration*

In this Figure, Communication Devices are at the extreme of Fragmentation. As explained above, this product group is composed of companies that develop individual solutions which result in few economies of scale for companies, and thus companies stay small.

Software at the AT level also has relatively few economies of scale, in particular due to the language customisation issue necessary each geographical market. However, in terms of mainstream software, as is well-known from recent years of anti-trust legal actions, this is a highly consolidated market.

Braille readers by themselves are a more fragmented product group, because as an AT product (i.e., the general public does not use Braille) the market is inherently smaller than is the general consumer market. To the extent that Braille reader companies diversify into low-vision products which are used by a wider and larger market, companies will gain more economies of scale advantages and will tend to be more Consolidated.

[90] http://news.bbc.co.uk/2/hi/business/6998272.stm

Environmental Control Systems are positioned right in the middle of the spectrum to reflect the development that is coming from both sides of the market: the AT side (representing the more Fragmented market) and the Mainstream side (representing the more Consolidated end of the market).

Finally, Hearing Aids are the product group at the extreme of Consolidation, because as explained previously, this is a highly mature market where the number of competitive companies is quite small, each having achieved a significant market share.

7. STRATEGIC ASPECTS

7.1. EU AT ICT INDUSTRY DRIVERS

As a key part of any industry analysis, it is necessary to identify and understand the key drivers of that industry, in terms of the factors that companies need to attend to in order to be successful.

Regarding the basic view of the EU AT ICT industry on what drives their business, the following four themes clearly represent the most important factors given the level of agreement expressed[91].

Q3 – *Important drivers for the success of my firm in the Assistive Technology ICT industry in Europe are:*

- ***Q3a*** *– Knowledge of the disabled end-user. (24/30 very much agree; 4/30 somewhat agree; 0/30 somewhat disagree; 2/30 very much disagree)*
- ***Q3b*** *– Knowledge of the diagnostician, prescriptor of product solutions. (19/30 very much agree; 8/30 somewhat agree; 1/30 somewhat disagree; 1/30 very much disagree; 1/30 not relevant)*
- ***Q3c*** *– Knowledge of the rules and procedures of different national service provider systems in Europe (14/30 very much agree; 13/30 somewhat agree; 2/30 somewhat disagree; 1/30 very much disagree)*
- ***Q3d*** *– Flexibility in product design to be able to serve different geographical markets (11/30 very much agree; 14/30 somewhat agree; 3/30 somewhat disagree; 1/30 very much disagree; 1/30 no answer)*

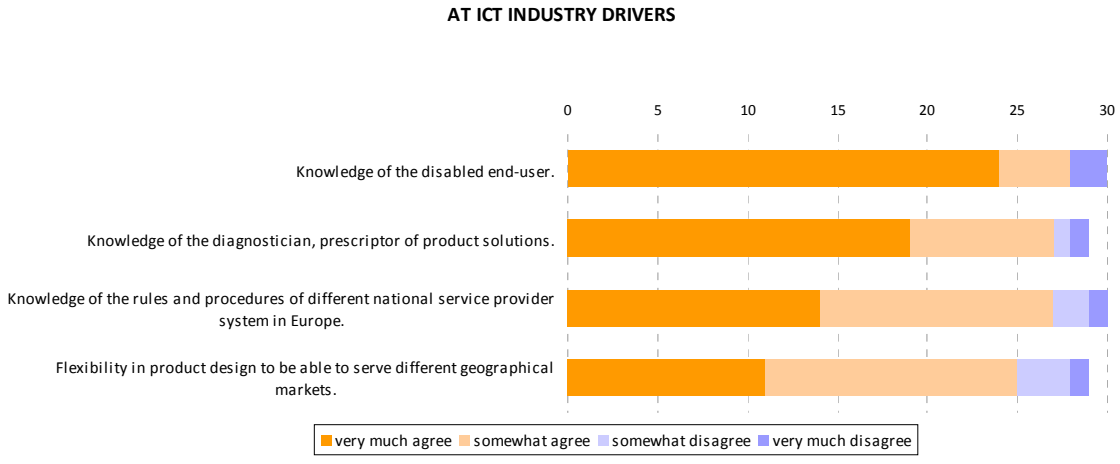

Figure 18. Important drivers for the success of my firm in the AT ICT industry in Europe[92]
Source. *Own elaboration*

[91] See Methodology Annex, Validation Questionnaire

[92] See Methodology Annex, Validation Questionnaire

As shown, 28 of 30 respondents agree that knowledge of the disabled end-user is an important driver. As to how companies gain this access to disabled end-users, from 25 interviews made with European firms contacted for this study, the most frequent methods mentioned were through an association dedicated to the disabled community (3 companies), or by disabled people as company employees (2 companies), and/or through their distributor network (6 companies).

As to the reasons for this contact, all responses mentioned a combination of the following: to detect market needs, get feedback on the design and development of new products, and testing new products.

Everyone mentioned that end-user feedback is essential for product development. The AT ICT industry is unique in that in many markets, the end-user and the financing agent are not the same person. Since third party financing agents are less likely to pay for products that are interesting but not essential, companies must develop their products around solving a specific problem or function. It is not enough for a product to be technologically interesting to be financed, it must fit the strict criteria of the financing entity, such as functionality for the end-user. Therefore, end-user needs are absolutely central to the product development process. If not, it will be much more difficult for a product to be successfully developed and commercialised.

The responses also indicate the importance of companies knowing how to market their product in terms of rules and agents involved. In addition, is the importance that this product or service meets the real needs of end-users with disabilities.

As for flexibility in product design to meet different geographical markets, only 11 of 29 questionnaire respondents very much agree that this is an important business driver. Companies interviewed explained that in some way they do adapt their products, above all in order to be able to sell products outside of their home market. Another cited reason was to be able to customise a product to the individual needs of an end-user.

This latter reason is clearly closely tied to the type of product. For example, the communication devices product area is almost entirely made up of individual solutions tailored to the specific needs of the disabled end-user. Therefore, essentially all of the products that form a part of communication devices, are by definition, adaptable so that they can be combined in different ways to form part of a personalised solution. Environmental Control Systems (ECS) is another product area where the installation of the specific system is entirely personalised according to the specific needs of the end-user.

What is key to both communication devices as well as ECS is that the component parts of the total solution are what must have high degrees of flexibility and be able to operate with other devices. The work of the ECS and communication device companies is to understand how to adapt these component devices to be able to work with the other necessary components that make up the global solution.

In cases where the specific type of adaptation was mentioned, the most frequent responses were adaptations for language (6), electrical (2), and design (including cultural differences) (2).

The common response was that these kinds of country-specific adaptations are simply understood and accepted as a part of doing business in Europe. What was mentioned was that in the AT ICT industry, these types of adaptations are essential in order to reach international markets, because of the low volume numbers in individual national markets. In other words, in order to reach any kind of economies of scale, companies must sell their products to international markets, which in many cases, implies specific types of product adaptations.

One company commented that the ideal would be to have products standardised enough to capture some degree of economies of scale but at the same time products that can be customised enough to form individual solutions for disabled end-users.

It is interesting that there were not responses related to manufacturing (i.e., low-cost manufacturing installations) or access to technology (i.e., having a cutting edge R&D department) being important industry drivers. Even though it could be argued that these options were not explicitly included as one of the drivers mentioned in the questionnaire, there was a space to indicate other business drivers beyond

those listed. Only three companies included a write-in answer and none of those related to manufacturing or technology issues ***(****To be part of a network of relationships; To have access to national subsidies for assistive technology; Level and type of product payment by the health insurance companies)*[93]. In summary, it looks that what is most keenly driving the EU AT ICT industry are the marketing challenges related to selling their products and services.

7.2. EU AT ICT INDUSTRY BARRIERS

Meanwhile, in terms of the most significant barriers to the development of their business in the EU, the following statements were all strongly validated[94]:

Q4 – *Important barriers to the development of our business in the EU are:*

- ***Q4a*** *– The lack of knowledge by the marketplace of the types of solutions available (i.e., not all possible AT ICT solutions are included in national service provider systems). (15/30 very much agree; 11/30 somewhat agree; 4/30 somewhat disagree; 0/30 very much disagree)*
- ***Q4b*** *– The cost and time needed to navigate the different national service provider systems in Europe in order to ensure compliance(19/30 very much agree; 8/30 somewhat agree; 3/30 somewhat disagree; 0/30 very much disagree)*
- ***Q4c*** *– The different interpretations of national service provider systems at the regional level (thereby fragmenting a national market into regional markets) (13/30 very much agree; 13/30 somewhat agree; 4/30 somewhat disagree; 0/30 very much disagree)*
- ***Q4d*** *– The lack of a coherent social policy for subsidising/reimbursing assistive technology products and the lack of coordination between the stakeholders involved. (19/30 very much agree; 7/30 somewhat agree; 4/30 somewhat disagree; 0/30 very much disagree)*
- ***Q4e*** *– High assistive technology ICT equipment prices (i.e., which result in lower overall sales volume). (8/30 very much agree; 10/30 somewhat agree; 7/30 somewhat disagree; 5/30 very much disagree)*
- ***Q4g*** *– Other (2/30)*
    - *Language is a barrier to sales in different EU markets because language is fundamental part of the product (* Germany <10 SME)*

93 See Methodology Annex, Validation Questionnaire

94 See Methodology Annex, Validation Questionnaire

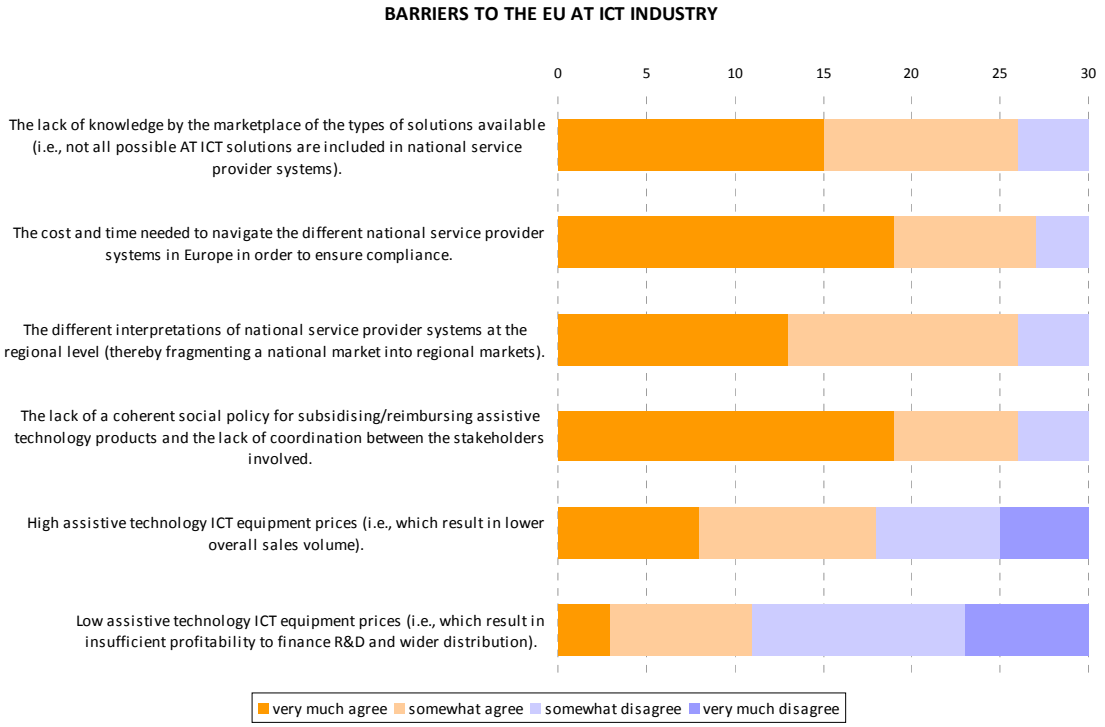

Figure 19.

Important barriers to the EU AT ICT Industry[95]

Source. *Own elaboration*

Essentially, in much as can be seen from the results on business drivers, the results regarding barriers reflect the key role that service providers have as the lynchpin marketing agent for companies getting their products sold. According to these results, EU AT ICT companies feel that service providers have insufficient knowledge, coordination, regional interpretation of rules, and that it requires a great deal of money and time to navigate their requirements. The level of agreement as to these factors being barriers is quite superior to the issue of selling prices, where responses were much more split between those who agree and those who do not.

Given the level of importance that service delivery systems have for industry, companies interviewed were asked to provide examples of good and difficult national systems for AT ICT products. Their responses could be grouped into three categories: good systems, somewhat difficult systems and poor systems. Beginning with the examples of good systems, the Nordic countries were mentioned as good by all those interviewed. As to why these systems are so positively viewed, we heard three common responses: 1.) The rules are well-established and clear; 2.) The system is well-financed and plenty of products are covered; and, 3.) Product selection is done via broad tenders (many manufacturers participate) where product functionality, and not cost, is the most important selection criteria.

It should to be added that two companies interviewed mentioned that the U.S. system is good because they do not use closed lists and that it is therefore easier for all manufacturers to participate, that it is a more transparent system.

The next category, the somewhat difficult group has two cited examples: UK and Germany, but for different reasons. In the UK, the NHS system is definitely well-established and has its purchasing organisation, PASA, with its particular rules and processes, etc. However, it was cited in one interview

[95] See Methodology Annex, Validation Questionnaire

that the system is very cost driven which often means that end-users fail to receive the best products, or indeed have only quite bad, out-of-date products.

In the case of Germany, from interviewees' responses it seems that the system has resources, but is much more privatised than in other countries. This means that if a manufacturer wants to have his or her products considered for financing by a private insurer, he or she must present these products to each relevant insurer in the market place. We understand from one interview, that this can be more than 10 entities and certainly represents an added complexity for serving this market.

Finally, there were those countries mentioned as being examples of more difficult or challenging places to do business. Two of the countries most frequently mentioned were Spain and Italy. These two countries have, at best, regional service providers and procurement systems to manage AT ICT products and policy. Just as Europe is a relatively more challenging market for being fragmented into 27 national markets compared to a large more unified market such as the U.S., selling product in Spain and Italy are by definition more complex because there is no strong voice at a national level. In the case of Spain, there are 17 autonomous communities (regions), which mean 17 different systems to attend to.

The case of Italy was also cited as being a difficult market because of its need for a local presence (complex rules + language) coupled with it being a very cost-driven system. This combination is very difficult for non-Italian firms. The need for a local presence (i.e., distributor) means that product is made more expensive because the distributor also receives a margin. Since the final cost to sell in Italy is more expensive that it is for an Italian company to sell (because they do not need a local distributor), the local Italian firm wins the contract. Further, local companies are often making less competitive products because they are smaller firms and not active in R&D. In sum, a system like Italy's is difficult for just about everyone: larger non-Italian companies, Italian SMEs as well as end-users since they do not receive the best possible products.

As a conclusion, all those interviewed agree that the most important issue is that the end user be well-served. The difference lies in who should and can best fill this job. Most of those interviewed think that a public entity is better able to do this than is a private company for reasons of objectivity and conflict of interests (i.e., only showing an end-user his own company's products).

However, for their part, public systems must be efficient in order to reach this goal of best serving the end user. This efficiency should include transparent processes that facilitate companies' participation, up-to-date information on new product developments, and using product functionality, instead of cost, as the key criteria for selecting products.

Since adequately developing all the necessary elements of a good public system requires a significant amount of financial resources, it might be more practical to identify best practices between the different existing public systems (for example in terms of tender processes, financing policy, etc.) and try to incorporate these best practices into individual countries' national systems to the extent possible. In sum, to make public systems as efficient and good as is financially possible.

7.3. AN ANALYSIS OF THE AT ICT INDUSTRY USING PORTER'S 5 FORCES MODEL

As has been presented above, the AT ICT industry is definitely unique in many of the challenges that it faces. To summarise where relative power lies within the various agents in the industry, an analysis according to the 5 Forces of Porter has been prepared. The Porter's 5 Forces tool is a simple but useful tool for understanding where power lies in a business situation and thus helping to understand the strengths and weaknesses of the current competitive position of the different industry agents.

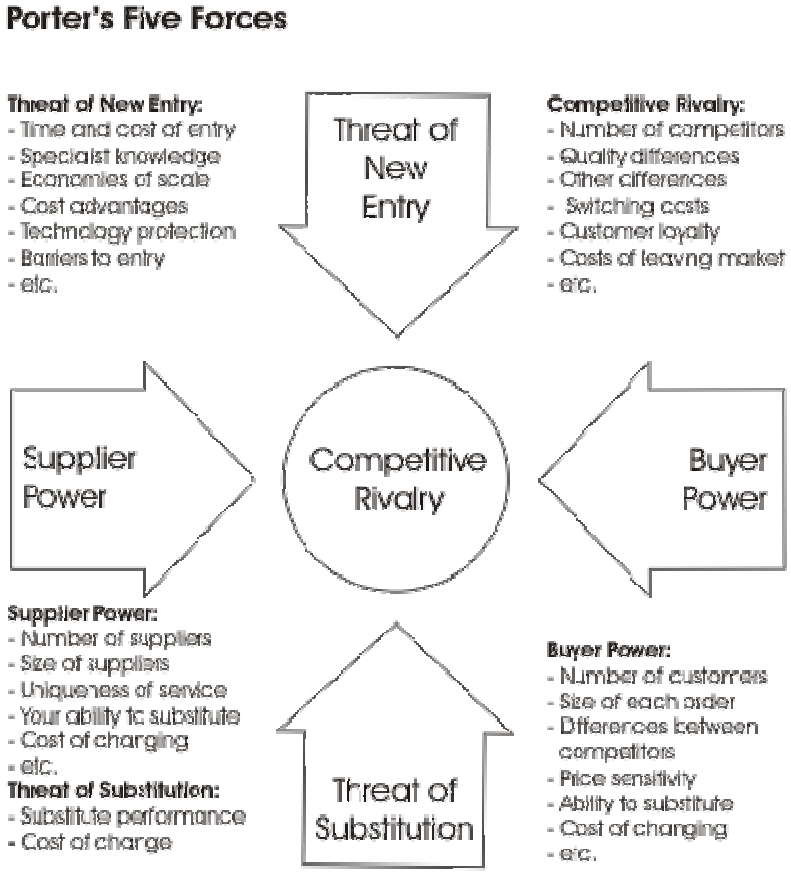

Figure 20. Porter's Five Forces

Source. *http://www.mindtools.com/pages/article/newTMC_08.htm*

7.3.1. BUYER POWER

Firstly, to clarify an important issue, "Buyers" refers to those who pay for the product, and who thus have the decision making power as to how money is spent on AT ICT products. Generally speaking, in this industry, the Buyer is not the end-user, but rather some form of a service provider system.

As explained earlier, these service providers are responsible for deciding which products are made available through their assessment, typology and selection phases. As has been discussed earlier, in a growing number of instances, these service providers also establish formal approved product lists which dictate the products available to end-users. These lists can last anywhere from 1-3 years and are an increasing trend. Finally, one cannot overlook the power of service providers in their role of product financing.

The scope of a service provider may be regional or national. This means that there is only one buyer for an entire geographical market, at least for many AT ICT products.

In conclusion, the structure of the AT ICT industry is in most countries not an open, free market, but rather a complex market where the rules for how to get a product to the end-user and get paid for it can be especially difficult and not transparent. Since the lynchpin behind these rules is generally the service

provider systems of each country, it is these systems that wield the highest degree of power among the various components of the European AT ICT industry. Further, as more and more products are potentially made available to end-users through the incorporation of new technologies and other product developments, the relative power of service delivery systems as gatekeepers to product solutions is increased.

Finally, as presented earlier, 28/30[96] of the EU AT ICT companies who responded to our questionnaire agreed that at present, the service provider function (assessment, product selection & financing) has the greatest relative power in the European Assistive Technology ICT value chain.

Q1– *European Assistive Technology ICT Industry characteristics:*

- ***Q1a*** *– At present, the service provider function (assessment, product selection & financing) has the greatest relative power in the European Assistive Technology ICT value chain. (9/30 very much agree; 18/30 somewhat agree; 2/30 somewhat disagree; 1/30 very much disagree)*

7.3.2. SUPPLIERS

In terms of the relative power of Suppliers, one key group of suppliers for AT ICT is that of technology suppliers. In terms of ICT development, so much is happening and so quickly, that it is virtually impossible for firms to keep up with all of the latest developments. This is especially problematic in some fields such as software, where the companies generally setting the pace are massive multinationals with tremendous resource power to keep churning out new products and services. Their level of resources compares sharply with the average AT ICT company, the majority of which are SMEs. For example, in the U.S. 60% of AT companies have less than 10 employees[97]. So given this tremendous difference in resources and size, it is clear that the AT ICT company is at a disadvantage when it comes to incorporating and keeping up with all mainstream technology developments.

However, there is another group of technology suppliers, universities and technology centres, which have a different relationship with AT ICT companies. For these centres that develop new technologies and applications, it is absolutely critical to have the input on end-user functionality and other market information, if there is any chance at all for the technology developed in the lab to actually be successfully commercialised. The sources of such information are the AT ICT companies who best know their clients' needs. Also, many of the research projects that these centres get funded require the participation of AT ICT companies so as to better achieve the goal of getting new technology to the marketplace. In this situation, the AT ICT company has more relative power towards the technology supplier, a better position of strength that that faced by AT ICT companies up against the multinational mainstream software and hardware developers.

Moving beyond technology supply, virtually none of the other types of suppliers has any kind of particular power in this industry. In the case of raw materials, there is nothing that be considered especially scare in terms of tangible elements (electronic components, plastic, software, etc.) which are common to most AT ICT products.

Perhaps to some degree it could be said that due to the small production series common to AT ICT industry, possible subcontractors for the manufacturing process are able to extract greater margins because of the lack of scale economies. However, any degree of power held by these manufacturing subcontractors cannot be considered to have outstanding effects on the essential dynamics of the industry.

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[96] See Methodology Annex, Validation Questionnaire

[97] U.S. Dept of Commerce Report on the Assistive Technology industry in the US, 2003

Another example of Suppliers who have intentionally limited their power in the industry are developers of software products for the AT ICT industry who make their products available as "freeware" or "shareware". This type of philosophy as the basis of a company's distribution policy, demonstrates an attitude towards openness and power-sharing as opposed to exclusivity. Perhaps before the reality of freeware, shareware, and open innovation, the existence of more proprietary solutions meant that the supplier to that proprietary solution had more power than today.

In summary, technology suppliers to AT ICT companies have a relatively strong degree of power, especially the mainstream software and hardware developers. However, the level of dominance is somewhat less for universities or technology centres which provide technology to AT ICT. For other types of Suppliers to the AT ICT industry, their level of power is rather low, especially when compared to other industry agents such as national service provider systems' role as Buyers.

7.3.3. SUBSTITUTES

If the trend towards standardisation continues, for example through the acceptance and implementation of Draft EC M376, the result should ostensibly make substitution easier, with lower switching costs, at least within same group of standardised products. By having a level playing field established through clear standards available to all, current manufacturers as well as new entrants would have to differentiate and add value to the basic, standard product.

According to a presentation [98] made by Keith Dickerson, chairman of the ICT Standards Board, on the Use of Standards to support accessibility, industry is solidly behind the standardisation effort because it would enable companies to sell products and services worldwide, not only to U.S. or Europe-only standards.[99]

Further, it is argued that ICT standards ensure interoperability of products and services, where standardisation is understood to mean what something has to have, and interoperability is understood to mean what something must do, i.e., work with other devices.

When interviewed, respondents clearly indicated (73%)[100] that interoperability is more important than standardisation, and several supported the argument of Mr. Dickerson that standards lead to interoperability, or at least that they are strongly related issues. To achieve interoperability, it will be likely necessary that companies work together to ensure that their products and services are compatible with each other. An example of such an effort is the Continua Health Alliance which has as its objective "To establish a system of interoperable personal tele-health solutions that fosters independence and empowers people and organisations to better manage health and wellness."[101] Members of this alliance include over 40 companies primarily from ICT, healthcare industries.

If, however, an interoperable solution is "closed" to a specific network or group of companies, the end result does not encourage substitutes. In general, though, the concept of interoperability is one which should encourage substitution by minimising any switching costs from moving from one solution to another.

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98 http://ec.europa.eu/information_society/policy/accessibility/deploy/pubproc/ws-2004-10/a_documents/keith_dickerson-slides.pdf

99 Information & Communications Technologies Standards Board, "Use of Standards to support Accessibility"

100 See Methodology Annex Questionnaire Interviews

101 http://www.continuaalliance.org/about/mission_objectives_/

Although the ICT Standards Board declares that industry is in favour of standards, it needs to also be mentioned that greater standardisation in accessibility can be seen as a threat by some companies, especially smaller SMEs. One defensive tactic that AT companies can employ to protect their customer base from competition (existing AT firms as well as new entrants) is to establish private agreements with Buyers. These types of agreements ensure companies with a guaranteed client base as well as ensuring that possible competitors will not be able get a hold in the marketplace.

In addition to standardisation and interoperability initiatives, another trend in the AT ICT industry which is driving substitution are the shorter product cycles of many products. A specific example of this is the hearing aid market, especially in higher-end price segments. In this context, the substitution includes substitution within the same company's product offering, for example through the cannibalisation of an existing product by the launch of a new, improved model.

The rapid development of technology definitely helps move these shorter product cycles, but working against greater levels of product substitution in the AT ICT industry at a European level is the issue of language. Language remains a relevant type of switching cost for users, especially in software products for disabled end-users. When asked if they agreed that language is a barrier to EU-wide distribution of application software, 61%[102] did agree. Further, for smaller firms and for cases where the extent of translation is more complex, the language issue can be an especially important barrier to serving additional markets.

In conclusion, Substitutes will be encouraged by greater levels of standardisation, as well as the trend in shorter product cycles.

7.3.4. NEW ENTRANTS

As is logical, the degree to which New Entrants are an important factor in the AT ICT industry is greatly tied to standardisation, in that, standardisation makes requirements clear for everyone, and should result in a more transparent industry. Transparency will mean that the marketplace becomes more potentially attractive to outsiders since it is easier to understand how the industry is structured.

An additional factor which is likely to encourage new entrants is any type of legislation that promotes the integration of the disabled. As public administrations and private industry are forced to comply with accessibility requirements by law, potential providers for ensuring accessibility can see a guaranteed market. A recent example of this has been seen in Spain where legislation has been passed which states that all public administration entities must have their websites deemed accessible by December 2008. A current supplier of web accessibility services in this market explained that this guaranteed client base, in addition to the full availability of web accessible technology and knowledge, ensures plenty of new competition coming into the market.

However, working against a greater number of new entrants are the complexities of individual country requirements, for example for the different service provider systems by country, as well as by product. As was explained earlier, the service provider systems wield the greatest levels of relative power in the AT ICT industry, so when access to this key variable is complex, it does not make for a hospitable market for aspiring new entrants.

Also, a further barrier to new entrants comes in the form of the different languages required to cover the complete European market. As discussed above in terms of substitutions, language requirements ensure that the types of economies of scale that may exist in a common language market such as North America, will always be more difficult to attain in smaller markets fragmented by language. Since economies of scale can be an important profitability driver in manufacturing, the lack of such possible economic gains makes the industry relatively less attractive.

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102 See Methodology Annex Questionnaire Interviews

In summary, the importance of New Entrants as a serious factor in the AT ICT industry depends on the particular situation of the country as well as the products involved.

7.3.5. INDUSTRY RIVALRY – HOW DOES THE INDUSTRY COMPETE?

The main lines along which companies compete in the AT ICT industry depend largely on the product involved. For example, in the case of the hearing instrument market, product features (weight, colour, size, battery life) are the main lines along which companies compete. To ensure that the market appreciates and purchases all these new features, companies have taken to launching product all the more frequently, in an industry marked for its shortening product cycles (formerly at cycles of 4-5 years and now with a 2-3 year cycle). [103]

A product feature that is especially important is the "ease of use" concept. This element is key for AT ICT products because this market combines the complications inherent to any user of technology with possible learning or mobility disabilities on the part of the end-user. Several companies interviewed (in the product areas of environmental control systems, communication devices and software and web accessibility) pride themselves on their ability to make easy to use AT ICT products. But this is not to say that the concept of making AT ICT easy to use is always a success. One communications device company explained that they had had some past frustration in trying to use technology with the elderly segment of end-users, due largely to this groups' lack of familiarity and comfort with technology products. This lack of familiarity on the part of many end-users thus puts much of the burden on manufacturers to come up with product solutions that can be readily adopted by AT ICT product users.

In addition to product features, many AT ICT products are also closely tied and impacted by the level of service provided by manufacturers to their clients. It is important to remember that in general, manufacturers' clients are not the disabled end-user, but rather a national service provider. So services such as training, as to new product developments may be very important activities to make sure that representatives of the system understand how to correctly judge the appropriateness of a company's products. This could include agents such as rehabilitators as well as more commercial figures such as distributors and retailers, once again depending on the product and country involved. This type of training is so important that the Assistive Technology Industry Association (ATIA) has as the centrepoint of their annual event, professional courses which bring together new products, or types of product functionality with practitioners. According to ATIA, these courses are extremely valued by the companies as well as the practitioners as an opportunity to learn how to use AT ICT products.[104]

An additional example where a type of service forms an integral part of the overall solution is in environmental control system (ECS) products. These systems must be installed in the end-user's home as well as subsequently monitored by the ECS managing entity as part of the accompanying service. In some cases installation requirements can even include special modifications that need to be made to an end-user's home (for example moving an electric box) and which may also be included as part of an installation service.

Just as in any industry, within the AT ICT industry, service elements as well as product features form integral parts of a company's reputation. Perhaps given the health nature of the majority of the AT ICT industry products, as well as the special needs of the end-users, even more sensitivity must be shown by firms in order to make sure that they get it right in terms of serving the end-user as well as direct client base. An example of the importance of one's reputation was explained by a communication devices' firm as regards the importance of their successful trial installation of its products in the National Paraplegic Hospital in Toledo, Spain. This installation ended up being the turning point for the company gaining a reputation in this market and thus having greater success and market penetration in Spain.

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103 Interview with large hearing aid manufacturer, March 2008.

104 Telephone interview with ATIA, September 2008.

As has been explained earlier, the existence of private agreements and lists of approved products can form important barriers in terms of which companies and which products can actually reach end-users. And by way of their serving as an entry barrier to other products, the companies which are included in these agreements benefit from a relative lack of competition as well as an assurance as to future sales given that some agreements may have a validity of several years. Clearly, companies that are well-positioned in service provider lists have a competitive advantage over companies that do not.

Also, as in many other industries, the issue of cost, and more specifically cost savings, is another important way in which some companies in the AT ICT industry compete. Virtually every country has to face the increasing challenge of adequately financing their service provider systems to ensure that disabled citizens get the products they need, while at the same time, having to compete for funding against other national interests (education, job creation, immigration, public safety, etc.). Given this challenging environment, it surely would help a company's possibilities of making a sale to national service provider if it can demonstrate that the system will save money by using the company's products while still meeting end-users' needs when compared to the alternative solutions.

Of course not all AT ICT products will fit to a cost savings argument as a way to compete, but other products, such as environmental control systems, may use a cost savings argument as a key line of argument for explaining why their products are a better, more economic solution. In the case of environmental control systems, this cost savings argument is presented that independent living is a cheaper solution for caring for disabled people than is institutionalising them, and that environmental control systems are all about how to develop solutions which permit greater degrees of independent living. Therefore, environmental control systems result in cost savings for national health systems.

Finally, as was presented earlier, Distribution and Retail is a key function for companies as a way to ensure that companies get their products positioned and sold well in different markets. Companies that are better able to lock in the key distribution channels with up to date knowledge on AT ICT products as well as service delivery systems and changes therein, will clearly have a competitive advantage over those companies with second-rate or virtually non-existent distribution networks.

In conclusion, the AT ICT industry is a complex one where companies compete on various dimensions such as:

- Product features
- Service provided by manufacturers
- Company reputation
- Private agreements and approved product lists between suppliers and buyers
- Cost savings to service providers
- Strong distribution and retail networks

The extent to which these various dimensions are more or less important, depends on the country and products involved. However, in general AT ICT industry terms, one can conclude that the overall balance of power is in favour of the Buyer, in that this agent represents the Service Provider function which dictates what products will be made available as well as controls the financing of same.

Key industry trends such as the role of standardisation have important impact on the industry and shape many of the dimensions of how companies in the industry seek out competitive advantage, for example by a more proactive strategy towards interoperability and partnering, or a more defensive reaction made evident through the use of private supply agreements and/or approved product lists, especially those that are of a longer duration.

7.4. CONSIDERATION OF THE AT INDUSTRIES IN THE U.S. AND JAPAN

The biggest issue for U.S. AT ICT companies is product financing. In the US, the percentage of people paying for their own AT is more than 50%, and since an estimated 23 percent of those aged 21 to 64 with a non-severe disability are unemployed, and approximately 74 percent of people with severe disabilities are without jobs, it is extremely difficult for many people with disabilities to afford the assistive technologies that are available[105]. And from the company perspective, if the end-user cannot afford the product, that makes one less sale.

The industry also complained that their state and federal regulatory agencies work with out-of-date product lists, and lack knowledge of the application and usefulness of devices. Also, that these agencies fail to stay up-to-date on the latest medical innovations and application of AT devices.[106] In conversations with the Executive Director of ATIA, it was clear that this issue of up-to-date information remains absolutely relevant today. Figures on the number of professional education sessions given at the ATIA annual event confirm the ongoing need for current information on possible AT solutions: less than 100 sessions in 2003 to more than 320 January 2009, an increase of more than 220% in 6 years.[107]

For the European AT ICT industry, these same issues are also seen as a problem, as was reflected in the results from the study questionnaire.

Q4 – Important barriers to the development of our business in the EU are:

- ***Q4a** – The lack of knowledge by the marketplace of the types of solutions available (i.e., not all possible AT ICT solutions are included in national service provider systems.) 15/30 very much agree; 11/30 somewhat agree; 4/30 somewhat disagree; 0/30 very much disagree.*

In terms of the situation in Japan, after studying the information gathered and interviews realised, the conclusion reached is that the main industry driver of AT in Japan is the costs pressures from the demographic increase of the aging population.

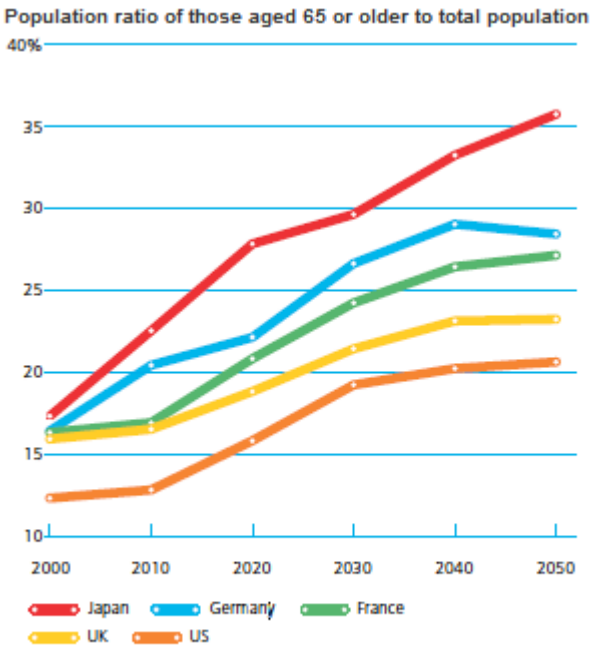
In Japan, the number of people aged 65 or over reached a historical high of 24.88 million as of October 1, 2004, according to census statistics released in February 2005 by the Statistics Bureau of the Ministry of Communications and Internal Affairs. The percentage of elderly overall climbed to 19.5% of the population. According to the National Institute of Population and Social Security Research, this ratio will reach roughly 25% by 2014, and by 2040, one-third of the population is estimated to be 65 or over[108]. This ratio is superior to those of Germany (29%), France (27%), the U.K. (23%) as well as the U.S. (20%).

105 U.S. Dept of Commerce Report on the Assistive Technology industry in the US, 2003.

106 U.S. Dept of Commerce Report on the Assistive Technology industry in the US, 2003.

107 Interview with D. Dikter, October 2006.

108 JETRO Japan Economic Monthly, October 2005. Industrial Report, "Medical Service Industry Trends in Japan."



Source: "World Population Prospects: The 2004 Revision," United Nations

Figure 21. Population ratio of those aged 65 or older to total population

Source. *"World Population Prospects: The 2004 Revision" United Nations*

In addition, for the AT ICT Japan industry it is also important to highlight the role of technological development in Japan. From the companies studied and other gathered information, Japan is a market that is driven more by technology push than by market pull. In large part this is not just because of Japanese technological capacity, but because the level of end-user organisation is low.

According to K. Kanemura, a Japanese disabled end-user who was at Abilities! Global Institute in 2001 as a part of her scholarship the Duskin Study Abroad Program for the Disabled, gathering information is hardest part for people with disabilities living in Japan to get assistive technology. She explains that In Japan, there are very few organizations, groups and companies that help the person to decide which technology is the best for him or her. Also, in terms of financing for disabled end-users to acquire assistive technology, when people with disabilities need an AT product, they request funding from the government. The amount of the subsidy depends on the income of the family living with the disabled end-user. Also, funding is not available for all types of assistive technology. It is limited to assistive technology on a fixed list of items.[109]

A further example of relative weak power of end-users is seen from Kazumi Kanemura, in his lecture on the "Differences in Assistive Technology and Access between Japan and the US". According to this, in Japan every student has the right to benefit from education under law, but the law says nothing about assistive technology. When deciding which technology to get for a student, the teacher in charge of the student, the principal and the other staff working at the school discuss and determine the solution without having the student and his family present. They may ask the student which technology he wants before the meeting, and they try to consider his needs at their meeting. However, they will make a decision without him and his family. The school can request funding for assistive technology equipment or teaching materials in the school from the government. [110]

[109] Kazumi Kanemura, E-Lectures: "Differences in Assistive Technology and Access between Japan and the US"

[110] Kazumi Kanemura, E-Lecure: Differences in Assistive Technology and Access between Japan and the US.

Finally, with regard to the disabled end-user in Japan it is important to include some of the special challenges that they must face because of their culture and language.

- One challenge is the entryway of the home, which includes a step up, to allow a space to take off one's shoes before entering the house. This step up must be solved by installing a ramp, but still be attractive enough to not ruin the image of the entryway.
- Most buses in Japan have some steps and no lift. Even if a bus has a lift for the physically disabled, it is still hard for them to get on the bus, because the buses are required to come to the bus stops on time, and bus drivers are sensitive sticking to these times. Some Japanese with disabilities insist that bus companies should change all bases into non-step buses. It would make it easier for not only people with disabilities, but also elderly, children and everyone to get on the bus.
- The Japanese language is difficult to work with on a computer given that Japanese has three types of characters: Hiragana, Katakana, and Kanji. Hiragana and Katakana have 48 characters. And Kanji has more than three thousand characters. This causes confusion for people with visual disabilities who have never seen the characters, because in many cases, different characters can have the same sound, depending on how they are used. This makes it quite difficult for software and hardware developers to produce communication devices.[111]

In summary, it is essentially impossible to perform an in-depth comparison of the U.S., Japanese and European AT industries due to the great differences in the availability of comparable data between these three markets. However, one important element shared: Both the U.S. AT industry and the European AT ICT industry share the opinion that service delivery systems do not stay as systematically up to date as is necessary on product developments and functionality to best serve disable end-users.

Specific to the U.S. it is noteworthy the strong dominance of the domestic market in terms of total company revenue. Figures from 1999 show that 81% of companies' revenue came from sales to the U.S. market.[112] Meanwhile the Japanese AT market is distinctive for the relatively low level of end-user power. This factor, together with Japan's strong tradition for technological development, has underscored the technology-driven aspect to the Japanese AT industry.

7.5. Ansoff Growth Matrix

As in any industry, the conditions of the European AT ICT industry largely dictate the strategic options that a company operating in the industry has. For example, given the lack of homogeneity between the service delivery systems in Europe, a company might decide to stay extremely focused on only one geographical market, and not complicate the business with additional distributors or selling points. However, another option is to try to take advantage of any kind of economies of scale that may exist by selling to as many different markets as possible. Also, an AT ICT company may decide that given the rapid level of technology development, it is only possible to develop and market one type of product because the company's resources do not allow for more. However, the other option is to once again better try to take advantage of increased volume by selling to numerous segments of users, including for example, the market potential from the growing ageing population.

111 K. Kanemura, e-Lectures: "Differences in Assistive Technology and Access between Japan and the US"

112 U.S. Dept. of Commerce Report on the Assistive Technology industry in the U.S., 2003.

To illustrate the strategies used by companies from the five different AT ICT product groups selected for this study, the Ansoff Growth Matrix has been used.

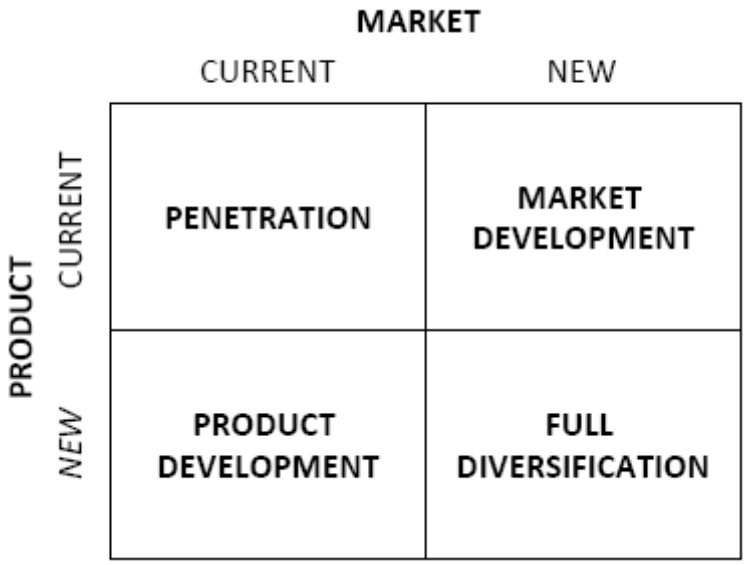


Figure 22. Ansoff Growth Matrix

Source. *Own elaboration*

The Ansoff Growth matrix is a tool that helps businesses determine their product and market growth strategy. Ansoff's product/market growth matrix suggests that a business' growth can depend upon whether it markets new or existing products and/or in new or existing markets. The output from the Ansoff product/market matrix is a series of suggested growth strategies that set the direction for the business strategy.

These strategies are described as follows:

MARKET PENETRATION

Market penetration is the name given to a growth strategy where the business focuses on selling existing products into existing markets.

Market penetration seeks to achieve four main objectives:

- Maintain or increase the market share of current products – this can be achieved by a combination of competitive pricing strategies, advertising, sales promotion and perhaps more resources dedicated to personal selling.
- Secure dominance of growth markets.
- Restructure a mature market by driving out competitors; this would require a much more aggressive promotional campaign, supported by a pricing strategy designed to make the market unattractive for competitors.
- Increase usage by existing customers – for example by introducing loyalty schemes.

A market penetration marketing strategy is very much about "business as usual". The business is focusing on markets and products it knows well. It is likely to have good information on competitors and on customer needs. It is unlikely, therefore, that this strategy will require much investment in new market research.

MARKET DEVELOPMENT

Market development is the name given to a growth strategy where the business seeks to sell its existing products into new markets. There are many possible ways of approaching this strategy, including:

- New geographical markets; for example exporting the product to a new country
- New product dimensions or packaging
- New distribution channels
- Different pricing policies to attract different customers or create new market segments
- A different market in terms of user needs

PRODUCT DEVELOPMENT

Product development is the name given to a growth strategy where a business aims to introduce new products into existing markets. This strategy may require the development of new competencies and requires the business to develop modified products which can appeal to existing markets.

DIVERSIFICATION

Diversification is the name given to the growth strategy where a business markets new products in new markets. This is an inherently more risky strategy because the business is moving into markets in which it has little or no experience.[113]

The following examples of company strategies in the EU AT ICT industry are cited to illustrate how these different types of strategies (penetration, market development, product development, diversification) are present in the AT ICT industry.

The following EU AT ICT companies were selected to illustrate how their strategies for operating successfully in the challenging EU AT ICT industry can been analysed within the Ansoff framework. Each of these companies represents on of the selected five product groups, and also different countries within Europe (The Netherlands, Denmark, Spain, UK, Germany).

7.5.1. VERY LARGE COMPANY IN THE HEARING INSTRUMENT SEGMENT

This company is an example of one which has exhibited a Penetration strategy in that the company stays to the hearing instrument market. Although the company has diversified somewhat to a include diagnostic equipment product line, these products represent a minor part of the company's total revenue (less than 10% in 2007) and is an activity line with lower gross margins than the primary hearing aid business (approximately 50% vs. approximately 70% respectively), and thus cannot be considered to represent an important level of product diversification.

113 http://www.tutor2u.net

7.5.2. LARGE COMPANY IN THE BRAILLE READER SEGMENT

This company is an example of a Penetration strategy if one considers the blind, low-vision and dyslexic markets essentially as one (i.e., as compared to the hearing disabled market). The justification for this grouping is based on technology, given that text-to-speech technology forms the basis of many solutions for dyslexia as well as for low-vision and blindness.

However, if one differentiates these three markets, then the firm's strategy would have to be considered as market development in that the company moved beyond products for the low-vision market into specific products for the blind and dyslexic segments. The company's purchase of another company in the product group company formed a key part of how the company was able to develop these markets (including geographical markets).

7.5.3. LARGE COMPANY IN THE ENVIRONMENTAL CONTROL SYSTEMS SEGMENT

This company exhibits a strategy more along the lines of Market development. In terms of end-users, the company has expanded from its initial dementia or elderly market to more recently include the learning disabled as end-users. This company has also experienced strong market development in terms of geographical markets, moving from its original home market more than 40 years ago to currently operating in 30 countries.

7.5.4. SMALL COMPANY IN THE SOFTWARE SEGMENT

This company is a prime example of having a Product development strategy. The company began in 1997 with a product offer centred in the development of accessible websites. Since then, the company has been integrating into different kinds of products and services for accessibility such as R&D, consulting, training, certification and web content in disability issues. However, the market for these products and services has essentially remained the same: the disabled in one geographical market. It is important to include that this company forms part of a large group of companies that has a stated vision and commitment to helping the disabled community. This Group philosophy has a strong impact on the company's strategy.

7.5.5. SMALL COMPANY IN THE COMMUNICATION DEVICES SEGMENT

This firm exhibits a clear Diversification strategy. The company has several examples of the development of new products and service: software for voice controlled ECS systems, management of care facilities, design of care centres for third parties, etc. This company has seen market development in the geographical sense as the company has expanded from its original home market to new activity in Russia, Spain as well as other countries. Further market development is evident given that the type of end-user associated with its various product areas is also quite different: quadriplegic end-users in the case of voice-controlled ECS systems and stroke victim end-users in computerised speech therapy systems.

7.6. AT ICT INDUSTRY Consolidation VIA MERGERS AND ACQUISITIONS

In addition to company strategy based on the Ansoff Growth Matrix, another very important strategy quite evident in the AT ICT market has been that of Consolidation.

Four of five (80%) of the companies considered for the case studies have shown examples of consolidation. For example, the hearing instrument company cited above has both been an active acquirer of related companies in past years (horizontal integration) and recently was also nearly purchased by another firm in the same segment. As is indicated previously in the Hearing Instrument factsheet, the hearing aid market has for years been one of the most active markets in terms of consolidation activity, both at the manufacturer level as well as at the distribution and retail level.

Another of the companies contacted and which operates in the market segment targeted towards those with low or otherwise impaired vision also has ample experience in making acquisitions, including at the international level. These purchases provided both product development (for example to the market segment targeted towards visually impaired people) as well as vertical integration in that additional distribution channels also formed part of these acquisitions.

A different story lies behind one of the companies contacted in that its acquisition history has not been so much involving the purchase of other firms, but rather the purchase of the company by other firms, not from industry, but instead from capital management firms. In March 2008 it was announced that a large private equity house in partnership with company management acquired a controlling interest in the firm in a transaction valued over €650 million. Such a purchase on the part of a major capital firms surely indicates that capital markets believe in the growth and profitability of the company's market model and see this business area as an attractive investment option.

The communication devices company began in 1995 as a spin off from a large multinational not related to the Assistive Technology industry. Since then the company has not initiated any deal activity although given the dynamic nature of this company and it active diversification strategy, it would not be surprising to see the firm use acquisitions to enter new markets or gain additional scale in those markets where it is already active.

The last example company is the only one considered which has not been active in M&A activity – either as the acquirer or as the company acquired. However, as was mentioned earlier, this is likely largely been marked by the company forming part of the group of companies with its specific vision to helping and assisting disabled people.

These examples of industry consolidation should not be considered as unique situations, but rather connect strongly to the discussion presented earlier in the context of a dynamic AT ICT industry which operates under challenging circumstances, and also faces additional changes to be discussed in the following chapter. However, as mentioned earlier, not all companies in the AT ICT market are quick to embrace a consolidation strategy. Markets with many smaller SMEs may choose a strategy not based on consolidation but rather private agreements as their best chance to stay active and competitive in the AT ICT industry. Also, markets with many small SMEs, such as communication devices, may be internally "balanced" in that none of the players are large enough to purchase another, nor does the communication device business model justify such a strategy based on gaining scale.

As to the opinion of the EU AT ICT industry's view on the likelihood of additional consolidation in the industry, only 17/30[114] agreed that Companies in the European Assistive Technology industry will consolidate (through mergers, alliances, partnerships, etc.) as disabled end-users take increasing responsibility for their product solutions.

Q1– *European Assistive Technology ICT Industry characteristics:*

[114] See Methodology Annex, Validation Questionnaire

- ***Q1d*** *– Companies in the European Assistive Technology industry will consolidate (through mergers, alliances, partnerships, etc.) as disabled end-users take increasing responsibility for their product solutions. (6/30 very much agree; 11/30 somewhat agree; 10/30 somewhat disagree; 1/30 very much disagree; 2/30 no answer)*

8. CHALLENGES AND CHANGES AFFECTING THE AT ICT INDUSTRY IN EUROPE

8.1. STANDARDISATION, MAINSTREAMING AND DESIGN FOR ALL

8.1.1. EUROPE

8.1.1.1. STANDARDISATION

One of the most important factors that affect the AT Market is the issue of Standardisation. It is a broad concept and can refer to standardisation in:

- Accessibility (i.e., defining what makes something accessible);
- Quality (minimum quality requirements for AT products); and
- Technical (technical specifications for AT products).

It is also a key factor because it affects many other drivers to the AT ICT industry such as technological developments, policies on who provides services and what those services are, as well as of course the financing of services and products.

Work that is currently being done: EC M376 led by the European Telecommunications Standards Institute (ETSI), Recognised as an official European Standards Organisation by the European Commission. EC M376 has as its objectives the following:

- Phase 1: To harmonise and facilitate the public procurement of accessible ICT products and services by identifying a set of functional European accessibility requirements for public procurement of products and services in the ICT domain,
- Phase 2: To provide an EU Norm (a standard) and a mechanism through which the public procurers have access to an electronic toolkit, enabling them to make use of these harmonised requirements in procurement.
- The project is currently in Phase 1 (Work period: September 2007 to March 2009) with the Final draft ready for ESO cross-approval on 24th September. As a part of this work, over 1,000 stakeholders have been involved from disability, business and standards organisations worldwide, in addition, over 270 contacts in European Public Procurement Network. 4 public (and 41 private) drafts were produced, the last of which was made public and open to comments and feedback. [115]

[115] www.jtc1access.org/documents/swga_330_ETSI_STF_333_Report.ppt

These standards will be applicable to public procurement in the EU, and would be roughly equivalent to the 508 legislation of the United States. If the United States' experience with 508 can serve as a type of guide, this type of legislation should have a positive impact on the development of AT ICT products. That said, a key difference in the case of EC M376 as compared to the 508 legislation in the U.S. is that individual EU countries will still be able to opt out of applying the EC M376 standards.

Despite the importance of this type of legislation to the lives of people with disabilities, leaders of this initiative have commented that one frustration in the process has been the relative lack of end-user participation in actively reviewing the standardisation content. One of the key reasons given for this is that end-users do not see how such legal standards will affect their everyday lives and accessibility.

However, from industry's point of view, as cited earlier with regard to product substitution in the AT ICT industry, industry is solidly behind the effort to product ICT standards to ensure interoperability of products and services. Benefits mentioned for purchasers include the ability to base his or her requirements on quality checked, commonly supported reference material. And for suppliers, standards would allow them to readily verify where his or her offer will meet tender requirements.[116]

Through interviews with industry for this study, the clear consensus (100%) is that interoperability is more important than standardisation. However, many (7/25) also said that the way to achieve interoperability is through standardisation or at least that the two are positively related.

From a collective analysis of the 25 interview responses, it was evident how the interviewees view the evolution of the standardisation and interoperability process. In summary, the process begins by *the market* determining the standard, as evidenced by a product's market share – a product is so important, so demanded by the market, that it becomes the standard to which other products are developed. An example of this is how Microsoft Windows developments dictate assistive technology developments.

But then, once the standard has been unofficially established basis its market penetration, the public system sets official standards. Two respondents explained (unprompted) that this is what happens: legal standards are developed after the market has already established what is the de facto standard.

8.1.1.2. DESIGN FOR ALL AND MAINSTREAMING

The argument in support of standardisation is based upon the idea that standardisation generates a common understanding of what is needed in terms of product functionality. This identification then facilitates a greater incorporation of Design for All techniques. A commonly accepted definition of Universal Design (a synonym for Design for All[117]) is that from Ron Mace, **"Universal Design is the design of products and environments to be USABLE by ALL people, to the greatest extent possible, without the need for adaptation or specialized design."** Using such techniques, the general world becomes more accessible to everyone and thus eliminating, or at least reducing, the role of assistive technology. This is the essence of the mainstreaming process.

Mainstreaming is where non-Assistive Technology companies produce their products using Design for All concepts to increase product accessibility, including end-users with disabilities, although it is important to include that accessibility is not just for those with disabilities. An example of a mainstream company is Microsoft in how it has designed it Vista operating system with options that allow it to be used by disabled end-users.

In interviews with EU AT ICT companies, the main reasons mentioned for using Design for All as a design concept were to increase market size by developing products that can be used by other markets, such as the elderly or other types of disabled users. The incorporation of Design for All is not an isolated practice,

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116 Information & Communications Technologies Standards Board, "Use of Standards to support Accessibility"

117 http://www.k-state.edu/udguidesite/G3.htm

but rather reflects a strategic decision to go for a bigger market and basically represents a company philosophy to create products in such a way that they are accepted and used by a wider group of people (customers). Selling to larger markets will presumably have a positive economic impact through greater economies of scale and less specific risk by having a more diversified customer base.

An example of how an AT company may incorporate Design for All into AT products, could be a Braille display manufacturer. A Braille display will remain an AT product, not a mainstream product, but by using Design for All, the manufacturer has designed the Braille display in such a way so that it can be better used with different computers and different operating systems. Changes can also be made to the size of the Braille digits and in that way the manufacturer can hope to extend the potential base of users. However, it remains an AT product with a limited number of users.

At least four of the 25 companies interviews mentioned that they use Design for All as a cornerstone in their design, not just to go to bigger markets (although this was the most cited reason) but also to make simpler, easier-to-use, less AT stigma products. This concept of simply making better products via Design for All is important to highlight because it means that a company could conceivably reach greater product volume without diversifying to other markets, but rather simply by capturing greater market share within the company's existing product category.

The other important reason for incorporating Design for All is based around a sense of Corporate Social Responsibility (CSR), to attend to end-user needs that otherwise would be un- or under-served.

These important developments in mainstreaming and by non-AT companies towards the development of more accessible products raise the issue of whether such developments will mean the end of the AT industry. The answer is no. As argued in the Provision of Assistive Technology in the Nordic Countries, "although one may achieve large improvements in the overall accessibility to goods and services from a systematic approach to universal design, there will nevertheless be a need for alternative and supplementary approaches to ensure accessibility and usability of goods and services."[118]

Importantly, industry sees the situation in largely the same manner. With regard to Assistive Technology ICT companies' view towards mainstreaming, it is clear that they agree that mainstreaming will affect their business. 73% agree that the effect of the Mainstreaming of Assistive Technology products will have an important effect on the European Assistive Technology ICT industry. Also that new companies will enter the Assistive Technology ICT industry via new, mainstream solutions (73% agree).

Q2– *European Assistive Technology ICT Industry characteristics:*

- ***Q2a*** *– The effect of the Mainstreaming of Assistive Technology products will have an important effect on the European Assistive Technology ICT industry. (6/30 very much agree; 15/30 somewhat agree; 7/30 somewhat disagree; 1/30 very much disagree; 1/30 no answer)*
- ***Q2b*** *– New companies will enter the Assistive Technology ICT industry via new, mainstream solutions. (8/30 very much agree; 14/30 somewhat agree; 6/30 somewhat disagree; 1/30 very much disagree; 1/30 no answer)*

However, as seen by the following results, AT ICT companies think that the effect of mainstreaming will be limited, and that it will not be an influence that eliminates the AT ICT industry.

83% agree that Mainstream solutions will not be a serious threat to the Assistive Technology ICT industry because some specific Assistive Technology products will always need to exist (i.e., not everything that is currently AT ICT will be mainstreamed).

118 Provision for Assistive Technology in the Nordic Countries, Second Edition. May 2007.

***Q2–** European Assistive Technology ICT Industry characteristics:*

- ***Q2d** – Mainstream solutions will not be a serious threat to the Assistive Technology ICT industry because some specific Assistive Technology products will always need to exist (i.e., not everything that is currently AT ICT will be mainstreamed). (7/30 very much agree; 18/30 somewhat agree; 3/30 somewhat disagree; 1/30 very much disagree; 1/30 no answer)*

67% agree that Mainstream solutions will not be a serious threat to the Assistive Technology ICT industry because specific AT product solutions are superior in quality and functionality to mainstream solutions.

***Q2–** European Assistive Technology ICT Industry characteristics:*

- ***Q2e** – Mainstream solutions will not be a serious threat to the Assistive Technology ICT industry because specific AT product solutions are superior in quality and functionality to mainstream solutions. (4/30 very much agree; 16/30 somewhat agree; 7/30 somewhat disagree; 2/30 very much disagree; 1/30 no answer)*

Mainstreaming effect on national procurement systems

There is an argument that as assistive technology solutions are incorporated into generally available, not-AT specific products, national service providers will cease to finance these types of products. Again, with reference to the Provision of Assistive Technology in the Nordic Countries, "If universal design standards are taken into account in an early stage of the design and production process it is less likely providers may incur extra costs of goods and services. Potentially this may save public expenses to assistive technology. If more goods and services are made accessible for all independent of disabilities to begin with, there will be less of a need for specialized and impairment specific products produced in a small number and at high costs per unit."[119]

And industry agrees with this likely impact of mainstream products on national service provider systems. According to questionnaire results, 67% of respondents agreed that Mainstream solutions will be less likely to be financed by national service provider systems.

***Q2–** European Assistive Technology ICT Industry characteristics:*

- ***Q2c** – Mainstream solutions will be less likely to be financed by national service provider systems. (7/30 very much agree; 13/30 somewhat agree; 9/30 somewhat disagree; 0/30 very much disagree; 1/30 no answer)*

However, as commented above, the Nordic Development Centre for Rehabilitation Technology recognizes the reality that some alternative and/or supplementary approaches will always be necessary, thus meaning that "one should not exaggerate the prospects of reduced public expenditures through improved social regulations to promote universal design."[120]

One company interviewed explained that they have already seen this happening in the U.S. market. This person explained that where AT product functionality has been incorporated into a mainstream product (such as a computer), this functionality in the mainstream product is no longer financed by a third party as an AT product. The specific example given involves eye tracking software and functionality in laptop

119 Provision for Assistive Technology in the Nordic Countries, Second Edition. May 2007.

120 Provision for Assistive Technology in the Nordic Countries, Second Edition. May 2007.

computers. Eye tracking software is covered as a separate AT product, but if the software is incorporated into the laptop itself, then it will no longer be financed.

Given this circumstance, the company developed a specific solution based around installing the software in the computer but protecting the software so that it cannot be used unless authorised by the company. An end-user who wants to activate the eye tracking software simply contacts the software manufacturer and pays for the software functionality. The software is then un-protected and ready for the end-user.

In this case, the company was able to develop a specific solution that allowed the company to make its product available to end-users, while still getting paid for it as an AT product. Clearly, a company's ability to do this will depend on the type of product involved.

In conclusion, both EU governments (at least those of the Nordic countries) and EU AT ICT companies know about design for all and mainstreaming. However, while acknowledging the likely important impact that the trend will have on the AT ICT industry, the companies surveyed did not express alarm that the market for AT products is about to disappear or that the competitiveness of their AT products in terms of quality will be undone by new mainstream solutions.

8.1.2. SITUATION IN THE UNITED STATES

The approach used in the United States to supporting mainstreaming and improving accessibility for people with disabilities has been largely been through legislation to force changes in the physical environment, including telecommunications. Compared to the current legislation in Europe or Japan on this subject, the U.S. government has a longer experience with this type of approach to achieve better accessibility.

On the one hand they did procurement law that says public procurement must be accessible. The most often-cited legislation in this area is Section 508 which has somewhat inspired similar legislation, EC M376, at the EU level.

The other line of legislation has been towards legislation to change the physical environment. The most important examples of this type of legislation have been the Americans with Disabilities Act of 1990 (ADA), the Rehabilitation Act of 1973, and the Telecommunications Act of 1996. The U.S. approach has also benefitted from an approach to coordinating the various actors involved from a centralized level. For example, the U.S. AT ICT system has the NIDRR resources, and specifically the network research centres (RERC) to take a more direct approach in implementing the changes implied by enacted legislation such as the ADA.

The Access-Board is also a major and renowned player in terms of accessible design and has taken a central role in bringing raising the issues of accessible design to mainstream companies.[121]

An example of the Access-Board's occurred on April 3 when the Telecommunications and Electronic and Information Technology Advisory Committee (TEITAC) presented its report to the Access-Board on updating accessibility criteria for information and communication technologies. The committee's report recommends revisions to the Board's standards for electronic and information technology covered by section 508 of the Rehabilitation Act. It also addresses updates to guidelines for telecommunications products issued by the Board under section 255 of the Telecommunication Act[122].

121 Interview with Access-Board

122 http://www.access-board.gov/news/teitac-report.htm

8.1.3. SITUATION IN JAPAN

Japan responded to the move by the U.S. government through the 1998 revision of Section 508 of the Rehabilitation Act in effect since 2001 to develop the e-Japan Priority Policy Program focused on correcting the Digital Divide as an important challenge in accordance with the Basic Law on the Formation of an Advanced Information and Telecommunications Network Society (Basic IT Law) which came into effect in 2001. In line with this movement, the Basic Programme for Persons with Disabilities was drawn up in 2002 and public governmental bodies announced their intention to encourage accessibility criteria in public procurement and to promote a procurement standard. In 2004, the Disabled Persons Fundamental Law was partly revised and the u-Japan Initiative which aims to emphasise UD, was announced to further promote the establishment of a procurement standard.[123]

In terms of standardisation, the ISO issued international standard ISO/IEC Guide 71, "Guidelines for standards developers to address the needs of older persons and persons with disabilities" with the aim of standardising individual product specifications and design processes to ensure promotion of UD. In 2004, in keeping with the Basic Programme for Persons with Disabilities of 2002, the Japanese Industrial Standards (JIS) officially announced a standard for promoting UD of products and services in the information field.[124]

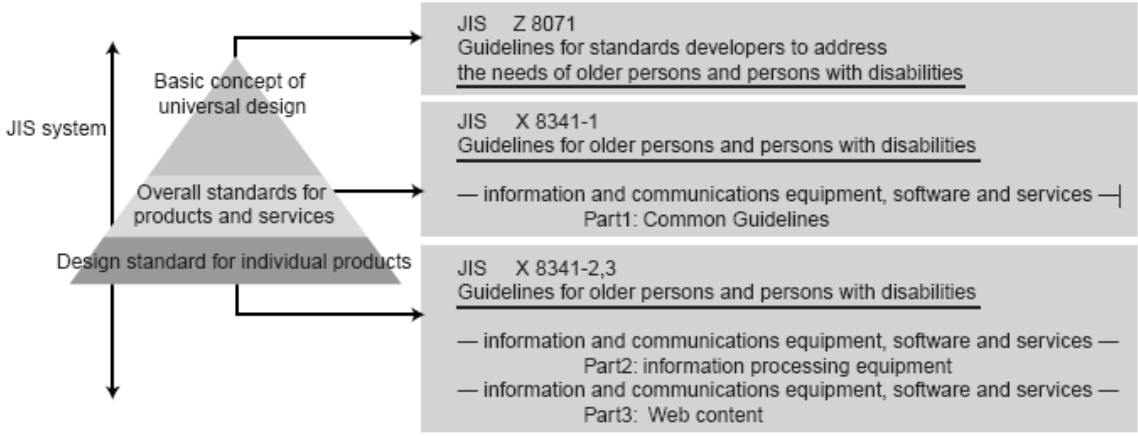

Figure 1
JIS standards for promoting universal design.

Figure 23. JIS standards for promoting Universal Design

Source. *Kato, K. Iwazaki, A., "Fujitsu's Activities for Universal design"*[125]

JIS X 8341-1 Guidelines for older persons and persons with disabilities – information and communications equipment, software and services[126] –

- **Part 1:** Common Guidelines. This stipulates basic UD requirements to consider for the entire IT field. These guidelines describe how the industry group standards in each product field must

123 http://www.fujitsu.com/downloads/MAG/vol41-1/paper01.pdf

124 http://www.fujitsu.com/downloads/MAG/vol41-1/paper01.pdf

125 http://www.fujitsu.com/downloads/MAG/vol41-1/paper01.pdf

126 http://www.fujitsu.com/downloads/MAG/vol41-1/paper01.pdf

be prepared and are important because they are prepared according to how the relevant products and services are used (as opposed to, for example, how something is made or designed).

- **Part 2:** Information processing equipment for personal computers
- **Part 3:** Web content

The ultimate aim of UD is not to be a technique for the disabled, but to provide products and services that can be used easily by as wide a range of people as possible. It was the opinion of several interviewed, that multinationals are getting into UD driven by the growth of the aging market more so than specifically for the disabled market. There may be some positive secondary effects for AT ICT users from UD, but disabled users are not the priority segment.

Fujitsu was one of the first companies in Japan to adopt Universal Design (UD) and has promoted the development of UD products and services. The main reasons that Fujitsu says it promotes UD are:[127]

- To improve the operability of equipment, systems and services
- When promoted company-wide, it can improve reliability
- Users of Fujitsu's products and services can pass Fujitsu's UD onto their customers, thus multiplying the impact.

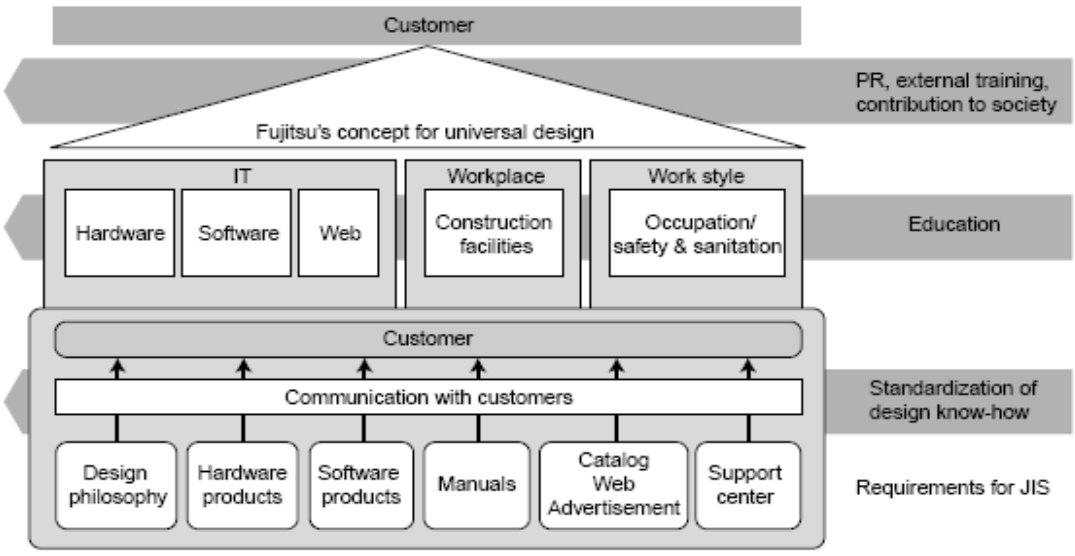

Figure 5
Target areas of Fujitsu's universal design.

Figure 24. Target areas of Fujitsu's Universal Design
Source. *Kato, K. Iwazaki, A., "Fujitsu's Activities for Universal design"*

Fujitsu has applied principles of Universal Design to several recent product developments[128].

- Raku Raku PHONE

  Fujitsu's Raku Raku PHONE is an easy-to-use mobile phone for elderly persons, persons unfamiliar with mobile-phone operation, and persons with physical disabilities, for example,

127 http://www.fujitsu.com/downloads/MAG/vol41-1/paper01.pdf

128 http://www.fujitsu.com/downloads/MAG/vol41-1/paper01.pdf

persons with visual disabilities. This highly accessible, user-friendly mobile phone makes full use of speech synthesis and voice recognition technologies and achieves good universal design through an ingenious combination of hardware, software, and user interface. In the development phase, we adopted a special process to aggressively research and evaluate product usability from users' viewpoints, clarify existing problems, and improve the design and user interface of mobile phones. This paper describes the steps taken to achieve universal design in the Raku Raku PHONE and the universal design features of its hardware, software, and audio functions.

- Automated Teller Machines (ATMs)

  Public services should be equally accessible to all users. Conversely, service users vary individually in terms of physical ability and experience in using the services. These individual differences have been a cause of a growing digital divide. The recent progress made in information technology has also provided more job and learning opportunities for those with disabilities, thus enhancing their social evolution. This trend can be seen in various countries that have established new guidelines for products and services and regulations concerning universal design. Before other companies, Fujitsu has always sought to implement universal design of its products and services in order to narrow the digital divide, while promoting improvements to machines and the development of new functions for automated machines used in banks, local government facilities, and hospitals. This paper describes Fujitsu's activities in promoting the universal design of automated machines, specifically Fujitsu's concept of universal design, methods of implementation, and the results of said activities. This paper also refers to new approaches being taken toward achieving the universal design of automated machines.

However, the following figures from 2001 indicate that Japan still room for progress in making its society, including all-important transport facilities, barrier-free.

	Number of facilities used on average by over 5,000 passengers per day	End of March 2001		Number of facilities used on average by over 5,000 passengers per day and provided with toilets	End of March 2001
		Made Barrier-free	Includes blocks for the guidance of the visually impaired		Provided with toilet for the handicapped
Railway stations	2,742	902(32.9%)	1,776(64.8%)	2,601	64(2.5%)
Bus terminals	44	30(68.2%)	24(54.5%)	25	3(12.0%)
Piers	8	3(37.5%)	6(75.0%)	8	2(25.0%)
Airports	21	2(9.5%)	7(33.3%)	21	3(14.3%)

Table 20. Status of Making Passenger Facilities Barrier-Free

Source. Japanese Ministry of Land, Infrastructure and Transport[129]

[129] http://www8.cao.go.jp/kourei/english/annualreport/2003/2-3.html

8.2. Greater awareness of AT product offerings

As mentioned earlier in the section on industry barriers, 26/30[130] companies agreed that the lack of knowledge by the marketplace of the types of solutions available is an important barrier to the development of their business.

> ***Q4*** *– Important barriers to the development of our business in the EU are:*
>
> - ***Q4a*** *– The lack of knowledge by the marketplace of the types of solutions available (i.e., not all possible AT ICT solutions are included in national service provider systems) (15/30 very much agree; 11/30 somewhat agree; 4/30 somewhat disagree; 0/30 very much disagree)*

Given this problem about the lack of knowledge on possible solutions, an increase in the level of available information for end-users should help overcome this type of problem. As the following table shows, within the EU countries, there are several different product databases which include summaries of different AT ICT product options.

The existence of these databases is clearly a help to educate end-users about different solutions, however, these references are still country specific, and do not provide a view of what is available across the EU. End-users will still need to search in individual markets.

	COUNTRY	NATIONAL DATA BASES	
EASTIN	DENMARK	Hjælpemiddel-instituttet	www.hmi.dk
	GERMANY	Rehadat	www.rehadat.de
	ITALY	Siva [(10)]	www.siva.it
	NETHERLANDS	Handy-Wijzer [(11)]	www.handy-wijzer.nl
	SPAIN	Ceapat	www.ceapat.org
	UNITED KINGDOM	Disabled Living Foundation	www.dlf.org.uk
	AUSTRIA	Handynet	http://handynet-oesterreich.bmsg.gv.at
	BELGIUM	Kennis- en OndersteuningsCentrum	www.koc.be
	FRANCE	Handicat	www.handicat.com
	IRELAND	Assist Ireland [(4)]	www.assistireland.ie
	PORTUGAL	Catálogo Nacional de ayudas técnicas	www.ajudastecnicas.gov.pt
	SWEDEN	Hjälpmedelsinstitutet (Webb-HIDA)	www.hi.se (http://80.80.24.87/)

Table 21. National Data Bases with information as to available AT products.

Source. *Own elaboration*

Knowledge about possible product solutions does not necessarily mean that disabled end-users will bypass their national service provider systems in the event that the system does not carry or cover the sought after product. However, at a minimum it is likely that end-users will be more aware, and will be more likely to ask about different solutions, thus taking a more active role in the selection of their AT ICT solutions.

130 See Methodology Annex, Validation Questionnaire

8.3. Aging population & RELATED COST PRESSURES

The 2008-based national population projections EUROPOP2008[131] convergence scenario show that the EU27 population is projected to become older with the median age projected to rise from 40.4 years in 2008 to 47.9 years in 2060.

The share of people aged 65 years or over in the total population is projected to increase from 17.1% to 30.0% and the number is projected to rise from 84.6 million in 2008 to 151.5 million in 2060. Similarly, the number of people aged 80 years or over is projected to almost triple from 21.8 million in 2008 to 61.4 million in 2060.

The young age dependency ratio for the EU27 population is projected to rise moderately to 25.0% in 2060, while the old age dependency ratio is expected to increase substantially from its current levels of 25.4% to 53.5% in 2060.[132]

In terms of disability, 44.6 million– one in six –persons aged between 16 and 64 report a long standing health problem or disability i.e. at least 16% of the overall EU working age population. Among young people (16-25), the figure stands at 7,3%.[133]

Many assistive technology devices are allocated to the elderly and the needs will not be smaller with an aging population. For example, in Sweden, around 70% of assistive devices prescribed go to people aged over 65[134]. These demographic shifts are going to be an important driver behind increases in demand, as well as increases, or changes in the types of demands for more accessible products, including some forms of AT ICT.

At the same time, according to the Summary of the Communication of 12 October 2006 from the Commission to the Council and the European Parliament: The long-term sustainability of public finances in the EU, the main challenge for Member States seems to be the impact of an ageing population on public finances. In the light of this challenge, public debt needs to be quickly reduced, employment rates increased, and pensions, health care and long-term care systems reformed as appropriate.

The Commission's analysis reveals that a considerable sustainability gap (in other words, the gap between the 2005 budgetary position and a sustainable position) of approximately 3.5% of GDP is emerging in both the EU and the euro area. Unless steps are taken to fill this gap, the average government debt/GDP ratio within the EU is projected to remain above 60% over the coming decades and, in the run-up to 2020, is set to start rising considerably, reaching almost 200% of GDP in 2050.

In terms of the level of risk of the 27 Member States, this report classified the countries as follows:

- **High-risk countries:** the Czech Republic, Greece, Cyprus, Hungary, Portugal and Slovenia. High risk is characterised by a very significant rise in long-term age-related expenditure. Some of these countries also have large deficits and in some cases a high level of debt;
- **Medium-risk countries:** Belgium, Germany, Spain, France, Ireland, Italy, Luxembourg, Malta, Slovakia and the United Kingdom. These countries can be sub-divided into two groups:

131 "Men and women with disabilities in the EU", Applica, CESEP and Alphametrics, 2007. http://ec.europa.eu/employment_social/health_safety/docs/ceremony_en.pdf

132 "Ageing characterises the demographic perspectives of the European societies", Eurostat 72/2008

133 "Men and women with disabilities in the EU", Applica, CESEP and Alphametrics, 2007.

134 Provision of Assistive Technology in the Nordic Countries, Second Edition. May 2007.

- Countries with a significant cost of ageing for public funds and where measures might be needed to curb these costs, but which currently have relatively strong budgetary positions (Spain, Ireland, Luxembourg);
- Countries that need to consolidate, to differing degrees, their public finances in the medium term, but for which the cost of ageing is less of a concern, usually as a result of reforms made to their pension systems (Slovakia, Italy, Germany, France, the United Kingdom and Malta).

— **Low-risk countries:** Denmark, Estonia, Latvia, Lithuania, the Netherlands, Austria, Poland, Finland and Sweden. These countries have come furthest in coping with ageing populations; this has meant a strong budgetary position (large surpluses, lower debt and/or accumulated assets) and/or comprehensive pension reforms, sometimes including a shift towards private pension schemes. [135]

As seen by the referenced countries, this trend toward a Consumer Model, is already underway in some national markets. In practice, this should result in less formal public structure in determining product solutions for end-users, and instead, more power passes to end-users via their being given personal budgets to decide what product solution to buy. This free market trend is essentially cost driven, as well as being supported by the idea of end-users having more empowerment in their health decisions.

Industry also recognizes the cost pressures that national service provider systems are facing. According to our questionnaire results, 27/30[136] respondents agreed that national service provider systems are increasingly cost-based, as opposed to being based on offering the widest number of AT ICT product to disabled end-users.

Q1– *European Assistive Technology ICT Industry characteristics:*

- ***Q1c*** *– National service provider systems are increasingly cost-based (as opposed to being based on offering the widest number of assistive technology ICT products to disabled end-users). (14/30 very much agree; 13/30 somewhat agree; 3/30 somewhat disagree; 0/30 very much disagree)*

Examples of how these trends have been introduced within different Europe countries include the following:

— The Netherlands has recently introduced a system with two options: one which is the traditional model where an end-user goes to its local social or medical service provider to receive a prescribed and paid-for solution. The second, and new, option is referred to as the personal budget option. Under this alternative, end-users are provided with an allocated amount from the state and advice as to possible solutions, from which the end-user is free to make his or her own decisions about product selection, including the responsibility to pay for any difference in price between the state-provided budget and the actual selling price.

  In principle, this system covers all types of Assistive Technology. Results thus far have been mixed. On the one hand, civil servants who are accustomed to working under the traditional system have not been especially active in promoting the personal budget option for end-users. However, those

135 http://europa.eu/cgi-bin/etal.pl

136 See Methodology Annex, Validation Questionnaire

end-users who are relatively more active and experienced in looking for their own product solutions have been quick to use the personal budget option.

— Another example is in Belgium with regard to hearing aids. Under this system, a flat payment is given to end-users who then have the freedom and responsibility to choose their specific product, as well as to pay themselves for any cost different between the flat government payment and the final price of the selected device.

— In the UK, the movement for independent living has been instrumental in promoting self-determination for disabled people. Within this context, direct payments emerged as a key mechanism enabling disabled people to exercise more flexibility, choice and control over the support that could be purchased to meet their needs. Placing financial resources under the control of disabled people offered a radically new mode of welfare production, challenging traditional assumptions about power and dependency and redefining purchased-provider-user relationships. In the face of mounting evidence and social claims, the value of direct payments for disabled people became more widely acknowledged by policy makers and now features prominently in UK government strategy.

  However, ten years after direct payments legislation, take-up remains low and implementation varies greatly. The rate of take-up of direct payments in England was and remains at least double that of Scotland, Wales or Northern Ireland despite rapid growth in all areas over recent years. Take-up has been highest where there was a close link between user-led organisations and local authority champions. Also, there was evidence of a more systematic level of investment in staffing, training, and publicity in England than elsewhere. The strongest elements for successful implementation where when partnerships involving user-led support scheme for end-user direct payments exist as well as a designated full-time post to champion policy development within the service provider system authority.[137]

— In Denmark, consumer organisations have been pushing for end-users of assistive technology to be able to select devices and suppliers of such devices, instead of having these selected for them by national service providers. This has resulted in end-users now receiving a grant in cash and then being able to select their own suppliers for assistive devices which are worn on the body (breast proteses, ostomy products, orthopaedic shoes, etc.) but so far does not seem to include AT ICT products. Also this grant includes a requirements specification for the assistive devices. This should ensure that the financing party is certain of the function and quality of the assistive device being funded.[138]

Lastly, examples of this trend are not limited to Europe. In Japan the system has been changed recently to introduce a type of end-user financed specific insurance to face future costs of health needs. This program includes a co-payment from end-users as well as the systematic payment made in the form of a payroll deduction. In other words, a system where the state increasingly transfers responsibility to the individual – both in terms of product selection and product financing.

As to whether or not the European AT ICT industry supports this shift of national service provider systems to a more Consumer Model, according to questionnaire results, 25/30[139] respondents agree that the assessment and selection of different product solutions should be the right and responsibility of the disabled end-user, and not of the national service provider systems.

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137 M. Priestly, "Direct Payments and Disabled People in the UK: Supply, Demand and Devolution", British Journal of Social Work (2007) 37, 1189-1204.

138 Provision of Assistive Technology in the Nordic Countries, Second Edition. May 2007.

139 See Methodology Annex, Validation Questionnaire

Q1– *European Assistive Technology ICT Industry characteristics:*

- ***Q1b*** *– The assessment and selection of different product solutions should be the right and responsibility of the disabled end-user, and not of the national service provider systems. (10/30 very much agree; 15/30 somewhat agree; 3/30 somewhat disagree; 2/30 very much disagree)*

Further, the companies contacted do not seem especially alarmed by these changes and what they might represent to their businesses. Rather, 18/30[140] agree that European AT ICT companies are well-prepared to operate in an industry where disabled end-users take increasing direct responsibility for their product solutions.

Q1– *European Assistive Technology ICT Industry characteristics:*

- ***Q1e*** *– European Assistive Technology ICT companies are well-prepared to operate successfully and profitably in an industry where disabled end-users take increasing direct responsibility for their product solutions (as opposed to receiving solutions through national service provider systems). (7/30 very much agree; 11/30 somewhat agree; 10/30 somewhat disagree; 1/30 very much disagree; 1/30 no answer).*

Additional results confirm that 24/30[141] agree that sales to private consumers, including disabled end-users, (as opposed to sales through service provider systems) will be an increasingly important part of company sales. However, only 13/30[142] think that over 50% of total sales will come from the private consumer market within the next five years. From these responses, we conclude that the EU AT ICT industry clearly acknowledges and foresees this trend towards a stronger end-user role in product selection and financing, but that such a development is not going to radically change their business in the near-term.

Q1– *European Assistive Technology ICT Industry characteristics:*

- ***Q1f*** *– Sales to private consumers, including disabled end-users, (as opposed to sales through service provider systems) will be an increasingly important part of your company's sales. (6/30 very much agree; 18/30 somewhat agree; 4/30 somewhat disagree; 2/30 very much disagree).*
- ***Q1g*** *– Your company expects that over 50% of its total sales will come from the private consumer market within the next five years. (9/30 very much agree; 4/30 somewhat agree; 9/30 somewhat disagree; 7/30 very much disagree; 1/30 no answer).*

In the European AT ICT industry, just like for any industry, new opportunities will always develop. The challenge for companies is to see the opportunity and develop a business model to capture it. As the AT ICT industry develops and evolves, some companies will inevitably close because of financial pressures or changes in the marketplace, etc. However, this industry is not a zero sum game – some companies can close but others can, and will, be created to capture the opportunities from a new AT ICT industry panorama.

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140 See Methodology Annex, Validation Questionnaire

141 See Methodology Annex, Validation Questionnaire

142 See Methodology Annex, Validation Questionnaire

9. ROLE OF POLICY MAKERS

9.1. EUROPEAN UNION

At the public policy level, the greatest challenge is perhaps how to foster a dynamic and healthy AT ICT industry at the European level while still working within the overall philosophy of the Lisbon Agreement whereby individual member states retain the ability to decide their own national health and social policy.

It is worth highlighting some of the key trends within the Nordic countries largely because these countries were consistently referenced in our interviews with EU AT ICT companies as having the best system in terms of a national procurement system that is relatively easy and minimally expensive to navigate. As to why these systems are so positively viewed, we heard three common responses: 1.) The rules are well-established and clear; 2.) The system is well-financed and plenty of products are covered; and, 3.) Product selection is done via broad tenders (many manufacturers participate) where product functionality, and not cost, is the most important selection criteria.

According to the Second Edition of the "Provision of Assistive Technology in the Nordic Countries, although the main emphasis has been on inclusion through the regular welfare state services and legal provisions, the Nordic countries have since the 1990s increasingly looked to the US for policy learnings, especially the Americans with Disabilities Act of 1990 and provisions on market regulation and accessibility requirements in the Rehabilitation Act (Section 508). New social regulation policy measures have sought to prevent and remedy discrimination on grounds of disability in separate legal provisions. Rather than compensating for disadvantages, this approach promotes social regulations that intend to ensure equal opportunities to participation in the market.

Further, until recently the authorities have focused more on individual accommodation when the needs arise and the provision of technical aids than on product standardisation and social regulations to promote general accessibility. In other words, the provision of assistive technology to compensate for individual impairments is generally more developed than social regulation of the environment to prevent barriers to participation, whether it be in regard to access to physical spaces, information or goods and services.

To date, Norway is the only Nordic country that has adopted procurement regulations that require state, municipal and county authorities and government-liable bodies to allow for "universal design" during the planning of public procurements (in force from January 2007 and corresponding to Directive 2004/18/EC). Both Norway and Sweden consider adopting new and more legislation in this area whilst this issue has a less prominent role on the public agenda in the other Nordic countries.[143]

It should be noted that the introduction of legal requirements, such as for education and workplace access, as well as EC M376 on public procurement policy discussed earlier, are the types of measures that do indirectly support the AT industry because they force compliance, and the uptake and further development of AT industry products, including AT ICT products. In fact, the ICT products could be some of the most useful in terms of increasing workplace and education access.

Another option to strengthen and promote the AT ICT industry in Europe was proposed at the onset of this study: federate, or otherwise organise, the AT ICT industry at the European level. Such an entity

143 "Provision of Assistive Technology in the Nordic Countries, Second Edition. May 2007.

would have as one of its main objectives to strengthen the AT ICT industry in Europe and its ability to provide the best solutions for end-users. That such a concept has been considered by the EC infers that the EC would support such a movement through its policy agenda.

For its part, industry agrees that the European Commission has a role to play in developing and strengthening the AT ICT industry in Europe. According to questionnaire results, 80% agreed that The European Commission should invest in the development and communication of credible market data to support European Assistive Technology ICT industry investment and development.

Q5 – *Organisation of the European Assistive Technology ICT Industry*

- ***Q5e*** *– The European Commission should invest in the development and communication of credible market data to support European Assistive Technology ICT industry investment and development. (13/30 very much agree; 11/30 somewhat agree; 3/30 somewhat disagree; 0/30 very much disagree; 3/30 no answer).*

9.2. United States and Japan

When one considers government support for assistive technology in terms of direct spending programs, the situation in the US is not especially positive.

One US AT ICT industry agent informally estimated that 80% of the US market of AT ICT products is paid for by third parties: Medicare, Medicaid, VA, or private insurance, or educational systems, with the remaining 20% paid out of pocket. This estimate takes into account the AT ICT market for children which is paid for through their schools or education systems.

However, according to the 2002 Medical Expenditure Panel Survey, 57% of expenditures for Other Medical Equipment and Services was paid for out of pocket[144]. As explained in a report comparing the US and German health systems in terms of Long Term Care, "Persons with disabilities (in the US) with incomes "in the middle" – too high to be eligible for Medicaid and too low to be able to afford private Long Term Heathcare insurance – fall through the cracks. Those persons who do not have family caregivers or whose caregivers are unable to provide all of the assistance needed are particularly vulnerable. Approximately three in 10 (29 percent) persons aged 50 or older with disabilities do not receive all of the assistance they need with essential daily activities, such as bathing, dressing and cooking; financial barriers are the most important predictor of these unmet needs." [145]

Yet, it can be argued that public policy in the US has decreased individuals' direct out-of-pocket costs of assistive technologies in other ways, in particular through the process of regulation. The characteristics of public transport and the modification / design of public spaces and public buildings are a key element of a person's ability to function. There has been substantial progress in making public buildings and spaces, the workplace and travel and communication more accessible to persons with disabilities. Much of this progress has resulted from the following laws and regulations:

- The Americans with Disabilities Act (ADA) or 1990, enacted to protect the civil rights of people with disabilities, has many implications for the adoption and use of assistive technologies, particularly in workplace accommodations and modification and construction of buildings, public spaces and public transportation.

144 Freiman, M. "Public Funding and Support of Assistive Technologies for Persons with Disabilities". Public Policy Institute, AARP. January 2006

145 Gibson, M., "Comparing Long-Term Care in Germany and the United States: What Can We Learn from Each Other?" AARP, October 2007

— Section 255 of the Telecommunications Act of 1996 addresses access to communications services for people with disabilities.

— The Architectural Barriers Act of 1968 was enacted to ensure access to buildings that were designed, built, altered or leased with federal funds.

— The Rehabilitation Act includes several sections that involve technological mandates, including that persons with disabilities should not be excluded or discriminated against in any program or activity that receives federal funds or that is carried out by the federal government; and that federal employees and community members with disabilities must have access to and use of information and data that non-disabled employees and community members are able to access and use. (Freiman, M. "Public Funding and Support of Assistive Technologies for Persons with Disabilities", AARP January 2006.)

In addition, the resources of NIDRR R&D centres and the Access-Board are important mechanisms to ensure that technological developments are incorporated into needed assistive technology products and services.

Meanwhile, for its part, the situation of public policy in Japan more closely resembles that of Europe in that more legislation has been directed towards helping people with disabilities cover their out of pocket expenses for purchasing or accessing assistive technology. Further, although national regulations exist to help provide access to assistive technology, as was explained earlier in chapter 4.2.2.3. the financing of an actual provision of these services is done at the prefectural or municipal level.

Recent legislation in Japan affecting the financing and access to AT products and services is the Long-Term Care Insurance Law. This law provides a social insurance system for long-term care and was implemented in April 2000. Under the legislation, individuals who need personal assistance for bathing, toileting, eating, occupational and physical therapy, nursing care, medical supervision and other treatment for physical conditions and changes brought about by advanced age, such as being bedridden or having dementia, can receive the necessary health care and welfare services.[146]

The Long-term Care Insurance System was designed so that Japan as a whole can support seniors who are in need of long-term care to lead life as independently as possible. In April 2006, a new system suggesting a shift to more prevention-focused, community-based services was implemented. The TMG, in cooperation with local governments, will continue providing proper insurance payments and structural maintenances.

The basic elements of the system are the following:

- 10% of the service charges must be paid by the policyholder.
- Monthly maximum limit (payment limit) is set for the long-term care services at home.
- 10% of the service charges and costs for food and accommodation must be paid by the policyholder (Some reduction may be made for the food cost for low-income persons).

With regard to legislation such as EC M376 which affects industry's design and production of more accessible products and services, the Japanese Industrial Standards (JIS) have put guidelines in place since 2004 to promote Universal Design in ICT products and services. Also, as is presented in chapter 8.1.3., in 2001 the Japanese government launched the e-Japan strategy Priority Policy Program focused on correcting the Digital Divide

146 http://www.dinf.ne.jp/doc/english/law/japan/selected38/chapter10.html

Although these initiatives are important and positive steps towards increasing the accessibility for all members of Japanese society, these initiatives have not yet been made into formal legislation, with corresponding penalties to help drive compliance. For example, it was commented by one Japanese person with disabilities that even if a disabled person has a job or has access to employment training, there is often a barrier in the transportation needed to physically get to the location[147]. They are these types of transportation and architectural barriers that would best be addressed in legislation such as the ADA in the US.

9.3. SUMMARY COMPARISON

In summary, with regard to the role of public policy and legislation in terms of improving the lives of people with disabilities, there seem to be three main lines on which public policy has been enacted:

- Legislation to directly subsidise or otherwise support the purchases of assistive technology for disabled end-users
- Legislation which dictates that all public procurement purchases of goods and services must be accessible. This type of legislation also ties closely to work on standardisation to better define what makes something accessible (i.e., Universal Design).
- Anti-discrimination laws that protect the rights of people with disabilities, especially in terms of their access to goods and services.

In the U.S., the approach of public policy has been to work on the second and third of these areas, and not generally the first of these, at least at a national level. This is due in large part to the U.S. not having a national health system through which the entire population (not just older people, or low-income, or veterans) is entitled to service. The results of the U.S. approach have been notable, with plenty of visible changes in the design or public spaces, transport and workplaces. However, there remains concern that because of the reality that end-users are who bear the largest part of the responsibility to access and finance their AT solutions, that some people who could benefit from these types of products and services, are not able to.

For its part, the EU and Japan have had more in common in terms of their legislative approach to AT and disability. In both areas, traditionally more legislative emphasis has been put on programs to finance and help access to assistive technology for disabled end-users. However, relatively little has been done to date in legislation that affects public procurement or basic anti-discrimination law. That said, this is changing, as can be seen through the work on the M376 legislation that has as its goal to harmonise and facilitate the public procurement of accessible ICT products and services by identifying a set of functional European accessibility requirements for public procurement of products and services in the ICT domain[148]. Such legislation will no doubt be a welcome development for people living with disabilities in Europe.

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147 Kazumi Kanemura, E-Lectures: “Differences in Assistive Technology and Access between Japan and the US”

148 http://www.jtc1access.org/documents/swga_330_ETSI_STF_333_Report.ppt#316 , 4, EC Standardisation Mandate M376 - Objectives

10. THE BEST ALTERNATIVE FOR STRUCTURING THE AT ICT INDUSTRY IN EUROPE

To start this discussion, we feel that it is important to include the response from the EU AT ICT industry[149] as to the need to form their own organisation.

Q5 – *Organisation of the European Assistive Technology ICT Industry*

- ***Q5a*** *– The European Assistive Technology ICT industry needs an organisation that represents its interests in Brussels. (11/30 very much agree; 10/30 somewhat agree; 5/30 somewhat disagree; 3/30 very much disagree; 1/30 no answer).*

The type of industry organisation, and specifically, the scope that it should have, will depend largely on what it hopes to accomplish. In the end there are many possible forms for a group to organise itself, some of the most common structures being: federation, association, network, working group, alliance, commission, where their distinguishing characteristics include:

FEDERATION – The act of uniting or of forming a union of states, groups, etc. by agreement of each member to subordinate its power to that of the central authority in common affairs

ASSOCIATION – A group of members of a profession organized to practice their profession together. The association may be a partnership, corporation, or some other entity

NETWORK – A group, system, etc. of interconnected or cooperating individuals or entities

WORKING GROUP – A group of people who work under a charter to achieve a certain goal. Most working groups have a finite lifetime. That is, once a working group has achieved its goal, it disbands.

ALLIANCE – A close association for a common objective, as of nations, political parties, etc.

COMMISSION – A group of individuals appointed by a governmental authority to perform some public service on an ad hoc basis.

It is clear that many options for different structures exist. Further, from the Annex 12.4 included presenting an inventory of the most important associations for the AT ICT industry, it is clear that the industry has a variety of associations, networks, working groups, etc.

After consulting with the EU AT ICT industry as to their view on what form an organisation should take, the majority view (66%)[150] is that the organisation should be a free-standing, newly established entity.

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[149] See Methodology Annex, Validation Questionnaire

[150] See Methodology Annex, Validation Questionnaire

Q5 – *Organisation of the European Assistive Technology ICT Industry*

- ***Q5ci –*** *The organisation should be a free-standing, newly created association (4/30 very much agree; 16/30 somewhat agree; 6/30 somewhat disagree; 2/30 very much disagree; 2/30 no answer).*
- ***Q5cii –*** *The organisation should be a network within an existing and recognised entity in the European Assistive Technology community (6/30 very much agree; 11/30 somewhat agree; 3/30 somewhat disagree; 6/30 very much disagree; 4/30 no answer).*
- ***Q5ciii –*** *The organisation should be something else. (2/30 very much agree; 1/30 somewhat agree; 0/30 somewhat disagree; 0/30 very much disagree; 3/30 not relevant; 24/30 no answer).*

As to the scope that this organisation should have, the majority response from industry indicates that it should be AT ICT[151].

Q5 – *Organisation of the European Assistive Technology ICT Industry*

- ***Q5b*** *– Such an organisation should include only Assistive Technology ICT and not the AT industry as a whole (i.e., mobility products, etc.) (9/30 very much agree; 11/30 somewhat agree; 5/30 somewhat disagree; 4/30 very much disagree; 1/30 no answer)*

Q7 – *AT ICT as a unique part of the AT industry as a whole*

- ***Q7a*** *– The main challenges and opportunities that the AT ICT industry face are quite special, and in general not the same as those experienced by other areas with the entire AT industry(8/30 very much agree; 14/30 somewhat agree; 6/30 somewhat disagree; 1/30 very much disagree; 1/30 no answer)*

In summary, based on this strong response from the EU AT ICT industry the recommendation for an industry organisation is that it be a free-standing, newly created association. Further, this association should be specific to AT ICT, and not include for example, mobility products.

In terms of the activities that such an organisation should carry out to promote the AT ICT industry in Europe, once again, the results from the industry questionnaire[152] are clear:

- ***Q5d*** *– The main functions that such an organisation should realise are:*
  - *NETWORKING between the stakeholders in the Assistive Technology value chain (industry, R&D, end-users, national service providers, etc) (10/30 very much agree; 14/30 somewhat agree; 4/30 somewhat disagree; 1/30 very much disagree; 1/30 no answer)*
  - *KNOWLEDGE EXCHANGE to enhance professional development, marketing and technical information. (14/30 very much agree; 10/30 somewhat agree; 4/30 somewhat disagree; 1/30 very much disagree; 1/30 no answer)*

151 See Methodology Annex, Validation Questionnaire

152 See Methodology Annex, Validation Questionnaire

- *POLICY LOBBY to the extent that this is possible at the EU level. (12/30 very much agree; 12/30 somewhat agree; 2/30 somewhat disagree; 2/30 very much disagree; 2/30 no answer)*

Since industry has indicated their strong interest in these activities, it is logical that companies would help support their industry organisation through funding these types of activities. The experience of the Assistive Technology Industry Association (ATIA) certainly supports the idea that industry values these types of activities. The response and interest on the part of industry as well as the professional community to ATIA activities has been quite impressive, especially to their annual event centred around professional development. Interest has been so strong that this year ATIA is celebrating two events in the same year to be able to attend all of the demand.

For an association to work and achieve the objective of promoting and strengthening the EU AT ICT industry, the following basic tenets should be followed:

- *Network members should include both large and small industry players. It needs the voices of both multinationals and SMEs to be successful.*
- *Geographical coverage should cover all EU member states, for example via connections to existing national organisations, such that representatives of national organisations becoming members of the EU level network.*
- *Strong support for the implantation and start-up of the network, for example on the form of specific EC policy support action and/or a type of grant to off-set initial start-up costs.*
- *Good operational financial structure to guarantee continuity. This would be principally financed through member fees and income from network events, activities and services.*
- *And most importantly, that the EC recognises this network as the key point of contact with the AT ICT industry, and likewise, that the industry values and recognises the network as their voice to the EC.*

In sum, to be part of THE principal voice for the AT ICT industry in Europe to the European Commission.

An additional voice in the EU AT ICT industry is the Association for the Advancement of Assistive Technology in Europe (AAATE), an interdisciplinary pan-European association devoted to all aspects of assistive technology, such as use, research, development, manufacture, supply, provision and policy. The AAATE has expressed an intention to form closer ties with the EU AT ICT industry. Certainly there is every reason for any type of AAATE-industry initiative to work together with an EU AT ICT industry association, however, the AAATE should not form the basis of this industry association. After consulting with the EU AT ICT industry[153], results indicate that industry remains rather uninformed and distant from the AAATE.

Q6 – *AAATE and European Assistive Technology Industry*

- ***Q6a*** *– My firm is well-aware of the AAATE (Association for the Advancement of Assistive Technology in Europe) (5/30 very much agree; 6/30 somewhat agree; 5/30 somewhat disagree; 14/30 very much disagree).*

153 See Methodology Annex, Validation Questionnaire

- ***Q6b*** *– The AAATE would be an effective organisation to build and manage the European Assistive Technology industry (2/30 very much agree; 11/30 somewhat agree; 4/30 somewhat disagree; 3/30 very much disagree; 5/30 not relevant; 5/30 no answer).*

10.1. Operational issues

With consideration for how the EC can specifically help promote the EU AT ICT industry, including an industry association, questionnaire[154] responses indicated that an agreed to starting point would be the investment in development and communication of credible European Assistive Technology ICT market data.

Q5 – *Organisation of the European Assistive Technology ICT Industry*

- ***Q5e*** *– The European Commission should invest in the development and communication of credible market data to support European Assistive Technology ICT industry investment and development. (13/30 very much agree; 11/30 somewhat agree; 3/30 somewhat disagree; 0/30 very much disagree; 3/30 no answer).*

This could represent an important line of activity for the new industry association. To best build upon existing knowledge, the association should work in close collaboration with well-established and important organisations in AT ICT, for example ATIA in the U.S. and RESJA in Japan. This would aid the European network in being recognised by the international community from the start, but would also best ensure a transmission of "best practices" in terms of how the network should work with public sector entities. ATIA (founded in 1999) could serve as a particularly valuable source given that the scope of activities most strongly supported by EU industry through their questionnaires responses coincides with those activities carried out by ATIA over the last 10 years.

For example, in the survey to EU AT ICT industry, 80% of companies agree that knowledge exchange to enhance professional development should be an activity of an EU AT ICT association. Meanwhile, the ATIA annual event has had tremendous success with their professional development courses which are a central part of the event. According to ATIA[155], the number of professional development courses at the ATIA annual event has gone from less than 100 in 2003 to more than 320 in 2009, an increase of 220%. Such a strong success in ATIA's professional development offering to the AT ICT industry would make it a logical source of input on any future organisation for the EU AT ICT industry.

Finally, it will be necessary that this association be promoted at and work in close collaboration with existing and highly relevant events for the European AT ICT industry. To this end, the tables included in Annex 12.8 present the main events relevant to the industry according to year celebrated and typology (conference, workshop or trade fair).

154 See Methodology Annex, Validation Questionnaire

155 Phone interview with ATIA, 4 Nov 2008.

11. RECOMMENDATIONS AND CONCLUSIONS

11.1. Recommendation for an AT ICT organisation

Given that one of the central issues behind this study was whether an industry organisation would be useful to and welcome by the EU AT ICT industry, the study team directly consulted companies from the industry on the subject via a questionnaire. The results from this direct consultation were quite clear and have been summed up in the previous chapter on how to best organise the EU AT ICT industry.

We saw ample agreement (70%) that the European Assistive Technology ICT industry needs an organisation that represents its interests in Brussels.

- ***Q5a** – The European Assistive Technology ICT industry needs an organisation that represents its interests in Brussels. (11/30 very much agree; 10/30 somewhat agree; 5/30 somewhat disagree; 3/30 very much disagree; 1/30 no answer).*

And as to what form such an organisation should take, the best voted alternative (66%) was for a free-standing, newly formed organisation.

- ***Q5ci –** The organisation should be a free-standing, newly created association (4/30 very much agree; 16/30 somewhat agree; 6/30 somewhat disagree; 2/30 very much disagree; 2/30 no answer).*

In terms of the scope of the organisation, although it can be argued that a division between what is and is not an ICT product becomes harder every day due to the continuing onslaught of new ICT developments, the voice from the EU AT ICT industry is that this new organisation should be focused on the AT ICT industry, and not include other big product groups such as mobility aids.

- ***Q5b** – Such an organisation should include only Assistive Technology ICT and not the AT industry as a whole (i.e., mobility products, etc.) (9/30 very much agree; 11/30 somewhat agree; 5/30 somewhat disagree; 4/30 very much disagree; 1/30 no answer)*
- ***Q7a** – The main challenges and opportunities that the AT ICT industry face are quite special, and in general not the same as those experienced by other areas with the entire AT industry(8/30 very much agree; 14/30 somewhat agree; 6/30 somewhat disagree; 1/30 very much disagree; 1/30 no answer)*

Lastly, in terms of the activities and events that this organisation should carry out, the results show strong support for the three lines of Networking, Knowledge exchange; and Policy lobby.

- ***Q5d** – The main functions that such an organisation should realise are:*
    - *NETWORKING between the stakeholders in the Assistive Technology value chain (industry, R&D, end-users, national service providers, etc) (10/30 very much agree;*

14/30 somewhat agree; 4/30 somewhat disagree; 1/30 very much disagree; 1/30 no answer)

- *KNOWLEDGE EXCHANGE to enhance professional development, marketing and technical information. (14/30 very much agree; 10/30 somewhat agree; 4/30 somewhat disagree; 1/30 very much disagree; 1/30 no answer)*
- *POLICY LOBBY to the extent that this is possible at the EU level. (12/30 very much agree; 12/30 somewhat agree; 2/30 somewhat disagree; 2/30 very much disagree; 2/30 no answer)*

Although the opinion received and thus the recommendation proposed is for an independent, newly formed EU AT ICT industry association, this does not and should not mean that the effort to build and put in practice such an association be started from scratch. There are two entities which have been identified which we think would be of great use to the EU AT ICT industry in its intention to create an association. The first of these is ATIA, which already has 10 years of strong experience working with the AT ICT industry (including with EU companies approximately 30 of whom are ATIA members[156]) in lines of activity essentially the same as those proposed above.

Another useful EU AT ICT industry agent with which to collaborate is the AAATE, especially given their goal to move closer to industry and develop stronger research-industries ties. As a starting point towards meeting this objective, at the AAATE's meeting in September 2008, the governing authority of the AAATE accepted the proposal to revise the AAATE constitution and thereby make it possible for Institutions, organisations and companies to become AAATE members.

11.2. Advantages and Disadvantages

This proposal to form a new, independent EU AT ICT industry association is, like all options, not without its advantages and disadvantages. The following summary includes the principal points.

11.2.1. ADVANTAGES

- *The EU AT ICT industry has voiced support for the idea.*
- *An association would build upon the successful experiences of ATIA, especially in terms of the scope and organisation of activities, as well as in financial and organisational aspects.*
- *The association would form links with other components of the AT ICT industry (professional community, researchers, end-users) so that together a multidisciplinary approach would exist, hopefully yielding more integrated and complete solutions for the various AT ICT industry stakeholders.*

156 Telephone interview ATIA, September 2008.

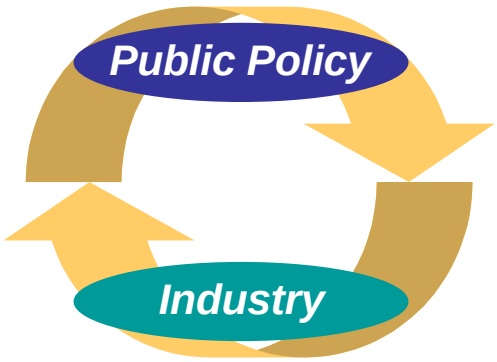
11.2.2. DISADVANTAGES

— *It would begin from the ground up, and would thus require an intense level of dedication, especially in the initial years of activity.*

Another angle for considering this network project, is from the points of view of Industry and from the Commission.

COMMISSION	ISSUE	AT ICT INDUSTRY
Yes	*would benefit from having a clear, respected and reliable central point of contact with the counterparty*	Yes
Yes, especially for the start-up	*would have a financial implication in the project*	Yes, for ongoing operating costs
Yes, i.e., progress on Design for All, increase level and quality of product development, lower selling prices	*the objectives are clear as to what they want to achieve*	Yes, i.e., standards, lobby where possible for a more unified, transparent, free market
No type of organisation will be able to have any significant impact on industry. The companies will keep gouging public systems and developing few innovative solutions. The end-user will never see any benefits.	*however, some doubts are always likely to linger ...*	Any association or network won't be able to achieve any real change in issues that count, i.e., major system reform (EU-level coordination, transparency, etc.). The end-user will still be under-served.

Table 22: Comparison in positions on basic issues regarding the formation of a European AT ICT Industry Association



Source. *Own elaboration*

Figure 25: Relationship between Public Policy and Industry

Source. *Own elaboration*

In the end what seems most clear is that Industry and public policy are inextricably linked, such that it is better and beneficial to both parties, that they make an effort towards a collaborative and cooperative relationship. In addition, risk of the Network project is relatively limited because of the mutual interest in the project on the part of the AAATE.

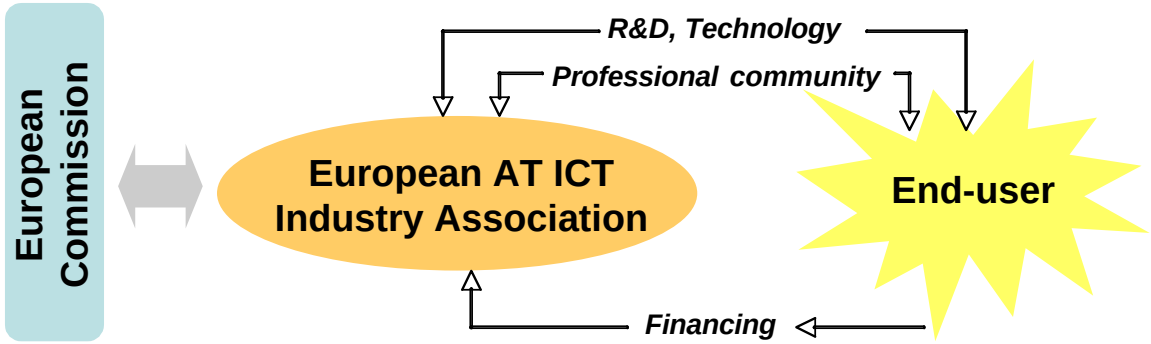


Figure 26: Key Relationships for a European AT ICT Industry Association

Source. *Own elaboration*

11.3. CONCLUSIONS

The AT ICT industry in the EU certainly is not a simple one. It is complex in various aspects, for example for the large number of products, for the large number of small firms, and for the different service provider systems that are used to get AT ICT products to disabled end-users.

How companies work within this depends largely on the type of product involved. For example, the hearing instrument market has consolidated significantly and now in the EU market nearly 80% of the market is controlled by 4 companies. Compare that to a market such as communication devices which is filled with very small companies that build completely individualized, made-to-order products. The diversity of companies and their corresponding strategies is a defining characteristic of the EU AT ICT industry.

However, one area common to the vast majority of firms is the marketing challenge: how to get the right product, via the right person, and with the right instructions and training to the disabled end-user who needs it. To some extent, this is a distribution and marketing challenge common to any industry, but in the AT ICT industry in Europe, the complexity of the different service provider systems is an extremely potent force in the marketplace.

Furthermore, these challenging circumstances are not static, but rather, there are additional factors affecting the AT ICT industry. One of these is the never-ending pace of ICT. And the basic problem of merely trying to keep up with the technology, is made much more complicated by the small size of AT ICT firms compared to the multinational ICT firms setting the pace.

An additional force of change in the industry is coming from standardisation, universal design, and mainstreaming. In part because of corporate social responsibility motives but largely because of potential market size, more companies are incorporating accessibility into their products and services. In some aspects, these trends offer plenty of opportunity for companies, but this also will result in new competition to some AT products from new, more accessible mainstream products.

Universal Design and mainstream products and services will continue to be promoted, both because of end-user interest but also because of public policy that dictates accessibility. This however, will not mean the end of the AT ICT market. It may mean that some products or services disappear, or that a solution is made obsolete, but that is business and industry evolution. For companies that take an active role in looking for opportunities, there will continue to be a market, especially in products and services related to ICT.

So it is easy to conclude that the European AT ICT industry is likely to stay a challenging one. However, there is a relatively easy action that can be taken, that seems to have potential for better organizing and supporting the competitiveness of the EU AT ICT companies: form an EU AT ICT industry association. When surveyed, responding companies supported the idea. Also, they support the idea for three lines of activity: networking; knowledge exchange; policy-making, that, based on the U.S. experience of the Assistive Technology Industry Association, can help strengthen the industry.

12. ANNEXES

12.1. DETAILED DESCRIPTION OF AT ICT PRODUCTS ACCORDING TO THE ISO 9999:2007 CLASSIFICATION SYSTEM

ISO 9999:2007 Assistive products for persons with disability – Classification and terminology

CLASS 22 ASSISTIVE PRODUCTS FOR COMMUNICATION AND INFORMATION

Devices for helping a person to receive, send, produce and/or process information in different Forms. Included are, e.g., devices for seeing, hearing, reading, writing, telephoning, signalling and alarming, and information technology.

12.1.1. ASSSISTIVE PRODUCTS FOR SEEING

Included are, e.g., magnifying devices.

22 03 03 Light filters (absorption filters): Devices for absorbing light with defined wavelengths and filtering out those which are unwanted.

22 03 06 Spectacles and contact lenses: Devices for helping a person to focus her/his vision Included are e.g., contact lens care products.

22 03 09 Glasses, lenses and lens systems for magnification: Devices for enlarging the image of an object a person needs to see. Included are, e.g., lenses with and without illumination. Special output software see 22 39 12.

22 03 12 Binoculars and telescopes: Devices for magnifying the image of a distant object for one or two eyes. Included are, e.g., spectacle-mounted monocular and binocular telescopes.

22 03 15 Assistive products for expanding and angling vision: Devices for broadening or changing the angle of the visual field. Included are, e.g., prismatic spectacles and recumbent spectacles.

22 03 18 Image-enlarging video systems: Devices for displaying an enlarged image of the subject that has been captured by a video camera. Included are, e.g., cameras, control units, video monitors and digitally processed video systems. Video recording and playing devices see 22 18 06. Closed-circuit television systems see 22 18 18.

12.1.2. ASSISTIVE PRODUCTS FOR HEARING

Devices for concentrating and/or amplifying and/or modulating sound for a person with hearing problems. Included are, e.g., hearing aids with built-in tinnitus masking and induction coil devices. Induction-loop devices see 22 18 30. Tinnitus masks see 04 27 15.

22 06 03 Ear-trumpets: Devices for concentrating and channelling sounds into the ear.

22 06 06 Body-worn hearing aids: Devices worn attached to the person's clothes or hanging around her/his neck for amplifying sound.

22 06 09 Spectacle hearing aids: Devices in which electronic circuitry is built into the frame of eyeglasses

22 06 12 In-the-ear hearing aids: Devices worn within the ear to amplify sound. Included are, e.g., in-the-canal hearing aids.

22 06 15 Behind-the-ear hearing aids: Devices worn behind the ear to amplify sound. Included are, e.g., headband hearing aids.

22 06 18 Tactile hearing aids: Devices for receiving, amplifying and transforming sounds into tactile signals.

22 06 21 Hearing aids used in connection with implants: Devices for assisting hearing by stimulating the receivers implanted, e.g., in the inner ear.

22 06 24 Headphones: Included are, e.g., devices that increase the volume of TVs, radios, stereos or are used together with communication amplifiers. Assistive products for handling audio, visual and video information, see 22 18.

22 06 27 Accessories for assistive products for hearing: Included are, e.g., audio connections, spectacle adaptations, remote controls for hearing aids.

12.1.3. ASSISTIVE PRODUCTS FOR VOICE PRODUCTION

Devices for assisting a person who has insufficient voice power to speak using his/her own voice. Microphones, see 22 18 33. Loudspeakers see 22 18 36.

22 09 03 Voice generators: Devices for generating air oscillations in the throat, which are transformed into speech by the movement of the soft palate, tongue and mouth. Included are, e.g., voice valves. Communication amplifiers, see 22 21 06.

22 09 06 Voice amplifiers for personal use: Devices for increasing the volume of a person's voice. Communication amplifiers, see 22 21 06.

12.1.4. ASSISTIVE PRODUCTS FOR DRAWING AND WRITING

Devices assisting a person to convey information by producing figures, symbols or language. Output devices for computers, see 22 39. Weighted cuffs, see 04 48 18. Relief maps, see 12 39 15

22 12 03 Manual devices for drawing and handwriting: Included are, e.g., pens, pencils, brushes, drawing compasses, straightedges and rulers. Grip adapters and attachments, pen and pencil holders, brush holders, see 24 18 06.

22 12 06 Writing, drafting and drawing boards: Drafting and drawing tables, see 18 03 09. Assistive products for fixation, see 24 27.

22 12 09 Signature guides, stamps and writing frames: Devices for assisting a person to write a signature or hand written characters in the correct position or to produce a printed signature using a stamp.

22 12 12 Manual Braille writing equipment: Devices for producing embossed Braille characters on paper with a special stylus or a stick.

22 12 15 Typewriters: Included are, e.g., manual, electric, talking and Braille typewriters and typewriters with memory. Computers and terminals, see 22 33.

22 12 18 Special writing paper/plastic: Materials for hard copies with special effects for tactile recognition.

22 12 21 Portable note-taking devices for Braille: Included are, e.g., portable devices with no display function, manually and electronically operated.

22 12 24 Word processing software: Software for writing, organizing and storing text, e.g. desk-top publishing software, wordprocessing software made for alternative control or accessories for word-processors. Included are, e.g., software for using Braille.

22 12 27 Drawing and painting software: Software for enabling drawing and/or painting activities with computers. Included are, e.g., CAD software and software for colouring pictures. Computers and terminals, see 22 33.

12.1.5. ASSISTIVE PRODUCTS FOR CALCULATION

Computers and terminals, see 22 33.

22 15 03 Manual devices for calculation: Included are, e.g., abacuses and slide rules

22 15 06 Calculating machines: Included are, e.g., talking calculators

22 15 09 Software for calculation

12.1.6. ASSISTIVE PRODUCTS FOR HANDLING AUDIO, VISUAL AND VIDEO INFORMATION

Devices for storing, processing (e.g. filtering noises or converting analogue to digital information) and displaying audio and visual information. Included are e.g. audio and video equipment, televisions and sound transmission systems. Headphones, see 22 06 24.

22 18 03 Sound recording and playing devices: Devices for recording and/or playback of sounds. Included are, e.g., reel-to-reel and all types of tape recorders, index tone generators and demagnetizers and digital sound recording devices and computer-recording of sound, e.g. Minidiscs, DAT, CD-players and DAISY-players.

22 18 06 Video recording and playing devices: Devices for saving visual images and films on tape and/or playing them. Included are, e.g., cameras and video players and digital video recorders and players.

22 18 09 Radio receivers: Included are, e.g., radio sets.

22 18 12 Two-way radios: Devices for receiving and transmitting mainly one to one remote radio communication. Included are, e.g., Citizens Band (CB), Family Radio Services (FRS), General Mobile Radio Service (GMRS) and marine radios.

22 18 15 Television sets: Included are, e.g., digital television sets.

22 18 18 Closed-circuit television systems: Closed systems for transmitting images with a camera to a recorder or direct displaying in a remote location. Standard network telephones see 22 24 03. Image-enlarging video systems, see 22 03 18. Monitoring and positioning systems see 22 27 24.

22 18 21 Decoders for videotext and text television: Devices for translating videotext into artificial speech and/or decoding spoken output to provide video captions. Excluded are speech recognition systems.

22 18 24 Radio frequency transmission systems: Devices for receiving or transmitting high-frequency modulated electromagnetic waves. Included are, e.g., systems, transmitters and receivers for local one-way communication. Assistive products for hearing, see 22 06.

22 18 27 IR systems for audio information: Devices for receiving or transmitting audio information using infrared light. Included are, e.g., systems, transmitters and receivers for local one-way communication, e.g. personal remote voice transmission and voice transmission systems for auditorium. Assistive products for controlling from a distance, see 24 13. Assistive products for hearing, see 22 06.

22 18 30 Induction-loop devices: Devices for receiving or transmitting information using electromagnetic waves in induction-loop systems. Included are, e.g., audio-frequency and carrier-frequency induction-loop systems and inductionloop receivers. Assistive products for hearing, see 22 06.

22 18 33 Microphones: Included are, e.g., headset microphones.

22 18 36 Loudspeakers

22 18 39 Accessories to audio, video and visual systems

12.1.7. ASSISTIVE PRODUCTS FOR FACE-TO-FACE COMMUNICATION

Devices for helping two people to communicate with each other in the same space. Assistive products for voice production, see 22 09.

22 21 03 Letter and/or symbol sets and boards: Devices for communication face-to-face when speaking is not possible or is difficult. Included are, e.g., letter, picture, symbol and icon sets and boards.

22 21 06 Communication amplifiers: Devices for increasing the volume of one or more person's voices. Voice amplifiers for personal use, see 22 09 06. Assistive products for hearing, see 22 06.

22 21 09 Dialogue units: Electronic devices that help direct communication. Included are, e.g., portable and non-portable digital electronic displays, paper, recorded and/or synthetic speech output equipment.

22 21 12 Software for face-to-face communication: Software for producing messages for direct communication.

12.1.8. ASSISTIVE PRODUCTS FOR TELEPHONING (AND TELEMATIC MESSAGING)

22 24 03 Standard network telephones: Included are, e.g., stationary telephones with/without portable receivers, loud speaking, visual telephones and videophones, telex and telefax machines and telephones with built-in warning. Signals. Assistive products for hearing, see 22 06.

22 24 06 Telephones for mobile networks: Included are, e.g., car telephones and portable short-range telephones and hands-free models and camera-equipped models.

22 24 09 Text telephones: Included are, e.g., mobile text telephones and telephones with Braille input/output.

22 24 12 Telephone booths

22 24 15 Telephone answering machines

22 24 18 Telephone switchboards: Panels and boards of switches for controlling the operation of a telephone system.

22 24 21 Accessories for telephoning: Included are, e.g., connection units and signal transformers of an incoming message, keyboards for mobile phones, number presentation assistive products, dialling, engaged and ring tone indicators, dialling assistive products, receiver holders and receiver amplifiers. Assistive products for hearing, see 22 06. Assistive products to assist and/or replace arm and/or hand and/or finger function, see 24 18. Assistive products for fixation, see 24 27.

22 24 24 Software for telecommunication and telematics: Software for verbal and/or visual communication between computers via the computer network. Included are Internet Phone telephony (IP) software. Software for face-to-face communication, see 22 21 12.

22 24 27 Intercoms: Closed-circuit systems that allow people to talk directly to one another whilst in different locations. Assistive products for alarming, indicating and signalling, see 22 27.

22 24 30 Entry phones: Included are, e.g., door entry systems with integrated door openers and entry phone amplifiers. Assistive products for alarming, indicating and signalling, see 22 27.

12.1.9. ASSISTIVE PRODUCTS FOR ALARMING, INDICATING AND SIGNALLING

22 27 03 Indicators with visual signals: Included are, e.g., electronic babysitters, door signals, door signal indicators and door warners.

22 27 06 Indicators with acoustic signals: Included are, e.g., rain indicators and computer-signal indicators.

22 27 09 Indicators with mechanical signals: Included are, e.g., indicating devices with vibration.

22 27 12 Clocks and timepieces: Devices for measuring, displaying and/or speaking the time. Included are, e.g., portable and non-portable devices and devices with or without an alarm function.

22 27 15 Calendars and timetables: Devices for storing and organizing data on planned activities. Included are, e.g., special calendar software.

22 27 18 Personal emergency alarm systems: Devices either operated by the user or activated automatically in case of personal emergency. Included are, e.g., insulin alarms, seizure alarms for people with epilepsy, and fall alarms.

22 27 21 Environmental emergency alarm systems: Included are, e.g., fire alarms and smoke-detectors.

22 27 24 Monitoring and positioning systems: Devices monitoring the status of a specific situation or a person. Included are, e.g., general positioning systems (GPS).

12.1.10. ASSISTIVE PRODUCTS FOR READING

Assistive products for expanding and angling vision, see 22 03 15

22 30 03 Talking reading materials: Media for storing written data to present it in spoken form.

22 30 06 Reading materials in large letters: Assistive products for seeing, see 22 03

22 30 09 Multimedia reading materials: Media storing data for assisting a person by presenting the content in multimedia form.

22 30 12 Page turners: Operating sticks, see 24 18 15.

22 30 15 Book supports and book holders: Reading-tables, desks and stands, see 18 03 06. Bed tables, see 18 03 15. Manuscript-holders, see 24 18 24.

22 30 18 Reading masks and typoscopes: Devices that enable a limited area of text to be visible at one time.

22 30 21 Character-reading machines: Devices for reading and transforming written text into alternative forms of visual, auditory and/or tactile communication.

22 30 24 Tactile reading materials: Media for presenting the content in Braille. Included are, e.g., books and other printed materials in Braille.

22 30 27 Special multimedia presentation software: Software used to link and show different kinds of displays and images, cartoons, animation and synchronized sound.

12.1.11. COMPUTERS AND TERMINALS

22 33 03 Desktop (non-portable) computers

22 33 06 Portable computers and personal digital assistants (PDA): Computers that can be powered with batteries and thus can be used anywhere Included are, e.g., communicators in combination with mobile phones.

22 33 09 Public information/transaction terminals: Included are, e.g., ATM and bank and ticket automates.

22 33 12 Operating software

22 33 15 Browser and communication software: Included are software for SMS, WAP, Outlook and e-mail.

22 33 18 Accessories for computers and networks: Included are, e.g., external memory units, modems, adapters and cables, writing and non-writing CD-ROM players, DVDs and networking devices. Input devices for computers, see 22 36, Output devices for computers, see 22 39.

12.1.12. INPUT DEVICES FOR COMPUTERS

Computers and terminals, see 22 33. Output devices for computers, see 22 39

22 36 03 Keyboards: Included are, e.g., Braille keyboards. Accessories for telephoning, see 22 24 21

22 36 06 Mouse-like devices: Included are, e.g., trackballs, light pens, joysticks connected to the mouse ports and mouse simulators game port joysticks.

22 36 09 Computer joysticks: Included are, e.g., switches with similar functions.

22 36 12 Alternate input devices: Included are, e.g., optical scanners, speech recognition units, touch sensitive boards and data gloves. Mouse-like devices, see 22 36 06

22 36 15 Input accessories: Devices for linking the input systems with the computer. Included are, e.g., stand-alone word banks and word lists, multiports, cables and boards.

22 36 18 Input software: Included are, e.g., one-finger drivers and screen keyboards. Excluded are software to control alternate input devices such as screen keyboards utilizing touch screens. Word processing software, see 22 12 24.

12.1.13. OUTPUT DEVICES FOR COMPUTERS

Included are, e.g., display monitors, printers, plotters and synthesizers.

22 39 03 Displays: Included are, e.g., Braille displays.

22 39 06 Printers: Included are, e.g., Braille printers/plotters.

22 39 09 Alternative output devices: Devices for displaying computer output data, alternating and emulating standard computer output devices in speech-to-speech conversion, synthetic speech. Included are, e.g., tactile displays other than Braille and synthetic speech software to produce output in an alternate mode.

22 39 12 Special output software: Included are, e.g., software that enlarges the text and graphics displayed on a computer screen, software that reads the display and converts it to speech (screen reader) Image-enlarging video systems, see 22 03 18.

12.2. QUESTIONNAIRE COMPLETED BY AAATE NCPS

This questionnaire is centred on the Assistive Technology ICT industry, defined as follows:

The industry dedicated Assistive Technology (AT) which is any item, piece of equipment, product or system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of persons with disabilities. The ICT (Information and Communication Technology) industry plays a key role in AT, especially as it concerns mainstreaming.

1. **Which of the following procurement models most closely fits that used in your country for the following five product groups: hearing aids, Braille readers, assistive products for voice communication, software for communication, environmental control systems? Who is the key decider about which product a patient/end-user receives?**

    a. **Medical.** Driving force is the prescribing physician who determines the solution basis patient needs and an approved list of products.
    b. **Social.** Initiative for a solution comes from the patient to seek out social service. The municipality is responsible for determining the correct patient solution with the aim of keeping the patient at home, and not institutionalised (i.e., in hospital).
    c. **Consumer.** Free market model where there is no intermediary between the patient/consumer and his/her solution.

Place an X in the box that most closely corresponds to the model in your country for these products:

	Medical	Social	Consumer
Hearing Aids			
Braille Readers			
Assistive products for voice communication			
Software for communication			
Environmental control Systems			

2. **Funding of the products and reimbursement model. According to the model of reimbursement of your country, who pays the cost of each product (hearing aids, visual aids, communication devices, software and environmental control systems) and the related services (installation, control, adjustments, etc.)?**

	Principal reimbursing entity	Related or special conditions (level of income, age, etc.)
Hearing Aids		
Braille Readers		
Assistive products for voice communication		
Software for communication		
Environmental control Systems		

* Possible reimbursement entities could include: national health service systems, regional health service systems, national social service systems, regional social service systems, private insurers, end-user, charities, private organisations, churches, or a combination of these.

3. What are the key regulatory entities in your country with responsibilities in the areas of product standardisation and certification?

a. Are they the same entities for all five product groups? If not, please specify:

The same for all products (yes/no)	
Hearing Aids	
Braille Readers	
Assistive products for voice communication	
Software for communication	
Environmental control Systems	

b. Do these entities and the policies they enforce serve as significant barriers to new products entering the market? For which products or type of products are the barriers most significant?

c. What are the greatest difficulties of the current system? For example, lack of coordination, duplicity of roles, cost and time necessary to navigate the process?

4. What are the principal networks and associations related to the at ICT industry in your country?

Name of Association	Profile of members. Approximate % of the following categories: industry, research, user groups	Does it operate on a national or regional level? If regional, please state the region.	Is it specific to a certain product group? Which?	Does it play an important role in forming public legislation and / or policy as regards assistive technology and disabled people?	Does it form part of a larger geographical network (i.e., European, or worldwide)

5. Key trends in the next 3-5 years of the at ICT industry in your country?

12.3. QUESTIONNAIRE USED FOR TELEPHONE INTERVIEWS WITH EUROPEAN AT ICT COMPANIES

1. THE MOST IMPORTANT VALUES/CRITICAL DRIVERS ARE:							
Knowledge of end users		Knowledge of national systems		Flexibility			
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Does your company have direct contact with end-users?	For what reasons? For example, in order to market and/or develop products?	Does your company contract with or sell to national health or social systems?	What is the approximate turnover of these contracts as a percentage of total turnover?	Does your company operate or sell to different markets? (geographical and/or product markets)	How is your company structured in order to take into account the differences that exist in the various countries and markets where your firm operates?	Can and does your company adapt its products for the different markets?	What percentage of your firm's products are adaptible?

2. DESIGN FOR ALL		3. VALUE CHAIN POWER	4. SERVICE DELIVERY				
Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16
Does your company understand the Design for All approach in terms of product development and design?	Does your company use the Design for All approach to develop AT ICT products? Why?	Within in the AT ICT value chain, who has the greatest level of power: R&D, Manufacturing, Distribution and Retail, or the End-user?	Do you think that the service delivery function (assessment, product advice) should be covered by a public system or by industry?	Does your company carry out some service delivery functions? If yes, Which ones?	If in the future a public system does not fill this role, what would be the effect on industry? Would the industry change to fill this role? How? (i.e., vertically integrate)	Currently, who has more relative power: industry or the service delivery function?	What has been your company's experience in working with service delivery organisations?

5. NATIONAL PROCUREMENT SYSTEMS				6. MAINSTREAMING EFFECT ON NATIONAL PROCUREMENT SYSTEMS		
Q17	Q18	Q19	Q20	Q21	Q22	Q23
Do national procurement systems help or hinder the development of the EU AT ICT industry?	Do you know how to bring a new product into different countries' national procurement systems?	Do you have experience in selling to the different countries' national procurement systems?	Can you put on a scale from 1 to 5, where 1 is easy and cheap and 5 is difficult and costly, the different countries' national procurement systems? What are examples of 1 and examples of 5?	Do you think that national procurement systems will be effected by mainstreaming? How? (i.e., lower costs because fewer AT products are covered)	Do you think that these changes would be positive for the development of the AT ICT industry?	What actions would your company take to take advantage of, or protect itself from, these types of changes? i.e., changes in product design? leaving certain markets?

7. LANGUAGE AS A BARRIER			8. R&D DRIVERS AND BARRIERS		9. STANDARDISATION AND INTEROPERABILITY		
Q24	Q25	Q26	Q27	Q28	Q29	Q30	Q31
Do you think that language is a barrier to the EU wide distribution of application software?	Are you active in the software product area for the AT ICT market?	If your firm develops or sells software and you agree that language is a barrier, what are your company's solutions to overcome these barriers?	What are the main drivers to innovation and R&D in the AT ICT industry? Is it direct more by technology push or by market pull?	What are the main barriers to innovation and R&D in the AT ICT industry? Is technology and/ or quality standardisation a barrier?	Do you think that interoperability is more important than standardization in the development of solutions for users	How active is your company in standardization and/or interoperability?	What is your opinion as to how interoperability can be best achieved?

10. ISO SYSTEM		11. MARKET CHARACTERISTICS			12. FEDERATING THE AT INDUSTRY		
Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39
Does your national procurement system use the ISO classification system to organise AT ICT products?	Does your company organise its AT ICT products in terms of the ISO system?	Do you think that the AT ICT industry exists at a European level or does it only exist on a national or regional level?	Do you think that the European AT ICT market can be considered to be a free market? If not, will it ever be?	What would be the main effects on your company if the market we freer? i.e., more competition? better access to end-users?	Would building a federation for the AT industry be useful?	Should it be done at the AT level or the AT ICT level?	What should be the main issues to be discussed in such a forum?

12.4. LIST OF ORGANISATIONS KEY TO THE ICT INDUSTRY IN EUROPE

12.4.1. GOVERNMENTAL AND LEGAL ORGANISATIONS

GOVERNMENT & LEGAL ORGANISATIONS	RELATED FIELDS	LEVEL	COMMENTS
UN - United Nations Organisation www.un.org/disabilities	Disability, ageing, ICT	Internat.	Several working groups in relation to the AT-ICT sector such as those devoted to disability[157], ageing[158] or Information and Communication Technologies[159].
COE - Council of Europe www.coe.int	Disability Ageing, Accessibility, ICT	Europe	The Council of Europe has adopted several resolutions in fields related to the AT-ICT sector.
EC – European Commission http://ec.europa.eu	Disability Ageing, Accessibility, ICT, Employment	Europe	Several General Directorates of the European Commission are related in different ways and intensity with the AT ICT sector. They may promote reports and projects focused on different areas of the sector.
EP - European Parliament www.europarl.europa.eu	Disability Ageing, Accessibility, ICT, Employment	Europe	In addition to its daily activities the Parliament has several discussion group "Parliament Intergroups" more or less related to the AT-ICT Sector. Examples of these intergroups are the Disability and the Aging intergroups.
WB - World Bank www.worldbank.org	Disability Ageing, Accessibility, ICT, Employment	Internat.	The WB deals with a wide number of topics. They promote guidelines and reference policies.

157 http://www.un.org/disabilities/

158 http://www.un.org/ageing/

159 http://www.unicttaskforce.org/

WHO - World Health Organisation www.who.int	Ageing Disability (Assistive Devices) Rehabilitation	Internat.	WHO works on a wide number of topics, some of them related to the AT ICT sector. The effort of this work is applied to the development of guidelines and reference policies.
Business & Disability www.businessanddisability.org	Disability and inclusion	Europe	Objective to raise awareness of the business case for disability, promoting disability inclusion initiatives. Works with business, political actors and people with disabilities on issues related to physical Accessibility, e-Accessibility of products and services, and Employment.
NSH - Nordic Council NSH-Nordic Cooperation on disability www.nsh.se	Disability Ageing, Accessibility, ICT, Employment	Nordic countries	NSH initiates and manages the cooperation at the Nordic level between the various players in the disability sphere

12.4.2. INFORMATION SERVICE AND TRAINING ORGANISATIONS

INFORMATION SERVICE AND TRAINING	RELATED FIELDS	LEVEL	COMMENTS
Association for the Advancement of Assistive Technology in Europe (AAATE)	R&D, training, knowledge building	Europe	Interdisciplinary pan-European association devoted to all aspects of assistive technology, such as use, research, development, manufacture, supply, provision and policy. Promotes research and development of assistive technology, facilitates the exchange of knowledge within the field, and disseminates information about assistive technology and related issues.
European Association of Service Providers for Persons with Disabilities (EASPD) http://www.easpd.eu/	Service providers	Europe	Represents close to 8000 service provider organisations across Europe and across disability. We believe in interdependence and partnership of user organisations, service providers and authorities at all levels
European Health Manager Association (EHMA) www.ehma.org	Service providers,	Europe	Provides members with information and intelligence about developments within the European Union which affect health services, including information on EU activities, public health activities, sources of EU funding and general intelligence.
Council of Occupational Therapists for the European Countries (COTEC) http://www.cotec-europe.org/	Professional Training	Europe	Purpose of promoting and supporting mobility of individuals within Europe and increasing visibility of the profession. COTEC now represents 26 European Countries and more than 120,000 Occupational Therapists.

European Platform for Rehabilitation http://www.optiwork.org/?p=partners_europ_rehabilitation	Rehab and Employment	Europe	The European Platform for Rehabilitation is a leading network of leading service providers to people with disabilities and others who are disadvantaged. These services relate mainly to vocational training and reintegration in the open labour market.
Association for Research and Training on Integration in Europe http://www.arfie.info/en/	Integration and training	Europe	European network to improve the assistance, social integration and social services available to people with disabilities; mainly heavily dependent people with learning difficulties and people with associated psychiatric disorders.
International Society for Augmentative & Alternative Communication www.isaac-online.org	Research, education	Internat.	ISAAC is an NGO in Special Consultative Status with the Economic and Social Council of the United Nations. ISAAC does projects and makes information packs for people anywhere in the world who cannot speak. Includes institutional members such as schools, assistive technology centres, service delivery centres and academic programs.
Rehabilitation Engineering and Assistive Technology Society of North America (RESNA) www.resna.org	R&D, education	North America	Promoting research, development, education, advocacy and provision of technology; and by supporting the people engaged in these activities. RESNA's membership ranges from rehabilitation professionals to consumers to students.
Rehabilitation Engineering and Assistive Technology Society of Japan (RESJA)	R&D, education	Japan	Applying science and technology in the rehabilitation process. Members include rehabilitation professionals, providers, and disabled end-users.
Workability Europe http://www.workability-europe.org/	Employment	Europe, Internat.	Workability Europe is the largest employer body representing providers of work and employment services to people with disabilities in Europe. It has over 40 member organisations located in more than 20 countries.
Council of European Professional Informatics Societies (CEPIS) http://www.cepis.org/	ICT professional	Europe	Non-profit organisation seeking to improve and promote a high standard among Informatics Professionals. In 33 European countries.

12.4.3. TECHNOLOGY ORIENTED ORGANISATIONS

TECHNOLOGY-ORIENTED ORGANISATIONS	RELATED FIELDS	LEVEL	COMMENTS
European Committee for Standardisation (CEN) www.cen.eu	Standardisation	Europe	Work on voluntary technical standards which promote free trade, the safety of workers and consumers, interoperability of networks, environmental protection, exploitation of research and development programmes, and public procurement.
European Telecommunications Standards Institute (ETSI) www.etsi.org	ICT Standardisation	Europe	Official European Standards Organisation in the field of telecomunications. Almost 700 ETSI member organisations from 60 countries world-wide.
Design for All and Assistive Technologies Standardization Co-ordination Group (DATSCG) www.ictsb.org/DATSCG_home.htm	ICT Standardisation	Europe	Included into ICT Standard boards http://www.ictsb.org It has representatives from Administrations, consumers and SME.
European consumer voice in standardization (ANEC) www.anec.org/	General standardisation	Europe	Represents consumers from all EU Member States and the 3 EFTA countries (Iceland, Norway and Switzerland)
National Institute on Disability and Rehabilitation Research (NIDDR) www.ed.gov/about/offices/list/osers/nidrr/index.html	R&D funding	US	Conducts comprehensive and coordinated programs of research and related activities to maximize the full inclusion, social integration, employment, and independent living of disabled individuals of all ages
European Society for Engineering and Medicine (ESEM) www.esem.org/index.aspx	Engineering	Europe	Objective is to establish a platform of cooperation between medicine and engineering on a European basis. Not specific to AT.
European Society of Biomechanics http://www.esbiomech.org/	Engineering, Biomechanics	Europe	Objective: to encourage, foster, promote and develop research, progress and information concerning the science of Biomechanics (a field especially useful to people with disabilities)
European Construction Technology Platform*	Construction	Europe	Includes a theme area related to ECS, but is not specific to AT.
European Nano-electronics initiative advisory council*	Nano-technology	Europe	Includes a theme area related to AT, but is not specific to AT.

12.4.4. FINANCING ORGANISATIONS

FINANCING ORGANISATIONS	RELATED FIELDS	LEVEL	COMMENTS
European Financial Management and Marketing (EFMA) http://www.efma.com/	Insurance, Finance	Europe	Efma was formed in 1971 by bankers and insurers to encourage their colleagues to share experiences, promote the best practices of their institution, and collaborate through alliances and partnerships.
Association Internationale de la Mutualité http://www.aim-mutual.org/	Insurance and social protection bodies	Internat.	Mutual societies grouped together within AIM are groupings of persons with social-welfare objectives and without a profit motive, whose goal is to provide protection against the consequences of various social risks to their members and members' families.
Association of Mutual Insurers and Insurance Cooperatives in Europe (AMICE) http://www.socialeconomy.eu.org/	Insurance, Social economy	Europe	AMICE was created by the merger of two Europe based mutual and cooperative insurance associations, AISAM, with around 120 direct members in 21 countries, and ACME, with 57 members in 19 countries, has taken over the activities of AISAM and ACME. AMICE is a member of Social Economy Europe.

12.4.5. PROFESSIONAL AND END-USER ORGANISATIONS

USERS RELATED ASSOCIATIONS	TYPE	LEVEL	NATIONAL LEVEL
EDF - European Disability Forum (http://www.edf-feph.org/)	AT	Europe	Integrates associations from different countries and from different types of disabilities
ENIL - European Network on Independent Living (http://www.enil.eu/)	AT	Europe	
EBU – EUROPEAN BLIND UNION (http://www.euroblind.org/)	Blindness	Europe	Integrates associations from 44 different countries
NBA – National Braille association www.nationalbraille.org	Blindness		USA
EUD – European Union of the DEAF (http://www.eudnet.org/)	Deafness	Europe	Integrates associations from 21 countries
EURO-CIU – European Association of Cochlear Implant Users (http://www.eurociu.org/)	Deafness	Europe	Integrates associations from 21 countries

IFHOH / EFHOH – International Federation of Hard of Hearing People / European Federation of Hard of Hearing People (www.ifhoh.org & www.efhoh.org)	Deafness	Internat. Europe	Integrates 31 associations from 21 European Countries
TASH (http://www.tash.org/)	AT	Internat.	TASH is an international association of people with disabilities, their family members, other advocates, and professionals fighting for a society in which inclusion of all people in all aspects of society is the norm.
International Federation on Aging (IFA) http://www.ifa-fiv.org/en/accueil.aspx	Aging	Internat.	To improve the quality of the lives of older people around the world through policy change, grassroots partnerships and strengthening bridges between public and private sectors concerned with ageing issues
European Federation of the Older Persons (EURAG) www.ict-ile.eu/db/organisation/eurag-europe-the-european-federation-of-older-persons	Aging	Europe	Through its member organisations, EURAG represents millions of elderly people in Europe and promotes older people's quality of life on societal, social and political levels
European Older People's platform (AGE) www.age-platform.org	Aging	Europe	Promote the interests of older people in the European Union and to raise awareness of the issues that concern them most. AGE is involved in a range of policy and information activities to put older people's issues on the EU agenda and to support networking among older people's groups
European Alliance of Neuromuscular Disorders Association (EAMDA)	Neuro-muscular disability	Europe	Started in 1970 and now with 23 members. EAMDA is a member of the European Disability Forum (EDF).
European Brain Injury Society (EBIS)	Brain injuries	Europe	Dedicated to activities for traumatic brain injured persons and victims of acquired cerebral lesions: stroke, anoxia, encephalitis, brain tumour. EBIS brings together the many professionals involved in the field and the associations of people with a head injury and their families. (152 members)
Autism Europe www.autismeurope.org	Autism	Europe	Main objective is to advance the rights of persons with autism and their families and to help them improve their quality of life. Autism-Europe ensures effective liaison among more than 80 member associations of parents of persons with autism in 30 European countries.
Global Alliance of Mental Illness Advocacy Networks-Europe (GAMIAN) http://www.gamian.eu/	Mental illness	Europe	pan-European patient driven federation of national organisations across Europe assisting people affected by mental illness. Mission is education, awareness, advocacy, and anti-sigma campaigns, in order to improve the quality of life of mentally ill people together with their families

12.4.6. AT ICT INDUSTRY ORGANISATIONS

INDUSTRY ORGANISATIONS	RELATED FIELDS	LEVEL	COMMENTS
European Information & Communications Technology Industry Association (EICTA) http://www.eicta.org	ICT	Europe	– 35 national industry associations representing 10.000 companies. *Austria (FEEI), Belgium (AGORIA), Czech Republic (SPIS), Denmark (ITB KONTOR & DATA ITEK), Estonia (ITL), Finland (Technology Industries of Finland, Federation of Finnish Information Industries), France (Alliance TICS, SIMAVELEC), Germany (BITCOM, ZVEI), Greece (SEPE), Hungary (IVSZ), Ireland (ICT Ireland), Italy (ANIE, ASSINFORM), Latvia (LITTA), Lithuania (INFOBALT), Malta (ITTS), Norway (ITF ABELIA, IKT NORGE), Poland (KIGEIT, PIIT), Slovakia (ITAS), Slovenia (GZS), Spain (AETIC), Sweden (IT FÖRETAGEN), Switzerland (SWICO, SWISSMEM), The Netherlands (NEDERLAND ICT), Turkey (ECID, TESID), United Kingdom (INTELLECT)*
Assistive Technology Industry Association (ATIA) www.atia.org/	AT	USA	Collective voice of the assistive technology industry so that the best products and services are delivered to people with disabilities. USA-based association with a few European member companies.
EUCOMED Medical Solutions http://www.eucomed.be/about eucomed.aspx	Medical technology	Europe	Represents 4500 designers, manufacturers and suppliers of medical technology used in the diagnosis, prevention, treatment and amelioration of disease and disability. Can include, but is not specific to, AT.
Hearing Industries Associations (HIA) www.hearing.org	Hearing instruments	USA	Information protected for members only
HEAR-IT.ORG www.hear-it.org	Hearing instruments	Europe	Industry sponsored website directed towards users to educate and promote the use of hearing instruments
European Software Association (ESA) www.europeansoftware.org	Software	Europe	Representing the European software industry to policy makers and legislators in the European institution.
Grupo Fundosa (part of ONCE) www.grupofundosa.es	Accessibility, universal design, software	Spain	The business group of ONCE (Spanish National Organisation for the Blind)
The Telecare Services Association (TSA) http://www.asap-uk.org/	Telecare (ECS)	UK	Representative body for the telecare industry within the UK
European Committee of Domestic Equipment* (CECED) www.ceced.org	Domestic equipment	Europe	

12.5. country specific information RECEIVED BY AAATE NCPS QUESTIONNAIRE

12.5.1. REIMBURSEMENT POLICIES (I)

	HEARING AIDS		BRAILLE READERS		AP FOR VOICE COMMUNICATION		SOFTWARE FOR COMMUNICATION		ENVIRONMENTAL CONTROL SYSTEMS	
	PRINCIPAL	SPECIAL	PRINCIPAL	SPECIAL	PRINCIPAL	SPECIAL	PRINCIPAL	SPECIAL	PRINCIPAL	SPECIAL
DENMARK	Municipalities assess the needs and finance these products.									
FINLAND	Municipalities through basic and specialized health care	ICD 10:H90 Hypacusis conductiva et sensorineuralis H91.1 Presbyacusis	a) Municipalities through specialized health care b) Social Insurance Institution of Finland	b) Vocational rehabilitation for work or study on account of your illness or disability	Voice generators and amplifiers: Municipalities through basic or specialized health care		a) Municipalities through specialized health care b) Social Insurance Institution of Finland	b) Vocational rehabilitation for work or study on account of your illness or disability	Municipalities through social services or through health care	
GERMANY	Mix of public and private insurers		Mix of public and private insurers		Mix of public and private insurers		Mix of public and private insurers		Mix of public and private insurers	
ITALY	national health system	registered invalidity > 33%	national health system	registered blindness	national health system	registered invalidity > 33%	national health system	registered invalidity > 33%	municipality	registered invalidity = 100%
HUNGARY	national health service system			end-user, charities, private organizations		end-user, charities, private organizations		end-user, charities, private organizations		end-user, charities, private organizations
THE NETHERLANDS	private insurers (regulated by law)		private insurers (regulated by law)	or national health service sytem (when occupation related)	private insurers (regulated by law)		private insurers (regulated by law)		private insurers (regulated by law)	
SWEDEN	regional health service system	Devices necessary for employment situations will be reimbursed by the Swedish Social Insurance Agency, which is a national social service system	regional health service system	Devices necessary for employment situations will be reimbursed by the Swedish Social Insurance Agency, which is a national social service system	regional health service system	Devices necessary for employment situations will be reimbursed by the Swedish Social Insurance Agency, which is a national social service system	regional health service system	Devices necessary for employment situations will be reimbursed by the Swedish Social Insurance Agency, which is a national social service system	regional health service system	Devices necessary for employment situations will be reimbursed by the Swedish Social Insurance Agency, which is a national social service system
UK	regional health service systems		regional social service system	financial coverage depends on end-user's income	regional social service systems and less so charities	financial coverage depends on end-user's age and income	regional social service systems and charities	financial coverage depends on end-user's age and income	regional social service systems and regional health service system	financial coverage depends on end-user's age and income
GREECE	Social security org	75%-100% cost refund	none	9% VAT vs. 19%	none	9% VAT vs. 19%	none		none	

12.5.2. REIMBURSEMENT POLICIES (II)

	HEARING AIDS		BRAILLE READERS		AP FOR VOICE COMMUNICATION		SOFTWARE FOR COMMUNICATION		ENVIRONMENTAL CONTROL SYSTEMS	
	PRINCIPAL	SPECIAL	PRINCIPAL	SPECIAL	PRINCIPAL	SPECIAL	PRINCIPAL	SPECIAL	PRINCIPAL	SPECIAL
AUSTRIA	Health insurance	dependent on level of hearing loss, cost sharing between insurance and client	govnt social services (regional differences)	dependent on income level, degree of impairment, differences between education, vocational and private use	govnt social services (regional differences)	dependent on income level, degree of impairment, differences between education, vocational and private use	govnt social services (regional differences)	dependent on income level, degree of impairment, differences between education, vocational and private use	govnt social services (regional differences)	dependent on income level, degree of impairment
ISRAEL	national insurance institute	by assessment	national insurance institute	by assessment	national insurance institute	by assessment	end-user, charity		end-user, charity	
SPAIN	health		ONCE		regional services + end-users		regional services + end users		end-users	
BELGIUM (this information is for the Flanders Region. Wallonia and Brussels have their own reimbursement organisations: AWIPH and Cocof, respectively.)	Health insurance organisations funded by the State (Dutch: Mutualiteit, French: Mutualité)	There are no special funding conditions but the amount is very low, especially in view of the several thousand € selling cost of current digital hearing aids, approximately 60-70% of the cost is covered by the end-user	VAPH (Vlaams Agentschap voor Personen met een Handicap) collaborates with Kennis en Ondersteuningcentrum (KOC) for technical specifications. A list of equipment types and their specifications, together with the amount of financial reimbursement the end-user can expect, is maintained and published regularly in the official newspaper ("Refertelijst" in Staatsblad/Monitor).	Funding is limited to persons having registered before the age of 65. Reimbursement is always partial and is sufficient for basic models. For employment situation, coverage is 100%	VAPH (Vlaams Agentschap voor Personen met een Handicap) collaborates with Kennis en Ondersteuningcentrum (KOC) for technical specifications. A list of equipment types and their specifications, together with the amount of financial reimbursement the end-user can expect, is maintained and published regularly in the official newspaper ("Refertelijst" in Staatsblad/Monitor).	Funding is limited to persons having registered before the age of 65. Reimbursement is always partial and is sufficient for basic models. For employment situation, coverage is 100%	VAPH (Vlaams Agentschap voor Personen met een Handicap) collaborates with Kennis en Ondersteuningcentrum (KOC) for technical specifications. A list of equipment types and their specifications, together with the amount of financial reimbursement the end-user can expect, is maintained and published regularly in the official newspaper ("Refertelijst" in Staatsblad/Monitor).	Funding is limited to persons having registered before the age of 65. Reimbursement is always partial and is sufficient for basic models. For employment situation, coverage is 100%	VAPH (Vlaams Agentschap voor Personen met een Handicap) collaborates with Kennis en Ondersteuningcentrum (KOC) for technical specifications. A list of equipment types and their specifications, together with the amount of financial reimbursement the end-user can expect, is maintained and published regularly in the official newspaper ("Refertelijst" in Staatsblad/Monitor).	Funding is limited to persons having registered before the age of 65. Reimbursement is always partial and is sufficient for basic models. For employment situation, coverage is 100%
	Funding agencies: Viaams Agentschap (Flanders), AWIPH (Wallonia), Service Brusxellois (Brussels), Dienstesssstelle für Personen mit Behinderung (Germany speaking part of Belgium)									

12.5.3. Reimbursement Policies (III)

	HEARING AIDS		BRAILLE READERS		AP FOR VOICE COMMUNICATION		SOFTWARE FOR COMMUNICATION		ENVIRONMENTAL CONTROL SYSTEMS	
	PRINCIPAL	SPECIAL	PRINCIPAL	SPECIAL	PRINCIPAL	SPECIAL	PRINCIPAL	SPECIAL	PRINCIPAL	SPECIAL
SLOVENIA	national health service system		national health service system		national health service system		end-users		end users, national social service system	
SLOVAKIA	national health care system	covers standard personal hearing devices. Other types of hearing devices are not on the list (i.e., IR, FM communicators, etc.)	national social service system	financial coverage depends on end-user's income	combination of agents	not available	national social service system	Cost, lacking a good quality voice in Slovak in a voice learning system	end-users, possibly covered by social service system	
IRELAND	Health/ Education service/ Self-funded	Combination in leasion with the agents involved	Health/ Education service/ Self-funded	Combination in leasion with the agents involved	Health/ Education service/ Self-funded	Combination in leasion with the agents involved	Health/ Education service/ Self-funded	Combination in leasion with the agents involved	Health/ Education service/ Self-funded, Local government (city councils)	Combination in leasion with the agents involved
PORTUGAL	National Health system	financial coverage depends on end-user's income	National and regional service systems	financial coverage depends on end-user's income	National service systems	financial coverage depends on end-user's income	End-users, National and regional service systems	financial coverage depends on end-user's income	end-users	

12.5.4. REGULATORY ENTITIES (I)

	a. Are they the same entities for all five product groups? If not, please specify.				
	HEARING AIDS	BRAILLE READERS	AP FOR VOICE COMMUNICATION	SOFTWARE FOR COMMUNICATION	ENVIRONMENTAL CONTROL SYSTEM
DENMARK	The Ministry of Health and Prevention and the Danish Medicines Agency act as the Competent Authority for medical devices. Danish Standards is the national standardisation body and through a subsidiary DS Certificering A/S they also offer certification.				
FINLAND	The National Agency for Medicines monitors the compliance medical devices (according to European Medical Devices Directive) with the legislation and regulations and promotes their safe use. VTT Technical Research Centre of Finland is the Notified Body for Medical Device Directive 93/87			None	The National Agency for Medicines monitors the compliance medical devices (according to European Medical Devices Directive) with the legislation and regulations and promotes their safe use. VTT Technical Research Centre of Finland is the Notified Body for Medical Device Directive 93/87
GERMANY	yes, the same entity for all product groups.				
ITALY	Currently there is no regulation about standardisation and certification. The possibility to introduce a product registration procedure is under discussion at the Ministry of Health				
HUNGARY	National Standardisation Authority	No standardisation regulatory entity	No standardisation regulatory entity	No standardisation regulatory entity	No standardisation regulatory entity
THE NETHERLANDS	yes, the same entity for all product groups.				
SWEDEN	It is the same entity for all product groups, i.e., all products are to be considered medical devices according to the European Medical Devices Directive. Responsible entity is Läkemedeisverket (the Medical Products Agency)				
UK	Medical and Healthcare products Regulatory Agency (but only for Health & Safety issues)	Medical and Healthcare products Regulatory Agency (but only for Health & Safety issues)	Medical and Healthcare products Regulatory Agency (but only for Health & Safety issues)	None	Medical and Healthcare products Regulatory Agency (but only for Health & Safety issues)
GREECE	N/A	N/A	N/A	N/A	Helleneic Organisation for Standardisation (ELOT)

Regulatory entities (II)

	a. Are they the same entities for all five product groups? If not, please specify.				
	HEARING AIDS	BRAILLE READERS	AP FOR VOICE COMMUNICATION	SOFTWARE FOR COMMUNICATION	ENVIRONMENTAL CONTROL SYSTEM
AUSTRIA	In general: Standards partially by ÖNORM (Standards Austria) and often under EU (CEN) Standards. Certification of technical products in general by TÜV (Technischer Überwachungs-Verein). No special procedure known for the five product-lines				
SPAIN	AENOR	ONCE	AENOR	AENOR	AENOR
BELGIUM	Agreement between insurers and hearing aid providers	VAPH collaborates with Kennis en Ondersteuningcentrum (KOC) for technical specifications. A list of equipment types and their specifications, togehter with the amound of financial reimbursement the end-user can expect, is maintained and published in the official newspaper ("Refertelijst" in Staatsblad/Monitor)	VAPH collaborates with Kennis en Ondersteuningcentrum (KOC) for technical specifications. A list of equipment types and their specifications, togehter with the amound of financial reimbursement the end-user can expect, is maintained and published in the official newspaper ("Refertelijst" in Staatsblad/Monitor)	VAPH collaborates with Kennis en Ondersteuningcentrum (KOC) for technical specifications. A list of equipment types and their specifications, togehter with the amound of financial reimbursement the end-user can expect, is maintained and published in the official newspaper ("Refertelijst" in Staatsblad/Monitor)	VAPH collaborates with Kennis en Ondersteuningcentrum (KOC) for technical specifications. A list of equipment types and their specifications, togehter with the amound of financial reimbursement the end-user can expect, is maintained and published in the official newspaper ("Refertelijst" in Staatsblad/Monitor)

12.5.5. REGULATORY ENTITIES (III)

	a. Are they the same entities for all five product groups? If not, please specify.				
	HEARING AIDS	BRAILLE READERS	AP FOR VOICE COMMUNICATION	SOFTWARE FOR COMMUNICATION	ENVIRONMENTAL CONTROL SYSTEM
SLOVENIA	Ministry of Health, Special Committee				
SLOVAKIA	Ministry of Health Care provides the List of approved medical equipment, including some AT. Hearing aids belong here. All devices in the List must be approved by State institute for drug control. ALSO Ministry of labour, social affairs and family produces a List of technology covered by the govermental social system.	Ministry of labour, social affairs and family produces a List of Assistive technology covered by the governmental social system together with price limits. There is only general description of the types of AT, not related to a specific producer like it is in the List of medical equipment provided by Ministry of Health care.	Ministry of labour, social affairs and family produces a List of Assistive technology covered by the governmental social system together with price limits. There is only general description of the types of AT, not related to a specific producer like it is in the List of medical equipment provided by Ministry of Health care.	Ministry of labour, social affairs and family produces a List of Assistive technology covered by the governmental social system together with price limits. There is only general description of the types of AT, not related to a specific producer like it is in the List of medical equipment provided by Ministry of Health care.	Ministry of labour, social affairs and family produces a List of Assistive technology covered by the governmental social system together with price limits. There is only general description of the types of AT, not related to a specific producer like it is in the List of medical equipment provided by Ministry of Health care.
IRELAND	The same for the 5 product groups: According to the international ISO-standards. National Standards Authority (NSAI) and Irish Medicine Board				
PORTUGAL	There is a one national entity (State Service) responsible for the translation into Portugese of international standards related to assistive technology i.e., ISO 9999. Thre is no standardisation system developed specifically for Portugal (at least not that is widely used and relevant)				

12.6. VALIDATION QUESTIONNAIRE COMPLETED BY EUROPEAN AT ICT COMPANIES

BASIC INFORMATION: INDICATE YOUR RESPONSE BY TYPING AN "X" IN THE CORRESPONDING ORANGE CELLS

I.	**Number of total firm employees:**	<10	10 - 100	101 - 500	500+
II.	**The company considers itself:**	Assistive technology		Mainstream*	
III.	**The company sells in:**	1 EU market		various EU markets	International (EU+)

** Mainstreaming refers to the process of non Assistive Technology companies altering or changing the design of products (i.e., through Universal Design) to make their products more accessible, including to the disabled.*

INDICATE WITH AN "X" IN THE ORANGE CELLS THE DEGREE TO WHICH YOU AGREE WITH THE FOLLOWING STATEMENTS	**very much**	**somewhat agree**	**somewhat disagree**	**very much**	**Not relevant**	**Additional Comments**
1. European Assistive Technology ICT Industry Characteristics						
a. At present, the service provider function (assessment, product selection & financing) has the greatest relative power in the European Assistive Technology ICT value chain						
b. The assessment and selection of different product solutions should be the right and responsibility of the disabled end-user, and not of the national service provider systems						
c. National service provider systems are increasingly cost-based (as opposed to being based on offering the widest number of assistive technology ICT products to disabled end-users)						
d. Companies in the European Assistive Technology industry will consolidate (through mergers, alliances, partnerships, etc.) as disabled end-users take increasing responsibility for their product solutions.						
e. European Assistive Technology ICT companies are well-prepared to operate successfully and profitably in an industry where disabled end-users take increasing direct responsibility for their product solutions (as opposed to receiving solutions through national service provider systems).						
f. Sales to private consumers, including disabled end-users, (as opposed to sales through service provider systems) will be an increasingly important part of your company's sales.						
g. Your company expects that over 50% of its total sales will come from the private consumer market within the next five years.						
h. European Assistive Technology ICT companies' product development and product offering is superior to that of companies from North America.						
i. Maintaining a European-wide distribution network represents an important cost for European Assistive Technology ICT companies.						
j. For European Assistive Technology ICT companies, it is more profitable to sell product to the North American market than to the European market (excluding exchange rate risk).						

12.7. SELECTED RESULTS FROM INTERVIEWS WITH EUROPEAN AT ICT COMPANIES

		DO YOU AGREE THAT LANGUAGE IS A BARRIER TO THE EU WIDE DISTRIBUTION OF APPLICATION SOFTWARE?																			
ANSWERS		*language isn't a barrier but rather an ooportunity (core value proposition of the company)*	*not a barrier but an opportunity*	*yes, very important barrier for their products -- especially when they hope to go to EU marekt in next couple of years*	*language is key to software*	*yes*	*cultural barriers also very important*	*yes*	*yes*	*not a barrier, just part of doing business in europe.*	*yes, but extent to being a barrier depends on the type of product and the amount of translating that is necessary.*	*yes*	*no, not for them. To translate the software is not a problem.*	*not a barrier but a bottleneck*	*not really relevant. Only have to translate mkting mat*	*yes*	*yes*	*yes*	*not relevant*	*yes*	*no*
YES	**11**			1		1	1	1	1		1	1				1	1	1		1	
NO	**7**	1	1							1			1	1	1						1
YES	**61%**																				

		DO YOU AGREE THAT INTEROPERABILITY IS MORE IMPORTANT THAN STANDARDIZATION IN THE DEVELOPMENT OF SOLUTIONS FOR USERS?																					
ANSWERS		*interested in interoperability but not standardisation*	*see them as complementary -- one helps achieve the other*	*standardisation brings about interoperbility. They work together*	*interoperability is more impt*	*interoperability is more important*	*sees the relation between the two.*	*ineroperability would be great ,but it would require mobile handset mfgs to use the same operating system.*	*interoperability is key.*	*standaridisation is dangerous because you don't know who is establishing stnds*	*interoperability is more important*	*interoperability is key.*	*interoperability is more important*	*interoperability is more impt*	*yes*	*both*	*interoperability is more important. Not worried about legal standards, thinks that they are mkt leader so is setting the standards which everyone else has to follow*	*very difficult to geto a stnds. In US ther eis an ECS stnrd, they tried to do same in EU a few years ago but failed. Now pxs are higher in EU than in US.*	*see them as complementary -- one helps achieve the other. Interop is more impt*	*Yes*	*doesn't know and/or not relevant*	*yes (to us)*	*both are impt. 50/50*	*yes*	*yes*
INTEROPERABILITY	16	1			1	1		1	1		1	1	1	1	1		1		1	1		1		1	1
STANDARDISATION	0																								
both / complementary	6		1	1			1									1				1			1		
INTEROPERABILITY	**73%**																								

		DOES YOUR COMPANY ORGANISE ITS AT ICT PRODUCTS IN TERMS OF THE ISO SYSTEM?																		
ANSWERS		*yes*	*yes*	*no*	*no*	*no. Doesn't see why they should (benefits)*	*They do not use ISO 9999 for the classification of their product. It is not useful and when they tried to search some product, they did not find it. It should be more human. They do not see benefits in it.*	*don't use but recognise that it has its utility*	*not really but it was somewhat necessary to classify their products in this way to bid in some natinoal procrement systems*	*yes. Are convinced of its utility*	*no*	*they sometimes use it when it's approrpiate. In general, all these types of norms are too slow.*	*yes*	*yes*	*no*	*no*	*knows about the system but they don't use it.*	*not yet, but they will. Problem is a lack of info. Could be useful as a type of certification of products*	*doesn't knowit doesn't use it.*	*no*	*yes*
YES	7	1	1							1		1	1	1						1
NO	13			1	1	1	1	1	1		1				1	1	1	1	1	1	
YES	**35%**								1									1			

12.8. main AT ICT events

Conference
Workshop
Trade Fair

2007	2008	2009
ATIA 2007 (annual conference) 8th Assistive Technology Industry Association (ATIA) Conference and Exhibition January 24-27, 2007 Orlando, Florida, USA www.atia.org	**ATIA 2008** (annual conference) 9th Assistive Technology Industry Association Conference and Exhibition January 30 - February 2, 2008 Orlando, Florida, USA www.atia.org	**ATIA 2008** (annual conference) 10th Assistive Technology Industry Association Conference and Exhibition January 28 - 31, 2009 Orlando, Florida, USA www.atia.org
CSUN 2007 (annual conference) 22nd Annual International Technology and Persons with disabilities Conference March 19-24 California State University, Northbridge Center, Los Angeles, CA, USA www.csun.edu/cod/conf	**CSUN 2008** (annual conference) 23rd Annual International Technology and Persons with disabilities Conference March 10-15, 2008 California State University, Northbridge Center, Los Angeles, CA, USA www.csun.edu/cod/conf	**CSUN 2009** (annual conference) 24th Annual International Technology and Persons with disabilities Conference March 16-21, 2009 California State University, Northbridge Center, Los Angeles, CA, USA www.csun.edu/cod/conf
ICTA 2007 The first International Conference on ICT & Accessibility April 12-14, 2007 Hammamet, Tunisia www.esstt.rnu.tn/utic/tica2007		
	CWUAAT 2008 (biannual international workshops) 4th Cambridge Workshop on universal access and assistive technology April 14 - 16, 2008 Cambridge, UK http://rehab-www.eng.cam.ac.uk/cwuaat/cwuaat08.htm	
	IASTED 2008 International Conference on Assistive Technologies. The International Association of Science and Technology for Development April 16 – 18, 2008 Baltimore, Maryland, USA http://www.iasted.org/conferences/home-619.html	
REHAB SCANDINAVIA 2007 (annual exhibition) REHAB - Scandinavia / Cure & Care - Exhibition for Disabled People May 8 - 10, 2007 Fredericia, Denmark	**REHAB SCANDINAVIA 2008** (annual exhibition) REHAB - Scandinavia / Cure & Care - Exhibition for Disabled People May 6 – 8, 2008 Copenhagen, Denmark http://www.rehab-scandinavia.com/index.asp	**REHAB SCANDINAVIA 2009** (annual exhibition) HEALTH & REHAB 2009 May 12 – 14, 2009 Denmark http://www.rehab-scandinavia.com/index2.asp?lang=gb
NAT-C 2007 (biannual conference) Nordic Assistive Technology Conference 2007 May 14 – 15, 2007 Oslo, Norway www.nat-c.org/?q=en/node/30	**NAT-S 2008** (annual seminar) Nordic Assistive Technology Seminar 2008 25-26 November 2008 Helsinki, Finland http://www.nuh.fi/english/natc.html	
ICORR 2007 (biannual conference) 10th edition of the International Conference on Rehabilitation Robotics June 12-15, 2007 Noordwijk, Holland www.rehabrobotics.org		**ICORR 2009** (biannual conference) 11th edition of the International Conference on Rehabilitation Robotics June 23-26, 2009 Kyoto International Conference Center, Japan www.rehabrobotics.org
RESNA 2007 (annual conference) The Rehabilitation Engineering and Assistive Technology Society of North America June 15-19, 2007 The Arizona Biltmore, Phoenix, Arizona, USA www.resna.org/Conference/Conference.php	**RESNA 2008** (annual conference) The Rehabilitation Engineering and Assistive Technology Society of North America June 26 -30, 2008 Arlington, Virginia, US www.resna.org	**RESNA 2009** (annual conference) The Rehabilitation Engineering and Assistive Technology Society of North America June 23-27, 2009 New Orleans, US www.resna.org
ICTA 2007 - FICCDAT The 2nd International Conference on Technology and Aging (ICTA) Festival of International Conferences on Caregiving, Disability, Aging and Technology June 16 - 19, 2007 Toronto, Ontario, Canada www.ficcdat.ca		**FICCDAT 2011** Festival of International Conferences on Caregiving, Disability, Aging and Technology June 5-8, 2011 Sheraton Centre Toronto Hotel, Toronto, Canada. www.ficcdat.ca
HCI INTERNATIONAL 2007 (biannual conference) 12th International Conference on Human-Computer Interaction July 22-27, 2007 Beijing, P.R. China http://www.hci-international.org		**HCI INTERNATIONAL 2009** (biannual conference) 13th International Conference on Human-Computer Interaction July 19-24, 2009 San Diego, CA, USA http://www.hcii2009.org/

Conference
Workshop
Trade Fair

ICCHP 2008 (biannual conference)
11th International conference on computers. Helping people with special needs
July 9-11 2008
University of Linz, Austria
http://www.icchp.org/

ISAAC 2008 (biannual conference)
13th confenrece international society for augmentative and alternative communication
August 2 – 7, 2008
Montréal, Canada
http://www.isaac2008.org/

JCAART 2007 (annual conference)
22nd Japanese Conference of Advancement on Assistive and Rehabilitation Technology
August 23 – 25, 2007
Nagoya Congress Centre. Japan
http://www.resja.gr.jp/conf-22/eng/index.html

JCAART 2008 (annual conference)
23rd Japanese Conference of Advancement on Assistive and Rehabilitation Technology
August 27 – 29, 2008
Niigata, Japan
http://shinsen.biz/23rihakou/index_e.html

JCAART 2009 (annual conference)
24th Japanese Conference of Advancement on Assistive and Rehabilitation Technology

ARATA 2008 (biannual conference)
National Conference of the Australian Rehabilitation & Assistive Technology Association
September 22 – 24, 2008
Adelaide, Australia
http://www.e-bility.com/arata/

IKT FORUM 2007 (annual conference)
IKT-Forum für und mit Menschen mit Behinderungen: Praxis – Forschung – Entwicklung
September 24 – 25, 2007
Johannes Kepler Universität Linz, Austria
http://www.iktforum.at/index.html

IKT FORUM 2008 (annual conference)
IKT-Forum für und mit Menschen mit Behinderungen: Praxis – Forschung – Entwicklung
July 6 – 7, 2008
Linz, Austria
http://www.iktforum.at/

IKT FORUM 2009 (annual conference)
IKT-Forum für und mit Menschen mit Behinderungen: Praxis – Forschung – Entwicklung
July 13 – 14, 2009
Linz, Austria
http://www.iktforum.at/

REHACARE 2007 (annual trade fair)
18th International Trade Fair Rehabilitation - Care - Prevention - Integration
October 3-6, 2007
Düsseldorf, Germany
www.rehacare.de

REHACARE 2008 (annual trade fair)
19th International Trade Fair Rehabilitation - Care - Prevention - Integration
October 15-18, 2008
Düsseldorf, Germany
www.rehacare.de

REHACARE 2009 (annual trade fair)
20th International Trade Fair Rehabilitation - Care - Prevention - Integration
October 14-17, 2009
Düsseldorf, Germany
www.rehacare.de

AAATE 2007 (biannual conference)
AAATE International Conference
October 3 – 5, 2007
San Sebastian, Spain
www.fatronik.com/aaate2007

AAATE 2008 (biannual workshop)
AAATE International Workshop 2008
September 25 – 26, 2008
Milano, Italy
http://www.aaate.net/news.asp?check_if_more=999&articlei=81

AAATE 2009 (biannual conference)
AAATE International Conference
August 31 – September 2, 2009
Florence, Italy
http://eilab.ifac.cnr.it

TECHSHARE 2007 (annual conference)
International conference on accessibility
October 4 – 5, 2007
Novotel London West, UK
www.rnib.org.uk/xpedio/groups/public/documents/Code/public_rnib004057.hcsp

TECHSHARE 2008 (annual conference)
International conference on accessibility
February 4 – 5, 2008
New Delhi, India
http://barrierbreak.com/events-conference/techshareindia.php

TECHSHARE 2009 (annual conference)
International conference on accessibility
Autumn/Winter 2009

http://www.rnib.org.uk/xpedio/groups/public/documents/Code/public_rnib004057.hcsp

ASSETS 2007 (annual conference)
9th International ACM SIGACCESS Conference on Computers and Accessibility
October 15 – 17, 2007
Tempe AZ, USA
www.sigaccess.org/assets07

ASSETS 2008 (annual conference)
10th International ACM SIGACCESS Conference on Computers and Accessibility
October 13 – 15, 2008
Halifax, Nova Scotia, Canada
www.sigaccess.org/assets08

ASSISTH 2007
1st International Conference on accessibility and assistive technology for people in disability situation
19-21 November 2007
Toulouse, France
http://www.irit.fr/ASSISTH/ASSISTH2007/index2.php

ICT 2008
Europe's biggest research event for information and communication technologies
25 -27 November, 2008
Lyon, France
http://ec.europa.eu/information_society/events/ict/2008/index_en.htm

RAATE 2007 (annual conference)
Recent Advances In Assistive Technology & Engineering
November 26 – 27, 2007
Sheffield, UK
www.raate.org.uk

RAATE 2008 (annual conference)
Recent Advances In Assistive Technology & Engineering
December 1, 2008
Coventry, UK
www.raate.org.uk

12.9. TABLE OF COMPANIES: EASTIN & HANDICAT

The principal assistive technology database for products in Europe in the EASTIN: European Assistive Technology Information Network. This network is composed of six national information systems: REHADAT (Germany), SIVA (Italy), CEAPAT (Spain), HMI (Denmark), DLF (UK), HULPMIDDELEN WIJZER (The Netherlands), and basically serves as a link into each of these six national databases.

The list of companies which is included in this Annex is the result of analysing each of the six national databases within the EASTIN plus Handicat, the French national assistive technology database. Brief descriptions of these databases follow:

- Portale **SIVA** (www.portale.siva.it) is the national information system on Assistive Technologies, run on behalf of the Italian Ministry of welfare. Its contents include over 8300 assistive devices, 1350 companies, 280 information and research centres, 700 ideas on how to solve daily life problems, 30 case studies, over 210 documents (fact sheets, articles, lectures etc.). It also includes a number of interactive services such as a guide to assistive technology, a virtual classroom for on-line lectures, forums and an e-mail or telephone helpline. The database is bilingual (Italian and English).[160]
- **REHADAT** (www.rehadat.de) is the German national information system supporting the vocational integration of people with disabilities. Detailed information about various aspects of vocational rehabilitation is available from eight databases designed for use by people with disabilities as well as by professionals involved in rehabilitation. The topics covered by the databases are: Technical Aids, Case Studies, Literature, Research, Law, Addresses, Workshops, Seminars. More than 100,000 current entries are available from REHADAT on CD or via the Internet. The database is bilingual (German and English).[4]
- The **HJÆLPEMIDDELBASEN** (www.hmi.dk), the Danish AT database, has been operational since 1985 and the information from the database has been published on Hjælpemiddelbasen since 2000. Hjælpemiddelbasen is visited by more than 65.000 visitors each month, who are mainly professionals and users of AT. The database contains information on over 15.000 products (of which approximately 8,000 are currently available on Danish market) and about 420 Danish suppliers of assistive technology. The database language is Danish.[4]
- The **CEAPAT** (www.ceapat.org/catalogo) data base on assistive technologies is called CATALOGO DE AYUDAS TECNICAS and was developed by the Technical university of Madrid. It has been available online since 1999. It includes information on products, their technical characteristics and their manufacturers/suppliers. The content includes over 3000 assistive devices and 1000 enterprises. A team within CEAPAT takes care of keeping its content updated. The Technical University of Madrid deals with technical maintenance, accessibility, software, innovation, usability and new developments.[4]
- **HULPMIDDELEN WIJZER** (www.hulpmiddelenwijzer.nl) - in operation until 2007 - was a national information system on assistive technology. The system was launched in June 2001, by upgrading a previous system that had been available off line for about 15 years. It was accessible through subscription and offered search facilities on products, user problems, manufacturers/suppliers, legislation and literature.[4]

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160 http://www.esatin.info

- The Disabled Living Foundation system is called **DLF Data** (www.dlf.org.uk). It is the primary source of information in the UK for assistive technology. DLF Data is an invaluable resource for anyone needing information on disability equipment and daily living aids, including occupational therapists, physiotherapists, care home managers, students and disability information advisors. DLF Data contains detailed information on over 14,000 products from over 1,700 suppliers, all in one place. [4]
- **HANDICAT** (http://www.handicat.com) is the French national assistive technology database. It is searchable over the Web. Handicat is operated by Handicap et Cadre de Vie (HACAVIE), a French national disability resource center. The site is in French.

These six national databases all offer search facilities on products and manufacturers/suppliers, however there are important differences between them in terms of how these searches can be done (degree of detail, the concepts used, etc.). The following table compares basic attributes and functionality of the different databases relevant to the AT ICT industry in Europe.

			AT INFORMATION PROVIDERS NERWORKS [1]		UPDATED REGULARLY	LANGUAGE ENGLISH	CLASSIFIED BY						
							PRODUCT			COMPANY			
							ISO 9999		FUNCTION	NAME	COUNTRY	FUNCTION IN THE VALUE CHAIN [2]	PRODUCT GROUP
COUNTRY	NATIONAL DATA BASES		EASTIN	ATI ALLIANCE			2003	2007					
DENMARK	Hjælpemiddel-instituttet	www.hmi.dk	X	X	X [16]			X		X			
GERMANY	Rehadat	www.rehadat.de	X	X	X [14]	X		X		X			
ITALY	Siva [10]	www.siva.it	X	X	X [19]	X		X	X	X	X	X [10]	X
NETHERLANDS	Handy-Wijzer [11]	www.handy-wijzer.nl	X	X	X [17]			X		X			X
SPAIN	Ceapat	www.ceapat.org	X	X	X [12]			X		X			
UNITED KINGDOM	Disabled Living Foundation	www.dlf.org.uk	X	X	X [18]	X			X	X	X	X [6]	X
AUSTRIA	Handynet	http://handynet-oesterreich.bmsg.gv.at			X [15]			X		X	X	X [3]	X
BELGIUM	Kennis- en OndersteuningsCentrum	www.koc.be		X	X				X	X		X [7]	X
FRANCE	Handicat	www.handicat.com		X	X			X	X	X		X [8]	X
IRELAND	Assist Ireland [4]	www.assistireland.ie		X	X	X			X	X		X [5]	
PORTUGAL	Catálogo Nacional de ayudas técnicas	www.ajudastecnicas.gov.pt					X					X [9]	
SWEDEN	Hjälpmedelsinstitutet (Webb-HIDA)	www.hi.se (http://80.80.24.87/)			X			X	X	X		X [13]	

12.9.1. National Data Bases with information as to available AT products

1 *European Assistive Technology Information Network(www.eastin.info)*
1 *International Alliance of Assistive Technology Information Providers (www.ati-alliance.net)*
2 *i.e., manufacturer, distributor, etc.*
3 *Einzelhandel, Großhandel, Herstellung, Reparatur, Verleih = Retailer, Wholesaler, Manufacturer, Repairer, Renter*
4 *Includes a list of key service providers where assistive technology is an element of their service provision*
5 *supplier directory*
6 *suppliers, retailers*
7 *handelaar*
8 *fabricant*
9 *fabricantes*
10 *SIVA Databases > Companies > Advanced search by: Name, Parent organisation, Country, Province/country/state (first specify the country), Town, Types of Assistive Devices manufactured, Types of Assistive Devices supplied, Brands manufactured, Brands supplied, Brands sold, Last Update, Document Number. --- SIVA Databases > Assistive devices > Advanced search by: Usage environment, Model, Children's version available, Include discontinued products, Last update, Record number of the product, Brand, Primary supplier (holder of the brand), Functional limitations (ICF)*
11 *search by brand*
12 *every time there is a new product/company the database is updated*
13 *Visa alla leverantörer - supplier directory*
14 *every 6 months*
15 *every 3 months*
16 *companies are asked to update once a year, but they can update on a regular basis – whenever they feel like it, or have a new product. That's what most of them do.*
17 *every 3 months*
18 *continuously updated*
19 *continuously updated by manufacturers and distributors. Every six months they receive a reminder to update their information. If the information is not updated in five years it is automatically erased.*

As can be appreciated from this comparative table, some of the key difficulties with using these databases are:

1- Most of the national information systems are only available on their own languages. Only a few provide information in English, and that information is quite limited.

2- Not all the national information systems are updated. For example, the CEAPAT (EASTIN Spain) has recently started using ISO 9999:2007 (class 22). When this analysis was carried out they were still using the old version ISO 9999:2003 (class 21) and the information was not updated.

3- The Hulpmiddelen Wijzer (www.hulpmiddelenwijzer.nl), the national information system on assistive technology in The Netherlands, was in operation up until 2007. The Handy-Wijzer is the new national information system on assistive technology in The Netherlands.

4- The lack of consistency in how the databases are structured. For example,

   a. In CEAPAT (the Spanish database), Hjælpemiddel-instituttet (the Danish database), Rehadat (the German database) and Disabled Living Foundation (the UK database) you can't search by type of company according to its function in the value chain (i.e., manufacturers) and the type of products (i.e. search of manufacturers according to the type of Assistive Products manufactured).

   b. In Handicat (the French database), you can search by manufacturers but not manufacturers by general product type (i.e. class 22), only by very specific product type (22.03.03).

   c. The Danish database lists all companies as distributors. Although this could be that all companies distribute, it is impossible from such a categorisation system to understand which companies might also be manufacturers. The database administrator has an agreement with the Danish companies that the registration of companies as manufacturers is only available to the database administrators. Companies do not want to share openly information as to their type of activity.

5- Finally, the classification system is not unified among the different national databases which make up EASTIN. An example of this is the DLF (EASTIN UK) doesn't use the ISO classification, but rather classifies products by functionality.

On the positive side, the German database is a good example of how a database can be structured and made available. This database covers over 22,000 products across all of AT and is updated every 6 months. Anyone can solicit a copy of this database for free via the REHADAT website (www.rehadat.de). And, in addition, once one has asked for the information, the updated versions are sent out automatically at no cost. However, even this "best example" has its limits in that in the English version it is possible to search only five of the eight possible databases (Technical Aids, Case Studies, Addresses, Research and Literature). A search in all eight databases is only possible in the German version. In summary, what is clearly needed for the industry and for end-users is a homogenous, standardised format, in English, that covers all European countries and AT ICT product categories.

12.9.2. TABLE OF COMPANIES: EASTIN & HANDICAT

* **M**: Manufacturer, **D**: Distributors.

		COUNTRY	NAME	EMAIL	TELEPHONE	FAX	ADDRESS	M	D
1	1	AUSTRALIA	Pulse Data International PTY Ltd.	www.pulsedata.com.au	006128911300	006128911323	Suite 23, 2 O'Connell Street - 1015	x	
2	1	AUSTRIA	BHM-Tech Produktionsgesellschaft mbH	office@bhm-tech.at	00433359200780	004333592007819	Grafenschachen 242	x	
3	2	AUSTRIA	CareTec GmbH	office@caretec.at	0043151380810	0043151380819	Stubenbastei 1	x	
4	3	AUSTRIA	Emporia Telecom Produktions- und Vertriebs GesmbH & CoKG	office@emporia.at	00437327777170	00437327777178	Industriezeile 36	x	
5	4	AUSTRIA	LifeTool	david.hofer@lifetool.at	004373290155202	004373290155201	Hafenstrasse 47-51 - A-4020, Linz	x	
6	5	AUSTRIA	TU Wien FORTEC Arbeitsgruppe für Rehabilitationstechnik	fortec@fortec.tuwien.ac.at	004315880142901	004315880142999	Favoritenstr. 11/029	x	
7	1	BELGIUM	Acapela group	www.acapela-group.com	003265374275	003265374276	33, Boulevard Dolez	x	x
8	2	BELGIUM	Groupement d entraide sociale La Famille	www.geslafamille.be	003224113137		rue jean jacquet 25, 1081 bruxelles	x	
9	3	BELGIUM	HMC International NV	info@hmc-products.com	003293810950	003293810951	E3-Laan 89, 9800 Deinze	x	
10	4	BELGIUM	INTERPOINT	interpoint@interpoint.be	003216201230	003216201230	Celestijnenlaan 48 - B-3001, Leuven	x	x
11	5	BELGIUM	koba vision	info@kobavision.be	003211344513	003211348525	de oude hoeven 6, 3971 Leopoldsburg	x	
12	6	BELGIUM	NSI bvba	info@nsi-be.com	003289519000	003289519009	Haakstraat 1A	x	x
13	7	BELGIUM	Plextor Europe	www.plextor.be	003227255522	003227259495	Excelsiorlaan 9	x	
14	8	BELGIUM	Sensotec NV/SA	info@sensotec.be	003250394949	003250394946	Gistelsteenweg 112, B - 8490 Varsenare	x	x
15	9	BELGIUM	Technology and Integration	info@tni.be	+32(0)9/3315858	+32(0)9/3315859	Victoriastraat 52, 9000 Gent	x	
16	10	BELGIUM	Topcom Europe	info@topcom.be	003216398920	003216398939	Grauwmeer 17	x	
17	1	CANADA	DAESSY DAEDALUS TECHNOLOGIES, INC.	daessy@daessy.com	0016042704605	0016042448443	2491 Vauxhall Place, Richmond, B.C. V6V 1Z5 Canada	x	
18	2	CANADA	SIGHT ENHANCEMENT Systems	sales@sightenhancement.com	0015198838400	0015198838405	60 Bathurst Drive, Unit #17, Waterloo, ON N2V 2A9	x	
19	1	DENMARK	AB Handic Help	info@abhh.dk	004545766006	004545766460	Ved Klædebo 12C 2970-Hørsholm	x*	
20	2	DENMARK	Abertil A/S	sa@abertil.dk	004557529390	004557529391	Roskildevej 384 4100-Ringsted	x*	
21	3	DENMARK	Andrew Health Care	info@AndrewHealthCare.dk	004545663336		Enrumvej 3 2942-Skodsborg	x*	
22	4	DENMARK	Arbejdsmarkedscenter Nord	jpijcn@ama.aarhus.dk	004589308009		Skejbygårdsvej 13-17 8240-Risskov	x*	
23	5	DENMARK	Arriva Handicapservice		004587235142		Arriva Handicapservice	x*	
24	6	DENMARK	Ascom Danmark A/S	info@ascom.dk	004570203883	004570203882	Roskildevej 342 C 2630-Taastrup	x*	x
25	7	DENMARK	ASK v/Robin Bredel	info@ask-ikt.dk	004520945945		Silkeborggade 4, 5.tv 2100-København Ø	x*	
26	8	DENMARK	Astrid Leisner & Søn ApS	sune@leisner.dk	004563713050	004563713051	Korsvang Centret 5610-Assens	x*	
27	9	DENMARK	Audio Voice Technology	salg@avtech.dk	004570239230	004544530530	Baldersbækvej 18 2635-Ishøj	x*	
28	10	DENMARK	Audioteket A/S	info@audioteket.dk	004565485000	004566115463	Døckerslundsvej 33 5000-Odense C.	x*	
29	11	DENMARK	Audio-Visuelt Centrum A/S	info@avc.dk	004575624577	004575614699	Finlandsvej 5 8700-Horsens	x*	
30	12	DENMARK	Bang & Olufsen forhandlere				Bang & Olufsen forhandlere	x*	
31	13	DENMARK	Bjørn Nielsen Rehab & Hospitalsartikler A/S	mail@bjoern-nielsen.dk	86927955	86927027	Sønderbyen 7 9510-Arden	x*	
32	14	DENMARK	Blindeværkstederne Bredegård		48480079		Endrupvej 24 3480-Fredensborg	x*	
33	15	DENMARK	Boghandlere	www.bogpriser.dk/boghandlere			Boghandlere	x*	
34	16	DENMARK	Butik KIK	butikkik@mail.tele.dk	36461960	36461925	Høje Taastrup Boulevard 39 2630-Taastrup	x*	
35	17	DENMARK	Calundan Høreteknik	calundan@mail.tele.dk	86898029	86898091	Brunhøjvej 8 8680-Ry	x*	
36	18	DENMARK	Care4all	info@care4all.dk	76134444	76124949	Østervangsvej 39 6715-Esbjerg N	x*	
37	19	DENMARK	CEPA Mobility ApS	cepa@cepa.dk	70277421		Njalsgade 88 3.3 101 2300-København S	x*	
38	20	DENMARK	Condigi Televagt A/S	info@ctv.as	87935000	87935010	Niels Bohrs Vej 42 8660-Skanderborg	x*	
39	21	DENMARK	CRD-data	info@crd-data.dk	75554983		Åglimt 13 6040-Egtved	x*	
40	22	DENMARK	CWD	CWDE@get2net.dk	20312345		Eghøjvej 2B 8250-Egå	x*	
41	23	DENMARK	Dal-Pres ApS	info@dal-pres.dk	47383340	47383360	Holmensvej 20A 3600-Frederikssund	x*	
42	24	DENMARK	Dania-Import ApS	info@dania-import.dk	76410078	76410038	Nygade 69620-Aalestrup	x*	
43	25	DENMARK	Danish Care Technology A/S	info@danishcare.dk	4558500565	4558500534	Industrivej 29. 4200 Slagelse	x*	
44	26	DENMARK	Dansk Autohjælp A/S	era@dah.dk	70108092	70108093	Torsøvej 2 8200-Århus N	x*	
45	27	DENMARK	Dansk Høreteknik A/S	dh.as@dk-hoereteknik.dk	47175598	47175588	Østervej 6,1.3650-Ølstykke	x*	
46	28	DENMARK	Dansk Taleteknologi A/S		70232526		Rosenvængets Alle 9-11 2100-København Ø	x*	
47	29	DENMARK	DSB Handicapservice	handicøst@dsb.dk	70131419		DSB Handicapservice	x*	
48	30	DENMARK	Dyberg-Larsen I/S		64481474		Middelfartvej 475466-Asperup	x*	
49	31	DENMARK	E-Bogen	pernille@e-bogen.com	40541100		Nørgaardsvej 30 9280-Storvorde	x*	
50	32	DENMARK	Edb-forhandlere				Edb-forhandlere	x*	

		COUNTRY	NAME	EMAIL	TELEPHONE	FAX	ADDRESS	M	D
51	33	DENMARK	EDNord	adm@ednord.dk	96333500	96333501	Istedgade 37A 9000-Aalborg	x*	
52	34	DENMARK	EL-FI Data	info@elfi.dk	75933200	75933221	Heimdalsvej 16 7000-Fredericia	x*	
53	35	DENMARK	Elmetec A/S	elmetec@elmetec.dk	89325270	89325277	Nordlandsvej 64-66 8240-Risskov	x*	x
54	36	DENMARK	Entomed		35362290	35362291	Skolestien 13 3150-Hellebæk	x*	
55	37	DENMARK	Eschenbach Optik A/S	mail@eschenbach-optik.dk	70203888	75857988	Boeskærvej 18 7100-Vejle	x*	
56	38	DENMARK	ES-Rehatec	rehatec@vip.cybercity.dk	39697011	39695570	Magle Torv 12, st.2860-Søborg	x*	
57	39	DENMARK	ETAC A/S	info@etac.dk	79685833	75665257	Parallelvej 1 8751-Gedved	x*	
58	40	DENMARK	ETS Distribution Scandinavia A/S	hardy@etstrack.dk	44921800	44927700	Harmonivej 4 2730-Herlev	x*	
59	41	DENMARK	Euman A/S	sales@euman.com	33228856	33228895	Niels Ebbesens Vej 17 1911-Frederiksberg C	x*	
60	42	DENMARK	Evikali A/S	lb@evikali.dk	70224711		Fynsgade 3 8560-Kolind	x*	
61	43	DENMARK	EXAKT	exakt@exakt.dk	98193533	98193123	Stenholm 7 9400-Nørresundby	x*	
62	44	DENMARK	Fanø Soft	admin@fanoe-soft.dk	75163365	75166567	Bavnebjergtoft 9 6720-Fanø	x*	
63	45	DENMARK	Felson I/S	felson@felson.dk	70206676		Gartnervej 2 6710-Esbjerg V	x*	
64	46	DENMARK	FLEXME TechMedia ApS	info@flexme.dk	44348460	44998140	Farum Gydevej 643520-Farum	x*	
65	47	DENMARK	FLT Alarmer	post@flt.dk	40373251	65310851	Fjordparken 36 5800-Nyborg	x*	
66	48	DENMARK	Focus Computer Products A/S	info@focuscomp.dk	44845144	44845688	Hørkær 7-9, Bygn. B2730-Herlev	x*	
67	49	DENMARK	Foniris Telecom ApS	info@foniristele.com	69127777		Hørskætten 3 2630-Taastrup	x*	
68	50	DENMARK	Foreningen af Danske DøvBlinde FDD	fddb@fddb.dk	36752096	36388585	Kløverprisvej 10B, 1.2650-Hvidovre	x*	
69	51	DENMARK	Fyns Antenne og elektronikcenter	fae@fae.dk	63111351	63111352	Roersvej 33 A5000-Odense C	x*	
70	52	DENMARK	GN ReSound Danmark A/S	info@gnresound.dk	45752222	45752229	Lautrupbjerg 7 2750-Ballerup	x*	
71	53	DENMARK	Gyldendal Uddannelse	gyldendal@gyldendal.dk	33755560	33755722	Klareboderne 3 1001-København K	x*	
72	54	DENMARK	Handicare A/S (tidligere Kjærulff)	info@handicare.dk	64821535	64821449	Ørkebyvej 6	x*	
73	55	DENMARK	HERBOR.DK	kontakt@herbor.dk	75538009		Låsbygade 89. St.Th 6000-Kolding	x*	
74	56	DENMARK	Hewlett-Packard		48121000	48121001	Engholm Parkvej 8 3450-Allerød	x*	
75	57	DENMARK	HH-tele.dk V/ Jydsk Distribution	info@hh-tele.dk	96419151	96410034	Industrivej 3 7490-Aulum	x*	
76	58	DENMARK	Hi3G Denmark Aps	thomas.hovring@3.dk	33330135		Arne Jacobsens Allé 17, 82300-København S.	x*	
77	59	DENMARK	Hjælpemidler for Handicappede	hfh@synsnerven.dk	98954244	98954224	Søhedenvej 809750-ØsterVrå	x*	
78	60	DENMARK	Højager Belysning A/S	info@hojagerbelysning.dk	56288000	56288020	Hårlev Mark 1A 4652-Hårlev	x*	
79	61	DENMARK	Huset Venture	ordbanken@husetventure.dk	86283555	86283563	Stavtrupvej 34 8260-Viby J.	x*	
80	62	DENMARK	Husum Special Optik	hso@image.dk	38289095	38899092	Frederikssundsvej 302 A2700-Brønshøj	x*	
81	63	DENMARK	IHM P/S	sales@hmortensen.dk	39663131	39661445	Vandtårnsvej 87 2860-Søborg	x*	
82	64	DENMARK	IKT-gruppen	ikt@ikt.aaa.dk	87347134		P.P. Ørums Gade 9-11 bygn. 20 8000-Århus C.	x*	
83	65	DENMARK	Inspiri ApS	inspiri@inspiri.dk	63850046	63850020	Hjorslevvej 31 5450-Otterup	x*	
84	66	DENMARK	Instituttet for Blinde og Svagsynede	HP@IBOS.dk	39452545	39452525	Rymarksvej 12900-Hellerup	x*	
85	67	DENMARK	Instrulog Rehab A/S	info@instrulog.dk	44979477	44975457	Måløv Værkstedsby 772760-Måløv	x*	
86	68	DENMARK	INSTRUMETER A/S	mail@instrumeter.dk	45505810	45505811	Linde Allé 292850-Nærum	x*	
87	69	DENMARK	ITECH ApS	info@itech.dk	39627665	39627668	Billedvej 6 2100-København Ø	x*	
88	70	DENMARK	J.E.S. Paulsen	om@alinco.dk	43965002		Formervangen 262600-Glostrup	x*	
89	71	DENMARK	Jadea	post@jadea.dk	23230055	35363559	Frederiksborgvej 5, baghuset st.3450-Allerød	x*	
90	72	DENMARK	JC Data	jcd@samtal2000.dk	86232822		Erbækvej 16 8380-Trige	x*	
91	73	DENMARK	JO-EL Electric A/S	dksales@jo-el.com	63151000	63151005	Ørbækvej 280 5220-Odense SØ	x*	
92	74	DENMARK	Jysk Handi	mail@jyskhandi.dk	86996500	86996531	Hornbjergvej 11 8543-Hornslet	x*	
93	75	DENMARK	Kærnedata v/Gerd Nielsen	kernedata@nonbohegn5.dk			Nonbo Hegn 5 8800-Viborg	x*	
94	76	DENMARK	Kapitex Scandinavien	kapitex.dk@mail.dk	5676 3104	5676 3105	Lokesvej 10 4600-Køge	x*	
95	77	DENMARK	Kebo Med A/S	info@kebomed.dk	36398080		Jernholmen 43 2650-Hvidovre	x*	
96	78	DENMARK	Kidde Danmark A/S	info@kidde-danmark.dk	36869600	36869611	Industriholmen 17-19 2650-Hvidovre	x*	
97	79	DENMARK	Kikkertgrossisten.dk	info@kikkertgrossisten.dk	50513209		Råbjergvej 8 9210-Aalborg Sø	x*	
98	80	DENMARK	Klingtech	info@klingtech.dk	74331000	74613184	Stegholt 25 a	x*	
99	81	DENMARK	Konsulentfirmaet Palle Madsen	info@sfw.dk	65994505	65994506	Næråparken 49 5792-Årslev	x*	
100	82	DENMARK	LAP-Sikkerhed ApS	info@lapsik.dk	43422270		Rugvænget 19 G 2630-Taastrup	x*	
101	83	DENMARK	Lewel Plus	info@lewelplus.dk	75517070	75517474	Centervej 2 6000-Kolding	x*	
102	84	DENMARK	Lindpro A/S	cd@lindpro.dk	89329900	89329999	Bredskifte Allé 7 8210-Århus V	x*	
103	85	DENMARK	LM-Teknik	lm-teknik@lm-teknik.dk	96588000	96588001	Klejtrupvej 57 9500-Hobro	x*	
104	86	DENMARK	Logos-IT	logos-it@stofanet.dk	75612113	75615113	Askevej 33 8700-Horsens	x*	
105	87	DENMARK	Luxo Danmark A/S	office@luxo.dk	44200700	44200730	Baltorpbakken 5-7 2750-Ballerup	x*	
106	88	DENMARK	LVI Danmark ApS	info@lvi.dk	57672099	57673099	Marielundvej 28, 1. th 2730-Herlev	x*	
107	89	DENMARK	LYSOGLUP / v. Steen Scheffler ApS	s@scheffler.dk	43451451	43451199	Paul Bergsøes Vej 2 2600-Glostrup	x*	
108	90	DENMARK	MAR SOFT	mar@marsoft.dk	48799366	48799343	Musvitvej 10 3200-Helsinge	x*	
109	91	DENMARK	Max Manus A/S		31675555	31674252	Rosenkæret 11C 2860-Søborg	x*	
110	92	DENMARK	Mikro Værkstedet A/S	salg@mikrov.dk	65918022	65917922	Lucernemarken 12	x*	
111	93	DENMARK	Milo Radio A/S		36410011	36411388	Valhøjs Allé 672610-Rødovre	x*	
112	94	DENMARK	Mixware	mail@mixware.dk	60646450		Tåstrup Byvej 19	x*	
113	95	DENMARK	Mobiludsalg.dk	info@mobiludsalg.dk	70231418	44231419	Herstedvang 7 C, 1. sal 2620-Albertslund	x*	
114	96	DENMARK	Mosther	mosther@tdcadsl.dk	74403113		Rudbæk 15 6470-Sydals	x*	
115	97	DENMARK	MY-TIME Holding ApS	mail@my-time.dk	56521018	56521015	Holtug Linievej 35	x*	
116	98	DENMARK	NEBA A/S	neba@neba.dk	46590177	46590197	Baldersbuen 172640-Hedehusene	x*	
117	99	DENMARK	Novendo ApS		70266623	70266624	H.P. Christensens Vej 13000-Helsingør	x*	
118	100	DENMARK	Nugurt	larsen@inet.uni2.dk	36443203		Pilestræde 52, 3.1112-København K	x*	
119	101	DENMARK	On Sight Vision	osv@onsightvision.dk	57611190	57809185	Magleagervej 1 4100-Ringsted	x*	
120	102	DENMARK	Optiker E. Bendtsen		31355031	31748340	Rolighedsvej 101958-Frederiksberg C	x*	
121	103	DENMARK	OTICON A/S	sum@oticon.dk	39177100	39277900	Kongebakken 9 2765-Smørum	x*	
122	104	DENMARK	Papyrus A/S	info.dk@papyrus.com	70223838	70223939	Bredebjergvej 12630-Taastrup	x*	
123	105	DENMARK	Personics A/S	jas@personics.net	70210440		Søren Frichs Vej 38D 8230-Åbyhøj	x*	
124	106	DENMARK	Phonak Danmark A/S	info@phonak.dk	64417887	38104686	Nitivej 10 2000-Frederiksberg	x*	
125	107	DENMARK	Phonic Ear A/S	mail@phonicear.com	004539177101	004539277900	Kongebakken 9, DK-2765 Smørum	x*	x

		COUNTRY	NAME	EMAIL	TELEPHONE	FAX	ADDRESS	M	D
126	108	DENMARK	PROcare	procare@procare.dk	43626243	43626543	Stensmosevej 22-24	x*	
127	109	DENMARK	Prolog Development Center		36360000	36360001	H.J. Holst Vej 3C-5C 2605-Brøndby	x*	
128	110	DENMARK	ProMobil ApS	info@promobil.dk	48224225	48224227	Gefionsvej 4, 1	x*	
129	111	DENMARK	Radio-/TV-forhandlere				Radio-/TV-forhandlere	x*	
130	112	DENMARK	Ravenholm Computing ApS	www.ravenholm.dk	44889900	44889988	Ryttermarken 10 3520-Farum	x*	
131	113	DENMARK	Ropox A/S	info@ropox.dk	55750500	55750550	Ringstedgade 2214700-Næstved	x*	x
132	114	DENMARK	ROPOX.	info@ropox.dk	004555750500	004555750550	Ringstedgade 221 - DK 4700, NAESTVED	x*	
133	115	DENMARK	Rova		74627762	74627923	Lavgade 52 6200-Åbenrå	x*	
134	116	DENMARK	SafeKey ApS	info@safekey.dk	96310000	96310099	Løven 13 9200-Aalborg V	x*	
135	117	DENMARK	Safelink Denmark ApS	salg@safelink.dk	70200780	73848510	Sdr. Tingvej 10 6630-Rødding	x*	
136	118	DENMARK	Saver Aps	info@saver.dk	87591640	87591611	Færgevej 2B 8500-Grenå	x*	
137	119	DENMARK	ScanDis	info@scandis.dk	97162311	97162077	Nr. Lindvej 14 7400-Herning	x*	
138	120	DENMARK	Scantone A/S	jfe@scantone.dk	46195100	46195196	Roskildevej 384 4100-Ringsted	x*	
139	121	DENMARK	Scantron A/S	info@scantron.dk	66139966		Buchwaldsgade 515000-Odense C.	x*	
140	122	DENMARK	SecondGuess ApS	secondguess@secondguess.dk	27265965		Jagtvej 109 3. tv.2200-København N	x*	
141	123	DENMARK	SONIC Innovations A/S	info@sonici.dk	004544522500	004544522544	Hoerkaer 26, 2730 Herlev	x*	
142	124	DENMARK	Special Pædagogisk Forlag A/S	forlag@spf-herning.dk	004597128433	97210107	Birk Centerpark 32 7400-Herning	x*	
143	125	DENMARK	Specialskolen for Voksne, Hjørring		004598903588	98922751	Elsagervej 25 9800-Hjørring	x*	
144	126	DENMARK	SPOK ApS	sales@spok.dk	004535360219	35374537	Blegdamsvej 4, 1. tv.2200-København N	x*	
145	127	DENMARK	TAGARNO AS	mail@tagarno.com	004576251111	76251199	Sandøvej 4 8700-Horsens	x*	
146	128	DENMARK	TDC Handicapservice	handicapservice@tdc.dk	004580802626	33201101	Bagsværd Møllevej 3 2800-Lyngby	x*	
147	129	DENMARK	Tele Call Danmark	info@telecall.dk	004521123456		Svenstrupvej 63 5260-Odense S	x*	
148	130	DENMARK	Teleforhandlere				Teleforhandlere	x*	
149	131	DENMARK	Teleteknik	teleteknik@post9.tele.dk	004597141586	97141525	Birkevej 14 7451-Sunds	x*	
150	132	DENMARK	TestLab-System A/S	info@testlab.dk	004546740505	46740510	Metalvej 7 4000-Roskilde	x*	
151	133	DENMARK	TopSupplies ApS	info@topsupplies	004570124100	44534100	Hadsundvej 12 2610-Rødovre	x*	
152	134	DENMARK	TopVision ApS	topvision@stofanet.dk	004575641179	75647911	Stevedorevej 6A	x*	
153	135	DENMARK	Transmedia	info@transmedia.dk	004586787600		Ivar Huitfeldts Gade 10, 1.8200-Århus N	x*	
154	136	DENMARK	VGE-Gruppen	ess@vge-gruppen.com	004575734222	004575734311	Borgergade 17 7323-Give	x*	
155	137	DENMARK	Vicsat	info@vicsat.dk	004570208287	004586898284	Industrivej 10 B 8680-Ry	x*	
156	138	DENMARK	Virtual-Mouse	info@virtual-mouse.com			Fredtoftevej 2 2650-Hvidovre	x*	
157	139	DENMARK	Vitaris A/S	kundeservice@vitaris.dk	004570200940	004570200960	Smedeland 10 2600-Glostrup	x*	
158	140	DENMARK	Voice Design	voicedesign@voicedesign.dk	004586296511	004586296501	Kirkevænget 88 8310-Tranbjerg J.	x*	
159	141	DENMARK	Widex	widex@widex.com	004544355600	004544355601	Ny Vestergårdsvej 25 3500-Værløse	x*	
160	1	FINLAND	Benefon Oyi				Salo Postfach 84, FIN-24101 Salo	x	
161	2	FINLAND	IST International Security Technology Oy	www.ist.fi			Melkonkatu 16 A, FIN-00210 Helsinki	x	
162	1	FRANCE	ACCESSOLUTIONS	contact@accessolutions.fr	0033143440202	0033134296027	24 rue lamartine, 38320 eybens	x	
163	2	FRANCE	ADEP - ateliers noel le gaud	fhavia@apnl.com	0033146971687	0033141442208	7 rue voltaire, 92800 Puteaux	x	
164	3	FRANCE	AEGYS	contact@aegys.com	0033442953688	0033442953788	131, Chemin des Xaviers, 13013 Marseille	x	
165	4	FRANCE	AETA	jlsancey@aeta.fr	0033141361212	0033141361213	kepler hall 3 - 18-22 av edouard herriot, 92350 le plessis robinson	x	
166	5	FRANCE	Akompas technologies	info@akompas.com	0033491055076	0033491055076	73 rue chateaubriand, 13007 marseille	x	
167	6	FRANCE	Alcatel-Lucent	www.alcatel-lucent.com	0033140761010		54 rue de la boetie, 75008 paris	x	
168	7	FRANCE	APAM	apam.materiel@apam-paris.asso.fr	0033140446715	0033140446775	3 rue jacquier, 75014 Paris	x	
169	8	FRANCE	Aphycare technologies	contact@aphycare.com	0033296484139	0033296485986	4 rue ampere, 22300 lannion	x	
170	9	FRANCE	Aria	www.synthe-aria.com	0033231474401		5 avenue de lausanne, 14000 caen	x	
171	10	FRANCE	ASSYS	a.roche@assys.fr	0033169891667	0033169891666	47 rue du trou grillon, 91280 saint pierre du perray	x	
172	11	FRANCE	Axos	gregory.gaboret@axos-fr.com	0033147898305	0033147899142	124 boulevard de verdun, 92411 courbevoie cedex	x	
173	12	FRANCE	BCF MKM S.A.	bcfmkm@wanadoo.fr	0033323530958	0033323537493	BP 30139, Les terrasses du mail, 02880 CUFFIES	x	
174	13	FRANCE	BIO	bio@bio.com	0033130241526	0033130247401	197 avenue du general leclerc, 78220 viroflay	x	
175	14	FRANCE	Ceciaa	service.commercial@ceciaa.com	0033144693166	0033144693169	134-140 rue d'aubervilliers - bâtiment c, 75019 paris		x
176	15	FRANCE	CNEFEI	ntic@cnefei.fr / jack.sagot@ac-versailles.fr	0033141443100	0033145063993	58/60 avenue des landes, 92150 suresnes	x	
177	16	FRANCE	COMPUZIK	Info@compuzik.com	0033145063001	0033170248306	90 avenue Félix Faure 92000 Nanterre	x	
178	17	FRANCE	Cree	cree@cree.fr	0033472240899	0033472242536	z.i. du recou, 69520 grigny		x
179	18	FRANCE	curiosis editions - aiaca	contact@aiaca.org	0033142570578	0033142592413	37 rue leon. 75018 paris		x
180	19	FRANCE	DAITEM	www.daitem.fr	0033476453232	0033476453220	rue du pre de l orme, 38926 crolles cedex	x	
181	20	FRANCE	Data Health System	t.perier@d-h-s.net	0033466232903	0033466761910	48 rue eugene freysprosinet z.i. de grezan, 30900 nimes	x	
182	21	FRANCE	DeafGard Ltd	info@deaf.fr	0033494596317	0033494697780	ZA des 4 chemins - 83340 Flassans sur Issole	x	
183	22	FRANCE	DIAGRAL Atral System	jj.liard@atral.fr	0033476453200	0033476453242	rue du pre de l orme, 38926 crolles cedex		x
184	23	FRANCE	Diese Telecom	info@dieseecom.com	0033145361770	0033145361779	4 bis rue françois pinson, 92320 châtillon	x	
185	24	FRANCE	DORO SAS	commercial@doro.fr	0033130071700	0033130071710	bp 446, 78055 st quentin en yvelines cedex	x	
186	25	FRANCE	Dupont Medical	www.dupont-medical.com	0033383495495	0033383495496	parc de nancy/pompey - site de ban la dame, 54390 frouard	x	
187	26	FRANCE	Editions Club PoM Logiciels	contact@clubpom.fr	0033321552883	0033321552979	7 rue henri becu - bp 5, 62118 fampoux	x	
188	27	FRANCE	ELAN informatique	www.elan.fr	0033561360777	0033561360770	4, rue Jean Rodier	x	
189	28	FRANCE	erocca	contact@mon-echo.eu	0033450360711	0033450367240	86 route des charmottes d'en haut, 74890 bons en chablais	x	
190	29	FRANCE	ESCHENBACH OPTIC	mail@eschenbach-optik.com	0033130077900	0033134810835	Z.I. LE CHENE SORCIER, 78340 LES CLAYES SOUS BOIS	x	
191	30	FRANCE	E-Sidor	contact@e-sidor.com	0033143368720		236 bis rue de tolbiac, 75013 paris	x	
192	31	FRANCE	Etex	info@etexfrance.fr	0033155782500	0033155782505	9-11 avenue ledru rollin, 75012 paris	x	x
193	32	FRANCE	EUROBRAILLE	boutique@eurobraille.fr	0033155269100	0033155269191	134-140 rue d'Aubervilliers - 75019, Paris	x	
194	33	FRANCE	Frontalini Amedeo	info@tournepage.com	0033238981464	0033238981464	10 allée des peupliers, 45700 conflans sur loing	x	
195	34	FRANCE	Groupe CIOA	info@cioa.com	0033494141240	0033494141241	Avenue de l'Université, 83160 La Valette du Var		x
196	35	FRANCE	Guillaume Borios / iOS-software	ios@ios-software.com			Appt. 4, Batiment D, 6 Chemin de la pelude, 31400 TOULOUSE	x	
197	36	FRANCE	handicap liaisons services	handicap.ls@wanadoo.fr	0033344650315	0033344650216	266 avenue daumesnil. 75012 paris	x	
198	37	FRANCE	Hop Toys	hoptoys@hoptoys.com	0033467138110	0033467138114	boite postale 236, 34402 lunel cedex		x
199	38	FRANCE	ICOM handicap international	icom@handicap-icom.asso.fr	0033472768844		18 rue de gerland, 69007 Lyon	x	
200	39	FRANCE	Idée	contact@association-idee.org	0033251314851	0033251314851	10 rue des sables, 85540 moutiers les mauxfaits	x	x

		COUNTRY	NAME	EMAIL	TELEPHONE	FAX	ADDRESS	M	D
201	40	FRANCE	Identites	identites@score-vpc.fr	0033241961848	0033241341157	b.p. 6005, 49140 seiches sur le loir		x
202	41	FRANCE	IGL France	contact@igl-france.com	0033174372726		rue de copenhague bp 13918, 95731 roissy cdg cedex	x	
203	42	FRANCE	In'Tech INFO	contact@intechinfo.fr	0033143902121		72 avenue Maurice Thorez, 94200 Ivry Sur Seine	x	
204	43	FRANCE	IST medical	info@ist-medical.fr	0033231951103	0033231449778	12 rue Ferdinand Buisson, 14280 SAINT CONTEST	x	
205	44	FRANCE	j-d.com groupe prescom	www.jdcom.fr	0033130855566	0033130450549	3 rue michael faraday, 78180 montigny-le-bretonneux	x	
206	45	FRANCE	JPR international	janpiro@aol.com	0033139505838	0033139538083	70 rue yves le coz, 78000 versailles		x
207	46	FRANCE	Kinetec S.A.	www.kinetec.fr	0033324529121	0033324529034	rue albert deville, 08014 charleville mezieres		x
208	47	FRANCE	La main Gauche	lamaingauche@orange.fr	0033160692873	0033160692873	BP10 008 Chailly, 77933 Perthes Cedex	x	x
209	48	FRANCE	leblat sas	contact@leblatphone.com	0033327422503	0033327369052	e4 - 30 rue josquin desprez, 59300 valenciennes	x	
210	49	FRANCE	Lee entreprise	lee.mark@wanadoo.fr	0033556901444	0033556901444	13 rue Georges Mandel - 33 700 Mérignac	x	
211	50	FRANCE	Lioli	lioli@wanadoo.fr	0033240501450	0033240501450	4 rue de la michaudiere, 44300 nantes	x	
212	51	FRANCE	lissac opticien	www.lissac.fr	0033144884444	0033142361481	114 rue de rivoli - bp 87, 75022 paris cedex 01	x	
213	52	FRANCE	Magasin Bossu	magasinbossu@club-internet.fr	0033142377693	0033142375693	154 avenue de la division Leclerc, 62160 Antony		x
214	53	FRANCE	Maïa Interactive/Pictomedia	maia@nordnet.fr	0033327282380	0033327282381	30, rue de la République, 33150 CENON	x	
215	54	FRANCE	MEM-X Diffusion Sarl	info@mem-x.eu	0033176916908		bp23, 91401 orsay cedex	x	
216	55	FRANCE	metrovision	charlier@metrovision.fr	0033320171956	0033320171951	4 rue des platanes, 59840 pérenchies	x	
217	56	FRANCE	microvocal	microvocal@microvocal.com	0033297509901		bp 30407, 56404 auray cedex	x	
218	57	FRANCE	Nenko France	mail@nenko.nl	0033320885320	0033320882575	124 à 128 rue du faubourg de douai, 59000 lille		x
219	58	FRANCE	nuance societe	ventes@nuance.com	0033155591460	0033155591461	4 rue alexis de tocque, 92160 antony	x	
220	59	FRANCE	Olympus France SA		0033145602300	0033146867614	74 rue d Arcueil. 94150 Rungis	x	
221	60	FRANCE	Oralux	www.oralux.org				x	
222	61	FRANCE	PARROT SA	webmaster@parrot.com	0033148036060	0033148030666	Quai de Jemmapes 174, Paris	x	x
223	62	FRANCE	PRIME HEURE	prime-heure@club-internet.fr	0033468955108	0033468955108	22 rue du stade, 66690 saint-andré	x	
224	63	FRANCE	PRODITION S.A.S	info@prodition.fr	0033141880080	003341880086	37-39 rue Jean Baptiste Charcot, BP 314, 92402 Courbevoie Cedex		x
225	64	FRANCE	Production L.H.P.		00332560478		115, rue Massena, F-69006 Lyon	x	
226	65	FRANCE	Proteor SA	ht.aides.techniques@proteor.com	0033380784242	0033380784215	6 rue de la redoute, 21850 St Apollinaire		x
227	66	FRANCE	R/D/I+	http://www.rdiplus.com	0033298431727	0033298434171	37 rue Yves Collet, 29200 Brest	x	
228	67	FRANCE	REMEDINFO	remedinfo@free.fr	0033610271889		188 Rue du Château, 59232 VIEUX BERQUIN	x	
229	68	FRANCE	S.A.S. Henri Depaepe	contact@depaepe.com	0033130258160	0033139986124	75/77 rue du Pré-Brochet, 95110 Sannois	x	
230	69	FRANCE	Sagem Communications	www.sagem-communications.com	0033158117700	0033158117777	Le Ponant de Paris, 27 rue Leblanc, 75015 Paris	x	
231	70	FRANCE	SEDECA SA	contact@sedeca.com	0033169891667	0033169891666	08380 Signy-Le-Petit	x	
232	71	FRANCE	Smartio Systems	contact@sios.fr	0033466281146	0033466281146	Esp. Inn. 2, 110 allée Charles Babbage, 30035 Nîmes cedex 1	x	
233	72	FRANCE	SMS Audio Electronique S.A.R.L.	sms@audiofr.com	0033389441400	0033389446213	138 Grand'Rue 68170 RIXHEIM	x	x
234	73	FRANCE	Société LAMERAND	agencelamerand@free.fr	0033320797175	0033320433595	25 rue de l epau zae, 59230 sars et rosieres	x	
235	74	FRANCE	SOPEG	www.aeg-sopeg.fr			parc burospace - bat 2 - route de gisy - bp 24, 91531 bievres cedex		x
236	75	FRANCE	SUBSTANTIEL SAS / ORDISSIMO	info@ordissimo.com	0033142151082	0033148284231	135, rue Castagnary, 75015 Paris	x	
237	76	FRANCE	Suppleance	com@suppleance.fr	003313944960	0033139449293	13 avenue de la gare, 78180 montigny le bretonneux		x
238	77	FRANCE	Tacm	tacmat@wanadoo.fr	0033247480435	0033247480535	11 avenue marcel dassault, 37200 tours		x
239	78	FRANCE	TACTYS	info@tactys.com	0033146311621	0033146329905	58 rue Yves Kermen, 92140 Clamart	x	
240	79	FRANCE	TELE DEPANNAGE RICHERT	contact@conceptrichertvision.com	0033381568953		6 Chemin des saules, 25870 Chatillon le duc	x	
241	80	FRANCE	Texte et Relief	www.texte-et-relief.com	0033561248090	0033561248097	7, z.a. ribaute, 31130 quint fonsegrives	x	x
242	81	FRANCE	THALES DHR France, Mission Insertion	portanum@thalesgroup.com	0033157778589	0033157778495	45 Rue de Villiers, 92526 Neuilly sur Seine Cedex	x	
243	82	FRANCE	Tip	commercial@tip.fr	0033139446330	0033130570029	23 avenue rene duguay, 78960 voisins le bretonneux	x	
244	83	FRANCE	TONEdB S.A.S.	contact@tonedb.com	0033620719178	0033468427034	10, av du Champ de Mars F-11100 NARBONNE	x	
245	84	FRANCE	Traitprecis	traitprecis@yahoo.fr	0033320168383		Épi de soil, Rue Paul Doumer BP 99, 59373 LOOS CEDEX	x	
246	85	FRANCE	Visiole	info@visiole.fr	0033169191460	0033169191461	4 rue leon blum , z.a.e. les glaises, 91124 palaiseau cedex		x
247	86	FRANCE	Vision SAS	www.top-braille.com	0033497070404	0033497070424	32 rue Terron, 06200 NICE	x	
248	87	FRANCE	Vitrine Magique	contactcidal@3suisses.fr	0033892681878		220 rue Jean Jaurès 59491 Villeneuve D Ascq		x
249	88	FRANCE	Vivago	info@vivago.fr	0033149816812	0033149816813	70 avenue du general de gaulle, 94022 creteil cedex	x	x
250	89	FRANCE	VOCALISIS	info@vocalisis.com	0033139530063	0033130211774	137 rue de Versailles, 78150 LE CHESNAY	x	x
251	90	FRANCE	Wesform	wesco@wesco-group.com	0033549800166	0033549800333	bp 80184 route de cholet, 79141 cerizay		x
252	1	GERMANY	3M Medica. Zweigniederlassung der 3M Deutschland GmbH	3Mmedica@mmm.com	0049(0)2131140	0049(0)2131142649	Carl-Schurz-Str. 1	x	
253	2	GERMANY	A. Schweizer GmbH	info@schweizer-optik.de	0919172100	09191721072	Hans-Böckler-Str. 7	x	x
254	3	GERMANY	abitz.com Multilingual Software	abitz@abitz.com	0049306847290	0049(0)306857061	Wipperstr. 12		x
255	4	GERMANY	abm - arbeitsgemeinschaft behinderung und medien e.V.	info@abm-medien.de	0893079920	08930799222	Bonner Platz 1		x
256	5	GERMANY	ABP. Gesellschaft für angewandte Kybernetik mbH	info@abp-gmbh.de	0049(0)2056255486	0049(0)2056255487	Otto-Hahn-Strasse 12	x	x
257	6	GERMANY	Addimult GmbH Orthopädische Apparate	info@addimult.de	0771973203	0771973205	Grabenring 26	x	x
258	7	GERMANY	Adnota GmbH	info@adnota.com	0049(0)3039881150		Alt-Moabit 96a	x	
259	8	GERMANY	Aktion Tonband-Zeitung für Blinde e.V.	atz@atz-blinde.de	0049(0)55317153	0049(0)55317151	Dohnenstieg 10 B, 37603 Holzminden	x	x
260	9	GERMANY	Aktivshop GmbH	service@aktivshop.de	01805262649	01805262650	Oldenburger Str. 17		x
261	10	GERMANY	Allperfekt PC GmbH. EDV-Beratung - Blindenlesesysteme	info@allperfekt.de	0049(0)2631979105	0049(0)2631979084	Irlich	x	x
262	11	GERMANY	Andreas Fahl Medizintechnik-Vertrieb GmbH	vertrieb@fahl.de	0049(0)220329800	0049(0)22032980100	August-Horch-Straße 4a		x
263	12	GERMANY	Anima Produktions- und Vertriebs GmbH	info@anima-gmbh.de	0049(0)2526950417	0049(0)2526950418	Overbergstr. 16		x
264	13	GERMANY	Antenna TeleAlarm GmbH	telealarm.germany@telealarm.com	0049(0)61062857960	0049(0)61062857969	Senefelder Str. 1 T1, 63110 Rodgau	x	x
265	14	GERMANY	Ascom Deutschland GmbH	info@ascom.de	061097380	06109738333	Edisonstr. 11 - 13	x	x
266	15	GERMANY	Audio Service GmbH	info@audioservice.de	0049(0)522138070	0049(0)5221380790	Zeppelinstr. 9, 32051 Herford	x	
267	16	GERMANY	Audiocharta. SilverCreations Software AG	info@audiocharta.de	06782172740	06782172799	Campus Allee 9927	x	x
268	17	GERMANY	AUDIODATA GmbH	info@audiodata.de	0049(0)622349090	0049(0)62234909399	Schloß Langenzell, 69257 Wiesenbach	x	x
269	18	GERMANY	Audioline GmbH	info@audioline.de	0049(0)2131799010	0049(0)2131276990	Hellersbergstr. 2a	x	x
270	19	GERMANY	B & M Ingenieurbüro GmbH	bm@bm-ing.de	04503702222	04503702399	Strandallee 101	x	x
271	20	GERMANY	Baum Retec AG	info@baum.de	0049(0)622349090	0049(0)62234909399	Schloss Langenzell, 69257 Wiesenbach	x	x
272	21	GERMANY	Bayerischer Blinden- und Sehbehindertenbund e.V. BIT-Zentrum	landesgeschaeftsstelle@bbsb.org	089559880	08955988266	Arnulfstr.22		x
273	22	GERMANY	beENABLED. Markus Jürgens	info@be-enabled.de	0049(0)2151620686		Moltkestr. 10	x	x
274	23	GERMANY	BENQ Deutschland GmbH	www.benq.de	0049(0)408222640	0049(0)40822264100	Große Elbstr. 39, 22767 Hamburg	x	x
275	24	GERMANY	Bernstein Werkzeugfabrik Steinrücke GmbH	info@bernstein-werkzeuge.de	0049(0)219196500	0049(0)2191666159	Industriehof Trecknase 1	x	x

		COUNTRY	NAME	EMAIL	TELEPHONE	FAX	ADDRESS	M	D
276	25	GERMANY	Berufsförderungswerk Heidelberg gGmbH	Technische.Rehahilfen@bfw.srh.de	06221883285	06221883427	Bonhoefferstr. 7	x	x
277	26	GERMANY	BeTa Hilfen für Sehgeschädigte GmbH	info@beta-hilfen.de	0049(0)36143068310	0049(0)36143068319	Koenbergkstr. 3		x
278	27	GERMANY	beyerdynamic GmbH & Co.KG	info@beyerdynamic.de	071316170	07131617224	Theresienstr. 8	x	x
279	28	GERMANY	Bezet-Werk GmbH	info@bezet-werk.de	0049(0)3072387184	0049(0)3072387702	Nahmitzer Damm 30	x	x
280	29	GERMANY	Blista Brailletec. gGmbH für Blinden- und Sehbehindertentechnik	brailletec@brailletec.de	0049(0)6421/8020	0049(0)6421/80214	Industriestraße 11, 35041 Marburg	x	x
281	30	GERMANY	Bookchair Vertrieb. Helmut Hetzer	info@bookchair.net	09415865230	09415865232	Prinzenweg 10		x
282	31	GERMANY	Bosch Telecom GmbH Produktbereich Sicherheitstechnik	Haus-Service@de.bosch.com	0049(0)1805231232	0049(0)8962290285294	Robert Koch Str. 100, 85504 Ottobrunn	x	x
283	32	GERMANY	Branodata GmbH	branodata@brangs-heinrich.de	0049(0)2122403157	0049(0)2122403104	Felderstr. 79	x	x
284	33	GERMANY	BRANODATA GMBH.		00496435965420	00496435965421	Industriestrasse, 6 - 56414, MEUDT	x	
285	34	GERMANY	Brother International GmbH	brother@brother.de	0049(0)61018050	0049(0)6101805333	Im Rosengarten 14, 61118 Bad Vilbel	x	
286	35	GERMANY	Bruckhoff & Partner GmbH	service@bruckhoff.com	0049(0)511167000	0049(0)5111670050	Herrenstr. 6, 30159 Hannover	x	x
287	36	GERMANY	Bühner und Schaible GmbH	info@buehner-schaible.de	07181978400	071819784022	Ameisenstr. 12		x
288	37	GERMANY	Busch-Jaeger Elektro GmbH	info.bje@de.abb.com	0049(0)2351956	0049(0)23519561694	Freisenbergstr. 2. 8513 Lüdenscheid	x	
289	38	GERMANY	CareTech GmbH	kontakt@caretech.eu	00496082928935	00496082928935	Roder Weg 12, 61479 Glashütten	x	x
290	39	GERMANY	Carl Zeiss Geschäftsbereich Augenoptik	info@zeiss.de	073615910	07361591431	Turnstr. 27, 73428 Aalen	x	
291	40	GERMANY	Carolo	info@carolo.de	06985703024	06985703025	Zum Brommenhof 4, 60594 Frankfurt		x
292	41	GERMANY	Carsten Clasohm	webmster@clasohm.com			Landsberger Str. 205a, München	x	x
293	42	GERMANY	Cherry GmbH	info@cherry.de	09643180	0964318262	Cherrystrasse, 91275 Auerbach	x	
294	43	GERMANY	Cisco Systems GmbH	presse@info.cisco.de	08115595666	08115595453	Am Söldnermoos 17, 85399 Hallbergmoos	x	x
295	44	GERMANY	Clarson Apparatebau GmbH	clarson@clarson.de	0772099560	07720995622	Zeppelinstr. 4, 78083 Dauchingen	x	x
296	45	GERMANY	Cochlear GmbH. Deutschland GmbH	info@cochlear.de	0049(0)511542770	0049(0)5115427770	Karl-Wiechert-Allee 76 A, 30625 Hannover	x	x
297	46	GERMANY	Communica Kommunikationskonzepte	communica@communica-	0049(0)3999670851	0049(0)3999670123	Dorfstr. 59, 17111 Hohenbollentin	x	x
298	47	GERMANY	Condigi. Lichtruf- und Kommunikationssysteme Handelsgesellschaft mbH	info@condigi.de	0408517770	04085177722	Prachtkäferweg 5, 21077 Hamburg		x
299	48	GERMANY	Corscience GmbH & Co.	info@corscience.de	00499131977986	00499131977986-58	Henkestr. 91, 91052 Erlangen	x	
300	49	GERMANY	CSS Computersysteme Schmidt GBR	css@csslabs.de	0049(0)7130452163	0049(0)7130452164	Teichstr. 30, 74182 Obersulm-Weiler	x	x
301	50	GERMANY	Curt Beuthel GmbH und Co. KG	info@beuthel.de	0049(0)20049(0)2255070	0049(0)202555307	Höhne 21, 42275 Wuppertal		x
302	51	GERMANY	Detlev Kirchner. Handel Handwerk Dienstleistungen	info@spezialhandys.de	04064400777	04064400778	Leharstr. 57, 22145 Hamburg		x
303	52	GERMANY	Deutsche Blindenstudienanstalt e.V. - Blista Marburg	info@blista.de	064216060	06421606177	Am Schlag 8, 35037 Marburg		x
304	53	GERMANY	Deutsche Telekom AG. T-Com Zentrale	info@telekom.de	0049(0)2281810	08003301309	Friedrich Ebert Allee 140, 53113 Bonn		x
305	54	GERMANY	DFG Deutsche Fernsprecher GmbH	info@dfg-marburg.de	064214020	06421402400	Temmlerstr. 5, 35039 Marburg	x	x
306	55	GERMANY	dIB Elektronik GbR. Zentrale und Beratung (Rehavista Nürnberg)	nuernberg@rehavista.de	0049(0)911471658	0049(0)911471676	Allersberger Str. 185 N, 90461 Nürnberg	x	
307	56	GERMANY	Digital-Service GmbH	digital-service71711murr@t-online.de	0049(0)714423316	0049(0)7144209674	Erlenweg 11/3, 71711 Murr	x	x
308	57	GERMANY	Dipax	info@dipax.de	0049(0)3063923227	0049(0)3063923228	Kuglerstr. 8, 10439 Berlin	x	
309	58	GERMANY	Dipl-Ing Peter Braun	BraunWitten@Arcor.de	0049(0)2302933167		Bommerfelder Ring 7, 58452 Witten	x	x
310	59	GERMANY	dnt GmbH	www.dnt.de	0049(0)607437140	0049(0)6074371437	Voltastr. 4, 63128 Dietzenbach	x	x
311	60	GERMANY	Domo-Tec GmbH	info@domo-tec.de	0049(0)240541420	0049(0)24074142279	Schumanstr. 18 a, 52146 Würselen		x
312	61	GERMANY	DORMA Automatic GmbH Co. KG	marketingmaster@dorma.com	0049(0)23337930	0049(0)2333793495	Breckerfelder Str. 42-48 58256 Ennepetal	x	
313	62	GERMANY	Dr. Eduardo Mendel	mendel@uni-oldenburg.de	044172261		Zietenstr. 24, 26131 Oldenburg	x	x
314	63	GERMANY	Dr. Hein GmbH	info@dr-hein.com	0049(0)911323800	0049(0)9113238019	Fürther Str. 212, 90429 Nürnberg	x	x
315	64	GERMANY	DS Keyboard Technic GmbH	ds@dekorsy.de	07732800041	0049(0)7732800044	Herrenlandstr. 31, 78315 Radolfzell am Bodensee	x	
316	65	GERMANY	Dusyma Kindergartenbedarf GmbH	info@dusyma.de	0718160030	07181600341	Haubersbronner Str. 40. 73614 Schorndorf		x
317	66	GERMANY	E. Link & Co. GmbH	info@link-tuttlingen.de	074615018	074615010	Föhrenstr. 23, 78532 Tuttlingen		x
318	67	GERMANY	E.v. Gleichenstein Hilfsmittel zur Vorbeugung von. Haltungsschäden	vonGleichenstein@t-online.de	063526463	0635267366	Amtsstr.5, 67292 Kirchheimbolanden		x
319	68	GERMANY	ELCOM GmbH & Co. KG	info@elcom.de	0049(0)71315880	0049(0)7131588200	Talheimer Straße 32, 74223 Flein	x	x
320	69	GERMANY	Electrade GmbH. Elektronik-Vertrieb und Consulting	info@electrade.com	0898981050	0898544922	Lochhamer Schlag 10 b, 82166 Gräfelfing		x
321	70	GERMANY	ELeX-Sprachverarbeitung GmbH	informationen@etex.com	06995652000	06995652060	Zum-Jungen-Str. 4, 60320 Frankfurt	x	x
322	71	GERMANY	Elseco GmbH	info@elseco.de	08333924690	08333924692	Hauptstr. 14, 87743 Egg a.d. Günz	x	x
323	72	GERMANY	ELV Elektronik AG	elv@elv.de	0491600888	04917016	Maiburger Str. 32-36. 26789 Leer		x
324	73	GERMANY	Emo-Wetzlar. Arthur Seibert	info@emo-wetzlar.de	0644172044	0644172504	Hörnsheimer Eck 11, 35578 Wetzlar	x	x
325	74	GERMANY	Engelschutz e.V. R. Herz	info@euronotruf.de	0049(0)304170049(0)3877	0049(0)3041703876	Engelmannweg 14, 13403 Berlin		x
326	75	GERMANY	Epitech GmbH Kommunikationshilfen	info@epitech.de	0522387080	0522387008	Pivitstr. 13, 32120 Hiddenhausen		x
327	76	GERMANY	eps Vertriebs GmbH		0049(0)2573934560	0049(0)2573934590	Wallgraben 38, 48356 Nordwalde	x	
328	77	GERMANY	Ergonomie Studio Muckenthaler	ergonomie@muckenthaler.de	0892919890	08929198919	Pacellistr. 5, 80333 München		x
329	78	GERMANY	Eschenbach Optik GmbH & Co Optik	mail@eschenbach-optik.de	091136000	09113600358	Schopenhauerstr. 10, 90409 Nürnberg	x	x
330	79	GERMANY	EVOSOFT GMBH.	info@evosoft.com	004991153991	004991153911	Hugo-Junkers-Strasse 11 - D 90411, NUREMBERG	x	
331	80	GERMANY	F.H. Papenmeier GmbH & Co.KG. Reha-Technik	info@papenmeier.de	0049(0)23042050	0049(0)2304205246	Talweg 2, 58239 Schwerte	x	x
332	81	GERMANY	Fischer Schreibsysteme für Behinderte	www.fischerschreibsysteme.de	0049(0)2131601273	0049(0)213168723	Sperberstr. 5, 41564 Kaarst	x	x
333	82	GERMANY	Fitage GmbH	info@fitage.de	070008000910	070008000911	Zur Waldau 15, 68239 Mannheim	x	
334	83	GERMANY	FluSoft. Spezial Computer Technik	info@flusoft.de	0049(0)351404570	0049(0)3514045777	Tannenstr. 2, 01099 Dresden	x	x
335	84	GERMANY	FMN communications GmbH	info@fmn.de	0049(0)3631565000	0049(0)3631563224	Grimmelallee 4, 99734 Nordhausen	x	x
336	85	GERMANY	FONIUM Deutschland GmbH	info@fonium.de	0049(0)244331010	0049(0)2443310110	Im Schmidtenloch 34, 53894 Mechernich	x	x
337	86	GERMANY	Freedom Scientific GmbH.	info@freedomscientific.de	0049(0)402809540	0049(0)4028095429	Steintorweg 8, 20099 Hamburg	x	
338	87	GERMANY	Freigang, Kommunikations- Rehabilitationshilfen		07555919158		OAckenbach 1bergreut 5, 88693 Deggenhausertal	x	x
339	88	GERMANY	Fröhlich & Walter GmbH	info@f-u-w.de	06819267870	06819267850	Behrener Str. 8, 66117 Saarbrücken		x
340	89	GERMANY	FTB Forschungsintitut Technologie und Behinderung	sekr@ftb-volmarstein.de	0049(0)233596810	0049(0)2335968119	Grundschötteler Str. 40, 58300 Wetter	x	x
341	90	GERMANY	Fujitsu Siemens Computers GmbH	www.fujitsu-siemens.de	0049(0)21161780		Gladbecker Str. 7, 40472 Düsseldorf	x	x
342	91	GERMANY	Funkwerk Enterprise Communications GmbH	info@funktel.com	05341285701	05341285709	John-F.-Kennedy-Str. 43-53, 38228 Salzgitter	x	
343	92	GERMANY	G DATA Software AG	vertrieb@gdata.de	0049(0)23497620	0049(0)2349762298	Königsallee 178 b, 44799 Bochum	x	x
344	93	GERMANY	G. N. Danavox GmbH		0049(0)215191980	0049(0)2151919899	Bischofstr. 88, 47809 Krefeld	x	
345	94	GERMANY	GeBE. Computer & Peripherie GmbH	www.tastaturen.com	08142669580	081426695811	Zur Heupresse 4, 82140 Olching	x	x
346	95	GERMANY	Gehrke Kommunikationssysteme GmbH	info@gehrke-gmbh.com	0917698980	091765546	Seligenportener Str. 30, 90584 Allersberg	x	x
347	96	GERMANY	Genius, KYE Systems Europe GmbH	genius@genius-europe.com	0049(0)2173974310	0049(0)2173974317	Karl-Benz-Str. 9, 40764 Langenfeld	x	
348	97	GERMANY	getemed Medizin- und Informationstechnik AG	info@getemed.de	0049(0)332839420	0049(0)3328394299	Oderstr. 77, 14513 Teltow	x	x
349	98	GERMANY	GETT Gerätetechnik GmbH	info@gett.de	0049(0)374686600	0049(0)3746866066	Mittlerer Ring 1, 08233 Treuen		x
350	99	GERMANY	GFaI - Gesellschaft für angewandte Informatik e.V.	info@gfai.de	0049(0)3063921600	0049(0)3063921602	Rudower Chaussee 30, 12489 Berlin	x	

		COUNTRY	NAME	EMAIL	TELEPHONE	FAX	ADDRESS	M	D
351	100	GERMANY	GN Hearing GmbH. Geschäftsbereich Beltone	info@beltone.de	0049(0)2512039810	0049(0)251203981821	An der Kleimannbrücke 75, 48157 Münster	x	
352	101	GERMANY	GN Netcom GmbH	info.de@gnnetcom.com	0049(0)803126510	0049(0)803169895	Traberhofstr. 12, 83026 Rosenheim	x	
353	102	GERMANY	GN ReSound GmbH	info@gnresound.de	0049(0)251203960	0049(0)25120396250	An der Kleimannbrücke 75, 48157 Münster	x	
354	103	GERMANY	GORLO & TODT	info@gorlo-todt.de	0049(0)205280070	0049(0)2052800799	Voßkuhlstr. 40, 42555 Velbert	x	x
355	104	GERMANY	Greiner hearing technology eK	greinergmbh@hotmail.com	0049(0)773164563	0049(0)773169347	Kniebisstr. 51, 78224 Singen	x	
356	105	GERMANY	Grothe GmbH.	info@grothe.de	0049(0)224288900	0049(0)2242889036	Löhestr. 22, 53773 Hennef	x	x
357	106	GERMANY	Grundig Vertriebs GmbH		0049(0)40733310		BEUTHENER STRASSE 41, 90471 NÜRNBERG	x	
358	107	GERMANY	Guentel, Hans-Günter Hanke	tapir@tapir-online.de	0725460991		Am Schwarzen Weg 8, 68794 Rheinhausen	x	
359	108	GERMANY	Gunter Schlosser. Kommunikationstechnologie	office@gschlosser.de	04283955728	04283955717	Im Ortfeld 36, 27412 Tarmstedt		x
360	109	GERMANY	Hahn & Kolb Werkzeuge GmbH	info@hahn-kolb.de	071198130	07119813354	Borsigstr. 50, 70469 Stuttgart		x
361	110	GERMANY	Hand - Griff e.K.	huhn@hand-griff.de	0049(0)2019225912	0049(0)2019225914	Altendorfer Str. 42, 45127 Essen		x
362	111	GERMANY	Handy Tech Elektronik GmbH	info@handytech.de	0049(0)7451554460	0049(0)7451554667	Brunnenstr. 10, 72160 Horb	x	x
363	112	GERMANY	Hannabach CNC-Präzision	info@Hannabach-CNC.de	0746437061	074642708	Hohnerstr. 14, 78606 Seitingen-Oberflacht	x	x
364	113	GERMANY	Hansaton Akustik GmbH	info@hansaton.de	0049(0)402980110	0049(0)4029801128	Stückenstr. 48, 22081 Hamburg	x	
365	114	GERMANY	happy fire	info@happy-kidsfinder.de	0049(0)1805006858		Blumenthal 4, 21640 Horneburg	x	
366	115	GERMANY	happy-sixty. Der Laden für Senioren	shop@happy-sixty.de	09114312086	09114331233	Wiesenstr. 95, 90459 Nürnberg		x
367	116	GERMANY	Heba-Otoplastik. GmbH & Co. KG	info@HEBA.de	0049(0)6022681600	0049(0)602231663	Hauptstr. 42, 63853 Mömlingen	x	
368	117	GERMANY	Hedo Reha-Technik GmbH	info@hedo.de	0049(0)899048990	0049(0)899046183	Kirchenstr. 2, 85622 Feldkirchen	x	x
369	118	GERMANY	Herbert Waldmann GmbH & Co. KG	info@waldmann.com	077206010	07720601290	Peter-Henlein 5, 78056 Villingen-Schwenningen	x	x
370	119	GERMANY	hgt Hörgeschädigten Technik B & K GmbH	info@hgt.de	0049(0)2505603	0049(0)25053659	Siemensstr. 13, 48341 Altenberge	x	x
371	120	GERMANY	HK Sicherheitstechnik GmbH	Info@HK-Sicherheit.de	05732730200	05732730205	Wiehenkamp 1, 32584 Löhne		x
372	121	GERMANY	Hoerhelfer Versandhandel. Christian Fleck	info@hoerhelfer.de	08214509840	0821450984159	Provinostr. 52, 86153 Augsburg		x
373	122	GERMANY	Höft & Wessel AG. Skeye Mobile Business	info@hoeft-wessel.de	051161020	05116102411	Rotenburger Str. 20, 30659 Hannover	x	x
374	123	GERMANY	Hörmann Audifon GmbH	contact@audifon.de	0049(0)363540560	0049(0)36354056589	Werner-von-Siemens-Straße 2 99625 Kölleda	x	x
375	124	GERMANY	Hospicom Healthcare Consulting GmbH.	briefkasten@hospicom.de	0483290933	0483290940	Paul-Kock-Str. 2, 25704 Meldorf		x
376	125	GERMANY	HumanElektronik. Spezial- Rehabilitationstechnik	stefan.schaaf@humanelektronik.de	06241955489	06241955487	Bingerstr. 52, 67549 Worms		x
377	126	GERMANY	Humantechnik GmbH	info@humantechnik.com	0049(0)7621956890	0049(0)76219568970	Im Wörth 25, 79576 Weil am Rhein	x	x
378	127	GERMANY	IBM Deutschland GmbH. IBM Human Ability and Accessibility Center	www-05.ibm.com/de/accessibility/	07117850	07117853488	Pascalstr. 100	x	x
379	128	GERMANY	IBM GmbH. IBM Human Ability Accessibility Center	www-05.ibm.com/de/accessibility/	07117850	07117853488	Pascalstr. 100, 70569 Stuttgart	x	x
380	129	GERMANY	IDEAL Krug & Priester GmbH & Co. KG	center@ideal.de	074332690	07433269200	Simon-Schweitzer-Str. 34, 72336 Balingen	x	x
381	130	GERMANY	IGEL GmbH. Rehavista Bremen	info@rehavista.de	0421417850	04214178520	Konsul-Smidt-Str. 8 C, 28217 Bremen	x	x
382	131	GERMANY	INCAP GmbH. INCAP Christoph Jo. Müller GmbH	info@incap.de	08004646227	07231946350	Bauschlotter Str. 62, 75177 Pforzheim	x	x
383	132	GERMANY	Ingenieurbüro Dr. Elisabeth Seveke	Dr.Seveke@computer-fuer-behinderte.de	0049(0)3514724100	0049(0)3514724165	Schnorrstr. 70, 01069 Dresden	x	x
384	133	GERMANY	Interton. Hörgeräte GmbH	info@interton.de	0049(0)2202952260	0049(0)2202952626	Am Dännekamp 15, 51469 Bergisch-Gladbach	x	
385	134	GERMANY	IONE Technology GmbH	info@ione-europe.com	0049(0)2131880920	0049(0)21318809277	Sperber Weg 4G, 41468 Neuss	x	
386	135	GERMANY	IPD Infosystem Produktion und Distribution GmbH	info@ipd-hannover.de	05119363090	051193630919	Eintrachtweg 19a, 306173 Hannover		x
387	136	GERMANY	ITM Technology AG. Hagenuk	info@hagenuk-itm.de	072186010		Siemensstr. 2, 76344 Eggenstein-Leopoldshafen	x	
388	137	GERMANY	ITRON TECHNOLOGY GMBH.	itron@itron-europe.com			SPERBER WEG 4B - D-41468	x	
389	138	GERMANY	IVS GmbH. Industrievertretung Schweiger	info@ivsgmbh.de	0962167710	09621677152	Im Frauental 14, 92224 Amberg		x
390	139	GERMANY	Jakobs GmbH	info@jakobs.de	0049(0)227592000	0049(0)2275920022	Zum Schlicksacker 1-3, 50170 Kerpen-Buir		x
391	140	GERMANY	Joki-Foto	immer@astroshop-berlin.de	0049(0)3031569948	0049(0)31569950	Weisestr. 27, 12049 Berlin		x
392	141	GERMANY	Justus Schneider	justusschneider@t-online.de	06661919070	06661919071	Elmer Landstr. 47, 36381 Schlüchtern		x
393	142	GERMANY	Keybo.Hammerl GdBR	info@keybo.de	01805765000	09241724021	Norisstr. 10, Pegnitz		x
394	143	GERMANY	KG Hinrich Karp GmbH & Co	info@karp.de	0585239820	058523220	Industriestr. 1, 21354 Bleckede		x
395	144	GERMANY	Kidsfinder Vertriebsdirektion Bayern	info_kidsfinder.bayern@go4more.de	08957083830		Orleanstr. 34, 81667 München		x
396	145	GERMANY	Kind Hörgeräte GmbH & Co. KG	info@kind.com	0513980850	051398085299	Kokenhorststr. 3-5, 30938 Burgwedel		x
397	146	GERMANY	Koberg & Tente GmbH & Co. KG	verkauf@koberg-tente.de	0049(0)251609510	0049(0)2516095151	Haferlandweg 12, 48155 Münster	x	x
398	147	GERMANY	KOLLES SPEZIALUHREN	Info.Blindenuhren@Addcom.de	0049(0)619623011	0049(0)6196643256	Am Schellberg 3, 65812 Bad Soden am Taunus	x	x
399	148	GERMANY	Kroschke sign-international GmbH	vertrieb@kroschke.com	0531318318	0531318151	Daimlerstr. 20. 38112 Braunschweig		x
400	149	GERMANY	KTS Kompetenz in Technischer Sehhilfe	info@KTS-Braille.de	0049(0)7172919944	0049(0)7172919945	Rosensteinstr. 10, 73116 Wäschenbeuren	x	x
401	150	GERMANY	Lafüliki. Laden für linkshändige Kinder	www.lafueliki.com	057255950	05725915420	Schöttlingerstr. 7a, 31698 Lindhorst		x
402	151	GERMANY	Lake Software	CNT@LakeFolks.com				x	x
403	152	GERMANY	LAUWE.DE. Sven Kremsa - Christiane East GbR	info@lauwe.de	00495312408575	00495312408576	Hühnerkamp 19, 38104 Braunschweig		x
404	153	GERMANY	LAV Linkshand-Artikel Vertrieb	info@linkshandartikel.de	0049(0)42094403	0049(0)4209919305	Lycker Weg 5, 28790 Schwanewede		x
405	154	GERMANY	LCDmedia Klaus Ackermann GmbH	info@lcdmedia.de	0049(0)402195019	0049(0)40213598	Wendenstr. 435		x
406	155	GERMANY	Legrand-BTicino GmbH	info.service@legrand-bticino.de	0049(0)29211040	0049(0)2921104202	Am Silberg 14, 59494 Soest	x	x
407	156	GERMANY	Lehmann Elektronik GmbH	lehmann-gmbh@lehmannweb.de	0049(0)220894920	0049(0)2208949232	Wahner Str. 45, 53859 Niederkassel	x	x
408	157	GERMANY	Lekis Therapiematerial und Spiele. Sylvia Watzek e.K.	info@lekis.de	0049(0)3405710152	0049(0)3405196676	Brauereistr. 1-2, 06847 Dessau		x
409	158	GERMANY	Lifesec. Annett Meyer	info@lifesec.de	0049(0)3516414065	0049(0)3516414067	Dresdner Str. 236, 01705 Freital		x
410	159	GERMANY	Linke KG	office@earfoon.de	0049(0)304916098	0049(0)304916099	Kühnemannstr. 22-26, 13409 Berlin	x	
411	160	GERMANY	Linkshandversand. Sabine Hornung	hornung@linkshandversand.de	0049(0)6241934644	0049(0)6241934649	Otto Str. 8, 67551 Worms		x
412	161	GERMANY	LM Rehabtechnik AB. Verkaufsbüro Hamburg	info@Lmrehatech.com	04073464571	04073464520	Rungedamm 37, 21035 Hamburg	x	x
413	162	GERMANY	Logisty/Atral-Secal GmbH	info@diagral.de	0620160050	0620116833	Thaddenstra. 4, 69469 Weinheim	x	
414	163	GERMANY	Logitech GmbH	www.logitech.com	089894670	08989467200	Streiflacher Str. 7, Germering	x	x
415	164	GERMANY	Ludwig Becker GmbH	info@l-becker.de	063432032	063432076	Schulstr. 6		x
416	165	GERMANY	Luxo-Deutschland GmbH	office@luxo.de	0512170600	0512152910	Daimlerring 25, 31135 Hildesheim	x	
417	166	GERMANY	Maico Diagnostic GmbH	vertrieb@maico-diagnostic.com	0049(0)3070714650	0049(0)3070714699	Salzufer 13/14, 10587 Berlin	x	
418	167	GERMANY	Marland GmbH	info@Marland.de	0752592050	07525920519	Zollenreuter Str. 6, 88326 Aulendorf	x	x
419	168	GERMANY	Marlem-Software. Markus Lemcke	www.marlem-software.de	07121504458	01212510409965	Adolf-Damaschke-Str. 25/42, 72770 Reutlingen	x	x
420	169	GERMANY	Marschall-Versand.	post@marschall-versand.de	0935289671	0935289672	Turmstr. 10, 97816 Lohr am Main		x
421	170	GERMANY	Martin Elektrotechnik GmbH	martin@altenpflegehilfe.de	097412555	097415343	Buchwaldstr. 53, 97769 Bad Brückenau		x
422	171	GERMANY	MBK-Medizintechnik. Manfred G. Bück		0049(0)221876870		Erfurter Str. 3, 51103 Köln	x	
423	172	GERMANY	McCall InterTrade GmbH	nfo@mccallintertrade.com	0049(0)2119350113	0049(0)2119350150	Immermannstr. 13, 40210 Düsseldorf		x
424	173	GERMANY	MCT Paul & Scherer GmbH	uthe@emuf.de	0471/2900915	0049(0)38355/61437	Dorfstr. 4-6, 17495 Ranzin	x	x
425	174	GERMANY	Megacom. Kommunikationssysteme GmbH	info@megacom-gmbh.de	0419190850	04191908559	Borsigstr. 16, 24568 Kaltenkirchen	x	x

		COUNTRY	NAME	EMAIL	TELEPHONE	FAX	ADDRESS	M	D
426	175	GERMANY	Microsoft GmbH		08931760	08931761000	Edisonstr. 1, 85716 Unterschleißheim	x	x
427	176	GERMANY	Minos Sicherheitstechnik GmbH.	info@minos.de	0049(0)88194990	0049(0)8819499999	Weilheimer Str. 1, 82398 Polling	x	x
428	177	GERMANY	MISCO Germany Inc. Zweigniederlassung Langen	kundendienst@misco.de	06103305305	08008857657	Robert Bosch Str. 1-3, 63225 Langen		x
429	178	GERMANY	mobile Hilfsmittelzentrale Deininger GmbH	zentrale@deininger.biz	0049(0)625164881	0049(0)625161174	Lilienthalstr.10-12, 64625 Bensheim	x	x
430	179	GERMANY	Mobily ProCom GmbH.	info@mobilypro.com	0049(0)895789742	0049(0)89575241	Balanstr. 16, 81929 München	x	x
431	180	GERMANY	Mobitell GmbH	info@mobitell.de	0951297950	09512979513	Bamberger Str. 24, 96135 Stegaurach	x	x
432	181	GERMANY	Möckel Feinmechanik	info@moeckel.com	0640890040	064082440	Bornweg 13-15, 35418 Buseck	x	x
433	182	GERMANY	Motorola GmbH	www.motorola.com	06128700	06128704900	Heinrich-Hertz-Str. 1, 65232 Taunusstein	x	
434	183	GERMANY	MP-artware. Spezialbedarf für Design und Grafik	info@mp-artware.de	0049(0)742495910	0049(0)7424959195	Max-Planck-Str. 9, 78549 Spaichingen		x
435	184	GERMANY	MPP Medizin- Pflegebedarf e.K.		0049(0)2175990066	0049(0)2175990067	Neuenkamper Weg 46, 42799 Leichlingen		x
436	185	GERMANY	Multimedia KG. z.Hd. Michael Bliedung	MultimediaKG@t-online.de	0049(0)640392306	0049(0)640392307	Niederhofen 12a, 35428 Langgöns		x
437	186	GERMANY	NEAT GmbH	info@neatelectronics.de	0049(0)8951996660		Carl-Zeiss-Ring 12, 85737 Ismaning	x	x
438	187	GERMANY	Nokia GmbH	www.nokia.de	0049(0)2349840	0049(0)2349843070	Meesmannstr. 103, 44807 Bochum	x	x
439	188	GERMANY	Novar GmbH-Geschäftsbereich Ackermann	info@ackermann.com	0049(0)2137174735	0049(0)226183539	Albertstr. 4-8, 51643 Gummersbach	x	x
440	189	GERMANY	Novotech GmbH	mail@novotech-gmbh.de	0753393210	07533932199	Kaltbrunner Str. 24, 78476 Allensbach	x	x
441	190	GERMANY	Nuance Communications Germany GmbH	mktg_germany@nuance.com	0894587350	08945873520	Ridlerstr. 11, 80339 München	x	x
442	191	GERMANY	Octogone GmbH	info@octogone.de	07631805890	076318058999	Danziger Str. 5, 79395 Neuenburg	x	
443	192	GERMANY	OCULUS Optikgeräte GmbH	sales@oculus.de	064120050	06412005255	Münchholzhäuser Str. 29, 35582 Wetzlar	x	x
444	193	GERMANY	officeplus GmbH	info@officeplus.de	074124804	0741248230	Saline 29, 78628 Rottweil	x	
445	194	GERMANY	Olympia Buisness Systems Vertriebs GmbH	www.olympia-vertrieb.de	0049(0)23246801031	0049(0)2324680194	An der Becke 6, 45527 Huttingen	x	x
446	195	GERMANY	Olympus. Optical Co. (Europa) GmbH	www.olympus.de	0049(0)40237730	0049(0)40230761	Wendenstr. 14-16, 20097 Hamburg	x	x
447	196	GERMANY	Optro GmbH. NOTSIGNAL-TECHNIK	info@optro.de	0049(0)217478300	0049(0)21747830600	Industriestr. 75, 51381 Burscheid	x	x
448	197	GERMANY	Optron Produktion & Vertrieb	vertrieb@optron.de	06078911772	06078911774	Steinschönauer Str. 4b, 64823 Groß-Umstadt		x
449	198	GERMANY	ORTOPEDIA GMBH.		004943120030	00494312003378	Kiel	x	x
450	199	GERMANY	Oticon GmbH	info@oticon.de	0049(0)408488840	0049(0)4084888444	Hellgrundweg 101, 22525 Hamburg	x	
451	200	GERMANY	Panasonic Deutschland GmbH	www.gesundheit.panasonic.de	0049(0)4085490	0049(0)4085492500	Winsbergring 15, 22525 Hamburg	x	x
452	201	GERMANY	Pelikan Vertriebsgesellschaft mbH & Co. KG	info@pelikan.de	051169690	05116969212	Werftstr. 9, 30163 Hannover	x	
453	202	GERMANY	PHI Reha-Kom GmbH & Co.KG	info@reha-kom.de	0407258870	04072588736	Lohbrügger Kirchstr. 25, 21033 Hamburg	x	x
454	203	GERMANY	Philips	www.philips.de	0049(0)4028990	0049(0)4028992829	Lübeckertordamm 5, 20001 Hamburg	x	x
455	204	GERMANY	Phoenix Software GmbH	reha@phoenixsoftware.de	0049(0)228971990	0049(0)2289719999	Adolf-Hombitzer-Str. 12, 53227 Bonn		x
456	205	GERMANY	Phonak GmbH. hearing systems	info@phonak.de	0049(0)711510700	0049(0)7115107070	Max Eyth-Str. 20, 70736 Fellbach	x	
457	206	GERMANY	Physioline GmbH	info@physioline.com	07663948100	076639481028	Zeppelinstr. 10, 79331 Teningen		x
458	207	GERMANY	Pilotfisch GmbH	www.pilotfish.eu	08912021890	08912021899	Schleissheimer Str. 6, 80333 München		x
459	208	GERMANY	Plustek Technology GmbH	info@plustek.de	04052303125	04052303525	Gutenbergring 38, 22848 Norderstedt	x	
460	209	GERMANY	Pragma GmbH	PRAGMA-GmbH@t-online.de	0049(0)3583650	0049(0)35836533	Rathenaustr. 9, 02763 Zittau	x	
461	210	GERMANY	Prentke Romich Deutschland GmbH	info@prentke-romich.de	0561785590	05617855929	Goethestr. 31, 34119 Kassel	x	x
462	211	GERMANY	Printus Fachvertrieb für Bürobedarf GmbH	Kundenservice@printus.de	0781607100	0781607295	Carl-Zeiss-Str. 1, 77656 Offenburg		x
463	212	GERMANY	Pro Deaf	info@pro-deaf.de	0049(0)71316426222	0049(0)7131573673	Herbert-Hoover-Str. 11, 74074 Heilbronn		x
464	213	GERMANY	Proaktivo. Ulrike Höck	info@proaktivo.de	0049(0)2263902826		Oberschelmerrath 10, 51766 Engelskirchen		x
465	214	GERMANY	Prosec Management Ltd.	info@prosec.bi	0049(0)3414206501	0049(0)3414206502	Dr.-Hermann-Duncker Str. 20, 04179 Leipzig		x
466	215	GERMANY	ProTak e.k. Wilhelm Lützenberger	info@qtak.de	09111205800	09111205799	Königstr. 12, 90402 Nürnberg		x
467	216	GERMANY	Pulch + Lorenz GmbH	kontakt@pulchlorenz.de	0766592720	07665927220	Am Untergrün 23, 79232 March	x	x
468	217	GERMANY	Quelle GmbH	service.quelle@quelle.de	0911140	01805303909	Nürnberger Str. 91-95, 90762 Fürth		x
469	218	GERMANY	Rafi GmbH & Co. KG	info@rafi.de	0751890	0751891300	Ravensburger Str. 128-134, 88276 Berg	x	x
470	219	GERMANY	Reer GmbH	info@reer.de	07152928520	071529285244	Riedwiesenstr. 7, 71229 Leonberg		x
471	220	GERMANY	Reha Media GmbH	info@rehamedia.de	0049(0)2033061950	0049(0)2033061960	Bismarckstr. 142a, 47057 Duisburg		x
472	221	GERMANY	Rehaforum Medical GmbH	info@rehaforum.com	04121473312	04121473320	Daimlerstr. 12 a, 25337 Elmshorn		x
473	222	GERMANY	Rehakomm Peter Jacobi	info@rehakomm.de	073455044	073455043	Wörthstr. 5, 89129 Langenau	x	x
474	223	GERMANY	Reha-Technik & Kommunikationstechnik für. Hörgeschädigte	Info@Reha-Com-Tech.de	0049(0)6519945680	0049(0)6519945681	Thebäerstr. 51, 54292 Trier	x	x
475	224	GERMANY	Rehavista GmbH	info@rehavista.de	08007342847	0049(0)3030111387	Pulsstr. 7, 14059 Berlin	x	x
476	225	GERMANY	Rehintech GmbH	rehintech@t-online.de	0049(0)2037139660	0049(0)20371396611	Ludgeristr. 16-18, Duisburg		x
477	226	GERMANY	REINECKER REHA-TECHNIK GMBH.	info@reineckerreha.de	0049062793110	0049062572561	Sandwiesenstraße, 19 - 64665 ALSBACH-HÄHNLEIN	x	x
478	227	GERMANY	Research Individuelle Hörsysteme. GmbH & Co. KG	info@research-hoersysteme.de	0597196660	05971966699	Osnabrücker Str. 2 - 12, 48429 Rheine	x	x
479	228	GERMANY	Richter Telefon Technik	Richter-Telefontechnik@t-online.de	0049(0)3513100445	0049(0)3513115445	Tittmannstr. 17, 01309 Dresden		x
480	229	GERMANY	Riedel GmbH	info@DerRiedel.de	07121515350	071215153557	Carl-Zeiss-Str. 35, 72770 Reutlingen	x	x
481	230	GERMANY	Ritto GmbH & Co. KG	info@ritto.de	0049(0)27738120	0049(0)2773812999	Rodenbacher Str. 15, 35708 Haiger	x	x
482	231	GERMANY	ROHDE & GRAHL	www.rohde-grahl.com	0049576970	00495769333	31595 Steyerberg/Voigtei	x	
483	232	GERMANY	Rolli-Company	service@rollicompany.de	06226960200	06226960050	Spitzäcker 11, 74931 Lobbach		x
484	233	GERMANY	Runkel Sprechanlagen-Systeme	runkel-sprechanlagen@t-online.de	06103977555	06103977666	Ohmstr. 20a, 63225 Langen	x	x
485	234	GERMANY	Russka Ludwig Bertram GmbH	info@russka.de	051029173	05102917555	Lübecker Str.1, 30880 Laatzen		x
486	235	GERMANY	S. Siedle & Söhne. Telefon- und Telegrafenwerke OHG	info@siedle.de	07723630	07723633300	Bregstr. 1, 78120 Furtwangen	x	x
487	236	GERMANY	Samsung Electronics GmbH	www.samsung.de	0049(0)1805121213	0049(0)1805121214	Am Kronberger Hang 6, 65824 Schwalbach	x	x
488	237	GERMANY	Sanford GmbH	www.sanford.de	0049(0)4085550	0049(0)8008500500	22510 Hamburg		x
489	238	GERMANY	Sanitätshaus Bernard Brinkmann GmbH	www.zipperlein.com	05251520811	05251520899	Eggertstr. 26, 33100 Paderborn		x
490	239	GERMANY	Scanvest-Ring GmbH	info@scanvest.de	0049(0)511902860	0049(0)5116137162	Hans-Böckler-Str. 12, 30851 Langenhagen	x	x
491	240	GERMANY	Schneider Intercom GmbH	info@schneider-intercom.de	0049(0)211882850	0049(0)21188285211	Heinrich-Hertz-Straße 40, 40699 Erkrath	x	x
492	241	GERMANY	Schulte-Elektronik GmbH	info@schulte-elektronik.de	0049(0)296297070	0049(0)2962970715	Schörenbergstr. 20, 59939 Olsberg	x	x
493	242	GERMANY	Schupp GmbH & Co KG	vertrieb@schupp-gmbh.de	074432430	07443243255	72238 Freudenstadt		x
494	243	GERMANY	Screenreader.net CIC	ask@screenreader.net	0044(0)1733234441		7 The Rookery, Orton Wistow, Peterborough, PE2 6YT	x	x
495	244	GERMANY	Secal Sicherheitstechnik GmbH	behrendt@secal-sitech.de	0049(0)2161977566	0049(0)2161977568	Püllenweg 42. 41352 Korschenbroich		x
496	245	GERMANY	SECURITY DIREKT Berlin	support@securitydirekt.de	01773505372	0891488158627	Courbierestr. 4, 10787 Berlin		x
497	246	GERMANY	Senio GmbH. Fachhandel für Senioren	info@senio.de	0800/7364633	01805/736460	Bergheimerstrasse 19, 69115 Heidelberg		x
498	247	GERMANY	Seniorenspiele. Werner Freisem	info@seniorenspiele.de	093635784	09363734	Michael-Wenz-Str. 7, 97450 Arnstein		x
499	248	GERMANY	Seniorenwohl Shop & Versand	info@seniorenwohl.de	0049(0)9717851048	0049(0)97197167	Am Klieglplatz 1, 97688 Bad Kissingen		x
500	249	GERMANY	Sennheiser electronic GmbH & Co. KG	info@sennheiser.de	0049(0)51306000	0049(0)51306312	Am Labor 1, 30900 Wedemark	x	x

		COUNTRY	NAME	EMAIL	TELEPHONE	FAX	ADDRESS	M	D
501	250	GERMANY	SENOTECH GmbH und Co. KG	info@senotech.de	0049(0)23313400050	0049(0)233134000580	Feithstr. 82, 58095 Hagen		x
502	251	GERMANY	Servox AG	info@servox.de	0049(0)224193220	0049(0)22419322277	Biberweg 24-26, 53842 Troisdorf		x
503	252	GERMANY	Sharp Electronics. Europe GmbH	www.sharp.de	0049(0)4023760	0049(0)4023764	Sonninstr. 3, 20097 Hamburg	x	
504	253	GERMANY	Sicherwohnen.com. Fachhandel für Haus- und Sicherheitstechnik	info@sicherwohnen.com	0180511407773		Wanzlebener Str. 10, 39167 Hohendodeleben		x
505	254	GERMANY	Siemens AG	www.siemens.de	0049(0)892349		Wittelsbacher Platz, 80333 München, 80086 München	x	x
506	255	GERMANY	Siemens AG A & D E T	www.siemens.de	0913170	09131728891	Werner-von-Siemens-Str. 50, 91052 Erlangen	x	
507	256	GERMANY	Siemens Audiologische Technik GmbH	www.hoergeraete-siemens.de	0049(0)91313080	0049(0)91313083204	Gebbertstr. 125, 91058 Erlangen	x	
508	257	GERMANY	Siemens Business Services C-LAB	jerry.c-lab.de/insb/uxdots.htm	05251606144	05251606065	Fürstenallee 11, 33102 Paderborn	x	
509	258	GERMANY	Siemens Nixdorf Informationssysteme AG. Informationssysteme AG	chh.erlm.siemens.de/	0049(0)2289825194	0049(0)2889825193	Vorgebirgsstr. 49, 53119 Bonn		x
510	259	GERMANY	Signum GmbH	info@signum-verlag.de	04545791056	04545791057	Schloßstr.4, 23883 Seedorf		x
511	260	GERMANY	Sonotel	info@sonotel.de	0401031888910	041031888919	Rosengarten 17, 22880 Wedel		x
512	261	GERMANY	Sony Deutschland GmbH	www.sony.de	0049(0)22159660	0049(0)2215966349	Hugo-Eckener-Str. 20, 50829 Köln	x	x
513	262	GERMANY	Stabo Elektronik GmbH	Info@stabo.de	0049(0)512176200	0049(0)5121512979	Münchewiese 14-16, 31137 Hildesheim	x	x
514	263	GERMANY	Starkey Laboratories GmbH	www.starkey.de	0049(0)404294730	0049(0)40429473255	Weg beim Jäger 218-222, 22335 Norderstedt	x	
515	264	GERMANY	Steinhöringer Werkstätten für behinderte Menschen	k.obermaier@kfj-muenchen.de	0049(0)80941820	0049(0)8904182150	Münchener Str. 39, 85643 Steinhöring	x	x
516	265	GERMANY	Steller Technology					x	x
517	266	GERMANY	Stockert & Sohn GmbH	Stockert-Sohn@t-online.de	0911771697	0911774270	Marienstr. 47, 90762 Fürth	x	x
518	267	GERMANY	Süddeutsche Blindenhör- und Punkttschriftbücherei e.V.	SBHPUNKT@AOL.com	07111353100	071113531020	Siemensstr.52 A, 70469 Stuttgart		x
519	268	GERMANY	SynPhon GmbH. Elektronische Hilfen für Sehgeschädigte GmbH	SynPhon@t-online.de	07250929555	089244357489	Im Steinig 6	x	x
520	269	GERMANY	Tagarno Deutschland GmbH	info@tagarno.de	04035710411	04035710412	Dammtorstr. 21		x
521	270	GERMANY	TechCess Europe Ltd	info@techcesseurope.com	04561714090	04561714090	Am Holm 80	x	x
522	271	GERMANY	Telecareplus GmbH	info@telecareplus.com	0049(0)2304931500	0049(0)2304931401	Konrad-Zuse-Str. 14		x
523	272	GERMANY	Telekom. Forschungs- und Technologiezentrum	www.telekom.de	06151830	06151834868	Am Kavalleriesand 3	x	x
524	273	GERMANY	Telos - Technology Consulting	info@telos-consult.com	05502999806	05502703291	Breymannstr. 8	x	x
525	274	GERMANY	TfB - Technik für Behinderte. Gesellschaft für Rehabilitationstechnik mbH	info@tfb-team.de	0511828300	0511828306	Hildesheimer Str. 154 a		x
526	275	GERMANY	Therapiemittel Leon	info@leontherapie.com	0049(0)232310012	0049(0)232310011	Stammstr. 4		x
527	276	GERMANY	THOMASHILFEN		004947618860	0049476188619	Walkmuhlenstrasse 1 - 27432 BREMERVORDE	x	x
528	277	GERMANY	Tieman GmbH	info@tieman.de	0049(0)669196170	0049(0)6691961727	Fritzlarer Str. 25, 34613 Schwalmstadt	x	x
529	278	GERMANY	Tiptel AG	info@tiptel.de	0049(0)21024280	0049(0)210242810	Halskestr. 1	x	
530	279	GERMANY	TMND GmbH	info@tmnd.de	07062674256	07062674255	Lehmgrube 10	x	x
531	280	GERMANY	T-Mobile Deutschland GmbH	kundenservice@tmobile.de	018033022021		Landgrabenweg 151		x
532	281	GERMANY	tms - medialine. Dipl.- Ing. Thomas Förster	tms-medialine@t-online.de	04532505460	04532505461	Timmerhorner Str. 1 b		x
533	282	GERMANY	Touch Integrative Blindenhilfsmittel	info@touch-hh.de	0402279632	04022756781	Humboldstr. 33		x
534	283	GERMANY	Unitron Hearing GmbH Deutschland	info@unitronhearing.de	0049(0)7116585380	0049(0)71165853899	Daimlerstr. 22, 70736 Fellbach-Oeffingen	x	
535	284	GERMANY	Urmet GmbH	urmet@t-online.de	080317411	0803172990	Sebastian-Tiefenthaler-Str. 13	x	
536	285	GERMANY	VAROLUX-Technik Gerätebau GmbH	info@varolux.com	0049(0)392026289	0049(0)3920266712	Mittelweg 3, 39179 Barleben	x	x
537	286	GERMANY	Verein zur Förderung der Blindenbildung e.V.	v.vzfb@zfb.de	0049(0)511954650	0049(0)5119546537	Bleekstr. 26, 30559 Hannover	x	x
538	287	GERMANY	Vertical Informatik. Raimund Bickelmann	vertical@online.de	070015251525	070015251525	Neuenstädter Str. 90		x
539	288	GERMANY	Viersinn gGmbH - Hilfen für Behinderte	info@Viersinn.de	0758492280	07584922819	Stubener Straße 4		x
540	289	GERMANY	Vision Engineering Ltd.	info@visioneng.de	08141401670	081414016755	Anton Pendele Str. 3	x	x
541	290	GERMANY	VITA BEATA Fachhandel für Seniorenbedarf	mail@vita-beata.de	0049(0)2432933103	0049(0)2432933104	Jülicher Str. 35. 41849 Wassenberg		x
542	291	GERMANY	Vitakt Hausnotruf GmbH	info@vitakt.com	05971934356	05971934380	Am Bauhof 20-32	x	x
543	292	GERMANY	Vitaphone GmbH	info@vitaphone.de	0621178918100	0621178918101	Markircher Str. 22	x	x
544	293	GERMANY	Vitaris GmbH	www.vitaris-gmbh.de	0049(0)899624620	0049(0)8996246228	Oskar-Messter-Str. 15, 85737 Ismaning	x	x
545	294	GERMANY	WanderGuard GmbH Seniorenbetreuungsprodukte		0049(0)7805956920	0049(0)7805956919	Ortenauer Str. 61, 77767 Appenweier	x	x
546	295	GERMANY	WBH - Westdeutsche Blindenhörbücherei e.V.	wbh@wbh-online.de	0049(0)251719901	0049(0)251712846	Harkortstr. 9, 48163 Münster	x	x
547	296	GERMANY	Wehrfritz GmbH	service@wehrfritz.de	0049(0)95649290	0049(0)9564929224	August-Grosch-Str. 28-38, 96476 Bad Rodach	x	x
548	297	GERMANY	Weimed	info@weimed.de	070000347927	070000348061	Wolfshovener Strasse 77 - 79		x
549	298	GERMANY	WEINMANN HAMBURG.		00494047020	00494054702461	PO BOX 540268 - D 22502 HAMBURG (54)	x	x
550	299	GERMANY	Weißenstein Behindertensysteme. Ing. Peter Weißenstein	mail@weissenstein-bs.de	0049(0)3617923970	0049(0)3617776323	Hohenwindenstr. 13	x	
551	300	GERMANY	Wellsana Versand GesmbH	service@wellsana.com	01805920092	01805936983	Am Storrenacker 18		x
552	301	GERMANY	Wergen Systemtechnik. Dipl.-Ing. G. Wergen	info@wergen.com	09116003203	09116003204	Hinterm Bahnhof 4006	x	x
553	302	GERMANY	Werner Retter	werner-retter@t-online.de	0049(0)7319770322	0049(0)7319770355	Laubering 9		x
554	303	GERMANY	WES. Ebert Systeme Electronic GmbH	info@wes-electronic.de	0618792560	06187925699	Phillip-Reis-Str. 10		x
555	304	GERMANY	Widex micro-technic GmbH. Widex Hörgeräte GmbH	marketing@widexmt.de	0049(0)71178950	0049(0)7117895200	Albstadtweg 6, 70567 Stuttgart	x	
556	305	GERMANY	Wilgor Optik Vertrieb GmbH	info@wilgor.de	0049(0)221597920	00492215979220	Richard-Byrd-Str. 27	x	x
557	306	GERMANY	Zettler GmbH. Kommunikations- und Sicherungstechnik		089237270	08923727600	Holzstr. 28-30	x	
558	307	GERMANY	ZyXEL Deutschland GmbH	sales@zyxel.de	0049(0)240569090		Adenauerstr. 20/A2		x
559	1	HUNGARY	REHAB Ltd.	info@rehabrt.hu	06-1-288-6700/265	09(1) 288-6700/265	1134 Budapest D´zsa György út 144	x	
560	1	IRELAND	ASH TECHNOLOGIES LTD.	info@ashtech.ie	0035345882212	0035345882214	B5, M7 Business Park NAAS, COUNTY KILDARE	x	
561	2	IRELAND	Rehan Electronics Ltd.	sales@rehanelectronics.ie	00353(0)539422013	00353(0)539420732	industrial est - gorey, co. wexford	x	
562	1	ISRAEL	HomeFree Systems Ltd.	contact@homefreesys.de	97236488690	97236488691	2 Haberzel St. ISR-61132 Tel Aviv	x	
563	1	ITALY	A.I.D.A. S.R.L.	info@aidalabs.com	0039059306025	0039178600363	Via T.Pelloni 29 - 41100 MODENA	x	x
564	2	ITALY	Aethra	info.aethra@aethra.com	0039071218981	0039071887077	via Matteo Ricci 10	x	
565	3	ITALY	ANASTASIS S.C. A .R.L..	info@anastasis.it	00390512962121	00390512962120	Piazza dei Martiri 1/2 - 40121, BOLOGNA	x	x
566	4	ITALY	APPUNTO R&D.	info@appunto-rd.it	00390523884298	00390523737252	Via Cavallotti 1 29015 Castel San Giovanni, Piacenza	x	x
567	5	ITALY	AUDIOLOGIC SRL.	info@audiologic.it	00390498074811	00390498074810	Via Tommaseo Niccolò, 94 - 35131 PADOVA	x	x
568	6	ITALY	AUXILIA SAS.	info@auxilia.it	0039059216311	0039059220543	Via Vaccari, 72 - 41100 MODENA	x	x
569	7	ITALY	BEGHELLI SPA.	italia@beghelli.it	00390519660411	00390519660444	Via Mozzeghine, 13/15 - 40050, BOLOGNA	x	x
570	8	ITALY	BORGIONE CENTRO DIDATTICO.	borgione@borgione.it	00390114551555	00390114551531	Corso Lombardia, 21 - 10078, VENARIA REALE TORINO	x	x
571	9	ITALY	CARL ZEISS.	post@zeiss.it	00390293773293	00390293773380	Viale delle Industrie, 18/20 - 20020, Milano	x	x
572	10	ITALY	CIPSA SOC.COOP.SOCIALE.	info@cipsa.it	00390522875747	00390522019906	Via Terracini 9/c - 42021 BARCO DI BIBBIANO	x	x
573	11	ITALY	COMPUTERART		0039062284247	0039062285548	Viale Morandi, 199 - 00155, Roma	x	x
574	12	ITALY	Coselgi S.p.A.	coselgi@coselgi.it	003969120222	003969100333	Via Laurentina	x	
575	13	ITALY	DISAWORLD.NET	info@disaworld.net	00390498058021	00390498058022	Via Campania, 15 - 35030, PADOVA	x	x

		COUNTRY	NAME	EMAIL	TELEPHONE	FAX	ADDRESS	M	D
576	14	ITALY	EASY LABS SRL.	info@easylabs.it	00390114386140	00390114308468	Via Venasca, 16 - 10138, Torino	x	x
577	15	ITALY	EQUOTEL SRL.		00390255607428	00390255607460	Via G. Pascoli, 9 - 20097, Milano	x	x
578	16	ITALY	FBL SRL.	fbl@lomellina.it	0039038491399	0039038491362	Contrada della torre, 16 - 27036, MORTARA (PAVIA)	x	x
579	17	ITALY	GIOVANNI FADDA.		0039055470920		Via Atto Vannucci, 10 - 50134, FIRENZE	x	x
580	18	ITALY	GUIDOSIMPLEX SRL.	infoclient@guidosimplex.it	0039066152801	00390661528036	Via del Podere San Giusto, 29 - 00166, ROMA	x	x
581	19	ITALY	HELPICARE BY DIDACARE SRL.	info@helpicare.com	00390516810450	00390516811287	Via Galvani 5/A, 40017 San Giovanni in Persiceto	x	x
582	20	ITALY	IBM SEMEA SPA.		0039051227213	00390511224116	Via Arienti, 6/8 - 40124, BOLOGNA	x	x
583	21	ITALY	ITOP OFFICINE ORTOPEDICHE SRL.	info@itop.it	0039069531191	003906953572	Via Prenestina Nuova, 163 - 00036, PALESTRINA (ROMA)	x	x
584	22	ITALY	KHYMEIA SRL.	info@khymeia.com	00390498935107	00390498957242	Piazza Europa, 9 - 35027, NOVENTA PADOVANA (PADOVA)	x	x
585	23	ITALY	LACE ELETTRONICA.	info@lace.it	0039050982206	0039050982434	Via San Cannizzaro, 16 - 56014, OSPEDALETTO (PISA)	x	x
586	24	ITALY	LEONARDO SRL.	staff@leonardoausili.com	00390522923770	00390522272586	via Nobel, 88 - 42100 REGGIO EMILIA	x	x
587	25	ITALY	LIFEVISION ITALIA SRL.		003902796649	00390276395371	Via San Pietro all'Olmo, 3 - 20121, MILANO	x	
588	26	ITALY	MANFROTTO TRADING.	info@it.bogenimaging.com	0039025660991	0039025393954	Via Livinallongo, 3 - 20139, MILANO	x	x
589	27	ITALY	MDV INGEGNERIA ELETTRONICA SAS.	mdvsas@tin.it	00390516258180	00390516258180	Via Del Fiume, 32/A - 40068 SAN LAZZARO Bologna	x	
590	28	ITALY	MICROLENS SRL.	info@microlens.it	00390292111505	00390292330371	Via Briantea, 62 - 20063 MILANO	x	x
591	29	ITALY	NUANCE ITALIA (EX SCANSOFT ITALIA)	info.italy@nuance.com			Viale Colleoni, 9 - 20041, AGRATE BRIANZA (MILANO)	x	x
592	30	ITALY	RIGEL ENGINEERING SRL.		00390586210222	00390586210255	Piazza Attias, 21/C - 57125, LIVORNO	x	x
593	31	ITALY	ROPIMEX ITALIA SRL.		0039039669234	0039039666850	Via Montalino, 13 - 20059, VIMERCATE (MILANO)	x	x
594	32	ITALY	SAIET TELECOMUNICAZIONI SPA.	sales@saiettelecom.it	0039051706711	0039051706763	Via Serenari, 1 - 40013 Castel Maggiore, Bologna	x	x
595	33	ITALY	SIM ITALIA SRL.	info@simitalia.it	0039051810572	0039051817845	Via Gramsci, 9 - 40018, SAN PIETRO IN CASALE (BOLOGNA)	x	x
596	34	ITALY	SLD SOFTWARE.	info.voceviva@alice.it	00390307460177	00390307465319	Via Traversa, 2 - 25031, CAPRIOLO (BRESCIA)	x	x
597	35	ITALY	SOCIETÀ COOPERATIVA SOCIALE CILTE.	info@cilte.it	00390113180909	00390113182669	Corso Unione Sovietica, 220 - 10134, Torino	x	x
598	36	ITALY	SR LABS.	info@srlabs.it	0039027492911	00390274929113	Via Tucidide, 56 - Torre 6 - 20134, MILANO	x	x
599	37	ITALY	STUDIO ACCA.	studioacca@libero.it	0039023287300	0039023287300	Via Libertà, 57 - 20019, SETTIMO MILANESE (MILANO)	x	x
600	38	ITALY	TECNO- TECNOLOGIE NELLA VISIONE SRL	commerciale@tecnologievisione.it	00393351017110	00390415100858	Via Dauli, 10 - 30031 DOLO, Venezia	x	x
601	39	ITALY	TELECO AUTOMATION SRL.	teleco.automation@nline.it			Viale del Lavoro, 5 - 31014, COLLE UMBERTO TREVISO	x	x
602	40	ITALY	TELESOCCORSO SRL.	info@telesoccorso.it	00390381 692151	00390381692150	Via Camillo Rodolfi, 1 - 27029, VIGEVANO (PAVIA)	x	x
603	41	ITALY	TIFCOM DI GASPARINI MARCO.	info@tifcom.com	0039035672121	003902700444327	Via Scuole Capannelle, 6 - 24050 ZANICA, Bergamo	x	x
604	42	ITALY	TIFLOSYSTEM SPA.	commerciale@tiflosystem.it	00390499366933	00390499366950	Via IV Novembre 12/B, 35017 Piombino Dese Padova	x	x
605	43	ITALY	UNIONE ITALIANA CIECHI CENTRO NAZIONALE TIFLOTECNI	segrsys@uiciechi.it	00390669988316.	00390669988408	Via Borgognona, 38 - 00187 Roma	x	x
606	44	ITALY	VOICE SYSTEMS SRL.	info@voicesystems.it	0039023450989	00390233101165	Via G. da Procida, 6 - 20149, Milano	x	x
607	45	ITALY	WOTAN SRL.		00390472200981	00390472200769	Via Stazione, 6 - 39045 FORTEZZA, Bolzano	x	x
608	1	MONACO	ITT MONACO SCS M.& CIE	info@ittmonaco.com	0037799998900	0037799998901	Le Roqueville 20 Boulevard Princesse Charlotte MC 98000	x	
609	1	NEW ZEALAND	HumanWare	nz.info@humanware.com	006433844555	006433844933	11 Mary Muller Drive, Christchurch	x	
610	1	NORWAY	AnimaX International ASA	sales@animax.no	004790175804	004764972173	Ensjøveien 12B	x	
611	2	NORWAY	BRAILLO NORWAY.		004733316622	004733316677	Storgata, 31 - 3101 TONSBERG	x	
612	3	NORWAY	Falck A/S	Kontakt@falck.dk	004770333311	004733152957	Falck-Huset-Polititorvet-1780 København V	x	
613	4	NORWAY	FALCK Vital	post@falckvital.no	37 14 94 50		Postboks 123, Melkeveien 9, 4952 Risør	x	x
614	5	NORWAY	HandyBits	general@handybits.com	004723264848	004723264849	P.O.Box 7218, Homansbyen, 0307 Oslo	x	
615	6	NORWAY	Inger Hagen	post@ihagen.no	004795199896	004722143760	Postboks 7167 Majorstua 0307-Oslo	x	
616	1	SPAIN	ABACUS IBERIA, S.A.	www.abacus.es	+34917867001	+34917867006	AV. PABLO NERUDA, 91-97. 28018 MADRID		x
617	2	SPAIN	ABROTES, S.L.	www.abrotes.com	+34913038878	+34913039759	GAMONAL, 61, 28031 MADRID	x	x
618	3	SPAIN	ADAPTOR (ORTOPEDIA EGARA)		+34937800950	+34937800950	RAMBLA EGARA, 372 BAJOS, 08221 TARRASA BARCELONA	x	x
619	4	SPAIN	AGC MÓVILES	alejandrocoll@agcmoviles.com	+34912440660	+34917395886	AV. BETANZOS, 17 BAJO, 28029 MADRID		x
620	5	SPAIN	AMPHONE		+34916316140	+34916316140	TEBAS, 34, 28230 LAS ROZAS MADRID	x	x
621	6	SPAIN	ANGEL, S.L.		+34646651143		PADREPOLANCO, 7 - 2º, 50008 ZARAGOZA		x
622	7	SPAIN	ARGANON, S.L.	www.arganon.com	+34913291929	+34913295757	CALDERON, 5, 28042 MADRID		x
623	8	SPAIN	ARIFARM, S.L.		+3414500861	+3414590754	ALFONSO FERNANDEZ CLAUSELLS, 5, 28035 MADRID		x
624	9	SPAIN	ASISTTEL, S.A.	info@asisttel.com	+34902150190	954156362	AV. REINA SOFIA, S/N		x
625	10	SPAIN	ATTENDO SYSTEMS S.L.U.	info@attendo.es	902196995	902197207	JOSE ECHEGARAY, 7 - 2ª, 28230 LAS ROZAS MADRID		x
626	11	SPAIN	AUDIFON IBERICA	www.audifon.es	915776793	915764003	HERMOSILLA, 93 - 1º DCHA. 28001 MADRID		x
627	12	SPAIN	AUDIOTEXT	audiotext@ya.com	630965473		VISTAS A MORALEJA Nº 10, 28034 MADRID	x	x
628	13	SPAIN	AUDISORD	audisord@audisord.com	933189184	934124890	PLAZA DE URQUINAONA, 1, 08010 BARCELONA		x
629	14	SPAIN	AVANTEAM, S.L.	info@avanteam.com	916347786	916347617	MAZARRÓN, 28, 28230 LAS ROZAS MADRID		x
630	15	SPAIN	AYAMA	ayama@ayama.com	937905862		CAMÍ RAL, 133 BAJOS, 08301 MATARÓ, BARCELONA		x
631	16	SPAIN	AYUDAS DINAMICAS, S.L.	www.ayudasdinamicas.com	935747474	935747475	PI Urvasa Llobregat 12, 08130 Santa Perpetua, BARCELONA		x
632	17	SPAIN	B & J ADAPTACIONES, S.L.	www.bj-adaptaciones.com	932850437	932130337	MARE DE DÉU DEL COLL, 44 BAJOS, 08023 BARCELONA		x
633	18	SPAIN	BAIXA VISIÓ ÁNGEL BARAÑANO	www.baja-vision.org	902105471	913992256	BALMES, 127, 08008 BARCELONA		x
634	19	SPAIN	BAJA VISIÓN ÁNGEL BARAÑANO	www.baja-vision.org	913992256	913992256	PONZANO, 25, 28003 MADRID		x
635	20	SPAIN	BELTONE		914282220	914282222	Pto. de la Morcuera, Ed. A-B 2, 28916, LEGANES MADRID		x
636	21	SPAIN	BEST DIGITAL		916321760	916321412	MARTINET 6, 28660 BOADILLA DEL MONTE MADRID		x
637	22	SPAIN	BIOINGENIERÍA ARAGONESA, S.L.	bioingenieria@bioingenieria.es	976798200	976798201	MATÍAS PASTOR SANCHO, 9 LOCAL, 50015 ZARAGOZA		x
638	23	SPAIN	C.D.I., S.L.	www.cdi-at.com	937508280	937508312	CARRER DEL SOL 18 1º, 3ª 08339 VILASSAR DE DALT, BARCELONA		x
639	24	SPAIN	CDLIBRO	info@audiolibro.es	917156376	913516375	Barlovento 1, 302, 28223 Pozuelo de Alarcón MADRID		x
640	25	SPAIN	CEAPAT	www.ceapat.org	913634800	917784117	LOS EXTREMEÑOS 1, 28018 MADRID	x	x
641	26	SPAIN	CECAPROIN, S.L.	www.cecaproin.com	963784289		JOSE ANDREU ALABARTA, 32 BAJO, 46014 VALENCIA	x	x
642	27	SPAIN	CEIAF	ceiaf@centro-eurocei.net	954179210	954170512	Real, 27-14, 41920 San Juan deAznalfarache SEVILLA		x
643	28	SPAIN	CEIMSA ELECTROMEDICINA, S.L.	www.ceimsa.es	948131776	948124470	POL.IND.MUGAZURI 6 A, 31600, BURLADA NAVARRA	x	x
644	29	SPAIN	CENTRO BAJA VISIÓN	mclavero@bajavisión.com	983291020		ACERA DE RECOLETOS 10, 47004 VALLADOLID		x
645	30	SPAIN	CENTRO OBREGON - ASPRONA		983376986	983373144	PASEO DEL OBREGON, 2-6, 47009 VALLADOLID	x	x
646	31	SPAIN	CETTICO	www.cettico.fi.upm.es	913522546	913526388	Campus Montegancedo, 28660 Boadilla Monte, Madrid	x	
647	32	SPAIN	CIENCIAS DE LA EDUCACION PREESCOLAR Y ESPECIAL		915626524	915640354	GENERAL PARDIÑAS, 95, 28006 MADRID	x	x
648	33	SPAIN	Code Factory, S.L.	info@codefactory.es	937337066	937893051	Rambla d'Egara, 148, 2-2, E-08221 Terrassa (Barcelona)	x	
649	34	SPAIN	COMERCIAL DE TELECOMUNICACIONES, S.A.		945284811	945278307	PORTAL GAMARRA 36, 26, 01013 VITORIA ALAVA		x
650	35	SPAIN	COMYTEL (COMUNICACION Y TELEFONIA, S.L.)	direccion@central.comytel.es	963896690	963891190	FINLANDIA, 17 BAJO, 46010 VALENCIA		x

		COUNTRY	NAME	EMAIL	TELEPHONE	FAX	ADDRESS	M	D
651	36	SPAIN	Corporacion Empresarial ONCE	com.ceosa@once.es	915908200	915908209	Pechuan, 28002 Madrid	x	
652	37	SPAIN	CRUZ ROJA	www.cruzroja.es	902222292		RAFAEL VILLA, S/N EL PLANTÍO, 28020 MADRID		x
653	38	SPAIN	DASIT, S.A.	www.dasit.net	976735960	976730034	Gutemberg 20, Pol. Molino del Pilar 914, 50015 Zaragoza		x
654	39	SPAIN	DCI IBERIA, S.L.	idebenito@dciiberia.com	916610266	916610307	AV. BRUSELAS, 13 3ª PLANTA, 28108 ALCOBENDAS MADRID		x
655	40	SPAIN	DESARROLLOS VÍA LIBRE	comunicacion.accesibilidad@fundacionce.es	914350442	914352623	DON RAMÓN DE LA CRUZ, 38 BAJO, 28001 MADRID		x
656	41	SPAIN	DIDACMANÍA	info@didacmania.com			MAJOR DE SARRIA 20, 08017 BARCELONA		x
657	42	SPAIN	DISMINUIDOS FÍSICOS DE ARAGÓN	ortopedia@dfa-org.com	976599090	976596210	MIGUEL SERVET, 34-36, 50008 ZARAGOZA		x
658	43	SPAIN	DOLMEN DISTRIBUCIONES, S.L.	info@dolmendis.com	902120546	902120802	ISAAC PERAL, 10, 28820 COSLADA MADRID		x
659	44	SPAIN	E.O. PRIM, S.A.	eop@nexo.es	914024747	914017547	DON RAMON DE LA CRUZ 83, 28006 MADRID		x
660	45	SPAIN	E.T.S.I.TELECOMUNICACIONES	www.etsit.upm.es	913367316	913367323	CIUDAD UNIVERSITARIA, S/N, 28040 MADRID		x
661	46	SPAIN	EGESA (ELECTRONICA GENERAL ESPAÑOLA, S.A.)	www.egesa.es	913736852	913162884	GABRIELA MISTRAL 8, 12 B, 28035 MADRID	x	x
662	47	SPAIN	EGI ELECTROACÚSTICA GENERAL IBÉRICA (EGI)	@egiaudio.com	976405353	976405354	AVDA. ALMOZARA 79, 50003 ZARAGOZA	x	x
663	48	SPAIN	EL CORTE INGLES						x
664	49	SPAIN	ERICSSON RADIO, S.A.	www.ericsson.es	902180576	913392371	RETAMA 7, 3, 28045 MADRID		x
665	50	SPAIN	ESES	pi.comercial@eses.es	913798200	913798263	Antonio Lopez 249, 2, Ed. Vertice, 28041 MADRID		x
666	51	SPAIN	ESTUDIOS ABAIRA	international@abaira.es	914151300	914151408	SÁNCHEZ PACHECO, 89 - 91, 28002 MADRID		x
667	52	SPAIN	EULEN, S.A.	www.eulen.com	916310900		LEZAMA 4, 28034 MADRID		x
668	53	SPAIN	FEDERACIÓN ASPACE (ASPACE)	aspacesp@teleline.es	915614090	915634010	MADRID (SPAIN)		x
669	54	SPAIN	FONYTEL S.A.	mroa@fonytel.es	915669157	915669236	MARTINEZ VILLERGAS, Nº 49, 28027 MADRID	x	
670	55	SPAIN	GAES, S.A.	www.gaes.es	933005763		PEDRO IV, 160, 08005 BARCELONA		x
671	56	SPAIN	GRACARE, S.A.	www.gracare.com	934907562	934907573	GALILEO, 261, 08028, BARCELONA		x
672	57	SPAIN	HERMEX IBERICA, S.A.	wesform.hermex.es	937122227	937118847	BRUTAU, 96, 08203, SABADELL BARCELONA		x
673	58	SPAIN	IBÉRICA DE COMPONENTES, S.A.	psaiz@ibercom.net	916587320		Av. Somosierra 12 1, 28709 San Sebastian Reyes MADRID		x
674	59	SPAIN	IDEO, S.L.	www.ideo.es	954270465	954273235	VIRGEN DE LUJAN, 19, 41011 SEVILLA	x	x
675	60	SPAIN	INOFFCOM S.L.	www.the-echo-world.com	915102370	914160068	PADRE CLARET 10, 28002 MADRID		x
676	61	SPAIN	INSTITUTO AUDITIVO ESPAÑOL, S.A.		933173528	933013842	PAU CLARIS, 98, 08010 BARCELONA		x
677	62	SPAIN	IRISCOM SISTEMAS, S.L.	arrazola@iriscom.org	619288104	943512132	Mikeletegi 56, PT Miramón, 20009 Donosti, Gipuzkoa	x	x
678	63	SPAIN	IRUSOIN, S.A.	zuatzu@irusoin.com	902227100	943594134	P.Emp. Zuatzu, Ed. Urgull 6/7, 20018 Donosti, Gipuzkoa		x
679	64	SPAIN	ITECO		952270004		AV. BARCELONA, 42, 29009 MÁLAGA		x
680	65	SPAIN	LA CASA DEL MÉDICO	www.lacasadelmedico.com	914297000		ATOCHA, 113, 28012 MADRID		x
681	66	SPAIN	LAEM		902331122	965111672	URB. EL PALMERAL, BLOQ-9 Nº 17-27, 03008 ALICANTE		x
682	67	SPAIN	LAUSON	ventas@lauson.es	932624100	932623222	PASAJE DE ARAL, 110 - ZAL, 08040 BARCELONA		x
683	68	SPAIN	LEBON	editorial@lebon-libros.com/	934877009	934877009	ROGER DE LLURIA, 93, 08009 BARCELONA		x
684	69	SPAIN	MAGNETRON, S.A.		915192416	915196444	CARDENAL SILICEO, 22, 28002 MADRID		x
685	70	SPAIN	MAPFRE ASISTENCIA	www.mapfre.es	915812968	915812979	CLAUDIO COELLO, 123, 28006 MADRID		x
686	71	SPAIN	MASTER COELECTRONIC, S.L.	www.masterelectronic.com	915194342	915193163	TORRELAGUNA, 127, 28043 MADRID		x
687	72	SPAIN	MECD		917018000		ALCALA, 34, 28014 MADRID		x
688	73	SPAIN	MED-EL GMBH	jrodrigo@med-el.es	918041527	918044348	Ronda Pontiente 16 Bajo, 28760 TRES CANTOS MADRID		x
689	74	SPAIN	MEDIATRIC, S.L.	www.mediatric.com	934181072	934181338	MUNTANER, 499 BAJOS, 08022 BARCELONA	x	x
690	75	SPAIN	MEDIAVOICE SPAIN, S.L.	info@mediavoice.com.es	932240989	932213688	AV. ICARIA, 145-147 5º LOCAL-C, 08005 BARCELONA	x	x
691	76	SPAIN	MEDISA (MEDICAL IBERICA, S.A.)	www.medical-iberica.com	916064211	916062254	Lanzahitas 6, Pol.Ind. Albarreja, 28940 Fuenlabrada		x
692	77	SPAIN	MENSATEL, S.A.	www.mensatel.telefonica.com.pe	913349100	913581190	Manuel Tovar 35-3, 28034 MADRID		x
693	78	SPAIN	METODOS Y SISTEMAS DIDACTICOS, S.L.	metodos@mx3.redestb.es	913284464	913284448	RAMON ARECES, 14 - 12º A, 28030 MADRID		x
694	79	SPAIN	MING TELECOM, S.L.		654403634		PEDROÑERAS, 41 11-B, 28043 MADRID		x
695	80	SPAIN	MINUJA ERGOTECNIC, S.L.	minuja@minuja.com	977417506	977417428	PADRELLS 14, 43746 TIVISSA TARRAGONA	x	x
696	81	SPAIN	MQD. MIRA LO QUE TE DIGO	hoaransb@ctv.es	919474605	947461130	FUENTE LUGAREJOS, 09001 BURGOS		x
697	82	SPAIN	MUNDOVISIÓN	fernando.mancha@mundovision.net	954689370	954680096	Dátiles 14, Pol.Ind.Palmera, 41700 Dos Hermanas Sevilla		x
698	83	SPAIN	NEIF, S.A.		913440295	914578215	INFANTA MARÍA TERESA, 6, 28016, MADRID		x
699	84	SPAIN	NOCLAFILMS PRODUCCIONES, S.L.	noclafilms@eresmas.com	964225163	964225163	XIMÉNEZ, 3-5, 12004 CASTELLÓN		x
700	85	SPAIN	NOVOVISION	www.novovision.es	914201878	914200057	ATOCHA 41, 28012 MADRID		x
701	86	SPAIN	ODEYS (ORTOPEDIA DE ELECTRONICA Y SISTEMAS)	www.members.es.tripod.de/odeys	629145571		APARTADO DE CORREOS 6029, CASTELLON	x	x
702	87	SPAIN	ONCE - CIDAT	cidat@once.es	917097600	917097777	CAMINO DE HORMIGUERAS, 172, 28031 MADRID	x	x
703	88	SPAIN	ORTO AYUDAS, S.L.	ortoayudas@ortoayudas.com	913806022	917781347	AV. BUENOS AIRES, 2 C/V AV. ALBUFERA, 28038 MADRID		x
704	89	SPAIN	ORTOPEDIA CANARIA	www.ortocan.com	922279822		PILAR 27, 38003 SANTA CRUZ DE TENERIFE TENERIFE		x
705	90	SPAIN	ORTOTECSA, S.L.	info@ortotecsa.com	918719132	918719323	Peña de Francia 8, 28500 Arganda del Rey, MADRID	x	x
706	91	SPAIN	OTICON SPAIN, S.A.	www.oticon.es	902100230	916613804	ctra. Fuencarral km 15,700 Ed. Europa, 28100 Madrid		x
707	92	SPAIN	OWASYS	info@owasys.com	946025323	946025353	PARQUE TECNOLÓGICO 207B, 48170 ZAMUDIO VIZCAYA	x	x
708	93	SPAIN	OZA C.A.T., S.L. (CENTRO AYUDAS TECNICAS)		981138199		Ronda de Outeiro, 37 Bajo Izqda. 15009, A CORUÑA		x
709	94	SPAIN	PEOPLE COMUNICATIONS				Pº de La Castellana 216, Pta Europa 2, 28046 Madrid		x
710	95	SPAIN	PHONAK IBÉRICA S.A (PHONAK)	juanfran.partearroyo@phonak.es	902331122	965111672	El Palmeral 9, 17-27, 03008 ALICANTE		x
711	96	SPAIN	PRIM, S.A. SUMINISTROS ORTOPEDICOS	prim.ortopedia@ortoprim.com	913342580	913342560	POL. IND. 1. C, Nº 20 28938, MOSTOLES MADRID		x
712	97	SPAIN	PROAMIGO	info@proamigo.com	902011011	901533111	PZA. JUAN ZORRILLA, 1, 28003, MADRID		x
713	98	SPAIN	PRODIMED, S.A.	prodim.prodimed@tsai.es	915352067	915351389	GENERAL RODRIGO, 6, 28003, MADRID	x	x
714	99	SPAIN	Productos Medicinales Medela S.L.	www.medela.es	933205969	933205531	Manuel Fernández Márquez 49, 08918 Badalona	x	
715	100	SPAIN	PROINSSA - S.L.L.	info@proinssa.com	607763948	963918900	PZA. POETA LLORENTE, 2 BAJO DCHA., 46003 VALENCIA		x
716	101	SPAIN	QUAVITAE, S.A.		914481500	915934969	FUENCARRAL, 123 - 6º A, 28010 MADRID		x
717	102	SPAIN	RECOLETOS VISIÓN	info@recoletosvision.es	902181461	902193425	MUSGO, 3, 28023 MADRID		x
718	103	SPAIN	REDEL SENIOR, S.L.	info@redelsenior.com	902020906	915120712	Tramontana 27, 28223 Pozuelo de Alarcón MADRID	x	x
719	104	SPAIN	REDISLOGAR COMUNICACIONES, S.A.		916590063		Lanzarote 2, Pol.Ind.Norte, 28700 SS Reyes, MADRID		x
720	105	SPAIN	REHA MEDICAL, S.L.	www.lifante.net	934787108	934787108	Gaiter de Llobregat 131, 08820 El Prat de Llobregat		x
721	106	SPAIN	REHAGIRONA, S.L.	www.rehagirona.com	902487272	972405054	Trens Petits, Pol.Ond. Mas Xirgu, 17005 GIRONA		x
722	107	SPAIN	REHASOFT	info@rehasoft.com	932136736	932136736	TORRIJOS, 23, 08012, BARCELONA		x
723	108	SPAIN	RV ALFA, S.A.	rfalfa@rfalfa.com	914136812	914138272	JOSÉ SILVA, 3 BAJO, 28043 MADRID		x
724	109	SPAIN	SCENA SUBTITULACIÓN, S.L.		963513034		STA. IRENE, 3 - 11, 46002 VALENCIA		x
725	110	SPAIN	SERVICIOS DE TELEASISTENCIA, S.A.		915632289	915640291	VELAZQUEZ, 126, 28006 MADRID		x

		COUNTRY	NAME	EMAIL	TELEPHONE	FAX	ADDRESS	M	D
726	111	SPAIN	SIEMENS, S.A.		915148000	915147018	RONDA DE EUROPA 5, 28760 TRES CANTOS MADRID	x	x
727	112	SPAIN	SIEMENS-IS2 (SIEMENS)	juanjose.garcia@is2.es	915140733	915148618	MADRID 125, 28903, GETAFE MADRID	x	x
728	113	SPAIN	SILVER VISION TECHNOLOGIES		917330004		Pº DE LA CASTELLANA, 240 PISO 8 D, 28046 MADRID		x
729	114	SPAIN	SITRE TELECOM	afigueroa@gapd.es	915180495	917111826	Ana Mariscal 3, 28223 Pozuelo de Alarcón MADRID		x
730	115	SPAIN	SOFTITULAR, S.L.	infor@softitular.com	934232365		VILAMARÍ, 21 3º 2, 08015 BARCELONA		x
731	116	SPAIN	SOGECABLE, S.A.	www.sogecable.es	917367000		AV. ARTESANOS 6, 28760 TRES CANTOS MADRID		x
732	117	SPAIN	SOGEPAQ		915247220		GRAN VIA, 32 1ª PLANTA, 28013 MADRID		x
733	118	SPAIN	SONELSA	consultas@sonelsa.es	912254555	942262777	Pol.Trascueto, 39600 Revilla de Camargo CANTABRIA		x
734	119	SPAIN	SONOR AUDIFONOS		972200664	972227166	GRAN VIA JAIME I, 69, 17001 GIRONA		x
735	120	SPAIN	SONY	www.sony.es	913091402		DIEGO DE LEON 55, 28006 MADRID		x
736	121	SPAIN	STENOTYPE SPAIN	stenotype@terra.es	915932175	914471722	Gral.MARTÍNEZ CAMPOS, 15 5º IZDA., 28010 MADRID		x
737	122	SPAIN	SUBTITULA'M	subtitulam@inser.es	963858424		SAN JOSÉ DE CALASANZ, 30 2ª, 46008 VALENCIA		x
738	123	SPAIN	SUPACE		933570427	933570268	ESCULTOR LLIMONA, 17 BAJO, 08031 BARCELONA		x
739	124	SPAIN	TCR 27, S.A.L.	tcr27sal@terra.es	963031030	963031031	QUART, 51, 46001 VALENCIA		x
740	125	SPAIN	TELEASISTENCIA ASISPA	teleasistencia@asispa.es	914033131	914052304	MARTÍNEZ VILLERGAS 8, 28027 MADRID		x
741	126	SPAIN	TELECOM Y NOVATECNO, S.A.	jmurunuela@spctelecom.com	945297029	945297028	Leonardo da Vinci 14, P.T., 01510 MIÑANO ALAVA		x
742	127	SPAIN	TELECOR / SERVICIOS DE TELECOMUNICACIONES	sgarcia@telecor.es	915970193	915972315	Pza. Pablo Ruiz Picasso, Ed.. Serantes, 28020 MADRID		x
743	128	SPAIN	TELEFÓNICA MÓVILES DE SPAIN, S.A.	tapias_d@tsm.es	680013286	680017882	Serrano Galvache 56, 12ª Ed. ÁLAMO, 28033 MADRID	x	x
744	129	SPAIN	TELELARM CARE, S.L.	www.telelarmcare.es	915616155	915617900	VELAZQUEZ, 126 5º A, 28006 MADRID	x	x
745	130	SPAIN	TEMPOS 21	info@tempos21.com	915784802	915780532	ALCALÁ, 85 1º IZDA., 28009 MADRID		x
746	131	SPAIN	TOMAHAWK, S.L.	tomahawk@inves.es	918725494	918734885	AV. Quintanar 73-75, 28514 NUEVO BAZTÁN MADRID	x	x
747	132	SPAIN	TRADITEL		934197640		ENTENZA, 332, 08029 BARCELONA		x
748	133	SPAIN	VODAFONE	www.airtel.es	916575079	916575307	AV. EUROPA, 1, 28100 ALCOBENDAS		x
749	1	SWEDEN	Bellman & Symfon AB	info@bellman.se	004631682820	004631682890	S. Långebergsgatan 30, 421 32, Västra Frölunda	x	
750	2	SWEDEN	Bo EDIN AB	info@edin.se	004687671818	004687671820	Förrådsvägen 2B, SE-181 41 Lidingö	x	x
751	3	SWEDEN	CareTech AB	kontakt@caretech.eu	00466082928907		Nyborgsvägen 197, 61479 Kalix	x	
752	4	SWEDEN	Comento AB	staff@hearit.biz	00468178120	00468178160	Gliavägen 77, 16858 Bromma	x	
753	5	SWEDEN	Etac Sverige AB	info@etac.se	004686334700	004686531870	SE-164 51 Kista, SWEDEN	x	
754	6	SWEDEN	Gewa AB	info@gewa.se	0046859469400	0046859469419	Malmvägen 55, S-19162 Sollentuna	x	
755	7	SWEDEN	INDEX BRAILLE AB.	info@indexbraille.com	00469202030 80	0046920203085	Hantverksvagen 20 Box 155 - S-954 23, GAMMELSTAD	x	
756	8	SWEDEN	Index. Brailleprinter Company AB		004692057135	004692057249	Hantverksvägen 20, 95423 Gammelstad	x	
757	9	SWEDEN	Libego AB	info@libego.se	0046133420160	0046133420161	Diskettgatan 11B, SE-583 35 Linkoping	x	
758	10	SWEDEN	LVI Low Vision International AB	info@lvi.se	0046470727700	0046470727725	Verkstadsgatan 5, 35246 Växjö	x	
759	11	SWEDEN	POLAR PRINT AB		004692087885	004692087886	PO BOX 950 - S 971 28, LULEÅ	x	x
760	12	SWEDEN	Possio	sales@possio.com	0046858744020	0046858744010	16428 Kista, Postfach P.O. Box 1236, Kista	x	
761	13	SWEDEN	RFSU REHAB AB	www.rfsu.se	004686920700	004686531870	Drottningholmsvagen, 37 - S 102 24, STOCKHOLM	x	x
762	14	SWEDEN	RINI ergoteknik ab	info@rini.se	0046859477170	00468929279	Kruthornsvägen 20A, S-19253 Sollentuna	x	
763	15	SWEDEN	TOBII TECHNOLOGY AB	sales@tobii.com	004686636990	00468301400	Karlsrovägen 2D - 182 53 DANDERYD SVEZIA	x	
764	1	SWITZERLAND	Ascom (Schweiz) AG	ask-ascom@ascom.ch	0041319991111	0041319992300	Belpstrasse 37, CH-3000 Berne 14	x	x
765	2	SWITZERLAND	ASSISTIVETECHNOLOGY	phk@nohandcom.com			4102 BINNINGEN	x	
766	3	SWITZERLAND	Bernafon AG	http://www.bernafon.com	0041319981515	0041319981590	Morgenstrasse 131, 3018 Bern	x	x
767	4	SWITZERLAND	Bones GmbH	info@bones.ch	0041417264270	004152672284	Böhnirainstr. 14	x	
768	5	SWITZERLAND	Eurion E. Riedener	info@eurion.ch	0041562235333	0041562235343	Ausstr., 5300 Turgi	x	
769	6	SWITZERLAND	fst fondation suisse pour les etheses	info@fst.ch	0041327329777	0041327305863	charmette 10 b – cp, 2006 neufchâ	x	
770	7	SWITZERLAND	Genossenschaft Hörgeschädigten-Elektronik		004155952888	004155954949	Hömelstr.17, CH-8636 WALD ZH	x	
771	8	SWITZERLAND	GHE-CES ELECTRONIC AG.	info@ghe.ch	0041552462888	0041552464949	Hömelstr. 17, 8636 Wald	x	x
772	9	SWITZERLAND	INVAIR Technologies AG	info@invair.com	0041417287851		Gartenstrasse 2, CH-6300 Zug	x	x
773	10	SWITZERLAND	Qualilife SA	info@qualilife.com	0041919800951	0041919800952	riva paradiso 26, 6900 lugano paradiso	x	x
774	11	SWITZERLAND	Siemens Schweiz AG	call-center-med.ch@siemens.com	0041585581599			x	x
775	1	TAIWAN	BTC.					x	x
776	2	TAIWAN	ITRON TECHNOLOGY INC..	ione@ione.com.tw			TAIWAN TAIWAN	x	x
777	3	TAIWAN	KYE.					x	x
778	1	THE NETHERLANDS	Alva B.V.	info@alva-bv.nl	0031263841384	0031263841300	HA Arnhem	x	
779	2	THE NETHERLANDS	AssistiveWare	info@assistiveware.com		0031206128266	Van Speijkstraat 73-D, 1057 GN Amsterdam	x	
780	3	THE NETHERLANDS	BNC Distribution	www.bnc-distribution.com	0031508506960		Wasaweg 3a - 9723 JD GRONINGEN	x	
781	4	THE NETHERLANDS	Hippus	info@hippus.nl	0031765217210	0031765217128	Parkstraat 35, 4818 SJ Breda	x	
782	5	THE NETHERLANDS	Kompagne VOF	info@kompagne.nl	0031302870564	0031302898560	Winthontlaan 200	x	
783	6	THE NETHERLANDS	Optelec B.V.	info@optelec.nl	31(0)886783444	31(0)886783400	Breslau 4, 2993 LT Barendrecht	x	x
784	7	THE NETHERLANDS	PVOICE SOFTWARE.	jouke@pvoice.org			AMSTERDAM	x	x
785	8	THE NETHERLANDS	RVS RICHARD VAN SEENUS NEDERLAND		0031365320450	0031365321308	Bolderweg 6 - 1332 AT, ALMERE	x	x
786	9	THE NETHERLANDS	VAN LENT SYSTEMS.	info@vanlentsystems.com	0031412640690	0031412626025	DOMMELSTRAAT, 34 - 5347 OSS	x	
787	1	UK	1st Call Mobility	info@1stcallmobility.co.uk	(01279)425648	(01279)792695	Roydon Mill Park, Essex		x
788	2	UK	Ability Answers (Tekability)	info@tekability.com	(01792)412700	(01792)534102	Unit 2 Cwm Road, Hafod, Swansea, SA1 2AY		x
789	3	UK	Ability Showroom and Mail Order	ability@redcross.org.uk	(0870)7397391	(0116)2708765	British Red Cross Society, 114 Queens r. Leicestershire		x
790	4	UK	Able Living Ltd	info@ableliving.com	(020)85306030	(020)89897795	Patman House, 23-27 Electric Par., George Lane, London		x
791	5	UK	Ableworld	sales@ableworld.co.uk	(01270)627185	(01270)627185	39 Beam Street, Cheshire		x
792	6	UK	Access Audio Ltd	info@accessaudio.co.uk	(0800)7819489	(0131)6609777	Un. 2-5, Hardengreen BP, Dalhousie r., Eskbank, Lothian	x	x
793	7	UK	Ace Mobility Choice Ltd	all@acemobilitychoice.co.uk	(01621)868886	(01322)271788	Unit B2, Beckingham Bus. Park, Beckingham, Essex		x
794	8	UK	Active Mobility Centre Ltd	enq@activemobility.co.uk	(01642)805050	(01642)808487	Head Office, 178 Belasis Avenue, Cleveland		x
795	9	UK	Adapt-It	info@adapt-it.org.uk	(0845)6441712	(0845)6441742	Churchill House, Stirling Way, Hertfordshire		x
796	10	UK	Age Concern Aid-Call Ltd	sales@aidcall-alarms.co.uk	(0800)772266	(01364)651459	Linhay House, Linhay Business Park, Devon		x
797	11	UK	Aid-Call Ltd	healthcaresales@aidcall.co.uk	(01364)654321	(01364)651459	Linhay House, Linhay Business Park, Devon	x	x
798	12	UK	Alfred Peters Plc	sales@cirrusresearch.co.uk	(01723)890141	(01723)891742	Bridlington Road, Hunmanby, North Yorkshire		x
799	13	UK	Allardyce Healthcare	mikes@allardycehealthcare.co.uk	(01382)228411	(01382)202577	Unit 12, Tom Johnson Road		x
800	14	UK	Allergy Best Buys	info@allergybestbuys.co.uk	(08707)455002	(08707)442203	Hill Top Farm, Hights Lane		x

		COUNTRY	NAME	EMAIL	TELEPHONE	FAX	ADDRESS	M	D
801	15	UK	Alphamarque Associates Ltd	sales@alphamarque.com	(01707)660188	(01707)660199	1 The Mount, Hertfordshire		x
802	16	UK	Ampetronic Ltd	sales@ampetronic.com	(01636)610062	(01636)610063	Northern Road, Nottinghamshire	x	x
803	17	UK	Ansador Ltd	sales@ansador.co.uk	(020)72287777	(020)79242376	4 River Reach, Gartons Way		x
804	18	UK	Anything Left Handed Ltd	enquiries@anythingleft-handed.co.uk	(020)87703722	(020)87151220	Sterling House, 18 Avenue Road, Belmont, Surrey		x
805	19	UK	Argyll	info@argylltelecom.com	(0870)7501471	(0870)7501469	80 Argyll Street, Argyll		x
806	20	UK	Ascom (UK) Ltd	sales@ascomws.co.uk	(01732)742014	(01732)455865	45 Westerham Road, KENT	x	x
807	21	UK	Associated Optical	assoc.opt@btconnect.com	(01628)605433	(01628)665077	Unit 2, 64 High Street, Buckinghamshire		x
808	22	UK	Astric Medical	astricmed@aol.com	(01273)716516	(01273)716516	Astric House, 36 Blatchington Road, East Sussex	x	x
809	23	UK	Audio Communications	barry@elm6.wanadoo.co.uk	(01793)851440	(01793)851440	Unit 6, Elm Court Industrial Park, Station r., Wiltshire	x	x
810	24	UK	B and H Designs	bhdesign@talk21.com	(01462)893039	(01462)893039	2 Pepys Way, Hertfordshire	x	x
811	25	UK	Back Shop	info@thebackshop.co.uk	(020)79359120	(020)72241903	14 New Cavendish Street		x
812	26	UK	Back To Work	info@backtowork.co.uk	(01256)351080		Hampshire		x
813	27	UK	BAE Systems Ltd	john.leslie@baesystems.com	(01383)822131	(01383)824401	Northway, Hillend Industrial Park, Hillend, FIFE	x	x
814	28	UK	Betterlifehealthcare.com	info@betterlifehealthcare.com	(01772)626777	(01772)626770	Cuerden Green Mill, Sherdley r., Lostoc Hall, Lancashire		x
815	29	UK	Bewator Ltd	sales@bewator.co.uk	(0871)3860800	(0871)3860888	Brecon House, William Brown Close, Llantarnam Park	x	x
816	30	UK	Bierley	sales@bierley.com	(01664)474056	(0845)2802281	3 Bouverie Court	x	x
817	31	UK	Birmingham Optical Group Plc	sales @nidek.co.uk	(0845)2303020	(0845)2308703	583 Moseley Road, West Midlands		x
818	32	UK	Bodys Care Centre Ltd		(01702)346204	(01702)338631	631 London Road, Essex		x
819	33	UK	Brother UK Ltd	sales@brother.co.uk	(0845)6060626	(0161)3083281	Shepley Street, Audenshaw	x	x
820	34	UK	BT Age and Disability Action	disability@bt.com	(0800)800150	(01332)822839	PP38/15 Lea Valley Britannia Road, Hertfordshire	x	x
821	35	UK	Burnside Telecom Ltd	sales@burnsidetelecom.com	(08700)762766	(01420)520029	Burnside House, Isington Road, Hampshire	x	x
822	36	UK	Business Support Line	www.business-support-line.co.uk	(01792)549803	(01792)281381	9 Eastbourne Grove, Swansea		x
823	37	UK	Byw Bywyd (Living Life)	post@byw-bywyd.co.uk	(01248)717500	(01248)716461	Star Showroom, Anglesey		x
824	38	UK	C H BYRON CORPORATION	sales@chbyron.com	01527 55 77 11	01527 55 77 01	34, Sherwood Rd, Aston Fields, Bromsgrove B60 3DR	x	
825	39	UK	Cane&Able Ltd	jon@caneandable.co.uk	01920 877 377		31-33 High st, Stanstead Abbotts, Ware, Herts SG12 2AS		x
826	40	UK	CARADON FRIEDLAND Ltd.		01268 563000	01268 563538	Arnold Centre, Paycocke Road, Basildon Essex SS14 3EA	x	
827	41	UK	Carclo Technical Plastic Ltd	optics@ctpcoil.co.uk	(01753)575011	(01753)811359	111 Buckingham Avenue, Berkshire	x	
828	42	UK	CARCLO TECHNICAL PRODUCTS LTD	http://www.carclo-ctp.co.uk/	0044 208 685 0500		47 Wates Way, Mitcham, Surrey CR4 4HR	x	
829	43	UK	Care Design	caredesign@clara.net	(01695)579061	(01695)570489	Moorgate, Lancashire		x
830	44	UK	Cavendish Laboratory	www.inference.phy.cam.ac.uk/dasher/deutsch/	00441223339852	00441223354599	Madingley Road	x	x
831	45	UK	Centroller Ltd	sales@centroller.co.uk	(01784)454748	(01784)449044	Surrey House, 187 London Road, Middlesex		x
832	46	UK	CF Hewerdine Ltd	sales@hewerdine.co.uk	(01784)451258	(01784)460770	Devils Lane, Thorpe Lea, Surrey		x
833	47	UK	Chailey Heritage Clinical Services		(01825)722112	(01825)724729	Beggars Wood Road, East Sussex	x	x
834	48	UK	Channel Safety Systems Ltd	sales@channelsafety.co.uk	(0870)2430931	(0870)2430932	9 Petersfield Business Park, Bedford, Hampshire	x	x
835	49	UK	Childerhouse Medical Ltd	info@childerhousesolutions.co.uk	(0870)4446140	(0870)4446141	Pathway H, Units 1-5, 64 Windsor Way, East Sussex		x
836	50	UK	Christopher James General Contractors	admin@christopherjames.co.uk	(01274)665555	(01274)665571	Shaw House, Highfield Works, Highfield Road, Idle		x
837	51	UK	Chubb Community Care	comcare@iess.co.uk	(01254)688688	(01254)696460	Shadsworth Road, Lancashire		x
838	52	UK	Chums Ltd	enquiries@chums.co.uk	(0871)9110601	(0151)5486829	Unity Grove, Knowsley Business Park, Liverpool		x
839	53	UK	Claude Systems Ltd	annemarie@claudesystems.com	(01383)820011	(01383)820093	Head Office, 4 Bellman Way, Donbristle, FIFE		x
840	54	UK	Clearline	clearline@nes-solutions.co.uk	(01206)848200	(01206)845090	15 Clough Road, Essex		x
841	55	UK	Clinical Engineering Consultants Ltd	cec.co@lineone.net	(01306)631681	(01306)631688	Unit 2, Harlow House, Dukes Road, Newdigate, Surrey	x	x
842	56	UK	Clofield Ltd	sales@silent-alert.co.uk	(01246)260045	(01246)450789	FREEPOST SF1206, Derbyshire	x	x
843	57	UK	Closed Door Security Systems	johnsrose@blueyonder.co.uk	(0191)4772961	(0191)4775226	12 Richmond Terrace, Tyne and Wear		x
844	58	UK	Cobolt Systems Ltd	cobolt@compuserve.com	(01493)700172	(01493)701037	The Old Mill House, Mill Road, Norfolk	x	x
845	59	UK	COMBINED OPTICAL INDUSTRIES Ltd.	andrew.green@coil.co.uk	01753575011	01753811359	200 Bath Road, , Slough, Berkshire, SL1 4DW	x	
846	60	UK	Communic8 Ltd	info@silverphone.co.uk	(08701)600600	(08701)909990	39 Bouverie Square, Kent		x
847	61	UK	Connevans Ltd	customerservices@connevans.com	(01737)247571	(01737)223475	54 Albert Road North, Surrey	x	x
848	62	UK	Conversor Products Ltd	info@conversorproducts.com	(0870)0663499	(0800)2989982	Lansbury Estate, 102 Lower Guilford Road, Surrey	x	x
849	63	UK	Crick Software Ltd	info@cricksoft.com	00441604671691	00441604671692	Boarden Close, Moulton Park, Northampton NN3 6LF	x	
850	64	UK	C-TEC	sales@c-tec.co.uk	01942 322744	01942 829867	Stephens Way, Wigan WN3 6PH	x	
851	65	UK	CTP Coil LTD	optics@ ctpcoil.co.uk	00441753575011	00441753811359	111 Buckingham Avenue, SL1 4PF, Slough Berks	x	
852	66	UK	Damart	infouk@damart.com	(01274)568211	(01274)551130	Bowling Green Mills, Lime Street, West Yorkshire		x
853	67	UK	Daylight Company Ltd	info.uk@daylightcompany.com	(020)89641200	(020)89641300	89-91 Scrubs Lane, London, NW10 6QU	x	x
854	68	UK	DCS Joncare	marketing@dcsjoncare.freeserve.co.uk	(01235)523353	(01235)531019	4 Radley Road Industrial Estate, Oxfordshire		x
855	69	UK	De Smit Medical Ltd	sales@desmitmedical.co.uk	(0845)3454226	(0845)3454227	118a Station Road, Bristol		x
856	70	UK	deafgard ltd	sales@deafgard.com	00441273624054	00441273624055	31 high street, brighton bn2 1rp	x	
857	71	UK	Disabled Accessories.com	sales@disableaccessories.com	(0800)3895534	(0118)9253231	200 Brook Drive, Green Park, Berkshire		x
858	72	UK	Docobo Ltd	info@docobo.co.uk	(1372)459866	(1372)454968	36 Keswick Road, Surrey		x
859	73	UK	Dolphin Computer Access Ltd.	info@dolphinuk.co.uk	00441905754577	00441905754559	Technology House, Blackpole Estate West	x	
860	74	UK	Donald Wardle and Son Ltd (Wardles)	admin@wardles.co.uk	(01782)215160	(01782)204217	Wardles, Ratton Street, Hanley, Staffordshire		x
861	75	UK	Doro UK Ltd	acsales@doro-uk.com	(08708)610200	(01753)883081	1 High Street, Buckinghamshire	x	x
862	76	UK	Dorset Nursing Supplies	sales@dorsetnursing.co.uk	(01202)425070	(01202)418332	3 Wickham Road, Bournemouth		x
863	77	UK	Draper Tools Ltd	sales@drapertools.com	(023)80266355	(023)80260784	Hursley Road, Hampshire		x
864	78	UK	Dudley Hunt	enquiries@dudleyhunt.co.uk	(01796)482105	(01796)481493	Unit 7, Blair Atholl Sawmill Yard, Perthshire		x
865	79	UK	Easylink UK	info@easylinkuk.co.uk	(01536)744788	(01536)744988	Factory 7, Grange Road IE, Northamptonshire	x	x
866	80	UK	Eclipse Nursecall Systems Ltd	sales@nursecall.co.uk	(01624)832821	(01624)836279	The Mount, Mount Gawne Road, Isle of Man	x	x
867	81	UK	Electrovision Ltd	sales@electrovision.co.uk	(0174)4745000	(0174)4745002	Lancots Lane, Sutton Oak, Merseyside		x
868	82	UK	Emergi-Lite Safety Systems (Thomas & Betts Ltd.)	emergi-lite_marketing@tnb.com	00441132810600	00441132810601	Bruntcliffe Lane, Morley, Leeds, LS27 9LL.	x	
869	83	UK	Emporia Life Phone	sales@emporialife.co.uk	(0845)2177712	(01638)561634	Crawford House, Wellington Street		x
870	84	UK	EPC	linda@epc-wheelchairs.co.uk	(01252)547939	(01252)377588	Head Office, 43 Alexandra Road, Hampshire		x
871	85	UK	Essentialaids.com	contact@essentialaids.com		(01273)735241	32 Guildford Road, East Sussex		x
872	86	UK	F Parr Ltd	sales@parrs.co.uk	(0870)9047424	(0870)9047434	Merse Road, North Moons Moat, Worcestershire		x
873	87	UK	Fold Group	john.Mclean@foldgroup.co.uk	(028)90428314		3-7 Reburn Square, Co Down		x
874	88	UK	Frequency Precision Ltd	contact@frequencyprecision.com	(01837)810590	(01837)810590	Shorts Farm, Northlew, Devon	x	x
875	89	UK	Galt Educational	orders@galt-educational.co.uk	(0845)1203005	(0800)0560314	Johnsonbrook Road, Cheshire		x

		COUNTRY	NAME	EMAIL	TELEPHONE	FAX	ADDRESS	M	D
876	90	UK	GB ELECTRONICS	info@gb-electronics.co.uk	00441626833559	00441626833529	23 Wentworth R, Heathfield, Devon TQ12 6TL	x	
877	91	UK	Geemarc Communications Limited	sales@geemarc.com	00441707372372	00441707372529	5 Swallow Court, AL7 1SB Swallowfield, Hertfordshire	x	x
878	92	UK	GetBack Supplies Ltd	sales@getbacksupplies.co.uk	(0115)9121507	(0115)9120882	Unit 1, 583 Mansfield Road, Nottinghamshire		x
879	93	UK	Gewa (UK) Ltd	sales@gewa.co.uk	(01296)461003	(0871)4740434	8 Farnborough Close, Buckinghamshire	x	x
880	94	UK	Gimble Ltd	mike@gimbleuk.com	(01743)289288		90 Longden Coleman, Shropshire		x
881	95	UK	GLENTRONICS LTD	sales@glentronics.co.uk	028 9034 2090	028 9034 2147	64 Mallusk R., Newtownabbey, Northern Ireland BT36 4QE	x	
882	96	UK	Gordon Morris Ltd	info@gordonmorris.co.uk	(01458)272121	(01458)274545	Unit 21 Wessex Park, Somerton Business Park	x	x
883	97	UK	GPSP Ltd	info@disabledstickers.co.uk	(01522)688388		PO Box 900, Lincoln	x	x
884	98	UK	Hagger Electronics	sales@hagger.co.uk	00441462677331	(01462)675016	Unit 22 Business Centre West, Avenue 1, Hertfordshire	x	x
885	99	UK	Hartana Developments Ltd	hartana@hartana.co.uk	00442079200513	(020)79200514	61 Warnford Court, London EC2N 2AY	x	x
886	100	UK	Hearing Care Solutions Ltd	info@hearingcaresolutions.co.uk	00441782504999	(01782)505457	Station Buildings, Station Road, Staffordshire	x	x
887	101	UK	Hearing Products International Ltd	kw@hear4you.com	0044161480-8003	0044161488006	Echo House, 26 Haigh Park, Haigh Avenue, Chesire	x	x
888	102	UK	Hector Tanner and Co Ltd	info@silentbell.co.uk	(0117)9661751	(0117)9667404	23-24 Barnack Trading Centre, Novers Hill		x
889	103	UK	Help the Aged (Mail Order) Ltd	homeshopping@helptheaged.org.uk	(0870)7700441	(020)72391459			x
890	104	UK	Helpful Hand	enquiries@thehelpfulhand.fsnet.co.uk	(01625)424438	(01625)617857	6 Chester Road, Cheshire		x
891	105	UK	Henleys Medical Supplies Ltd	sales@henleysmed.com	(01707)333164	(01707)334795	Brownfields, Hertfordshire		x
892	106	UK	Herga Electric Ltd	info@herga.com	(01284)701422	(01284)753112	Northern Way, Suffolk	x	x
893	107	UK	Homecraft Rolyan	homecraft.sales@patterson-medical.com	(08702)423305	(08701)660211	Nunn Brook Road, Huthwaite, Nottinghamshire	x	x
894	108	UK	Honeywell Analytics	sales@sfdetection.com	(01202)645577	(01202)665331	Hatch Pond House, 4 Stinsford Rd, Nuffield, Dorset		x
895	109	UK	Hoopers Healthcare Products	info@hoopers.org	(0121)2001616	(0121)2123737	37 Northampton Street, Birmingham	x	x
896	110	UK	Hope Education	orders@hope-education.co.uk	(0845)1202055	(0800)929139	Hyde Buildings, Ashton Road, Cheshire		x
897	111	UK	Hounslow Mobility	admin@hounslowmobility.com	(020)85772333	(020)85779099	2-3 Noble Corner, Great West Road, Hounslow TW5 0PA		x
898	112	UK	Humanware	eu.sales@humanware.com	(01933)415800	(01933)411209	Russell Smith 2, Northampton Road, Northamptonshire	x	x
899	113	UK	Huntleigh Healthcare Ltd	sales.admin@huntleigh-healthcare.com	(01582)745700	(01582)745825	310-312 Dallow Road, Bedfordshire		x
900	114	UK	Huntleigh Medical	sales@huntleigh-medical.com	(0800)0855617	(0800)0859849	Finway House, Bedfordshire		x
901	115	UK	Ihear ltd	operations@ihear.co.uk	(01506)497158	(01506)407801	Adaptive House, Quarrywood Court	x	x
902	116	UK	Inclusive Technology	inclusive@inclusive.co.uk	(01457)819790	(01457)819799	Unit 2 Gatehead Business Park, Delph		x
903	117	UK	Independence Ltd	sales@independence.ltd.uk	(01353)667722	(01353)668778	95 Main Street, Cambridgeshire		x
904	118	UK	Independent Living Company	sales@independent-living.co.uk	(020)89316000	(0709)2380198	11 Hale Lane, Mill Hill		x
905	119	UK	Initial Attendo	sharonndavies@iess.co.uk	(01709)389300	(01709)389344	1 Centurian Business Park, Bessemer Way		x
906	120	UK	Initial Community Care	commcare@iess.co.uk	(01254)688688	(01254)696460	Shadsworth Road, Lancashire	x	x
907	121	UK	Insight Medical Products Ltd	info@insightmedical.net	(01666)500055	(01666)500115	Units 1-4, Silk Mill Sts, 2 Charlton, Gloucestershire	x	x
908	122	UK	Invicta Telecare Ltd	info@invictatelecare.co.uk	(01732)781966	(01732)781975	Basted House, Harrison Road, Borough Green, Kent		x
909	123	UK	Jar Talking	jean@jartalking.com	(01933)313846	(01933)313846	26 Clarence Court, Northamptonshire	x	x
910	124	UK	JD Williams & Co Ltd	www.jdwilliams.co.uk	(0871)2312000	(0161)3862910	Griffin House, 40 Lever Street		x
911	125	UK	Just Checking Ltd	info@JustChecking.co.uk	(01564)741822		Appledore Lodge, Blind Lane, Warwickshire		x
912	126	UK	Kapitex Healthcare Ltd	sales@kapitex.com	(01937)580211	(01937)580796	Kapitex House, 1 Sandbeck Way, West Yorkshire	x	x
913	127	UK	Keeler Limited	info@keeler.co.uk	00441753857177	00441753827145	Clewer Hill Road	x	
914	128	UK	Keep Able Ltd	sales@keepable.co.uk	(08705)202122	(01384)473716	Sterling Park, Pedmore Road, West Midlands		x
915	129	UK	Kent Mobility Ltd	sales@kentmobility.co.uk	(01732)770998	(01732)355174	Unit 6, Sanderson Way, Kent		x
916	130	UK	Keytools Ltd	info@keytools.co.uk	(023)80294500	(023)80294501	Abacus House, 1 Spring Crescent	x	x
917	131	UK	KID GLOVE LTD	info@keytools.com	00442380584314	00442380556902	Keytools Ltd, PO Box 700, Southampton SO17 1LQ	x	
918	132	UK	Kirton Healthcare	info@sensoryplus.co.uk	(01440)705352	(01440)706199	Part of The Kirton Healthcare Group Ltd, 23, Suffolk		x
919	133	UK	Kozee Komforts	sales@kozeekomforts.co.uk	(01262)409200	(01262)602102	Komfort House, Boundary Road, Bessingby Industrial Estate		x
920	134	UK	Lazerbuilt Ltd	enquiries@lazerbuilt.co.uk	(01438)743753	(01438)720077	20 Gunnels Wood Park, Hertfordshire		x
921	135	UK	LDA	www.ldalearning.com	(0845)1204776	(0845)7838648	Abbeygate House, East Road, Cambridgeshire	x	x
922	136	UK	Lifemax Ltd	sales@lifemaxuk.co.uk	(0870)6091612	(0870)9710061	The Business Centre, Brimpton Lane, Reading	x	x
923	137	UK	LifeStyle Access & Mobility	info@lifestyleaccess.com	(0845)1221486	(020)89926336	373-375 Uxbridge Road		x
924	138	UK	LINDAM Ltd.	careline@lindam.com			Hornbeam Square West, Harrogate, North Yorkshire HG2 8PA	x	
925	139	UK	Live-Link Communications Ltd	nursecallalarms@aol.com	(0870)4440066	(0870)4440055	6 Milrig Cottage	x	x
926	140	UK	London Mobility Warehouse	Enquiries@themobilitywarehouse.co.uk	(0800)0938610	(020)87523081	333 Western Avenue		x
927	141	UK	Madhouse Software Productions Ltd	admin@madhousesoftware.co.uk	(01226)390000	(01226)390000	South Yorkshire		x
928	142	UK	Malem Medical	malem@malem.co.uk	(0115)9664440	(0115)9664672	10 Willow Holt, Lowdham, Nottinghamshire		x
929	143	UK	Masterswitch (UK) Ltd	pells@hemscott.net	(020)88813918	(020)88813918	184 Walpole Road, London		x
930	144	UK	MEDesign Ltd	postbox@medesign.co.uk	(01704)542373	(01704)545214	Clock Tower Works, Railway Street, Merseyside	x	x
931	145	UK	Medicalarm Ltd	info@medicalarm.co.uk	(01604)646200	(01604)646767	The Old Barn, Court Farm, Northamptonshire		x
932	146	UK	MedicAlert Foundation	info@medicalert.org.uk	(020)78333034	(020)72780647	1 Bridge Wharf, 156 Caledonian Road	x	x
933	147	UK	Mercon (UK)	markimail@talk21.com	(01423)888895	(01423)889416	41-43 High Street, Starbeck, North Yorkshire	x	x
934	148	UK	Mike Ayres Design	enquiries@mikeayresdesign.co.uk	(01359)251551	(01359)251707	Unit 8, Shepherds Grove, Stanton, Suffolk	x	x
935	149	UK	Millercare Mobility Specialists	info@millercare.co.uk	(01254)233426	(01254)398323	Moscow Mill Street		x
936	150	UK	Minder Ltd (Mindme)	sales@mindme.co.uk;info@mindme.co.uk	(0845)2418222		Unit 287B,The Wenta BC, Colne Way, Hertfordshire		x
937	151	UK	Mobilis Healthcare Group	orders@mobilishealthcare.com	(0161)6335333	(0161)6274401	100 Shaw Road, Lancashire		x
938	152	UK	Mobility Smart Ltd	sales@mobilitysmart.cc	(0870)1998246	(0870)1992173	Old Lodge Lane, Claughton-on-Brock, Lancashire		x
939	153	UK	Mobility World Ltd	eng@mobilityworld.co.uk	(0870)7407782	(0870)7407784	Unit 2, Focal Point, Lacerta Court, Hertfordshire		x
940	154	UK	Montrose Secam Limited	info@montrosesecam.com	00441753653125	00441753670970	P.O. Box 40, Iver, Bucks, SL0 9PZ	x	x
941	155	UK	Morecare Mobility & Healthcare Specialists		(01380)727555	(01380)736696	36 The Nursery, Bath Road, Wiltshire		x
942	156	UK	Morley Mobility	morleymobility@googlemail.com	(0113)2530357		Unit 79, Market Hall, Queen Street, Leeds		x
943	157	UK	Multisensory Environments	enquiries@multisensory.biz	(01924)272244	(01924)265111	The Builders Yard, Intake Lane, West Yorkshire	x	x
944	158	UK	Musisca Ltd	info@musisca.co.uk	(01453)751911	(01453)751911	Piccadilly Mill, Lower Street, Gloucestershire	x	x
945	159	UK	N & C Phlexicare	phlexicare@nicholsandclarke.com	(020)85864600	(020)85864646	41-51 Freshwater Road, Chadwell Heath, Essex		x
946	160	UK	NES Arnold	orders@nesarnold.co.uk	(0845)1204525	(0800)3280001	Gregory Street, Cheshire		x
947	161	UK	New Vision Technology Ltd	info@newvisiontechnology.com	(01249)814309	(01249)814309	Head Office, Sherwood, The Quarry, Wiltshire	x	x
948	162	UK	Newtech Southern Ltd	sales@newtechsouthern.co.uk	(01425)620210	(01425)638443	Canada House BC, 1 Carrick Way, Hampshire	x	x
949	163	UK	Next of Kin Ltd	help@nextofkin.com	(0845)9007007	(08707)657595	Abacus House, Dudley Street, Hertfordshire		x
950	164	UK	Nightingale Medical & Mobility Products		(01628)668660	(01628)663584	34 Eastfield Road, Burnham, Berkshire		x

		COUNTRY	NAME	EMAIL	TELEPHONE	FAX	ADDRESS	M	D
951	165	UK	Nokia Mobile Phones UK Ltd	info@nokia.com	(08700)555777	(01480)435111	Lancaster House, Lancaster Way, Cambridgeshire	x	x
952	166	UK	Nordic Care Services Ltd	info@walkeze.co.uk	(01227)479293	(01227)477958	Becket Lodge, Harbledown Park, Kent		x
953	167	UK	Northern Acoustics/NA Care	sales@northern-acoustics.co.uk	(0141)7762556	(0141)7762556	117 Townhead, Kirkintilloch, Lanarkshire		x
954	168	UK	Northern Woodcrafts	terrileach@hotmail.co.uk	(0191)4144834		Old Co-Op Buildings, Hookergate Lane	x	x
955	169	UK	Nottingham Rehab Supplies	customerservice@nrs-uk.co.uk	(0845)1204522	(0845)1218112	Findel House, Excelsior Road, Leicestershire	x	x
956	170	UK	OPITEC Educational Materials Ltd	info.uk@opitec.com	(023)80682401	(023)80682402	Unit 37, Basepoint Centre, Anderson Road		x
957	171	UK	OPT4MOBILITY Ltd	sales@opt4mobility.com	(020)89438890	(020)89438897	9/11 The Causeway, Middlesex		x
958	172	UK	Optelec Tieman Group	sales@tiemanuk.co.uk	(01923)231313	(01923)231385	2 Millfield House, Woodshots Meadow, Hertfordshire	x	x
959	173	UK	Optima Low Vision Services Ltd	sales@optimalowvision.co.uk	(01803)864218	(01803)840107	Dartside, Ford Road, Devon		x
960	174	UK	Osmond Group Ltd	info@ergonomics.co.uk	(0845)3450898	(01202)850560	21 Johnson Road, Ferndown Industrial Est, Dorset	x	x
961	175	UK	OTS Ltd	info@otstores.co.uk	(0845)2607061	(0845)2607062			x
962	176	UK	Palm Products	sales@palmproducts.co.uk	(01939)200567	(01939)200567	Oakview, Weston under Redcastle, Shropshire	x	x
963	177	UK	PC Werth Ltd	sales@pcwerth.co.uk	(020)87722700	(020)87722701	Audiology House, 45 Nightingale Lane		x
964	178	UK	PCD MALTRON LTD	sales@maltron.co.uk	00441785785529		Castlefields, Stafford, Staffs. ST16 1BU	x	
965	179	UK	Pelltech Ltd	sales@pelltech.co.uk	(01993)776451	(01993)771606	Avenue 1, Station Lane, Oxon		x
966	180	UK	Penfriend Ltd	sales@penfriend.biz	00441316682000	00441316682121	30 South Oswald Road	x	x
967	181	UK	Penny & Giles. Computer Products Limited	sales@penny-gilescp.co.uk	00441202481751	00441202499279	1 Airfield Way	x	
968	182	UK	Perfectly Happy People Ltd	info@phpbaby.com	(0870)1202018	(0870)1201540	Head Office, 93 Bollo Lane, Chiswick		x
969	183	UK	Peta (UK) Ltd	sales@peta-uk.com	(01245)231118	(01245)231811	Mark's Hall, Mark's Hall Lane, Essex		x
970	184	UK	Philip and Tacey Ltd	sales@philipandtacey.co.uk	(01264)332171	(01264)384808	North Way, Hampshire		x
971	185	UK	Plantronics International	headset.helpline@plantronics.com	(0800)410014	(01793)8488530	Interfac BP Binknoll Lane, Wootton Bassett, Wiltshire		x
972	186	UK	Portset Systems Ltd	admin@portset.co.uk	(01489)893919	(01489)893320	Shield House, Brook St, Hampshire	x	x
973	187	UK	Possum Controls Ltd	sales@possum.co.uk	(01296)461000	(01296)461001	8 Farmbrough Close, Stocklake Buckinghamshire	x	x
974	188	UK	Posture Point Ltd	info@posture.co.uk	(01359)252275	(01359)252275	Church Cottage, Church Lane, Hepworth, Norfolk		x
975	189	UK	Posturite (UK) Ltd	support@posturite.co.uk	(0845)3450010	(0845)3450020	The Mill, East Sussex	x	x
976	190	UK	Prentke Romich International Ltd	info@prentkeromich.co.uk	(01733)370470	(01733)391939	PRI House, Minerva Business Park, Lynch Wood	x	x
977	191	UK	Prestige Healthcare (London) Ltd		(0870)452300	(020)84419123	7 Lytton Road, Hertfordshire		x
978	192	UK	PRETORIAN TECHNOLOGIES LTD.	enquiries@pretorianuk.com	00441427678990	00441427678990	DN21 1QB GAINSBOROUGH, LINCOLNSHIRE	x	
979	193	UK	PRI Liberator Ltd	Info@pri-liberator.com	(0845)2261144	(0845)2261166	PRI Liberator House, Minerva Business Park, Lynch Wood		x
980	194	UK	Professional Vision Services Ltd	sales@professional-vision-services.co.uk	(01462)420751	(01462)420185	Wellbury House, 90 Walsworth Road, Hertfordshire		x
981	195	UK	Promedics Ltd	orders@promedics.co.uk	(01254)619074	(01254)619001	Moorgate Street, Lancashire		x
982	196	UK	Promotion & Display Technology Ltd	jodie.silver@pdtuk.com	(0161)9257536	(0161)9257530	Salbec House, Winders Way		x
983	197	UK	ProVu Communications Ltd	contact@provu.co.uk	(01484)840048	(01484)651742	Seville Mill, Seville Street, Huddersfield		x
984	198	UK	ProWellness UK Ltd	helpdeskUK@prowellness.com	(020)89562780	(020)89562781	Centre 500, 500 Chiswick High Road		x
985	199	UK	Puretone Plc	info@puretone.net	(01634)719427	(01634)719450	9-10 Henley Business Park, Trident Close, Medway, Kent		x
986	200	UK	Putnams	info@putnams.co.uk	(01752)345678	(01752)340340	Eastern Wood Road, Langage Industrial, Devon		x
987	201	UK	QED	sales@QEDLtd.com	(023)92580600	(023)92528666	Unit D16, Heritage BP, Heritage Way, Hampshire	x	x
988	202	UK	RAT (Music Stands) Ltd	sales@ratstands.com	(020)87414804	(020)87418949	16 Melville Road, London	x	x
989	203	UK	RDK Mobility	sales@rdkmobility.co.uk	(0161)7249580	(0161)7259905	35-37 Blackburn Street, Manchester		x
990	204	UK	RehabTeq Ltd	rehabteq@aol.com	(0118)9272300	(0118)9272300	Head Office, The Old Forge, Pearson Road, Berkshire	x	x
991	205	UK	Remploy Ltd		(01388)814511	(01388)420509	Merrington Lane Industrial Estate, Co. Durham	x	x
992	206	UK	Retell	sales@retell.co.uk	(01932)779755	(01932)780383	53 Thames Street, Middlesex	x	x
993	207	UK	Ridley Electronics Limited	info@ridleyelect.co.uk	01722 717878	020 8558 7113	Chilmark, Nr. Salisbury, Wilts, SP3 5AF	x	x
994	208	UK	Ritchie Electronics	george@barrybox.co.uk	(01908)313624	(01908)313624	21 Whetstone Close, Heelands, Buckinghamshire	x	x
995	209	UK	RNID Sound Advantage	solutions@rnid.org.uk	(01733)361199	(01733)361161	1 Haddonbrook Business Centre, Fallodan Road, Orton Southgate	x	x
996	210	UK	Rocom Ltd	enquiries@rocom.co.uk	(01937)847550	(01937)847788	Rudgate, Thorpe Arch, West Yorkshire		x
997	211	UK	Rompa Ltd	sales@rompa.com	(0845)2301177	(01246)221802	Goyt Side Road, Derbyshire	x	x
998	212	UK	Ropox A-S	pd@ropox.com	(01943)870524	(01943)870524		x	x
999	213	UK	Rose Health Care	rosehealthcare@btconnect.com	(01473)258508	(01473)258508	60 St Matthews Street, Suffolk		x
1000	214	UK	Royal National Institute for the Blind (RNIB)	cservices@rnib.org.uk	(0845)7023153	(01733)371555			x
1001	215	UK	RS Components Ltd	general@rswww.com	(01536)201201	(01536)201501	PO Box 99, Birchington Road, Northamptonshire		x
1002	216	UK	RSL Steeper	assist@rehab.co.uk	(01634)226120	(01634)226148	Unit 7, Hunslet TE, Severn r, West Yorkshire	x	x
1003	217	UK	Safe and Sound Products Ltd	sales@saspl.co.uk	(01427)884486	(01427)884486	5 Hazel Close, Staffordshire	x	x
1004	218	UK	Safetell Ltd	secure@safetell.co.uk	(01322)223233	(01322)277751	Unit 46, Fawkes Avenue, Kent		x
1005	219	UK	Sales and Marketing Direct Ltd		(01325)367400	(01325)367500	Unit 2, Banks House, Banks Road, Co. Durham		x
1006	220	UK	Salton Europe Ltd	sales@saltoneurope.com	(0161)9473000	(0161)6821708	Princess Street, Failsworth, Manchester	x	x
1007	221	UK	Sanford Brands UK		(01273)513233	(01273)632636	Estate Road, East Sussex	x	x
1008	222	UK	Sarabec Ltd	sales@sarabec.co.uk	(01642)247789	(01642)230827	15 High Force Road	x	x
1009	223	UK	Saracen Products Ltd	grippit2000@aol.com	(0141)3362200	(0141)3362005	211 Saracen Street	x	x
1010	224	UK	Scanflex Ltd	info@scanflex.co.uk	(0151)3431523	(0151)3431514	2 Thursby, Croft BP, Bromborough, Merseyside		x
1011	225	UK	Scope (Communications UK) Ltd	sales@scope-uk.com	(01803)860700	(01803)863716	Quantum House, Steamer Quay, Devom	x	x
1012	226	UK	Seiko UK	service@seiko.co.uk	(0870)7000988	(01628)799107	SC House, Vanwall Road, Berkshire		x
1013	227	UK	SeniorLink Eldercare	kathryn.spence@eldercare.co.uk	(01706)242828	(01706)219240	847 Burnley Road, Loveclough, Lancashire		x
1014	228	UK	Sennheiser UK Ltd	sales@sennheiser.co.uk	(01494)551551	(01494)551550	3 Century Point, Halifax Road, Buckinghamshire	x	x
1015	229	UK	Sensorbility	sales@sensor.co.uk	(01548)511498	(01548)511393	West Prawle House, Salcombe		x
1016	230	UK	Sensorcare Systems Ltd	enquiries@sensorcare.co.uk	(0161)6264067	(0161)6271741	TP House, Prince of Wales Business Park, Vulcan Street	x	x
1017	231	UK	Sensorcom Ltd.	http://www.sensorcom.com/contact.asp	00448709016070	00448709026070	Sensorcom Ltd. London, BR3 4LZ	x	
1018	232	UK	Sensorium Ltd	info@sensorium.co.uk	(01383)720600	(01383)739793	Sensorium House, 9 Nethertown Broad Street, FIFE		x
1019	233	UK	Sentico	info@sentico.co.uk	(0870)1200900	(01905)797773	24 The Furlong, Berry Hill IE, Worcestershire		x
1020	234	UK	Seton	sales@seton.co.uk	(0800)585501	(0800)526861	Wildmere Industrial Estate, Oxfordshire		x
1021	235	UK	SF DETECTION LTD	consumer@honeywell.com	00441202645577	00441202665331	Hatch Pond House, 4 Stinsford Road, Poole, Dorset BH17 0RZ	x	
1022	236	UK	Shine International Ltd	mail@shineinternational.co.uk	(01733)391900	(01733)391551	14-15 Holkham Road, Peterborough		x
1023	237	UK	Signet AC Ltd	info@signet-ac.co.uk	(0191)4174551	(0191)4170634	6 Tower Road, Glover IE, Tyne and Wear	x	x
1024	238	UK	Signs and Labels Ltd	sales@safetyshop.com	(0800)132323	(0800)3895311	Douglas Bruce House, Corrie Way, Cheshire		x
1025	239	UK	Silwatch Europe Ltd	dennis@kiley.biz	(020)74357700	004420774331114	5 Green Hill, Prince Arthur Road, London		x

		COUNTRY	NAME	EMAIL	TELEPHONE	FAX	ADDRESS	M	D
1026	240	UK	SJS Services	enquiries@sjs-services.co.uk	(01463)871950	(01463)870125	Birchwood House, Hawthorn Road, Ross-shire		x
1027	241	UK	Skype Technologies Ltd.	info@skype.net			2 Stephen Street, W1T1AN London	x	x
1028	242	UK	Smartbox Assistive Technology Ltd	info@sensorysoftware.com	(01684)578868	(01684)897753	26 Abbey Road, Worcestershire	x	x
1029	243	UK	Spacekraft Ltd	enquiries@spacekraft.co.uk	(01274)581007	(01274)531966	Titus House, 29 Saltaire Road, West Yorkshire		x
1030	244	UK	Sparks Fire Protection		(01639)885837	(01639)888313	Cornubia, Groeswen Lane, Margam, West Glamorgan	x	x
1031	245	UK	Specialist Alarm Services Ltd	sales@sasuk.com	(0800)0642727	(0191)2725010	Hinde House, Elswick East Terrace, George Street Industrial Estate		x
1032	246	UK	Specialist Crafts Ltd	post@speccrafts.co.uk	(0116)2697711	(0116)2697722			x
1033	247	UK	Specialist Fire Products	sales@fireprods.co.uk	(01295)261300	(01295)276409	7 Cromwell Road, Oxon		x
1034	248	UK	Speechmark Publishing Ltd	info@speechmark.net	(01869)244644	(01869)320040	Telford Road, Oxon		x
1035	249	UK	SRS Technology Ltd	enquiries@srstechnology.co.uk	(01922)456882	(01922)456883	Unit 105, Brickyard Road, West Midlands	x	x
1036	250	UK	Stanley Handling Ltd	cataloguesales@stanleyhandling.co.uk	(01582)767711	(01582)765994	Coldharbour Lane, Hertfordshire		x
1037	251	UK	Step by Step	orders@sbs-educational.co.uk	(08451)252550	(08000)561438	Lee Fold, Cheshire		x
1038	252	UK	Stroke Association	info@stroke.org.uk	(020)75660300	(020)74902686	240 City Road	x	x
1039	253	UK	Structured Wholesaling Ltd	magnascreen@hotmail.com	(020)89599595	(020)89592295	33 Salcombe Gardens, Mill Hill		x
1040	254	UK	Study Buddy	www.wordpower.u-net.com				x	x
1041	255	UK	SUBHAS C. MARHARAJ.					x	x
1042	256	UK	Summit	solutionstec@btconnect.com	(020)74745552	(020)74742666	Waterfront Studios, 54c Dock Road	x	x
1043	257	UK	Sun Mobility	sun.mobility@fsmail.net	(0118)9314999	(0118)9872345	Asda Mall, Chalfont Way, Lower Earley		x
1044	258	UK	Suntrap Systems	sales@suntrap-systems.co.uk	(0121)4400431	(0121)4400705	West Midlands		x
1045	259	UK	Support Technology Consultancy Ltd	sales@supportec.co.uk	(0121)3293449	(0121)3293449	101 Aldridge Road, Perry Bar, West Midlands	x	x
1046	260	UK	Surecare	enquiries@surecare.co.uk	(01244)321199	(01244)321139	The Old Rectory, St Mary's Hill, Cheshire		x
1047	261	UK	SW Retail Ltd	sales@swretail.fsnet.co.uk	(01226)762513	(01226)762528	Unit 3 Marrtree Business Park, Kirkwood Close, Sheffield		x
1048	262	UK	Sygnum Technical Solutions Ltd	sales@sygnum.biz	(0845)4340015	(01462)473941	The Pixmore Centre, Pixmore Avenue, Hertfordshire		x
1049	263	UK	Tactile Signs Europe Ltd		(01394)420741	(01394)420664	Britannia House, Bentwaters BP Rendlesham, Suffolk	x	x
1050	264	UK	Talking Products Ltd	info@talkingproducts.com	(01794)516677	(01794)513570	Unit 25, Romsey, Greatbridge Road, Hampshire	x	x
1051	265	UK	Tally Ho Lighting Co Ltd	info@tallyholighting.freeserve.co.uk	(07071)781843	(020)83613828	Kingsclere House, 36 Cedar Avenue, Hertfordshire		x
1052	266	UK	Talman Ltd	sostalisman@btinternet.com	(020)85545579	(020)85541090	21 Grays Corner, Ley Street, Essex	x	x
1053	267	UK	Tamms Direct Ltd	sales@tammsdirect.com	(08705)102020	(08704)443108	Agecroft Road, Pendlebury		x
1054	268	UK	TANNER, HECTOR AND CO LTD	info@silentbell.co.uk	011 7966 1751	011 7966 7404	23/24 Barnack Trading Centre, Bristol, BS3 5QE	x	
1055	269	UK	Targon Technology Ltd	sales@targon.co.uk	(01484)644080	(01484)640466	Moorland Mills, Slades Road, Golcar, West Yorkshire	x	x
1056	270	UK	Taskmaster Ltd	info@taskmasteronline.co.uk	(0116)2704286	(0116)2706992	Morris Road	x	x
1057	271	UK	TBS G.B Telematic & Biomedical Services Ltd	info@tbsgb.com	(01702)608728	(01702)608729	Central House, 8 Clifftown Road, Essex		x
1058	272	UK	Teaching Resources	sales@muventures.co.uk	(01992)716052	(01992)719474	Unit 10, The IO Centre, Lea Road		x
1059	273	UK	Techcess Ltd	admin@techcess.co.uk	(01455)213708	(01455)213709	9-10 Willow Park, Warwickshire		x
1060	274	UK	Techno-Vision Systems Ltd	info@techno-vision.co.uk	(01604)792777	(01604)792726	76 Bunting Road, Bunting Road Industrial Estate		x
1061	275	UK	TechReady		(020)85326138	(020)85326140	43 Thames Road, Essex		x
1062	276	UK	Tensor Marketing Ltd	info@tensormarketing.co.uk	(01325)469181	(01325)381386	Lingfield Way, Yarm Road Business Park, Co. Durham		x
1063	277	UK	TFC	petaturner@yahoo.co.uk	(01271)327207		8 Lynhurst Avenue, Devon	x	x
1064	278	UK	TFH UK	info@tfhuk.com	(01299)827820	(01299)827035	5-7 Severnside Park, Severn Road, Worcestershire		x
1065	279	UK	The Force Ten Co Ltd	sales@forcetenco.co.uk	(01372)450887	(01372)450771	6 Beckley Parade, Leatherhead Road, Surrey		x
1066	280	UK	Thomas Betts Emergi-Lite	marketing@emergi-lite.co.uk	(0113)2810600	(0113)2810611	Bruntcliffe Lane, Morley, West Yorkshire		x
1067	281	UK	Thorpe Kilworth Ltd	marketing@thorpekilworth.co.uk	(0116)2885588	(0116)2813777	St George's House, Moat Street, Leicestershire		x
1068	282	UK	Thumbthing UK	info@thumbthing.com		(020)76131273	11 Linkswood Road, Buckinghamshire	x	x
1069	283	UK	TOBY CHURCHILL LTD.	sheila@toby-churchill.com	00441223576117	00441223576118	20, Panton Street - CB2 1HP CAMBRIDGE	x	x
1070	284	UK	Total Product Sales Ltd	sales@total-product-sales.co.uk	00441763245245	00441763245456	Unit 10, Orchard Road, Hertfordshire		x
1071	285	UK	Totally Active Ltd	info@totallyactive.co.uk	00441264350022	00441264350033	Duke Close, West Way, Hampshire		x
1072	286	UK	TPG DisableAids	enquiries@tpg-disableaids.co.uk	00441432351666	00441432351777	Plough Lane, Herefordshire		x
1073	287	UK	Traxsys Input Products. Esterline Corporation	www.traxsys.com	00441425463100	00441425463111	1 Embankment way, BH24 1EU Ringwood, Hampshire	x	x
1074	288	UK	TSL Products Ltd	sales@textel.co.uk	00441379854545	00442083652348	Lodge Farm, Rushall, Norfolk	x	x
1075	289	UK	Tunstall Group Ltd	sales@tunstall.co.uk	00441977660479	00441977662450	Whitley Lodge, Yorkshire	x	x
1076	290	UK	UK Monitoring Ltd	admin@ukmon.com	00441274394521	00441274727145	8 Currer Street, Little Germany, West Yorkshire		x
1077	291	UK	Universal Aids Ltd	info@universalaids.co.uk	(0161)4809228	(0161)4765707	8-14 Wellington Road South, Chesire	x	x
1078	292	UK	Verko - Design for Easier Living	info@verko.co.uk	(020)82019444	(020)82019111	752c Finchley Road		x
1079	293	UK	Videospec Ltd	sales@videospec.co.uk	(01483)722273	(01483)728343	30a High Street, Old Woking	x	x
1080	294	UK	Viking Optical Ltd	enquiries@vikingoptical.co.uk	(01986)875315	(01986)874788	Blyth Road, Suffolk		x
1081	295	UK	Vis-Ability (DK)	info@vis-ability.co.uk	(01354)656560	(01354)651373	211 Creek Road, Cambridgeshire		x
1082	296	UK	Visual Impressions Ltd	visimp@visimp.co.uk	(020)76293246	(020)74931796	34-36 Maddox Street	x	x
1083	297	UK	Vivatec Ltd	sales@vivatec.co.uk	(0870)2430999	(01189)656356	Crane House, Molly Millars Lane, Berkshire		x
1084	298	UK	Vivid Acoustic Systems Ltd	enquiries@vivid-acoustics.com	(01670)710740	(01670)710750	Unit 4, Nelson Park West, Northumberland		x
1085	299	UK	Vodafone Ltd	disability.access@vodafone.co.uk	(08700)733222	(01635)45713	PO Box 549, Oxfordshire		x
1086	300	UK	Voluntary Association for Surrey Disabled	enquiries@vasd.org.uk	(01306)741500	(01306)741600	10 Havenbury Estate, Station Road, Surrey		x
1087	301	UK	Wanderguard (UK) Ltd	sales@turun.co.uk	(020)77310132	(020)73849324	Eden House, 59 Fulham High Street, London	x	x
1088	302	UK	Wandsworth Group Ltd	info@wandsworthgroup.com	(01483)740740	(01483)713400	Albert Drive, Sheerwater, Surrey	x	x
1089	303	UK	Welbeing (Wealden and Eastbourne Lifeline)	info@welbeing.org.uk	(01323)644422	(01323)415383	68 Grove Road, East Sussex		x
1090	304	UK	Westworld Mobility & Lifestyle		(01935)848872	(01935)478322	17 The Park, Somerset		x
1091	305	UK	Whiteley Electronics Ltd	bholmes@whiteleyelectronics.com	(01623)415600	(01623)420484	Victoria Street, Nottinghamshire	x	x
1092	306	UK	Winslow	sales@winslow-cat.com	(0845)2302777	(01246)551195	Goyt Side Road, Derbyshire		x
1093	307	UK	Woodfit Ltd	sales@woodfit.com	(01257)226699	(01257)264271	Kem Mill Lane, Whittle-le-Woods, Lancashire		x
1094	308	UK	Yorkshire Care Equipment	yorkshirecareequipment.com/	00441132503250	00441132507433	6 Over Lane, Rawdon, Leeds LS19 6DY		x
1095	309	UK	Zychem Ltd	info@zychem-ltd.co.uk	00441625528811	00441625528833	Wilmslow Road, Handforth, Cheshire	x	x
1096	1	USA	AbleNet, Inc.	customerservice@ablenetinc.com	0016512942200	0016512942259	2808 Fairview Avenue North, 55113-1308 Roseville, MN	x	x
1097	2	USA	ADAPTIVATION Inc.	info@adaptivation.com	0016053354445	0016053354446	2225 W. 50th Street, Suite 100 - SD 57105, SIOUX FALLS	x	x
1098	3	USA	Ai Squared	sales@aisquared.com	0018023623612	0018023621670	130 Taconic Business Park Rd., VT 05255 Manchester Center	x	
1099	4	USA	AMDI- ADVANCED MULTIMEDIA DEVICES INC.	Info@amdi.net	0015168220808	0015168226611	200 FRANK ROAD - 11801 HICKSVILLE	x	x
1100	5	USA	APPLIED HUMAN FACTORS	sales@ahf-net.com	0012104080098	0012104080097		x	x

		COUNTRY	NAME	EMAIL	TELEPHONE	FAX	ADDRESS	M	D
1101	6	USA	AT&T. Shannon Labs	www.naturalvoices.com/	0019546784155		180 Park Avenue, Bldg 103, Room D171, NJ 07932 Florham Park	x	
1102	7	USA	ATTAINMENT COMPANY INC.	info@attainmentcompany.com	0016088457880		VERONA, WISCONSIN	x	x
1103	8	USA	AudioMed, Inc.	http://www.audiomed.com/	0015629211427	0015629218931	16043 Valley View Avenue, Santa Fe Springs, CA 90670	x	
1104	9	USA	AUGMENTATIVE RESOURCES INC..	sales@augresources.com	0018639843912	0018639846175	Epicenter Blvd., 8331 - 33809 LAKELAND, Florida	x	x
1105	10	USA	BLAZIE ENGINEERING.				FOREST HILL	x	x
1106	11	USA	BRAIN ACTUATED TECHNOLOGIES INC..	sales@brainfingers.com	0019377672674	0019377677366	1350 President Street - 45387 -181, Yellow Springs	x	x
1107	12	USA	Cardiocom	info@cardiocom.com	0019523616467	0018883208881	7980 Century Blvd. Chanhassen, MN 55317		x
1108	13	USA	Cirque Corporate	www.cirque.com	0018014671100	0018014670208	2463 South 3850 West Suite A, UT 84120 Salt Lake City	x	
1109	14	USA	Clearly Superior Technologies	www.clearlysuperiortech.com	0016195791762	0016195791764	1044 Pioneer Way, Suite F, CA 92020 El Cajon	x	
1110	15	USA	Contour Design	info@contourdesign.com	0016038934556	0016038934558	10 Industrial Drive, NH 03087 Windham	x	x
1111	16	USA	CRICK SOFTWARE Ltd.	info@cricksoft.com	0014254678260	0014254678245	50 116th Avenue SE Suite 211 - wa 98004	x	x
1112	17	USA	Designer Appliances Inc	continentaleurope@quillmouse.com	0015167475665		140 Old Country Rd, Ste 205, NY 11501 Mineola	x	
1113	18	USA	DIDAX EDUCATIONAL Inc.	info@didax.com			395 Main Street, Rowley, MA 01969	x	
1114	19	USA	DON JOHNSTON Inc.	info@donjohnston.com	0018477400749	0018477407326	26799 West Commerce Drive - 60073	x	x
1115	20	USA	DONEGON OPTICAL CO LTD	info@doneganoptical.com	0019134922500	0019134922503	P.O. Box 14308, Lenexa, KS 66285-4308	x	
1116	21	USA	DynaVox Technologies	www.dynavoxsys.com	0018886977332	0014123815241	2100 Wharton Street, Suite 400, PA 15203 Pittsburg	x	x
1117	22	USA	EDMARK CORPORATION.		0012065568400	0014255568430	PO Box 97021, Redmond, WA 98107	x	x
1118	23	USA	ENABLING DEVICES	info@enablingdevices.com	0019144780046	0019144787030	Schnorrstr.70 - 10706 HASTINGS ON HUDSON NY	x	x
1119	24	USA	ENABLING TECHNOLOGIES	info@brailler.com	0015612253687	0015612253299	1601 Northeast Braille Place - FL 34957	x	
1120	25	USA	ENHANCED VISION		0017143741829	0017143741821	17911 SAMPSON LANE - CA 92647, Huntington Beach	x	
1121	26	USA	ENVISION	www.envisiondisplay.com		1-510-770-1088	47490 Seabridge Drive, Fremont, CA 94538	x	
1122	27	USA	Evoluent LLC	hello@evoluent.com	0016503552467	0016503555550	617 Viewridge Drive, CA 94044 Pacifica	x	
1123	28	USA	EyeTech Digital Systems	info@etmail.net	0014807043158	0017038148626	2160 E. Brown Rd. Suite 2, AZ 85213 Mesa	x	
1124	29	USA	FAITH CARLSON.					x	x
1125	30	USA	Fellowes, Inc.	www.fellowes.com	0016308931600	0016308931683	1789 Norwood Avenue, Itasca, IL 60143-1095	x	x
1126	31	USA	FENTEK NDUSTRIES INC	sales@fentek-ind.com	0019286390161	0019286390551	470 S. Main Street, Suite G, Cottonwood, Arizona, 86326	x	
1127	32	USA	FRANKLIN ELECTRONIC PUBLISHERS INC	webmaster@franklin.com		0016092395948	One Franklin Plaza, Burlington, NJ 08016-4907	x	
1128	33	USA	FREEDOM SCIENTIFIC.	info@freedomscientific.com	0017278038000	0017278038001	11800 31st Court North - FL 33716 ST., Petersburg	x	x
1129	34	USA	GARDTEC	dave@gardtecinc.com	0012626345560	0012626346182	2909 Mt. Pleasant S., Racine, WI 53404-1837	x	
1130	35	USA	GLOBAL ASSISTIVE DEVICES, Inc.	nfo@GlobalAssistive.com	0019547761373	0019547768136	4950 North Dixie Highway, Fort Lauderdale FL USA 33334	x	
1131	36	USA	GREYSTONE DIGITAL.	info@.keytools.com			28078 HUNTERSVILLE, Norht Carolina	x	x
1132	37	USA	GUS COMMUNICATIONS INC.	admin@gusinc.com	0013607158580		1006 Lonetree Court - 98229, Bellingham WA	x	x
1133	38	USA	GW Micro	sales@gwmicro	0012604893671	0012604892608	725 Airport North Off. Park, IN 46825 Fort Wayne	x	
1134	39	USA	H.K. Eyecan Ltd.	info@eyecan.ca	0016138600333	0016135964300	36 Burland Street, CAN-K2B 6J8 Ottawa, Ontario	x	
1135	40	USA	Hugh MacMillan. Rehabilitation Centre	milner@utcc.utoronto.ca	0014164243860	0014164251634	350 Ramsey Road, CA-M4G 1R8 Toronto	x	
1136	41	USA	Hunter Digital	www.footmouse.com		0013104761874	11999 San Vicente Blvd., Suite 440, CA 90049 Los Angeles	x	x
1137	42	USA	IMG. Innovation Management Group, Inc	sales@imgpresents.com	0018133463581	0018133463973	22311 Ventura Blvd Suite 104 - CA 91364, Woodland Hills	x	x
1138	43	USA	Infogrip	sales@infogrip.com	0018056520770	0018056520880	1141 East Main Street, CA-93001 Ventura, California	x	
1139	44	USA	INNOVENTIONS INC.	magnicam@magnicam.com	0013037976554	0013037274940	9593 Corsair Drive, Conifer, CO 80433-9317	x	x
1140	45	USA	IntelliTools, Inc.	info@intellitools.com	0017077732000	0017077732001	1720 Corporate Circle - CA 94954	x	
1141	46	USA	Interlink Electronics Inc.	support@interlinkelec.com	0018054848855	0018054848989	546 Flynn Road, CA 93012 Camarillo	x	
1142	47	USA	ITAC Systems	sales@moustrak.com	0019724943073		3113 Benton Street, TX-75042 Garland, Texas	x	
1143	48	USA	Kensington Computer Products Group	www.kensington.com	0016505722700		333 Twin Dolphin Drive, Sixth Floor	x	
1144	49	USA	KENSINGTON MICROWARE Ltd.		0014155722700	0014155729675	2855, Campus Drive - CA 94403, SAN MATEO, CALIFORNIA	x	x
1145	50	USA	KEYTECH INC.	sales@magictouch.it	0019722348617	0019722348542	1293 North Plano Road - TX 75081, RICHARDSON, TEXAS	x	x
1146	51	USA	Kinesis Corporation	sales@kinesis.com	0014254028100	0014254028181	22121 - 17th Avenue SE, Suite 112, Bothell, WA. 98021-7404	x	
1147	52	USA	Kurzweil Educational Systems, Inc.	sales@kurzweiledu.com	0017812760600	0017812760650	100 Crosby Drive, Bedford, MA 01730-1402	x	x
1148	53	USA	LC Technologies, Inc.	info@eyegaze.com	0017033857133	0017032883727	1483 Chain Bridge Road, Suite 104, VA 22101 McLean	x	x
1149	54	USA	MADDAK INC.	jkelly@belart.com	0019736287600	0019733050841	6 Industrial Road - NJ07440	x	x
1150	55	USA	Madentec Limited	sales@madentec.com	0017804508926	0017809886182	4664 - 99 Street, CAN-T6E 5H5 Edmonton, Alberta	x	x
1151	56	USA	Mayer-Johnson LLC	mayerj@mayer-johnson.com	0018585500084	0018585500449	p.o. box 1579, solana beach, ca 92075-7	x	x
1152	57	USA	Motion Media Technology Inc	usinfo@motion-media.com	0019103956100	0019103956108	6714 Netherlands Drive, 28405 NC Wilmington	x	
1153	58	USA	NATURALPOINT INC.	sales@naturalpoint.com	0015417536645	0015417536689	33872 East Gate Circle SE - OR 97333	x	x
1154	59	USA	NaturalPoint, Inc. dba NaturalPoint	sales@naturalpoint.com	0015417536645	0015417536689	Corvallis, Postfach P.O. BOX 2317, OR 97339 Corvallis	x	x
1155	60	USA	North Coast Medical, Inc.	custserv@ncmedical.com	0014087765000	0018772139300	18305 Sutter Boulevard, Morgan Hill, CA 95037-2845	x	
1156	61	USA	Oakworks, Inc.	medical@oakworks.com	0018009164613	0018775624787	923 E. Wellspring Rd., PA 17349 Shrewsbury	x	
1157	62	USA	OCUTECH Inc.	info@ocutech.com	0019199676460	0019199678146	109 Conner Dr Ste 2105, Chapel Hill, NC 27514	x	
1158	63	USA	ORIGIN INSTRUMENTS CORPORATION	sales@orin.com	0019726068740	0019726068741	854 Greenview Drive - 75050	x	x
1159	64	USA	PENNY & GILES COMPUTER PRODUCTS		0015082263008		163 Pleasant Street, 02703 Attlebord Massachusetts	x	
1160	65	USA	Philips Lifeline	www.lifelinesys.com	0018004510525		111 Lawrence street, Massachusetts		x
1161	66	USA	Polital Enterprises LLC	Point-N-Click@polital.com	0019735755582	0019735754956	West Caldwell, Postfach PO Box 1584, NJ 07007 West Caldwell	x	x
1162	67	USA	PRC PRENTKE ROMICH COMPANY		0012162621984	0012162634829	1022 Heyl Road - 44691 Wooster OHIO	x	x
1163	68	USA	QUICKPAD TECHNOLOGY CORP.	support@quickpad.com	0016509619114	0016509619114	620B Clyde Avenue - CA 94945, Mountain View, California	x	x
1164	69	USA	RENAISSANCE LEARNING, INC..	info@alphasmart.com	0018006566740	0017154244242	Wisconsin Rapids, WI, USA, 54495-8036, Wisconsin	x	x
1165	70	USA	REPROTRONICS	info@repro-tronics.com	0012017221880	0012017221881	75 Carver Ave. Westwood, NJ 07675	x	
1166	71	USA	RJ Cooper et Association	info@rjcooper.com	0019495822572	0019495823169	27601forbes rd. suite 39, laguna niguel, ca 92677	x	
1167	72	USA	SALTILLO CORPORATION	service@saltillo.com			2143 Township Road, 112 - 44654, MILLERSBURG, OHIO	x	x
1168	73	USA	SILVER LINING MULTIMEDIA.	info@silverliningmm.com	0016039241321	0016039241323	NH 03458 PETERBOROUGH	x	
1169	74	USA	Starkey Laboratories, Inc.	sales@starkey.com	0019529416401		6700 Washington Avenue S., Eden Prairie, MN 55344-3476	x	x
1170	75	USA	SYM SYSTEM CORPORATION.		0014084560133	0014084560134	2211 B Fortune Drive - CA 95131 SAN JOSE	x	
1171	76	USA	Tash Inc. Technical Aids & Systems for the Handicapped Inc.	tashinc@aol.com	0018047475020	0018047475224	3512 Mayland Ct. - VA 23233 RICHMOND	x	x
1172	77	USA	Telular Corporation	www.telular.com		0013123798310	311 South Wacker Drive, Suite 4300, Chicago, IL 60606	x	
1173	78	USA	ViewPlus Technologies	www.viewplus.de	0015417544002	0015417386505	1853 SW Airport Avenue, 97333 Corvallis Oregon	x	
1174	79	USA	Words+ Inc.	info@words-plus.com	0016617236523	0016617232114	42505 10th Street West, 93534-2902 Lancaster, CA	x	

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Authors: Jennifer Stack, Leire Zarate, Carmen Pastor, Niels-Erik Mathiassen, Ricard Barberà, Harry Knops, Hugo Kornsten

FOR FURTHER INFORMATION:

ICT for Inclusion
Tel: +32 (0)2 29 90245
DG Information Society and Media Directorate
European Commission, BU31 01/66
B-1049 Brussels Belgium
einclusion@ec.europa.eu
http://ec.europa.eu/einclusion