D3.2.
Wave I: Self Service Terminals (SSTs) and plans for Wave II

Grant Agreement Number: Project number 205568
Project Acronym: eAccess+
Project Title: eACCESS+: the eAccessibility Network
Funding Scheme: ICT Policy Support Programme (PSP)
Date of EC approved Annex I: 23.9.10 (Amendment 17.9.2011)

Project Coordinator: Klaus Miesenberger
Deliverable: D3.2: Self Service Terminals and Plans for Wave II
E-mail: jennyd@aegean.gr and petrie@cs.york.ac.uk
Project website address: http://www.eaccessplus.eu
## Document Information

<table>
<thead>
<tr>
<th><strong>Issue Date</strong></th>
<th>31.09.2011</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Deliverable Number</strong></td>
<td>D3.2.</td>
</tr>
<tr>
<td><strong>WP Number</strong></td>
<td>WP3</td>
</tr>
<tr>
<td><strong>Partner Responsible</strong></td>
<td>Aegean</td>
</tr>
<tr>
<td><strong>Status</strong></td>
<td>Report</td>
</tr>
<tr>
<td><strong>Dissemination Level</strong></td>
<td>Public</td>
</tr>
</tbody>
</table>

## Version History

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Changed</th>
<th>Author(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>.01</td>
<td>20.09.11</td>
<td>Document template indicating sections where contribution is needed</td>
<td>AEGEAN, YORK</td>
</tr>
<tr>
<td>.02</td>
<td>10.10.11</td>
<td>Revision of document template to include analysis of contact reports</td>
<td>YORK, AEGEAN</td>
</tr>
<tr>
<td>.03</td>
<td>31.10.11</td>
<td>Update with latest contributions</td>
<td>AEGEAN, YORK</td>
</tr>
<tr>
<td>.04</td>
<td>10.11.11</td>
<td>Final draft for checking</td>
<td>All</td>
</tr>
<tr>
<td>.05</td>
<td>14.11.11</td>
<td>Final version</td>
<td>YORK, AEGEAN</td>
</tr>
</tbody>
</table>
Executive Summary

This deliverable reports on the activities undertaken and the information gathered from partners in Wave 1 on the Self Service Terminal (SST) domains, the results of these activities, and how these have impacted our plans for Wave 2.

We begin with presenting the wide range of activities undertaken. These included presentations, workshops, focus groups, visits to trade fairs, interviews with stakeholders in the industry as well as those who deploy SSTs, and several education based activities. For several, longer reports are available in the appendix. In addition, the information and resources gathered are presented, with relevant links to the HUB.

Next, we give an analysis of the current situation, based upon our activities and our information collection, which leads us to make recommendations for further interventions to improve the situation with regard to SSTs and eAcessibility. This is an important step for the domains of SSTs which is growing quickly with machines proliferating at a very rapid rate and becoming a ubiquitous and sometimes unavoidable part of our lives.

Our analysis concentrated in great part on the SST industry, since these are the people who are hard to reach and whom we need to understand if we are to be able to tailor our interventions to have some impact. However, we did also look at deployers of SSTs to provide balance.

The results told us that there is a very low awareness of eAccessibility in the industry generally, that mostly they are not interested or do not think it is their responsibility. We were able to further refine this understanding, by gaining a deeper knowledge of how the industry is structured. There are of course some exceptions, and we have interviewed them to get their views as well.

From our analysis results, we moved to recommendations for our future inventions. One of these is the type of material that we put on the HUB, since there was a strong call for this from those in the industry who are aware of eAccessibility for clearer and more relevant information. For each of our recommendations, we note if there are already plans for this type of intervention in place, some plans are more developed than others.

Finally, we present our plans for Wave 2, explaining who are our new partners and presenting the large number of activities we have already planned.
# Table of Contents

1 **Introduction** .................................................................................................................. 7  
   1.1 Report on the activities undertaken ............................................................................. 7  
   1.2 Report on the information gathered by partners ......................................................... 7  
   1.3 Provide an analysis of the current situation .............................................................. 7  
   1.4 Provide recommendations further interventions to improve e-Accessibility of SSTs .... 7  
   1.5 Report on contributions to the HUB .......................................................................... 7  
   1.6 Provide an outline of plan for Wave 2 of the SST work ............................................. 8  

2 **Activities undertaken by eAccess+ partners in Wave I** .................................................. 9  
   2.1 Introduction .................................................................................................................. 9  
   2.2 Kiosk Europe, 24th-26th May 2011, Essen, Germany .................................................. 9  
   2.3 Kiosk London, 17th-18th October 2011, London, UK ................................................ 10  
   2.4 Annual Conference of the UK Museums Computer Group December 2010 .......... 10  
   2.5 Annual Conference of the European Network of Science Centres and Museums (ECSITE), 26 – 28 May 2011, Warsaw Poland ................................................................. 12  
   2.6 Lecture Tour on e-Accessibility in Wales, in collaboration with Jodi Mattes Trust and CyMAL, 22 – 24th September 2010 ................................................................. 12  
   2.7 Annual Jodi Mattes Awards for Accessible Digital Culture, 1 December 2010, Edinburgh Scotland ........................................................................................................ 12  
   2.8 Interviews with stakeholders ...................................................................................... 13  
   2.9 Participation in the FUTURAGE Project and final FUTURAGE Conference, 18 October ... 13  
   2.10 Participation in the ATIS4All Thematic Network ...................................................... 14  
   2.11 Participation in the Web Accessibility Campaign ...................................................... 14  
   2.12 Coordination of the Campaign for the European Year for Active Ageing and Solidarity between Generations -2012 .................................................................................... 15  
   2.13 Participation in a series of conferences on EU policies on e-accessibility and on projects on this topic ................................................................................................. 15  
   2.14 Advocacy Work ........................................................................................................ 16  
   2.15 World Travel Market, November 9 – 10, 2012, London UK ..................................... 16  
   2.16 Discussions with travel website owners ..................................................................... 16  
   2.17 Activities with students (e.g. projects on accessible kiosks, information about accessibility of kiosks, etc) .................................................................................. 17  
   2.18 Case study with KEBA AG ....................................................................................... 19  
   2.19 24 Hour Universal Design Challenge, 2010, 27 November, Dublin ......................... 20  
   2.20 Seminar “Technology in the City”, 27 November, Dublin ........................................ 20  

3 **Information and resources gathered in Wave 1** .............................................................. 21  
   3.1 Introduction .................................................................................................................. 21  
   3.2 Previous work in the area ............................................................................................ 21  
   3.3 Standards .................................................................................................................... 21
1 Introduction

This deliverable, D3.2, will report on the activities undertaken; the information gathered and the analyses conducted by eAccess+ partners in Wave 1 of the project. In addition it will put forward the plan for Wave 2, based upon the experience of Wave 1. The main objectives of this deliverable are to:

1.1 Report on the activities undertaken

In this section we will report on the activities undertaken by eAccess+ partners in the 5 countries of Wave 1 (Greece, Ireland, Slovakia, Sweden and the U.K.), as well as activities by other partners whose activities span a number of countries. In addition we report on activities carried out by partners in countries that are not their own (e.g. partner Aegean – Czech Republic) as well as activities carried out by partners whose countries are not yet included in the wave group, but who had the opportunity to meet with stakeholders (e.g. Austria, partner Linz interviewed ATM deployers).

1.2 Report on the information gathered by partners

In this section we report on the information gathered by partners from the contacts established with key stakeholders in the 5 EU countries targeted in Wave 1, as well as in other EU countries and other, international, information.

1.3 Provide an analysis of the current situation

This section provides an analysis of the current situation related to e-Accessibility of SSTs learnt from Wave 1, especially where those shed light obstacles to achieving accessibility, in terms of missing links in the value-chain of accessibility in kiosk manufacturing and deployment, and general hindrance to take-up of accessibility. It provides a list of key issues.

1.4 Provide recommendations further interventions to improve e-Accessibility of SSTs

In this section we provide recommendations for further interventions to improve e-Accessibility of SSTs in the EU and beyond. This is a result of the work done from analyzing the information gathered by partners.

1.5 Report on contributions to the HUB

Here we explain the rationale behind the structure and the contributions proper developed for WP3 regarding the HUB.
1.6 **Provide an outline of plan for Wave 2 of the SST work**

which will move to:

- establish contacts with stakeholder groups in the 5 Wave 2 countries (Austria, Denmark, Germany, Italy, The Netherlands)
- undertake a range of activities to contact stakeholders, raise awareness of accessibility of SSTs
- further develop tools and resources to assist with the development of e-Accessibility in the SST domain
2 Activities undertaken by eAccess+ partners in Wave I

2.1 Introduction

In order to make contact with stakeholders, the partners undertook various activities, as specified by the network’s Description of Work, but also seized opportunities when these arose to make valuable contributions to the work. Amongst the different types of activities that will be described in more detail below, we attended trade fairs, conducted focus groups; interviews with stakeholders, made visits to stakeholders, attended conference workshops, worked with other EU networks and research projects (e.g. FUTURAGE, ATIS4All), undertook educational activities and general awareness raising at various fora and events.

It is important to note that the activities targeted mostly at groups who were not aware of eAccessibility at all, for example most of the manufacturers at trade fairs. However there were also activities aimed at those who are working in the field of eAccessibility, in order that we might capitalise on their networks to further the reach of eAccess+.

Below the activities are briefly listed and described.

2.2 Kiosk Europe, 24th-26th May 2011, Essen, Germany

Partners: Aegean and York

Two eAccess+ partners, Aegean and York, attended the trade fair, “Kiosk Europe”, which advertises itself as the “world’s largest self service event”\(^1\). The event was collocated with Digital Signage\(^2\) (which shares a great deal of the same market) and there were over 130 exhibitors registered. However, only about 30 stands were exhibiting kiosk related products, although some could be counted as both kiosk and digital signage. During the 3 days of the trade fair, the eAccess+ members spoke with over 20 exhibitors, and listened to many talks in the Open Forum. We gained a good understanding of how the industry is constituted, and we also distributed our own material to explain the aims of eAccess+ in general (project leaflet) and of WP3 in particular (with a handout specially designed for Kiosk Europe, see Appendix 1). The experience gave us valuable insights into the level of awareness and the interest in

\(^1\) http://www.kioskeurope.com/content/kiosk-europe-expo-2012-1

\(^2\) “Digital Signage” is a form of electronic display that shows television programming, menus, information, advertising and other messages. Digital signs (such as LCD, LED, plasma displays, or projected images) can be found in public and private environments, such as retail stores, hotels, restaurants and corporate buildings (http://en.wikipedia.org/wiki/Digital_signage).
eAccessibility in this industry that we were able to confirm at the later event, Kiosk London.

A full report is provided in Appendix 2.

2.3 **Kiosk London, 17th-18th October 2011, London, UK**

**Partner: York**

Partner York (a different researcher from the one who attended Kiosk Europe) attended the Kiosk London event. There were about 25-30 exhibitors and the researcher carried out interviews with a good number of them (12). This event provided further useful information, confirmed some of our findings from Kiosk Europe and contextualized some of the challenges of accessibility in the sector.

The event revealed that a large number of firms represented were from the United States, who were thus aware of the ADA rather than any European legislation. Marketing and sales people present did not feel they had the expertise to answer questions about the design and sales of their products in terms of accessibility.

Component manufacturers felt that accessibility was the responsibility of kiosk design manufacturers, and rather than their components, but designers of full kiosk installations were more concerned with accessibility. They concentrated however more on the “ergonomic” properties of kiosks, e.g. “height from ground” rather than user problems. Finally, the accessibility issues end with the kiosk designers deployment, then there does not appear to be any engagement with clients who deploy the kiosks regarding accessibility problems and fixing them.

A full report is provided in Appendix 3.

2.4 **Annual Conference of the UK Museums Computer Group December 2010**

**Partner: York**

The University of York attended the UK Museums Computer Group (MCG) Annual Conference in December 2010, with about 100 attendees. Chris Power and Helen Petrie gave a keynote speaker on eAccessibility in the museum sector, which mentioned the eAccess+ network, and was very well received.

At the end of the keynote, session attendees (about 90) were asked to participate in a “mass focus group”. Large posters were positioned around the coffee break out area with three questions:

- What does eAccessibility in museums mean to you?
What are the biggest problems you face in dealing with eAccessibility?

What resources/tools do you need to help you with improving eAccessibility?

Attendees were provided with a block of “PostIt” notes and a souvenir pen and invited to post their answers to these three questions on the large posters in the coffee area. This proved a very popular activity and over 130 “PostIts” were written and posted.

The key issues that emerged from the answers to each question were:

**What does eAccessibility in museums mean to you?**

Attendees have a clear idea of what eAccessibility means – they posted about the different user groups (although older people appeared less frequently than the various disability groups) with people with visual impairments and hearing impairments featuring most often.

Attendees also often referred to an “inclusive” approach – including all museum visitors, regardless of disability, literacy level etc.

**What are the biggest problems you face in dealing with eAccessibility?**

Many interesting problems were raised, from how to make particular applications or technologies accessible (e.g. Flash, podcasts, pdfs), through how to create accessible websites, multimedia guides to understanding the needs of particular user groups, particularly totally blind people who may wish to use braille and tactile materials in the museum and sign language using deaf people.

**What resources/tools do you need to help you with improving eAccessibility?**

Again many interesting ideas were raised, including providing a wiki with information (which of course eAccess+ is doing), examples of good practice, online training and one-to-one accessibility support.

A full report is provided in Appendix 4.
2.5  **Annual Conference of the European Network of Science Centres and Museums (ECSITE), 26 – 28 May 2011, Warsaw Poland**

**Partner: York**

ECSITE is the European Network of Science Centres and Museums\(^3\). A representative from York of eAccess+ attended one day of their annual conference which in 2011 was held in Warsaw, Poland, to find out more about the level of understanding of e-Accessibility in the museum sector and the interest in learning more about e-Accessibility. Brochures were distributed about the eAccess+ network to participants and to exhibitors. A number of participants and exhibitors expressed considerable interest in e-Accessibility and learning more about e-Accessibility in relation to museums and science centres.

2.6  **Lecture Tour on e-Accessibility in Wales, in collaboration with Jodi Mattes Trust and CyMAL, 22 – 24\(^{th}\) September 2010**

**Partner: York**

In conjunction with the Jodi Mattes Trust for Accessible Digital Culture and CyMAL (Museums, Archives and Libraries Wales\(^4\)) personnel from the University of York participated in a lecture tour on e-Accessibility for museums, archives and libraries in Wales. Lectures and workshops were given in Cardiff and Aberystwyth. These events promoted the eAccess+ Network and brochures were distributed. Personnel from Welsh institutions were very interested in receiving more information about e-Accessibility in museums, libraries and archives.

See: http://hub.eaccessplus.eu/wiki/Jodi_Mattes_Trust

2.7  **Annual Jodi Mattes Awards for Accessible Digital Culture, 1 December 2010, Edinburgh Scotland**

**Partner: York**

The Jodi Mattes Trust for Accessible Digital Culture runs a set of annual awards for excellence in accessibility in websites and use of technologies. These awards are for both UK projects and international ones. The University of York has conducted evaluations of the shortlisted projects for these awards since they were inaugurated in 2003. This evaluation includes conformance testing to WCAG1/WCAG2 and evaluation by disabled users of the usability and acceptability of the systems.

\(^3\) http://www.ecsite.eu/

\(^4\) www.cymal.wales.gov.uk
In 2010, Chris Power from the University of York gave a keynote at the Ceremony for the Awards. This highlighted the eAccess+ Network.

See: http://hub.eaccessplus.eu/wiki/Jodi_Mattes_Trust

2.8 Interviews with stakeholders

Partners: Aegean, CEUD/NDA, Linz, SIAT, York

In order to pin down issues relating to e-accessibility and SSTs, 22 interviews with relevant stakeholders were carried out. The interviews variously took place during at the trade fair (Kiosk London), during purposefully arranged visit to premises of company; at premises of company after initial contact at trade fair: by phone (again after initial contact at trade fair and by phone and by email. It is important to note that these last two tools (phone and email) are not really possible unless there has been some personal contact previously established.

As to the type of the stakeholder, these were mostly suppliers of SST related material of some kind (e.g. manufacturers and component suppliers, software developers integrators) and clients who deploy SSTs (e.g. public authorities).

The interview schedule for the interviews can be found in Appendix 6.

2.9 Participation in the FUTURAGE Project and final FUTURAGE Conference, 18 October

Partner: AGE

AGE was involved in the FUTURAGE Project, which aimed at identifying EU research priorities for the next 10 - 15 years. AGE made sure that eAccessibility was included in the list of priorities. On 18 October 2011, during the final conference of the project, AGE also disseminated among researchers the project eAccess+ flyer. The conference took place at the European Parliament and it was attended by more than 100 participants.

See: http://hub.eaccessplus.eu/wiki/The_Future_Age_Project
2.10 Participation in the ATIS4All Thematic Network

Partner: AGE
AGE is involved in the ATIS4All Thematic Network, aiming at facilitating everyone’s access to the most suitable assistive technologies or accessibility devices and services according to their needs. AGE disseminated the eAccess+ Network flyer to the partners of the project and other information about the eAccess+ network.

See: http://hub.eaccessplus.eu/wiki/ATIS4all

2.11 Participation in the Web Accessibility Campaign

Partner: AGE
AGE Platform Europe, the European Disability Forum\(^5\), ANEC\(^6\) and the European Blind Union\(^7\) have come together to launch a Web Accessibility Campaign. They are calling on the European Commission to propose binding EU legislation to ensure that public sector websites and websites delivering basic services to citizens are made accessible to all by no later than 2015. More precisely, they are calling for:

- The European Commission to review our proposal for a legal act on accessible websites
- The European Commission to propose binding EU legislation to ensure that public websites and websites delivering basic services of public interest are made accessible as soon as possible

Regular contacts have been also established with the eInclusion Unit in DG INFSO, a meeting was organized with the cabinet of Vice-President Nellie Kroes (INFSO) and another one will take place next week with the cabinet of Commissioner Michel Barnier (Internal Market).

\(^5\) http://hub.eaccessplus.eu/wiki/European_Disability_Forum
\(^6\) http://hub.eaccessplus.eu/wiki/ANEC
\(^7\) http://hub.eaccessplus.eu/wiki/European_Blind_Union
2.12  Coordination of the Campaign for the European Year for Active Ageing and Solidarity between Generations -2012

**Partner: AGE**

AGE is coordinating the Stakeholders’ Coalition for the European Year 2012. On 7 November, it launched a Manifesto for an Age-Friendly European Union by 2020. EAccessibility and access to information were mentioned in the document as a priority for EU/national and local policy makers if we want to ensure an “Age-Friendly EU”. The Manifesto was launched at the European Parliament and the eAccess+ flyer was disseminated.

See: http://hub.eaccessplus.eu/wiki/AGE_Platform_Europe_Manifesto

The list of the organizations involved in the Campaign is also available.

2.13 Participation in a series of conferences on EU policies on e-accessibility and on projects on this topic

**Partner: AGE**

Twice per year, AGE expert group on Universal Access and Independent Living meets in Brussels. From the beginning of the eAccess+ Project, the experts, coming from 12 different EU countries, were invited to send example of good practice on e-accessibility and self-service terminals. They also received regular updates on the project. For more information on AGE expert groups,

AGE also disseminated the information on the project during a series of events and conferences on active ageing and e-accessibility. There are two main events where AGE participated.

On 14 June 2011, AGE took part in the first EU Digital Assembly in Brussels, where Vodafone Foundation launched the Smart Accessibility Awards. The competition aims at promoting the development of IT applications designed to improve the lives of people with disabilities and older people to help them become more actively involved in society. The programme is supported and co-organized by AGE Platform Europe and the European Disability Forum (EDF). AGE Secretary General, Anne-Sophie Parent, was...

---

one of the speakers at the Digital Assembly. Her presentation focused on web accessibility\(^{11}\).

On 7 November, AGE also co-organised the meeting of the European Parliament Intergroup on Ageing and Intergenerational Solidarity\(^{12}\). The event focused on the preparation of the European Year 2010 and the promotion of an age-friendly environment. AGE Secretary General was a speaker of the meeting and she mentioned the importance of promoting eAccessibility if we want to ensure the active participation of older people in society.

2.14 **Advocacy Work**

**Partner: AGE**

AGE is also involved in a series of advocacy activities to promote e-accessibility. It is in regular contacts with the eInclusion Unit in DG INFSO. It is also involved in the work on the Standardisation Mandate 473 on Design for All\(^{13}\). ICT is covered by this mandate whose objective is to mainstream Design for all in the standardisation work linked to both goods and services.

On 12 October, AGE attended the first meeting of the Strategic Advisory Group on Accessibility.

2.15 **World Travel Market, November 9 – 10, 2012, London UK**

**Partner: ENAT**

ENAT attended the World Travel Market in London and publicized the eAccess+ network. ENAT did a seminar on their organization and accessible tourism and represented the eAccess+ project.

2.16 **Discussions with travel website owners**

**Partner: ENAT**

\(^{11}\) [http://www.accessforall.eu/tag/smartphones/](http://www.accessforall.eu/tag/smartphones/)


ENAT have been talking to many travel website developers about eAccessibility, the eAccess+ network and the information available on the Hub. There seems to be to little awareness on accessibility for travel websites and ENAT has spoken to a number of interested companies.

2.17 Activities with students (e.g. projects on accessible kiosks, information about accessibility of kiosks, etc)

Partner: Aegean
The students at the Department of Product and Systems Design Engineering of the University of the Aegean (4th and 5th years) undertook projects related to the eAccess+ Network as part of their course work in the classes on Design for All and Information Design.

2.17.1 Public presentation of student projects on Design for All and SSTs.
14 groups of students (group size between 2 and 5 students) completed projects as part of their course on Design for All (worth 50% of their course marks) on SSTs. The types of SSTs studied included:

- ATMs for banks
- various types of ticket machines (buses, trains, parking tickets, cinema tickets)
- self check in terminals at airports
- self service photograph printing machines
- food vending machines in schools where children’s choices would be available for parental supervision
- restaurant menus with dietary information outside of dining rooms
- self service centres for recycling waste
- bicycle hire machines

In the exercise the students were asked to research the machines and their eAccessibility issues. They were to suggest improvements and redesigns. The student groups presented their projects publicly. The results have highlighted several uses of SSTs that have not been previously examined for eAccessibility (e.g. photograph printing machines that are in widespread use in tourist regions) and that are very difficult to use and are in fact most often only intelligible to professionals. In addition, the projects showed clearly that there are “fashionable” technologies that are adopted by machine manufacturers when the use cases are not always supported by these technologies, i.e. touch screens that are very small. The exercise also showed repeatedly that providing adequate space for approaching and using the machines is
not well understood by those who are responsible for the positioning of the machines. In addition features of the machines such as card slots and collection slots appear to reflect the internal organization of the machinery engineering and little regard for the users, requiring them for instance to bend down to collect goods.

Students reported that the exercise had been of great use to them in understanding Design for All in practice and eAccessibility issues, particularly as many of the SSTs studied showed up problems that went far beyond ergonomic problems to software and hardware limitations.

Given the already extensive numbers of SSTs in use, and their increasing presence, the students felt that this was an area where their broad education in design could be put to work. They have incorporated ideas for redesigns and new designs into proposals for design competitions.

The eAccess+ project was introduced to the students and the members of the public, and they all were encouraged to visit it as a first source of information about eAccessibility issues.

A short survey will be carried out at the end of the academic year (2013) to ask the students to report on the usefulness to them of the eAccess+ HUB.

2.17.2 Classroom exercise in course Information Design

Students were asked to design a flyer about eAccessibility of SSTs to be distributed at Kiosk Europe alongside the official leaflet of eAccess+.

Extract from the brief

"You are required to produce a communication product that informs the self-service terminal industry about the main issues of eAccessibility and Design for All, and the problems that exist with self service terminals in terms of difficulties of usability and accessibility. The target audience for this product is the exhibitors and visitors to Kiosk Europe (The world's largest self service event - http://www.kioskeurope.com/ke-expo). The product would be distributed as part of the activities of the eAccess+ Network (www.eaccessplus.eu).

The product is subject to the following constraints:
- final form must be a PDF format for ease of transfer and printing
- May not exceed 1 A4 size page

The choice of materials, sizing, final form, etc. is free."
In all, 32 products were produced, out of which 10 were retained for consideration for the eAccess+ flyer. Of these, one was chosen to be produced as the SST flyer for Kiosk Europe (see Appendix 1), while two were retained for use at other events.

The students did not confine themselves to a flyer style, but included origami type games, aimed to create interest in the audience and encourage them to read the information product, while whiling away time (possibly in slow times at the exhibition).

There were two important outcomes of this activity: the first concerns the actual information product process, while the second concerns a deeper but more sustainable goal, of educating designers in Design for All.

More specifically:
1. The “Are you ignoring 10% of the population?” title of the information product that was reproduced for distribution at Kiosk Europe appeared helpful in attracting and holding the attention of the exhibitors we spoke to, proving that the students’ study of the product’s audience (e.g. doing content analysis of the website of Kiosk Europe) was successful. In the future, if possible, we will continue to ask students to do this kind of exercise, in order to continue making information products as far as possible tailored to the target audience. The leaflet has been translated by out Swedish partner SIAT for use locally.

2. Our students are instructed in Design for All, and by undertaking this exercise (for a different course), we believe that they are made even more aware of the information and communication gaps between products and services and public that uses them. We hope that this will enable them, as future designers engaged in the production of such systems and services, to be able to articulate more clearly the need for DfA as well as to be able to implement it.

2.18 Case study with KEBA AG

KEBA\textsuperscript{14} is a company based in Linz, Austria engaged in various fields, including banking and service automation. The company is one of the major ATM providers for banks and ticketing in Austria. In response to procurement requests from existing business partners, which include accessibility, and reacting to information from eAccess+, they have already had several meetings with partner Linz in order to proceed with co-operations throughout the whole of the wave, and this co-operation is continuing. The company has successfully taken part in the procurement, and is now motivated to invest professionally in accessibility.

\textsuperscript{14} http://www.keba.com/en/
The full report is provided in Appendix 5.

2.19 **24 Hour Universal Design Challenge, 2010, 27 November, Dublin**

**Partner: CEUD**

The theme of CEUD’s 24 Hour Universal Design Challenge and Seminar was “Technology in the City”. Five teams comprising of fifty designers were given a brief to “Create a universal design intervention or set of interventions with the surrounding environment with advisement from your design partner to improve its overall inclusivity in visual, spatial, mobility, service or communication terms so that the Grafton Street area can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size and ability or disability.”

Each team worked with a ‘design partner’, a person who experiences some level of difficulty in using the Grafton street, a busy pedestrian shopping area of Dublin. Through not explicitly limited to designing a self-service terminal, most teams designed looked to use accessible technology that would enable people with disabilities and older people to spend more quality time in the Grafton Street area.

A full report is given in Appendix 6


2.20 **Seminar “Technology in the City”, 27 November, Dublin**

**Partner: CEUD**

Held in conjunction with the 24 Hour UD Challenge and to mark the 2010 AGM of the EDeAN network, the “Technology in the City” seminar\(^{15}\) focused on research and design advances in the development and teaching of technology design that enables more people to interact independently with their environment. The seminar was attended by 5 small self-service terminal manufacturers who were particularly interested to hear the presentation on the INREDIS project and the APSIS4all pilot in Spain.

3 Information and resources gathered in Wave 1

3.1 Introduction

In this section we list and provide brief summaries of the different useful documents and resources that have identified thus far as useful to different stakeholders in the SST eAccessibility domain. These include guidelines and information about legislation, as well as about standards that are of relevance to SSTs or components of SSTs. We also include papers published in academic journals and conference proceedings as well as articles from trade press, and outputs from relevant projects.

3.2 Previous work in the area

There exists quite a lot of work, although some of it is quite dated, it still has some usefulness today. From this one may understand that the eAccessibility of SSTs has been a matter of concern for some time. However, it would appear that it is now that it has become a matter of urgency to address eAccessibility issues in a concerted and coherent manner. This is because devices are proliferating\(^\text{16}\) and are expanding into many areas of daily living. In some domains, it is becoming the case that goods and services are available only via SSTs. As EU Commissioner for the Digital Agenda Neelie Kroes declared: “Public self-service terminals can be found everywhere, and their numbers keep increasing. Yet, many present a challenge for persons with disabilities or for elderly persons, denying them the service.”\(^\text{17}\)

The information listed below can be found via the eAccess+ HUB.

3.3 Standards

There are various standardization efforts that can be used in the design and development of accessible SSTs, these are listed below.

Currently there are no standards that relate specifically to accessibility of SSTs.

3.3.1 International standards

The International Organization for Standardization\(^\text{18}\) has developed a range of standards that have some relevance for SSTs:

\(^\text{16}\) taken as a whole geographic region, Europe has the second largest amount of deployed SSTs, after the United States, and represents 18% of the world market www.kioskmarkeplac.com/237/12


\(^\text{18}\) http://www.iso.org/iso/home.html

Deliverable 3.2
Universal Remote Console standard (ISO/IEC 24752)

ISO/IEC 24752 facilitates operation of information and electronic products through remote and alternative interfaces and intelligent agents.

ISO/IEC 24752-1 defines a framework of components that combine to enable remote user interfaces and remote control of network-accessible electronic devices and services through a universal remote console (URC). It provides an overview of the URC framework and its components.


ISO standards on smart cards

There are a number of standards from the International Organization for Standardization19 concerning smart cards. While these do not necessarily include information about accessibility of smart cards, but they are an important starting point for people interested in the accessibility of these cards. Further work is needed to include accessibility aspects into future versions of these standards.


19 http://www.iso.org/iso/home.html
3.3.2 **European standards**


3.3.3 **National standards**

**Smartcard standard (EN 1332-4) (UK)**

EN 1332-4 - Identification Card Systems - Man-Machine Interface - Part 4: Coding of user requirements for people with special needs

Smart cards, that can be used to carry a user’s particular preferences (e.g. regarding colour contrast, typeface and size, etc., have been contenders for some time as a way to customize public terminals for particular users.

**Canadian standard for accessible design for automated banking machines (CAN/CSA B651.1)**

This is the second edition of CAN/CSA B651.1, Accessible design for automated banking machines. It supersedes the first edition published in 2001 under the title Barrier-Free Design for Automated Banking Machines.

This Standard specifies accessibility requirements for automated banking machines (ABMs) and ABM sites. Note: While the purpose of this Standard is to make ABMs or their environment more accessible, there might be some people with disabilities who have requirements beyond the scope of this Standard.

N.B. The eAccess+ Network has been trying to obtain a copy of this standard, but it is not possible to buy it via the Canadian Standards Association (CSA) website, due to errors in the website. We have notified CSA of these problems.

See:
http://hub.eaccessplus.eu/wiki/Canadian_standard_for_accessible_design_for_automated_banking_machines

**Canadian standard for accessible design for self-service interactive devices (CAN/CSA-B651.2)**

This is the first edition of CAN/CSA-B651.2, Accessible design for self-service interactive devices.

This Standard specifies requirements for making electronic (including electromechanical) and mechanical self-service interactive devices accessible to and usable by
people with a range of physical, sensory, and cognitive disabilities. It has been developed to fulfil an expressed need for a national technical Standard covering a broad range of interactive devices.

N.B. The eAccess+ Network has been trying to obtain a copy of this standard, but it is not possible to buy it via the Canadian Standards Association (CSA) website, due to errors in the website. We have notified CSA of these problems.

See:
http://hub.eaccessplus.eu/wiki/Canadian_standard_for_accessible_design_for_self-service_interactive_devices

3.3.4 **CUSS (Common Use Self Service) standard**

CUSS stands for Common Use Self-Service. It is a shared kiosk providing passenger check-in at airports whilst allowing multiple airlines to maintain branding and functionality. As kiosks can be located throughout the airport, congestion is alleviated and passenger flow improved.

The CUSS project was formally closed at the end of 2008, since when CUSS has become a reality with implementations at more than 100 airports globally. The International Air Transport Association continues to maintain the CUSS standard through the Common Use Working Group.

See: http://hub.eaccessplus.eu/wiki/Common_Use_Self-Service

3.4 **Guidelines**

3.4.1 **Irish guidelines for public access terminals**

The Irish guidelines cover all information and services delivered by means of Public Access Terminals. Public access terminals include (but are not limited to):

- ATMs (Automated Teller Machines)
- Information kiosks
- Ticket vending machines
- Information displays (e.g. flight information)
- Point of sale customer card payment systems
- Card door entry systems

3.4.1 **eAccessibility Policy Toolkit for Persons with Disabilities**

The eAccessibility Policy Toolkit for Persons with Disabilities has a section on “electronic Kiosks”. This repeats some of the information from the Irish Guidelines for public access terminals (see section 3.4.1), but also has extra resources, such as existing solutions and practices adopted from around the world.


3.4.2 **Guidelines from Georgia Tech on accessibility of point of sale machines**

A study of accessibility issues and potential design solutions associated with point of sale machines for designers, procurement officials, and consumers.

See: [http://hub.eaccessplus.eu/wiki/Georgia_Tech_Accessibility_Monographs](http://hub.eaccessplus.eu/wiki/Georgia_Tech_Accessibility_Monographs)

3.4.3 **Georgia Tech in the USA has Point of Sale Machines: Kiosks**

A study of accessibility issues and potential design solutions associated with kiosks for designers, procurement officials, and consumers.

See: [http://hub.eaccessplus.eu/wiki/Georgia_Tech_Accessibility_Monographs](http://hub.eaccessplus.eu/wiki/Georgia_Tech_Accessibility_Monographs)

3.4.4 **German guidelines (2005) BIMK-4712/04-A**

A set of guidelines for the installation of disabled-user-friendly kiosks.

3.4.5 Dutch guidelines for “user friendly” payment terminals

In 2007, the Dutch National Forum on the Payment System produced "Guidelines for user-friendly payment terminals. These guidelines include advice on making payment terminals accessible and easy to use for people with disabilities and older people.


3.4.6 US Department of Transport Check in kiosk accessibility guidelines

The US Department of Transport has developed guidelines for the accessibility of check in kiosks at airports and other transport nodes. It hopes to develop these guidelines into a standard in this area.

See: http://regulationroom.org/air-travel-accessibility/issue-posts/kiosks-accessibility-standards/

3.5 New proposals, research projects etc

3.5.1 Accessibility of information and ticketing for public transport (France)

This document provides an overview of the accessibility of equipment.


3.5.2 EZ Access® information

EZ Access® is a simple set of interface enhancements developed by the Trace Centre in the USA which can be applied to electronic products and devices so that they can be used by more people including those with disabilities. EZ Access enhancements can be applied to a wide range of interactive electronic systems from public information and transaction machines such as kiosks to personal handheld devices like cellular phones. By using EZ Access, developers can create products and devices that are usable not only by more people, but also in a wider range of environments and contexts. The blue
diamond EZ Help button only appears on devices that have approved implementations of the EZ Access system of access features and techniques.

See: http://trace.wisc.edu/ez/

3.5.3 **Report ePayments by RNIB (UK)**

The ePayments project is from the Royal National Institute for Blind People (RNIB) in the UK. It focuses on those elements which currently restrict and isolate blind and partially sighted people from making “cashless” electronic payments and identifies ways forward to remove these restrictions. Electronic payments are becoming essential components of paying for goods while shopping (both in-store and online) and purchasing tickets for travel, making it vital to ensure that blind and partially sighted people can use them independently.

See:

3.5.4 **National Public Inclusive Infrastructure**

National Public Inclusive Infrastructures (NPII) an initiative to build access technologies directly into the internet using open source software which will be free to use. This would make use of ubiquitous and cloud computing and will obviate the need for users to have access to specialist software or need to purchase it.

See: http://gpii.net/

3.6 **Summary**

As can be inferred from the above listing, the resources on e-Accessibility and SSTs exist, but they are hard to find representing very eloquently this highly fragmented industry and the difficulty to understand the state of play as regards e-Accessibility.

It must be noted that the network approach has been most useful in helping us to uncover resources that we would not otherwise have access to or even knowledge about. Some of this information is country specific, and represents pro-activeness on the part of the eAccess+ members (e.g. Dutch information in Wave 1, The Netherlands is actively participating in Wave 2) as well as information from partners whose organizations are European wide, e.g. AGE, who directed us to information from France - a country that is not represented in the eAccess+ network.
4 Analysis of current situation in eAccessibility of SSTs

4.1 Introduction

In this chapter we analyse our findings from various activities in order to develop a rich understanding of the current situation regarding eAccessibility in the SST industries and in SST deployment.

In particular, we wanted to gain deeper insights into the way eAccessibility is viewed by those involved in the SST industries. We wanted to understand more deeply not just the practices but also the attitudes and the beliefs held by those who are working in the various SST industries, whom we will term “suppliers”.

We also carried out activities, such as the large focus group and some interviews specifically aimed at deployers or clients. By clients, we mean people and organizations who deploy SSTs. This was done to understand something of the nature of the situation on the “demand” side of the equation.

In the sections below we present our findings. We begin with the analysis of the stakeholder interviews. In particular, we highlight issues on the level of awareness of eAccessibility, and the obstacles there are to the take-up of eAccessibility. We set this against an overview of the SST industries, in order to better understand how its characteristics may impact awareness and take-up.

The desired result of this analysis to reach an understanding of the situation that will lead us to formulate a set of recommendations for further interventions to improve eAccessibility of SSTs in the EU and elsewhere.

4.2 Analysis of stakeholder interviews

Altogether 22 interviews were undertaken. Of these, 12 were carried out with industry representatives at Kiosk London (see section 2.3, above). Of the others, they were variously carried during on site visits to the company, by phone and email. 20 are with suppliers of SST related material, and 2 interviews are with deployers of SSTs.

The numbers of interviewees can be further broken down into type of SST supplier or deployer, as shown in Table 1, below.
Table 4.1: Breakdown of Interviewees by type of stakeholder

<table>
<thead>
<tr>
<th>Type of stakeholder</th>
<th>Breakdown in our sample of interviewees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suppliers of:</td>
<td></td>
</tr>
<tr>
<td>Whole solutions</td>
<td>10</td>
</tr>
<tr>
<td>Components/software</td>
<td>9</td>
</tr>
<tr>
<td>Service/maintenance</td>
<td>1</td>
</tr>
<tr>
<td>Deployers</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>1</td>
</tr>
<tr>
<td>Public authorities</td>
<td>1</td>
</tr>
</tbody>
</table>

A summary of all the data from the interviews is provided in tabular form in Appendix 7.

Looking at the data collected, a number of patterns and themes presented themselves. The first theme concerns the degrees of awareness about accessibility and eAccessibility in companies. The second theme concerns the perception of eAccessibility as an expensive add-on, and not profitable, while a third theme was that of repeated requests for clear guidelines.

As a note on methodology, it is worthwhile to point out that it would not really have been feasible to collect this data regarding the lack of awareness amongst companies in any other way than at exhibitions such as Kiosk Europe and Kiosk London. It was the only way to approach companies, who would not have responded to any other methods. On the other hand, the tools and methodology for collecting information and making contact that we have developed in eAccess+ have shown their usefulness. For example, two of the interviews were arranged after the visit to Kiosk Europe, one was arranged by email, and the other with a visit to the company offices, while another partner (Dundee) organized the interview with a large well known company with a proven track record in the industry, and arranged for a further activity (see Section on planned activities).

4.2.1 Degrees of Awareness about eAccessibility

The first theme to emerge was the high number of companies who were completely unaware of eAccessibility (9 out of 20), and unable to see how could apply to them. All of the 9 were companies interviewed at Kiosk London. These companies were nearly all component suppliers/software suppliers, who sell their products to integrator companies.
However, this was not the whole picture. With larger well established companies it was different. These companies are well aware and even leaders in eAccessibility. Amongst the total of 20 companies interviewed there were least 2 that were well aware of the range of eAccessibility issues and actively working on eAccessibility. These were:

- Company 3 is a leader in this area in their domain (banking and finance) and are even drivers of standardization in eAccessibility.

- Company 20 (with whom the interview took place on the company’s premises after initial contact at Kiosk Europe) showed they were well of eAccessibility as well as issues of physical accessibility. They were aware of the needs of blind users, and ways to design for them (user testing with prototypes, etc).

A further dimension to the eAccessibility awareness theme was that some companies, while showing some awareness of eAccessibility, do not appear to know much more beyond the basics of physical accessibility.

- Companies 13 and 15 explained that their approach to designing for eAccessibility is based on CAD (Computer Aided Design) models, which is useful for the physical properties of height and reach.
- Company 14 referred to eAccessibility as being ergonomics and not having sufficient anthropomorphic data to run the models.
- Finally, Company 2 also noted that it would be a good idea to have some kind of accessibility certification for SSTs, implying physical accessibility.

4.2.2 Perceived High Cost of eAccessibility

The second theme of the perceived cost of eAccessibility emerged in interviews with four companies:

- Company 13 (a U.S. based company) has tried to promote eAccessibility to give themselves a competitive edge, has published white papers advertising its expertise in this area, yet is desperate for any information showing eAccessibility gives good return on investment (ROI).

- Companies 6, 7, and 9, all felt that the costs of including eAccessibility are an extra expense and that this must be borne by the clients.
Company 3 noted that in spite of all the work in the area, the biggest problem was the business case for eAccessibility.

As a corollary to this theme, Company 4 felt that it is a small market and they are a small company, implying that they do not have the resources and nor do they think it is possible to invest in this area without clear guidelines.

4.2.3 The need for clear guidelines

This brings us to the third theme. This was the request for clear guidelines which came up many times, reflecting two complimentary points of view: “tell us what to do and we will do it” and “we know we don’t know”. This reflected both lack of knowledge but also difficulty to take user needs and deployer requirements and turn them into SST specifications. For example:

- Company 2 (a European based company) noted it was difficult to get a clear idea of needs, beyond ergonomic metrics and wanted guidelines on this
- Company 1 (also European based) felt that eAccessibility is too open-ended, clients don’t know what they want
- Company 4 (also European based) has successfully won tenders for supply accessible SSTs, but does not have a good understanding of what eAccessibility is beyond physical attributes, and would like to have more information

4.2.4 Discussion

The information analysed from the interviews was extremely useful. It pointed to new areas of use for eAccessibility, e.g. low literacy. At the same time it showed clearly that there needs to be considerable very basic awareness raising activities for most of the SST industries in order for them to understand the importance of eAccessibility. This includes the problems that they will encounter if they continue with a lack of attention to eAccessibility. It also clearly showed us that we must find arguments and language that are relevant to them. The next section gives information about the current situation in the SST industries, and how this might impact eAccessibility concerns.

4.3 The SST Industries

There are five major points to be made in connection with the SST connected industries.
4.3.1 The SST industries are highly fragmented

The SST connected industries include companies with a wide variety of skills and interests. Many of these, because they supply components or software to integrator companies, do not come into contact with end users of SSTs, hence, they do not believe that they should be worried about end users at all, let alone, worry about eAccessibility.

At least six different types of company can be distinguished:

- **Kiosk Component Resale**: These companies are outsourcing organizations who import or procure pieces of hardware for resale.
- **Kiosk Component Manufacturing**: These companies make individual components, such as chip and pin readers, RFID readers and keypads.
- **Kiosk Framing Manufacturing**: A large number of companies were present at the Kiosk Europe and Kiosk London exhibitions that provide aesthetically designed, or functionally designed casings for different types of SST related computing hardware. There were a number of companies selling housing for iPads and tablet computers to be used in kiosks.
- **Kiosk Middleware Layer Software**: These companies produce either authentication software or security software.
- **Kiosk Design Manufacturing**: These companies design complete bespoke solutions for organizations on demand. Most designs are customized through 3D modelling software and the produced as one-off products.
- **Kiosk Service**: This appears to be a new market that is emerging. After the Kiosk is sold and installed, these companies contract to maintain the machines’ life.

4.3.2 The industry follows the trend in modularity

Suppliers of SSTs no longer necessarily offer monolithic machines as was the tendency in the past, but allow the client to choose to include or discard functionalities. For instance, the client may choose to purchase and deploy an SST without a credit card reader, if they judge that their end user group do not use credit card users. The impact on the end users was very evident in the case study of a set of DVD rental machines studied by students at the University of the Aegean. All the SSTs were made by the same manufacturer, all were deployed by the same DVD rental franchise, but each machine was different in functionality and in look and feel, severely violating the usability principle of consistency (Shneiderman and Plaisant, 2005). Some users are able to adapt, but most, especially older and visually impaired users get confused.
4.3.3 The SST industries are in a race to keep up with the latest technology

As with most modern technological industries, the need to keep abreast of the latest technologies is a dominant activity in the SST industries. There are two main motives than can be distinguished.

The first is to make the machines multi-functional, so that users can carry out several types of transactions with one machine, thus making the machine more profitable. The other is to deploy more machines and services and lower cost machines.

Some of the uses of new technologies are:
- use of smart phones and other personal portable devices to interact with SSTs, QR codes, etc
- gesture based interaction: using cameras to track user movements, users interact by pointing, waving, etc. and there is no contact with the SST machine
- interaction with 3D displays: users see display in 3D, either on special screens or by using special glasses
- body scanning devices: for instance SST mirrors that scan the images of the user and send them over networks to remote viewers

As can be understood, some of these technologies, if they are not implemented in an accessibility sensitive way, will leave out key sections of the population.

4.3.4 The boundaries between the SST industries and other industries are blurring

SSTs use much of the same technology as digital signage: large touch screens; cameras and projectors; remote monitoring software; and rely on access to the internet. Driven by the needs noted above, to make their machines multi-functional and profitable, SST suppliers, in some cases, feature extra screens above the machines to act as digital signage and offer advertising space. The advertising messages displayed can be customized to the current user. Difficulties for users to distinguish what is part of their task and what is outside the task can become more difficult when these are used. Students of the University of the Aegean noticed users pressing on the display of advertisement instead of the screen of the SST.

The SST industries are tightly aligned with companies that do business on the web, since they can act as distributors of tangible goods, such as food, which can be purchased online, and collected at the SST. In alternative scenarios they can act as
collectors. For instance, e-tickets or such as the Oyster Card in the London Transport system\textsuperscript{20} or e-money systems\textsuperscript{21} can be used at an SST.

As can be understood, the definition of what is and what is not an SST is already difficult, and will become more so.

4.4 \textbf{Emergent themes from the whole set of Wave1 activities}

In this section, we attempt to draw together the themes already set out.

4.4.1 \textbf{Awareness of eAccessibility in the SST Industries}

From talking with personnel from the SST industries and interviewing stakeholders who were from these industries, it was clear that suppliers of components did not appear to be interested in end users. For these groups, their focus is on supplying components and integrators, even when the output of their components, for instance, printed tickets, are delivered to end users.

There was more interest in eAccessibility from designers of integrated and full systems, perhaps because of legislation and procurement issues. However, the representatives at the two trade shows did not feel they had the expertise to answer questions about the design and sales of their products in terms of eAccessibility. Thus, it does not appear that they see eAccessibility as a “selling feature”. Nor are end users consulted in the design processes.

In fact, the whole value chain of SST development showed a lack of sustained or “through life” in relation to eAccessibility. Component manufacturers seem unaware of eAccessibility issues, leaving kiosk designers to work with components that they hope are accessible. Then, after deployment, neither the kiosk designers nor their partners have long-term engagement with clients regarding accessibility. If an accessibility problem was to emerge after installation occurs, it is unclear that anyone would be equipped to deal with it, or indeed if they would feel accountable and responsible for the problem.

This view was confirmed by interviews with deployers of machines, who in interviews explained that they were not consulted before purchase, or did not have processes in place to check that ensured that purchased equipment was accessible.

Finally, even if there was some understanding of physical accessibility, there was very little evidence for an understanding of eAccessibility.

\textsuperscript{20} http://en.wikipedia.org/wiki/Oyster_card
\textsuperscript{21} http://en.wikipedia.org/wiki/Electronic_money
4.4.2 Impact of SSTs being a highly fragmented industry on eAccessibility

We gained a good understanding of the composition of the SST industries, component (or “niche”) suppliers and whole solutions (“integrators”) providing complete solutions. Also noticed were the missing links in the eAccessibility value chain. Namely, that once the machines have been designed and delivered, the problems with accessibility are then considered to be the responsibility of deployers. The suppliers may sometimes do no more on site than to deliver the machine and connect it to a power source. At the very simplest level, information from the student projects at the University of the Aegean, indicated that accessibility problems were compounded not just by the machine per se, but by the situating of the machines in places where accessibility was compromised in terms of obstructions in the built environment, exposure to loud levels of noise, or bright sunlight, etc. When questioned by the students, the deployers complained they were given no help or guidance on such issues.

However, it appears that the niche suppliers, because they do not come into contact with end users, do not appear to have thought about the possible impact their products might have on end users nor any responsibility towards them. Yet this is not the case. For example, at Kiosk Europe, the eAccess+ members pointed out to the representative of a company displaying machines for queue management, that his company might like to think about requiring the printing component provider companies to support print larger printouts. We pointed out that this would be useful for many customers, and that the small print on the machine which was displayed on their stand could be enlarged without having to change the width of the paper roll, which is typically 60mm or 80mm, since there was more than adequate white space to the left and right of the printed area to enlarge the print. This could be done without using more paper (length of the roll) or increasing the costs and maintenance parameters of the current printer component. The company representative did not appear interested in such a possibility.

4.4.3 The low involvement of the SST industries with end users and usability of SSTs for end users

Generally, the whole industry does not seem overly concerned with end users, seeing it as the deployers’ responsibility. One exhibitor explained “we design what the client asks for, if they don’t ask for these features, we don’t supply them”. The subtext here implies that accessibility (in terms of extra equipment such as speakers or jacks for headphone input, supply of headphones, etc.) add to the cost of the machine, as well as the maintenance overhead (“one more opening for some joker to fill with chewing gum, or something else”). It is perhaps significant that there was only one talk scheduled at Kiosk Europe Open Forum on usability – and that did not take place.
4.7 Conclusions

There are several themes that came up and details have been presented above. However, there are two clear “take-home” messages that are directly supported by the activities carried out in Wave 1 of the WP3 work:

1. Developers of components and basic hardware/software for SSTs do not understand about eAccessibility, do not realize its importance and do not realize it is their problem

2. Deployers are very aware of the issues, and want to provide accessible SSTs and other technologies, but lack the tools to be able to give their requirements to industry

In the next chapter, we try to turn this knowledge about the problems and obstacles and into opportunities for effective ways of improving the situation.
5 Recommendations for further interventions to improve eAccessiblity of SSTs in the EU and beyond

Building on the analysis and conclusions of Chapter 4, we now offer a set of recommendations, with accompanying explanations, for our future work in this area. Further we note what steps have already been taken to implement these recommendations.

5.1 Recommendation 1: Discourse on eAccessiblity must be relevant for industry

Although it sounds obvious, it cannot be stated enough that the SST industries, as can be expected, are interested in selling SSTs and making profits from that activity. This means in our communications with them, we should tailor our discourse to industry concerns, such as the business case for eAccessiblity (return on investment, compliance with regulations, branding, customer loyalty, new business opportunities). That is, our messages must be oriented to ways of increasing revenue (by gaining more customers; by being seen to be socially responsible and ethically conscious), and/or not losing revenue (by producing products and services that are usable by a greater number of users; and/or that comply with legislation and standards).

Even the terminology “accessibility” and “eAccessiblity” is problematic for these industries, as it means variously access to machine parts for maintenance; access in the sense of positioning of SSTs (including allowing space for privacy). People we talked to at the trade fairs were clearly confused by the eAccessiblity concept and possibilities for SSTs. For example, an SST that sold tickets was also capable of displaying wayfinding information. The representative explained that in her view the SST was accessible because it could display routes suitable for wheelchair users. Another company explained that they had already worked on a tender to supply kiosks to local government. The brief was that the kiosks supply content (i.e. public planning policy documents) that would be accessible to users 24/7, therefore their SST was “accessible”. In American trade magazines on SSTs, the term “customer engagement” is used to describe getting customers to accept, use and prefer to use their machine/systems, and this might be an appropriate terminology to adopt to introduce accessibility to the SST industries in Europe.

5.1.1 Steps taken

eAccess+ Network members have already began work on this “appropriate discourse” approach by producing leaflets specifically relating to eAccessiblity and SSTs, and
intend to continue to produce other types of materials (videos etc.) in this style. As well, a paper to the Information Design conference has been submitted, in order to try to bring the weight of that community to the task, see section 7.3.16.

5.2 **Recommendation 2: Make contact with well established suppliers active in eAccessibility**

The eAccess+ Network should make contact with those suppliers who are active in the eAccessibility domain, for example, those working in ATM and payment machines. What we have understood is those suppliers who have a long established history in SSTs are able to support the design and development costs of providing eAccessible solutions. However, they maintain that they are not asked by the deployers to supply accessibility features. It would be beneficial to understand more about why this is so, and to also explore the different ways manufacturers and suppliers can bring their influence to bear on increasing eAccessibility in SSTs: standards, assisting and educating deployers, etc.

5.2.1 **Steps taken**

The eAccess+ has already planned a workshop on this topic, sponsored by NCR, a major player in the field (see section 7.3.10, below).

5.3 **Recommendation 3: Appropriate Guidance for deployers of SSTs**

Deployers of SSTs need guidance regarding eAccessibility. This might range from the responsibility they bear to comply with legislation, to an understanding of demographics and the numbers of population whom they exclude if they do not include accessibility features in the SSTs they purchase deploy, about tendering and procurement processes to very practical suggestions about situating the SSTs in the physical space so that they comply with the principle of size and space for use.

5.4 **Recommendation 4: Collect information about SST eAccessibility problems to be passed on industry**

There is currently very little information about the accessibility and eAccessibility of SSTs to provide to the different stakeholders in the SST industries. This would be in present day uses of SSTs. However, it must be possible to collect information which look to future uses of SSTs, to prevent inaccessibility being designed in.
5.4.1 **Steps taken**

An eAccess+ Network activity is planned with disabled and older people to report problems with specific SSTs that they encounter in their daily lives, see section 7.3.22.

5.5 **Recommendation 5: Better target our efforts within the industry**

Now that we have a clearer understanding of who should be our target groups within the SST industries, and their attitudes towards accessibility. We can better tailor our outreach, in particular to:

- integrators: make them aware their responsibility to deployers to offer them packages inclusive of accessibility options, and see this as a business opportunity.
- component suppliers: demonstrate how their products could be marketed to show that they could offer significant advantage to end users with concrete examples that are easy to implement and do not increase costs or require substantial redesign.

5.6 **Recommendation 6: Raise the level of awareness from physical accessibility to eAccessibility**

Our findings show that problems of physical accessibility, which are easy to demonstrate and to visualize, are understood reasonably well by the SST industries. We have very little evidence that accessibility of screen displays, interaction menus, etc. and other eAccessibility issues are understood or being considered. To raise the level of awareness, we must give clear examples of the way we use accessibility, and by extension, e-accessibility. Such examples might be those of the requirements of low literacy level users for spoken instructions and /or multilingual instructions.

5.7 **Recommendation 7: Work to change the perception in the industry that end users are the responsibility of the deployers**

We would need to better understand this perception from the suppliers that end users are only the responsibility of the deployers, and work with deployers to gain insight into their needs.

5.7.1 **Steps taken**

In our next wave we plan to interview more deployer stakeholders, and to find more out about the different domains in which SSTs are deployed: specifically, e government;
finance and banking; travel and tourism; cultural heritage, see Chapter 7 for a range of such activities.

Some of the activities have received more attention than others in the planning stage. For instance, below, some of the planning ideas for the appropriate discourse are given.

5.8 Planning for Recommendation 1 “Revelant discourse”

Some of the pertinent information strategies the eAccess+ Network will use:

5.8.1 Inform suppliers and manufacturers about legislation

What exists, when it comes into force, who it affects, and what court cases are currently in litigation. It appears that what happens in one sector (e.g. air travel) does not appear to influence manufacturers, because they do not think it will affect them. They should be informed that in fact, this may no longer be the case.

5.8.2 Explain the importance of designing in eAccessibility

Inform them that they should act in design stage before roll out, otherwise it will be much more expensive. We can use arguments from other accessibility experts who are already talking to industry. As an example:

“The main problem is that many are taking the "let's wait and see what happens" approach — waiting until they are required by law to implement accessibility features —He said going that route is a huge mistake. "If you just start planning for it and rolling it in now, you are going to be much better off than if you wait until you are forced to do it,"[...]. "It's going to be much more expensive if you wait. You are better off getting in front of it now." (Butler, 2011)

5.8.3 eAccessibility to keep customers (customer loyalty scenario)

A company wants to tender for a project offered by a customer company. The tender asks for eAccessibility. Thus the company needs to add this to its portfolio to participate in the tender and not lose this business from customer. (KEBA AG example)

5.8.4 Demonstrate the problems

Explain as graphically as possible the problems that old, but also new types of interface, can cause to some groups. Explain that unless the lack of accessibility and usability design is addressed then the usage of the machine will not realize its expected or hoped-for potential.
5.8.5 New types of interaction, if designed for all, can offer benefits for all

For instance, contactless interaction ("indirect action") with SSTs which is being investigated by the project will also show the industry that this alternative, which they already see as beneficial for the industry in terms of less opportunity for vandalism and generally less wear and tear, fewer components, (no printer), and less interaction time per customer, is also a way to offer an alternative for those groups of people for whom current ways of interacting with machines are comfortable, or even impossible, for instance people with no hands.

It must however be emphasized that this does not mean the problem of tackling e-accessibility is removed, rather it offers an alternative way of interaction, that is useful to all, in an industry where few alternative interaction styles are allowed.

Also, the difficulties must not be transferred to other parts of the interaction. For instance, if the users are not proficient in online transactions, if they do not have smart phones or devices that are capable of working with this technology, if they do not understand why they cannot just hand over hard cash and purchase the items they require. Such difficulties will be shared by older and disabled people, people from other cultures or low literacy, and people without access to expensive up-to-date technology and/or sufficient knowledge and trust in technology to use it for these purposes.

5.9 Summary: the rationale for these types of interventions

The eAccess+ network represents a wide variety of organizations, both in background and in geographical location. It is uniquely placed to carry out this wide variety of interventions, in order to improve the situation of SSTs and accessibility, not just with the present day machines, but also with future devices.
6 Relevant information and contributions to the eACCESS+ HUB

The work by the eAccess+ WP3 partners on the HUB for this work package followed two directions: that of devising a information architecture for the content, and that of populating the HUB with pointers to relevant information.

6.1 Structure of information for SSTs on the HUB

A structure for information about SSTs was developed for the HUB. It is not enough to collect and display or point to information, the content must be organised into a suitable information architecture so that users can find, retrieve and use it, and not overlook content that is important to them.

However, in the fragmented area that is SSTs, where there is no agreed naming convention for the SSTs themselves, and where it appears, little notice, except for a few exceptions, is taken of eAccessibility, it is necessary to include even awareness raising information, like photographs of violations, bad as well as good practices, not to mention a glossary. This is in stark contrast to an area like for instance web accessibility, which is able to use the structure of a FAQ (Frequently Asked Questions) to organise the content and drive the structure.

Here we chose to help users by keeping the domain, or areas of use, and then a second grouping of topics of importance. Of course, the two structures are cross referenced, so that the path through the information will lead the user to either of the structures. It is also important to keep the structure as simple as possible so that it can be visualised by users and remembered by them, so that they navigate in and around the structure (Morville and Rosenfield, 2006).

Areas of use:

- Banking and financial services
- Public transport
- Tourism and cultural heritage
- E-government

Topics of importance:
- Approaches to the eAccessibility of SSTs
- Standards and guidelines on the eAccessibility of SSTs
- Case studies on the accessibility of SSTs
• Legislation and policy

6.2 Contributions to SST information on the HUB

The contributions to the HUB, although not insignificant before the devising of the structure, have been more since the structure was put in place. This is a phenomenon in the area of work known as “user generated content” or UGC, commented upon by those working on wikis to share information (Holtzblatt et al, 2010; Jackson, 2010). Basically findings report the commonsensical understanding that as the amount of information scales up, contributions drop, as contributors search for appropriate places to put their material (Long, 2006).

Useful items such as a glossary of synonyms and abbreviations has also been provided. Here readers can see gathered in one place many of the terms (self service kiosk (SSKs), vending machine, public access terminals, public information terminal, self service check in, etc.; their accepted abbreviations, as well as industry terms Point of Sale (POS) electronic Point of Sale (ePOS) that are scattered throughout the literature and make both understanding and searching for information a more difficult task.

A further item is a set of guidelines for talking and writing about people with disabilities, this has equivalents in many languages (e.g. French, German, Austrian-German, Greek, Spanish).

Finally, continuing the theme of translations, the partners have undertaken to translate important contributions to the HUB into different languages, e.g. the Aegean has translated the CEUD guidelines into Greek.

One of our objectives is to also try to find more multimedia resources for the HUB to point to, e.g. video from on the design of accessible ATMs, and also visual material (e.g. photos, etc.), although we appreciate that these should be adequately described for HUB visitors with visual impairments.

Regarding the use of the HUB it is our understanding, based upon electronic portal research and the paradigm of “one stop shop” that the more the resources, the more likely it is for users return in the future.
7 Planning for Wave 2 (November 2011- end July 2012)

7.1 Introduction

In this section we briefly present the countries/network members who will be active in this next wave. Then we list our already planned range of activities to contact stakeholders, raise awareness of accessibility of SSTs. We expect that these activities besides the value they have of and in themselves, will also help us in our effort to further develop tools and resources to assist with the development of eAccessibility in the SST domain.

In order to bring the new wave countries on board, a series of phone conferences is planned between experienced Wave 1 and the new Wave 2 participants. In addition, there are several items that have already been started by partners (e.g. Linz and KEBA AG) as well as activities pinpointed by Wave 1 partners, that will be handed on to Wave 2 partners (e.g. the ERLEBNIS project, passed from partner Aegean to German speaking partners). Finally, the members will continue to capitalize on the Pan-European organizations that are part of the eAccess+ network.

7.2 Countries/network members involved in Wave2

The countries and partners for Wave 2, will be the five Wave 1 countries, plus 5 new countries with their relevant partners, as shown in Table 7.1, below.
Table 7.1: Wave 1 and Wave 2 countries and partners for the SST strand

<table>
<thead>
<tr>
<th>Country</th>
<th>eAccess+ partner</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wave 1</strong></td>
<td></td>
</tr>
<tr>
<td>Eire</td>
<td>CEUD/NDA</td>
</tr>
<tr>
<td>Greece</td>
<td>Aegean</td>
</tr>
<tr>
<td>Slovakia</td>
<td>TUKE</td>
</tr>
<tr>
<td>Sweden</td>
<td>SIAT</td>
</tr>
<tr>
<td>UK</td>
<td>York and Dundee</td>
</tr>
<tr>
<td><strong>Wave 2</strong></td>
<td></td>
</tr>
<tr>
<td>Austria</td>
<td>Linz</td>
</tr>
<tr>
<td>Denmark</td>
<td>Sensus</td>
</tr>
<tr>
<td>Germany</td>
<td>IN2</td>
</tr>
<tr>
<td>Italy</td>
<td>CNR, AIAS, AIE</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>Dedicon and HKU</td>
</tr>
</tbody>
</table>

It is also important to note the contributions from organizations that are Europe wide, such as those from ENAT and AGE.

### 7.3 Specific activities in Wave 2

A number of activities have already started or have been planned for Wave 2. They are listed below and will be fully reported on in the next deliverable (D3.3). They encompass talks and seminars; presentations and papers at conferences and trade fair activity, etc. as well as organization of workshops, as has been described in section on future interventions

#### 7.3.1 Seminar on digital accessibility in museums, Metropolitan Museum of Art, New York, 14th November 2011

**Partner: York**

A one day seminar will be held at the Metropolitan Museum of Art in New York on digital accessibility in museums, with speakers from the USA, Canada and Europe. The
eAccess+ Network and its relevance for the tourism and cultural heritage sector will be presented.

7.3.2 International Seminar on Digital Access for people with a disability to the 21st century Museums, Smithsonian Institute, Washington DC, 15th November 2011
Partner: York
A one day seminar will be held at the Smithsonian Institute in Washington DC on digital accessibility in museums, with speakers from the USA, Canada and Europe. The eAccess+ Network and its relevance for the tourism and cultural heritage sector will be presented.

7.3.3 Annual Conference of the International Museum Computer Network, Atlanta, 16 – 18th November 2011
Partner: York
A symposium will be held at the International Museum Computer Network Conference on digital accessibility in museums, with speakers from the USA, Canada and Europe. The eAccess+ Network and its relevance for the tourism and cultural heritage sector will be presented.

7.3.4 International Council of Museums, Colloquium on “More Accessible Museums” Brussels 2011
Partner: York
A two day colloquium will be held under the auspices of the International Council of Museums on “More accessible museums”. The eAccess+ Network and its relevance for the tourism and cultural heritage sector will be presented. In addition, eAccess+ has been invited to publish an article in the “Vie des Musees”, an ICOM publication.

7.3.5 Annual Jodi Mattes Awards for Accessible Digital Culture, Swansea, 1st December 2011
Partner: York
7.3.6 **DISH 2011: Digital Information in Heritage Conference, Rotterdam, the Netherlands, 7 – 9 December 2011**

**Partners:** York and SBA

---

7.3.7 **MuseumNext, Barcelona, May 23 – 25 202**

**Partners:** York and SBA

---

7.3.8 **ECSITE 2012, May/June 2012, Toulouse**

**Partner:** York, Aegean

eAccess+ will make a proposal for a session on eAccessibility for the ECSITE 2012 Annual Conference, to be held in Toulouse, France.

---

7.3.9 **Meeting with Northern Rail, UK, December 2012**

**Partner:** York

York has arranged a meeting with Northern Rail, one of the major rail companies in the UK to discuss eAccessibility issues (digital signage, ticketing machines etc).

---

7.3.10 **Workshop: Accessibility of self-service terminals and related technologies TBA Spring 2012**

**Partner:** Aegean, Dundee, York

Plans are underway to organize an eAccess+ workshop, sponsored by NCR, discussing methods for accessible ATM/SST design and development. This will include information exchange on European legislation and regulation in the area of eAccessibility and ATMs, procurement and accessibility, and in identifying eAccessibility research agenda in the area of ATMs/SSTs. This is likely to take place in May 2012 at a location in the UK, possibly Dundee.

---

7.3.11 **Interview with Accessibility Manager of Supermarket Chain Sainsbury’s**

**Partner:** Dundee

Interview with Accessibility Manager at Sainsbury’s to explore their activities in thinking about eAccessibility as part of their SST strategy.
7.3.12 **Article for Kiosk Europe magazine**

**Partner: Aegean**
This newsletter is distributed free of charge in print and online. We will produce an article about e-Accessibility for publication here.

7.3.13 **Presence at Kiosk Europe 2012, Berlin**

**Partners: York, Aegean, possibly others**
To follow on the work from 2011, we will try to present a talk in the Open Forum. At Kiosk Europe all talks were well attended over the three days of the event.

7.3.14 **Presence at Kiosk London 2012**

**Partners: Dundee, York**
It is not yet clear whether the organisers will hold this event in 2012, the 2011 event was the first time it had been held. If it is held, then eAccess+ will attend, and offer a talk or seminar.

7.3.15 **Presence at the conferences organised in the framework of the upcoming European Year 2012**

**Partner: AGE Platform Europe**

AGE will continue to coordinate the Stakeholders Coalition for the European Year 2012, whose focus is on the promotion of active ageing and independent living. This will be the occasion to encourage policy makers and other stakeholders to take action in the field of e-accessibility.

On 25 January 2012, AGE Secretary General will also be part of a panel on ICT and ageing in the Computer Privacy and Data Protection Conference held in Brussels, she will raise the issue of e- and web accessibility. For more information on the conference, please see here: [http://www.cpdpconferences.org/privacyaward.html](http://www.cpdpconferences.org/privacyaward.html).

There will also be several additional conferences where it will be possible to promote the network and its work.

7.3.16 **Paper proposal for Information Design Conference April 2012**

**Partner: Aegean**
Proposed Paper Title: “Accessible Content for SSTs”
Information Design represents a fairly new grouping of practitioners and researchers who work on topics as varied as design of information for pharmaceutical packaging and wayfinding signage and systems. As such they are extremely receptive to areas such as content design for information display, and have asked for papers treating inclusive design of information. We see this as an important group to talk with and bring up to date with the needs of accessible content for SSTs, etc.

7.3.17 **Paper proposal for Universal Design 2012 Oslo, June 2012**

**Partner: Aegean, York**

The theme of the conference is public spaces, and self service is one of the designated topics. Our paper proposal will present the results of eAccess+ in the area of SSTs as they have emerged from Wave 1. The paper will seek from the audience further engagement as user organizations, as well as suppliers and deployers of SSTs.

7.3.18 **Paper for Design Research Society, July 2012**

**Partner: Aegean**

Proposed Paper Title: Design Education: Accessibility and e-Accessibility of SSTs. Paper reports on the project work done by students on research and designing solutions for accessible SSTs and the pedagogical opportunities afforded by the exercise.

7.3.19 **Paper proposal/session proposal for ICCHP 2012 July 2012 (Aegean and others)**

**Partners: Lead Aegean, plus other partners**

Proposed title “Designing e-Accessible SSTs”. The aim to give an overview the area and to highlight the needs and areas for future work, in order to bring the varied capacities of the audiences of ICCHP to investigate this area.

7.3.20 **Contact ANEC (The European Consumer Voice in Standardisation)**

**Partner: Aegean**

Contact will be made with ANEC to coordinate work on SSTs.

7.3.21 **Contact with project APSIS4all (Accessible Personalised Services In Public Digital Terminals for all)**

**Partner: Aegean**
A new project (started April 2011, near to the beginning of our wave 1) which concentrates on ATMs and ticket vending machines (TVMs). We believe that in Wave 2 both their and our work will have progressed sufficiently for us to be able to share results and network efficiently with them.

7.3.22 Collect real life examples of SST e-accessibility problems

Partners: ALL
Building upon our network members and our networking with user organizations, we will start to collect real life examples of SST eAccessibility problems, particularly those with interaction with content that are less well understood than the ergonomic dimensions type of problems (i.e. process rather than properties) using the method of crowd sourcing.

8 Conclusions

This document provided an overview of the activities carried during the first wave of the eACCESS+ Network, including information gathered, events attended and stakeholders contacted/targeted.

This document highlights the main reasons uncovered so far that hinder the implementation and take-up of accessible self service, together with the stakeholders’ needs.
The document also introduces some of the existing solutions and best practices identified.

Some of main conclusions from the feedback gathered from stakeholders during Wave 1 are:

- Most manufacturers have very little awareness of accessibility issues.
- Those that do, do not view it as core business but as an expensive add-on that gets passed to customers.
- Those who are aware are mostly focused on physical accessibility, e.g. height and space and size for approach for users with wheelchairs, although a few mentioned input mechanisms, and display constraints
- Some market this as ADA compliant.
- Most often do not ask or consult users
- Use of CAD model to check properties such as height, reach.

Deliverable 3.2
Those interviewed were not always interested in finding out more. Of those that were, some wanted information on ROI, others wanted more guidance on what is meant by accessibility.

Most wanted stand alone materials online that they could consult.

Suppliers of components, software and service and maintenance providers who were interviewed do not believe their products/services have any role to play in accessibility whatsoever: “not our responsibility”

Clients of kiosks and kiosks solutions:
- are aware of the needs of their users,
- not able to pass these needs to departments that procure,

no mechanisms in place to check accessibility features of procured products,

During the Wave II of the eACCESS+ project, WP3 will disseminate in EU the results obtained from the already conducted consultations with stakeholders. They will attempt to fill the knowledge gaps identified and to provide the information requested. They will continue with basic awareness raising activities. In particular, besides the physical access issues, we want to highlight the e-Accessibility issues: that is, the new challenges that technologies such as gesture based interfaces, and iconic interfaces that some manufacturers and suppliers are thinking to include in SSTs will pose for users who are older, or with disabilities, including those such as low literacy, as well as for those who do not have access to personal devices such as smart phones.

In addition, the study of the situation in the domains of accessible self service terminals will be extended to 5 more EU countries, namely Austria, Denmark, Germany, Italy and The Netherlands and other countries where we can obtain contacts and information via our networking activities or be supported by eAccess+ members who are part of pan-European organizations.

In Wave II the information about WP3 topics set up in the eACCESS+ HUB will be further developed, including the information related to the 5 new countries targeted in this period.
9 References


10 APPENDICES

Appendix 1: eAccess+ flyer for self-service terminals sector

Are you still ignoring 10% of the population’s needs for Design for All?
Self service terminals and kiosks should...

accommodate a people with a wide range of preferences and abilities

be useful and marketable to people with diverse abilities

be easy to understand, regardless of user's experience, knowledge or language skills

be easy to use efficiently, comfortably and with minimum fatigue by all users

have easy to perceive information

provide appropriate space for approach, reach and manipulation, regardless of user’s size, posture or mobility

minimize hazards and adverse consequences of unintended actions

more information at www.eaccessplus.eu
Appendix 2: Report from Kiosk Europe

Report from Kiosk Europe 24-26 May 2011
Helen Petrie (York) and Jenny Darzentas (Aegean)

Summary:
This report covers 5 main points:

1. The contacts made, which turned out to be just one of five results from the visit and our activities there. The others were:
2. Our understanding of the types of companies seen at the event; (the industry ‘players’)
3. What we did (talked to representatives, asked questions and listened to talks)
4. The lessons learnt from the experience of trying to make contacts for eAccess+, (we were academics at a business trade show); and
5. Overall, what we gained from it; and some implications from this industry for the whole of eAccess+

1. Contacts Made (see table at end of report).

2. Our understanding of the types of companies seen at the event; (the industry ‘players’)
   a. Many exhibitors were components’ manufacturers. Many of these components are not part of the end user interaction (e.g. components for thermal printers) This meant that these exhibitors were expecting to make contact and do business with manufacturers of overall solutions who would be interested in their products’ qualities (e.g. size, robustness, reliability, etc). Therefore they could not easily engage with us on issues of usability/accessibility. We did try asking one exhibitor about making the print on the tickets larger (since there was plenty of space), but this was not a fruitful line of enquiry. Another set of exhibitors were in the business of maintaining the machines. We talked with the representative of one such company, who was very supportive, but could not relate her company’s core business to our concerns
   b. Other companies were representing the Digital Signage (DS)industry, rather than the Kiosk industry
   c. Another group that play a role in both the DS and the Kiosk industry are those who produce software for the kiosks and signs. This software is often custom made dedicated kiosk software, although it is possible to find applications running on well known common operating systems. It was explained to us by one such company that they have to “hide” the OS, to prevent users adjusting with the interface.
d. Notes about the event.

I. It seems that this is a fairly new event, since DS is a very new sector, dating from 2004-5. The event was more Digital Signage (DS) than Kiosk (however these industries share products and technologies, so potentially DS is interesting for eAccess+). Although Digital Signage presently is not very interactive, but refers to displays that advertise goods and services, there were several technologies on the stands promoting more interactivity and integration with kiosks. For instance, kiosks that have a display screen place above the machine, or even advertisements on the screen of the kiosk, that users can touch or swipe to get more information. We believe that in the future there will be more overlaps between the two sectors, and as they become more interactive, more work to be done to introduce eAccessibility.

II. There will be a Kiosk London event in October 2011 and another Kiosk Europe in Berlin in 2012. Knowing what we now know, we plan to attend the London event, and perhaps try to have a ‘presence’ e.g. give a talk at the Berlin event. (We noticed that speakers in Essen were not all represented with exhibition booths, so hopefully there will be no pressure to pay high exhibition fees to give a talk?). The talks that took place all during the three days of the exhibition were always fairly full, but the subject would have to be well tuned to the audience’s interests. (see section 4 below)

III. In the talks “seminars” there was no emphasis on usability. A scheduled talk about usability did not take place.

3. Activities at Kiosk Europe (Talking with representatives /Talks attended)

1. Despite our being at the event for 3 days, and the relatively large number of exhibitors, the actual number of contacts is small (10 contacts, of which 2 definite follow-ups, 1 possible case study, 2 “maybe interested”, 2 “no”s, and 1 company we revisited to speak to appropriate representative (product manager) who was politely interested). A further 2 contacts were targeted, both working on research on the acceptability of kiosks. The first was working on a privately funded project on behalf of a large consortium of manufacturers, while the second was working for his company and the products it represents. (See table at the end for details). It has to be said that many of the stands were for component manufacturers and/or suppliers and more than half of all the booths were representatives of DS related companies and DS display technologies (screens, orbs, cameras and projection, etc.). This was interesting, but we did not approach them, as it was beyond the brief we have in the network, and perhaps not yet a mature market. We talked with other representatives than those listed in the contacts and left our cards and leaflets, but there was no real interest shown by them or they could not
make the connection to their company’s core interests (e.g. Pitney Bowes, offering maintenance and technical services) so we not count them as contacts. Our more useful interactions are listed in the contact table at the end of this report.

2. Besides talking with representatives, we also attended the seminar programme, which ran each day. Over half of the talks were attended, but only 5 were finally of interest (1 with strong follow-up). The programme had quite a few changes, so some talks we had targeted did not take place, while others where organized with very short notice.

2.1. Talks attended and of interest to eAccess+:
   i. *Designing Innovations*; (talked about DS but discussed interactive DS, gave many example using devices and social media)
   ii. *Context-aware Digital Signage: Using Sensors to Understand the Audience*, (explained how DS is being designed to be customized to audience, could perhaps be used to customize kiosks –but would be expensive and probably not worth ROI for deployer)
   iii. *Kiosks in a connected world* (Kodak representative discussed the user research carried out for self serve printing kiosks which are a new way for traditional company to find new sources of income in the face of new technologies (digital photography) that have undercut its basic business. Part of his talk focused on the acceptability/usability of kiosks)
   iv. *Content Philosophy* (v. *ERLEBNIS Automat project presentation* (not advertised on programme). A presentation detailing a survey on the acceptability of self service kiosks carried out by Fraunhofer Stuttgart IAO commissioned by large consortium of kiosk manufacturers and suppliers. The manufacturers are interested in future trends, and so the study is oriented to trying to predict this, and what the users want and will accept. The work has survey users and trends in technology. No older or disabled users have been consulted [http://www.iao.fraunhofer.de/lang-en/component/content/article/120-forschung/431-erlebnis-automat.html](http://www.iao.fraunhofer.de/lang-en/component/content/article/120-forschung/431-erlebnis-automat.html). (in German)

2.2. Talks of potential interest that did not take place:

   2.2.1. *Usability workshop [...] focusing on the growth of e-mobility and charging station markets and the potential it holds for the Self service and DS industry*

3. The importance of attending the talks was not just contacts, but also to understand what are the main interests of the kiosk community. Repeatedly themes that come up were:
   o Ways to increase revenue,
   o Creating new uses for the technology (e.g. a kiosk with a smart mirror in front of which people try on clothes and the image is relayed via social
media to friends so that they can comment on whether or not it suits the wearer (the tweet mirror)

- Staying ahead with the technology (particularly device enabled kiosk interaction (e.g. using smart phones to scan Q codes, etc.) and using social networks and social media),
- Reliability of the machines,
- Compatibility versus creating “locked in communities” Several speakers discussed the merits of loyalty systems (e.g. swipe cards) that would recognize users (and generate knowledge for the deployer) against the expense of administering these systems, and loss of “universality” etc.

This understanding will be useful for us to see how we can best orient our information to appeal to them and “talk their talk”. This will be very important in following up contacts, and publishing within the kiosk community, and in general our effort to bring accessibility into their interests.

4. e-Accessibility and Trade Fairs: Lessons learnt.
The experience for academics to attract interest for a network project is not that common. Certainly the representatives we approached had clearly not encountered this kind of approach and treated us with some kind of anxiety in case we were “political activists”. Therefore some of the things we tried are detailed below for other partners in the next waves who may be undertaking this cross-sector activity for first time. When making contact with representatives of companies/exhibitors:

- Questions asked/strategies for explaining /about eAccess+
  - “Have you thought about disabled users?” (indicate something on product that might be difficult or inaccessible,
  - “Have you thought about including…?” (not too many suggestions).
- Points to get across:
  - Emphasise the numbers involved: we handed over leaflets asking “Are you ignoring 10% of population”, (designed by student from the Aegean), and on the 3rd and last day of the trade fair, it was noticed that exhibitors we had spoken with in the previous days, had still kept these handouts
  - Point out that Accessibility (and in particular e-Accessibility) does not just relate to the “ergonomics” aspect of the machine and its on-site location (e.g. conforming to the principle of “size and space for approach and height” and/or making machines ‘wheelchair friendly’), but also things like: screen visibility/content legibility/ use of alternative means of input and output/adequate time to interact, etc.
It was important not to overwhelm representative with information: even the term “accessibility” was not always readily understandable, since “accessible” in their environment refers to “easy access to parts” and is a maintenance and servicing concern.

Given the climate of corporate social responsibility, some exhibitors felt their products were being criticized, one exhibitor felt obliged to apologise for his company’s (Qbetter) lack of attention to accessibility.

- Having caught their attention (the 10% was a good point!) try to appeal to their interest in:
  - the practical usefulness of eAccess+: as a place for information sources and advice
  - the authority and prestige of eAccess+: funded by EU and a large network (24+ organizations)
- Collect business cards and company brochures. Try to pinpoint the name of the appropriate contact person and their coordinates for follow-up, rather than a department or the sales representative. By the same token give out business personal business cards. Follow up with email and phone calls.

  **Note:** not giving out a business card can be a subtle way for the representative to tell you s/he wants no further contact

5. The importance for the whole of the network: Kiosk Europe and eAccess+

For WP 3, the experience of Kiosk Europe gave us valuable information. This information will help us to plan the future work both with the industry and the in the design and use of the HUB. More specifically, it helped us to understand:

- the composition of the industry, (actors, roles and dependencies)
- the degree of the lack of awareness regarding accessibility and e-accessibility;
- what are their interests and thereby find the points to motivate them,
  - such as appeals to lost revenue e.g. “are you ignoring 10% of the population”
- how we should approach them in the future,
  - for instance. we need to do awareness raising, using arguments that are tuned to their needs
- what kind of materials we must ensure we include on the HUB in order to help them.
- etc.

However, the whole event, reinforced for us that many of the problems with present-day kiosks are to do with the information and communication technologies (ICTs) being
deployed, and much less with the “ergonomics” of the machines themselves. This was strongly evident in the DS business. Since Kiosk Europe was being twinned with Digital Signage at the event, we were able to obtain us good insights into the strong links between two industries (kiosks and digital signage) and to what they view as the motives that guide them and the challenges they face. The kiosk machines use their screen displays to repeat or reinforce messages and applications like wayfinding that are displayed on various types of digital signage (wall poster type, overhead type). This linkage will probably be the driver for new types of contactless or near field communication (NFC) technologies using mobile devices (ipads and tablets, smart phones, whether Apple or Android enabled). For instance, the display screen of a machine may be available on a user’s personal mobile device, and users will use the interface of the device to interact, rather than that of the machine. However, in terms of the content that is displayed, and even more when this content is interactive and dynamic, what is displayed on the signage seems set to repeat the mistakes that WCAG has fought so hard to correct in Web content, such as the reliance on graphics; problems with the legibility of content (small or difficult typefaces); the understandability of content (in terms of comprehension). The importance of, for instance, subtitling is generally overlooked.

We see that these industries (kiosks and DS) which are already merging will need to benefit from the whole of the eAccess+ network, and not just from one of the workpackages. As a result, all the workpackages of eAccess+ have much to offer to the kiosk community, and we must take this into account when setting up the hub materials and guiding the use of those materials.

The DS industry is very new, the kiosk industry is not aware of accessibility issues, except in a most basic sense. Thus we believe that both industries need to be made aware before retro designing makes it expensive. They can benefit from well targeted awareness raising and strong educational and training resources. Many of these resources exist, but may not appear relevant to the kiosk industry. Procurement, and in particular, public procurement can be instrumental in making the industry aware of the need for accessibility in the design of services, but there needs to be clear descriptions of what accessibility covers (i.e. not just ergonomic aspects of the machine, but the interaction concerns as well.) As our one supplier of whole machine solutions who had successfully tendered for and won a public procurement projects explained: “we do not know what it exactly means – ‘to be accessible’”. 

<table>
<thead>
<tr>
<th>Company name</th>
<th>Representative</th>
<th>Accessibility considered</th>
<th>Accessibility aware</th>
<th>Not our business, (components modules or maintenance)</th>
<th>Follow-up?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Name removed</td>
<td>Did not give business card</td>
<td>No</td>
<td>Explains they do it in other products (home automation, described customization), but have no plans here, but should!</td>
<td>Not our business, (components modules or maintenance)</td>
<td>Perhaps</td>
</tr>
<tr>
<td>2 Name removed</td>
<td>Card (wrote details) said he was personally interested</td>
<td>Explained kiosks with sound focused on user (as well as voice input?)</td>
<td>Yes, but not professionally</td>
<td>Wayfinding systems for hospitals need alternative means of communicating</td>
<td>Yes, showed genuine interest</td>
</tr>
<tr>
<td>3 Name removed</td>
<td>Card of Product manager given to us, did not speak to him, made several visits to the booth for this</td>
<td>Have it down on their literature (conforms to ADA legislation) but we did not see it demonstrated</td>
<td>Make a great deal of their CSR policy (so might be interested to follow up with eAccess+)</td>
<td>Have a child’s product, “rationale: to keep children occupied, while adults use kiosks” but we could see very apparent mismatches between age groups targeted in terms of software and styling</td>
<td>Spoke with product manager, they believe they have the problem under control (manufacture a machine that is compliant with ‘ergonomic’ size and space for wheelchair guidelines. Are open to more discussion</td>
</tr>
<tr>
<td>No</td>
<td>Name removed</td>
<td>Card</td>
<td>Will pass our literature on to Sales Dept</td>
<td>Core business kiosk (and other) modules (screens with computers in the backing of screens)</td>
<td>No</td>
</tr>
<tr>
<td>----</td>
<td>--------------</td>
<td>------</td>
<td>------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>-----</td>
</tr>
<tr>
<td>4</td>
<td>Name removed</td>
<td>No card</td>
<td>Representative did not make the connection between the software and the accessibility.</td>
<td>Aware of 508 regulations, but representative did not seem to think that the software was a problem, rather the ergonomics of the machines</td>
<td>No</td>
</tr>
<tr>
<td>5</td>
<td>Name removed</td>
<td>No card</td>
<td>Yes, but not in product, saw it as large letters, spacing etc</td>
<td>Core business, content design for digital signage and kiosk</td>
<td>Yes/perhaps</td>
</tr>
<tr>
<td>6</td>
<td>Name removed</td>
<td>Card</td>
<td>(“have delivered 80 units to European parliament, tendered to supply table kiosk for UK unemployment agencies)</td>
<td>Core business: whole kiosk design, the range can be seen on web site.</td>
<td>Yes, definitely</td>
</tr>
<tr>
<td>7</td>
<td>Name removed</td>
<td>Card as well as DVD with images</td>
<td>Yes, ADA aware</td>
<td>He asked for help regarding accessibility legislation</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Name</td>
<td>Card</td>
<td>Designer noted Yes</td>
<td>Tweet mirror, novel</td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Project on Technology and Acceptance</td>
<td>Focused on acceptance of SSTs and future trends (users surveyed did not include older and disabled users)</td>
<td>No, but see it as a natural extension of their work, if it suits the funders of the project (SST companies and deployers)</td>
<td>showed great interest in keeping in contact and sharing results, although some of their own results are business intelligence and not for public consumption</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>removed Privately commissioned (by large industry players)</td>
<td>already ability to make screen instructions larger</td>
<td>use of technology, in production, an interesting example of user centred design. The inventor of the business was quick to see advantages for visually sited users who would want help from sighted friends and family</td>
<td>Yes, as good case study?</td>
<td></td>
</tr>
</tbody>
</table>

(removed (interested in suggestions for making design accessible to different heights (e.g. children, wheelchairs users, tall people).
| Name removed | listened to talk entitled: *Kiosks in a connected world* | Usability was based on market surveys (young professional women ages 25-40) | Kodak moves from film and cameras to printing. Still a strong market and now led by SSTs. Know from experience documented in student project that there are significant usability and accessibility issues. The speaker seemed to have some awareness of this | Tried to meet him, but as speakers did not have exhibition stands were not able to find him to speak with him. Will try an email. |
Appendix 3: Kiosk London, 17th 18th October 2011

Partner: York

Introduction

The University of York, as representatives of the eAccess+ Network attended the Kiosk London event. Kiosk London is the premier event for Kiosk procurement sales in the UK. It is in association with the Kiosk Europe event which will be held in Berlin in 2012. Many of the stands and suppliers are from the United States, many of which will also be at the Kiosk Europe market. This event provided some useful information and contextualized some of the challenges of accessibility in the sector. This document details the results of 10 interviews with suppliers, those who provide public terminal kiosk equipment, and clients, those who purchase kiosk equipment.

Challenges and Lessons Learned

The first thing to note of Kiosk London is that it is a much smaller venue than originally expected. There were approximately 20-25 stalls for companies, with companies ranging from components for kiosks up to full kiosk design and deployment. There were very few visitors to the kiosk stalls. The companies represented can be broken down into the following categories:

Kiosk Component Resale: These companies are outsourcing organizations who import or procure pieces of hardware for resale.

Kiosk Component Manufacturing: These companies make individual components, such as chip and pin readers, RFID readers and keypads.

Kiosk Framing Manufacturing: A large number of companies were present that provide aesthetically designed, or functionally designed frames for different types of computing hardware. There was a non-trivial number of companies selling housing for iPads to be used as Kiosks.

Kiosk Middleware Layer Software: These companies produce either authentication software (e.g. LogMeIn) or security software (e.g. Kioware)

Kiosk Design Manufacturing: These companies design complete bespoke solutions for organizations on demand. Most designs are customized through 3D modelling software and the produced as one-off products. Very

Kiosk Service: This appears to be a new market that is emerging. Pitney Bowes, one of the largest companies in the world for post franking machines, has set themselves up as a servicing organization for other kiosk design and manufacturing firms. After the Kiosk is sold and installed, Pitney Bowes services the machines through-life.
Of those companies represented, a large number are from the United States, and the impression from the interviewer on site is that they are very unaware of European legislation in general, with most discussing the ADA.

An interesting challenge at this event is that many of the marketing and sales people present do not feel they have the expertise to answer questions about the design and sales of their products in terms of accessibility. This in itself speaks volumes about the maturity of accessibility in the marketplace of public access terminals. Many of the participants at the stalls were unwilling to commit time for even a short interview, even during slow times, and even after being told about the nature of eAccess+, including details about free resources.

**Interview Statistics**

12 interviews were undertaken onsite. The breakdown of interviewees were as follows:

- Kiosk Component Manufacturing: 5 interviews
- Kiosk Framing Manufacturing: 1 interview
- Kiosk Middleware Layer Software: 1 interview
- Kiosk Design Manufacturing: 4 interviews
- Kiosk Service: 1 interview

**Analysis**

For the interviews involving kiosk component manufacturing companies were not terribly productive or interesting. In each case, the interviewee stated that accessibility was not of interest to their sector and that instead it was the overall kiosk design manufacturers who needed to worry about these things. When asked about whether they would want more information about accessibility legislation, 4 of the 5 were uninterested in further information. One, Ingenico the manufacturer of Chip-and-pin technology was more aware of the need for accessibility and offered to put eAccess+ members in touch with design personnel.

There was one very interesting thing that came from these interviews with component manufacturers: they all felt that accessibility was the responsibility of kiosk design manufacturers, and that it had nothing to do with the components. One person went as far to say: “To be honest, I’m not that interested because it won’t get me sales of more products.”

The interview with a middleware manufacturer, and a software and hardware service provider were interesting in that they revealed that through-life support of kiosks in terms of accessibility is not being addressed. The salesperson at the middleware manufacturer had difficulty understanding why software for managing and monitoring kiosks remotely would need to be accessible. That salesperson repeatedly stated that because the users of the kiosks never saw the management software that it didn’t need
to be accessible. The software and hardware representative seemed to struggle with the question of what would happen if an accessibility problem was determined to be the cause of an issue that was being repeatedly serviced.

The interviews with designers of full kiosk installations were much more receptive to the idea of accessibility as being a concern. All four mentioned accessibility legislation, in particular the ADA in the States, as being a key concern. However, in each case users were not engaged with at any point in the design process. Instead, evaluation of accessibility was done by checklist against a 3D model. For example, the ADA guidelines for kiosks state that the kiosk must be no more than 54 inches from the ground. In 2013, that figure will change to 48 inches, and the company representative said that their processes were “well prepared” for such eventualities in that their designers would be prepared to check their models against the new measurements. With these interviewees, all mentioned that clients are concerned about legislation and as for it during procurement.

Discussion

The interviews paint an interesting picture of the value-chain of accessibility in kiosk manufacturing and deployment. There appears to be no management of what could be called “through-life” accessibility. Component manufacturers seem unaware of accessibility issues, leaving kiosk designers to work with components that they hope are accessible. Then, after deployment, neither the kiosk designers nor their partners have long-term engagement with clients regarding accessibility. If an accessibility problem was to emerge after installation occurs, it is unclear that anyone would be equipped to deal with it, or indeed if they would feel accountable and responsible for the problem.
Appendix 4: Focus Group at Annual Conference of the British Museum Computer Group

Partner: York
Appendix 5: Case study with KEBA

Background and Contact

KEBA is a company based in Linz engaged in the fields of industrial automation, robotics, energy automation and banking and service automation. The last one is of course of core interest for eAccessibility in Austria as KEBA is one of the major ATM providers for banks and ticketing in Austria.

Contacts have been established in the last years which did not lead to any activity. Recently, following an email providing information on eAccess+, an information and even cooperation request came back from KEBA:

Their product line “KePol” (http://www.keba.com/en/banking-and-service-automation/kepol-parcel-logistics-solutions/) supporting parcel logistics is very successful around the globe. Now new procurements came in from already existing partners (e.g. Denmark) which outline the need for accessibility. The stakeholder is under pressure to react in order not to lose the credit and market leadership in this domain.

Following this, eAccess+ provided information on accessibility in terms of a) integration into public/open space b) hardware accessibility and c) software/interaction accessibility. Also legal backgrounds and data about user groups were demanded.

This helped the company to successfully take part in the procurement. This motivated them to invest more professionally in accessibility to make their products and production processes fit for accessibility.

Discussions started at strategic level of the company how to best answer this upcoming requirements and needs and led to activities like know-how acquisition regarding built environment and hardware accessibility. This also includes work on a software development framework which should support accessibility from scratch. KEBA plans a new software development framework for their interaction technology and in this redesign process eAccessibility will play a key role.

KEBA will use eAccess+ as a resource for this and intends to go into a project cooperation with JKU in this process:

a) Diploma or practical programming activities have been agreed
b) KEBA and JKU work on a national applied research proposal

It is intended to include accessibility as a general requirement in all products which provide public or open access for users.

eAccess+ is seen as a resource for information and know-how and request can be expected regarding ATM accessibility issues.

History of contact and cooperation

- First contacts in December 2010; information provision over the next months
- First meeting January 8, 2011
- Follow up August 8, 2011
• Diploma agreement September 4, 2011
• Discussion with CEOs September 19, 2011
• First draft research proposal end of September 2011
• Telco Oct. 13, 2011 on next steps
Appendix 6: 24 Hour Universal Design Challenge, 2010

Partner: CEUD

The theme of CEUD’s 24 Hour Universal Design Challenge and Seminar was “Technology in the City”. Five teams comprising of fifty designers were given a brief to “Create a universal design intervention or set of interventions with the surrounding environment with advisement from your design partner to improve its overall inclusivity in visual, spatial, mobility, service or communication terms so that the Grafton Street area can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size and ability or disability.”

Each team worked with a ‘design partner’, a person who experiences some level of difficulty in using the Grafton street, a busy pedestrian shopping area of Dublin. Through not explicitly limited to designing a self-service terminal, most teams designed looked to use accessible technology that would enable people with disabilities and older people to spend more quality time in the Grafton Street area. The 5 designs were judged by leading design professionals from Ireland and Europe and audience members also voted for their favourites. The judges prize and people choice were as follows:

Judge’s Choice Award
Grafton Street service plus

The proposed service operates using an RFID (radio frequency identification) enabled card. On entering a premises, a discreet scanning process allows participating businesses to access relevant details of a person’s disability to facilitate a premium customer service response tailored to the disability needs of the customer, if requested.

With approval from the GP or relevant authorities, the user applies for a Grafton St. Service Plus (GSSP) card through an online/telephone registration service. This data is stored on the card and scanned by participating businesses displaying the GSSP logo. When a person carrying the card enters the premises, the system prompts staff via a pager system, with advice on how to tailor their customer service to the specific needs of the disability in question.
Through this service, the customer receives a higher level of personal service in a manner that is both discreet and empathetic to their disability, without causing embarrassment or stigma.

In the case of a person suffering from rheumatoid arthritis, staff through their training and intuitive prompts would recognise that the customer, may for example, require that packaging for food and beverage products are prepared for easy manipulation, and to place change directly into their hand so as to avoid potential difficulties in removing money from a counter.

People’s Choice Award
SOLAS System of ObeLisks for Accessible Streetscapes

The essential features of SOLAS maximise inclusivity by rethinking design in response to unmet needs identified throughout a exploratory consultation process. Firstly, in response to the lack of an accessible way of obtaining cash, the ATM has been re-designed to allow for people of all abilities to interact with the cash function interfaces with greater privacy and functionality by including a tilting screen mechanism and inclusive multimodal interface The simple modification of allowing card, cash and receipt to function from the same slot was found to significantly increase the amount of people who can use the machine.

Second, in response to the need for easy access to information, SOLAS also includes communication portals designed using the same inclusive features as the ATM, and allowing a large number of functions. These include an interface providing information (including accessibility) about shops and local services, such as bus and train timetables, in an inclusive fashion. The portal has also been designed to interface directly with the local business community including the use of a novel barcode way-finding system that can appear in business cards, magazine ads, and, of course, the SOLAS itself.

Finally, the obelisk houses an integrated toilet facility, designed to be enclosed esthetically and unobtrusively within the structure. A larger -size unisex universal access layout uses a wc with electronically height-adjustable seat position.
The larger obelisks are positioned in a concentric seating area, which fixes them in the streetscape and allows shoppers, workers and visitors to rest, meet and interact. Five SOLAS obelisks, three larger, and two smaller, (providing information only) are proposed for the Grafton Street urban area. SOLAS thus achieves a unified cohesive design opening up the Dublin city centre for all.

The challenge awards ceremony was attended by 120 design professionals and students from the domains of ICT, product design and the built environment. The judging panel included head of usability at the world’s largest ATM manufacturer, NCR. CEUD continues to interact with all the designer that took part in the challenge to promote Universal Design in their work and as a process for designing technology that can be used with ease and independence.

Appendix 7: Interview schedule for stakeholders in the SST area

Name of interviewee:
Name of interviewer:
Name of company:

1. What is your position in your company?

2. What is the core business of your organization?

   a. SST manufacturers, software developers or integrators (SUPPLIERS of SST related material of some kind)
   b. CLIENTs who deploy SSTs – museums, public transport authorities etc

If a SUPPLIER, ask these questions:

3. Does your organization consider the needs of disabled and older people in the development of your product/service?

   [note: find out what user groups they have considered]

If yes to Q3, ask Q4, Q5 and Q6

4. What aspects of the product/system are designed specifically to meet the needs of older and/or disabled people?

5. What processes did your organization use in developing these aspects?
   [e.g. user testing, consulting user organizations, found ideas on the web]

6. What were the most difficult aspects of addressing the needs of older and/or disabled people?
7. Do your clients ever request products/services that include the needs of disabled and/or older people?  
   [note: find out what user groups covered]

   If yes, ask Q8 and Q9

8. How did you deal with any such requests from clients?

9. What were the most difficult aspects of addressing the client’s requests?

IF a CLIENT, ask these questions:

10. Are older people and people with disabilities likely to be user of the products or services that you deploy?

11. In procuring products or services, do you specify accessibility for older and/or disabled people as one of the requirements?  
   [note: find out details of what they specify – e.g. WCAG2, Section 508 conformance]

   If yes, ask Q11

12. On receiving a product or service, do you check whether it meets these accessibility requirements

ASK EVERYONE:

13. Would you find it useful to have a resource on meeting the needs of disabled and/or older people?

   If yes ask Q14

14. Would you be interested in support on:  
   • legal requirements for accessibility  
   • design guidelines
• development processes
• user testing and evaluation

15. Would you like to have this support as:
• Online tutorials
• Face-to-face consultancy
• Consultancy via phone and email
• Online access to guidelines and good practice

16. Would you be interested in joining our LinkedIn Group or being an associate member of the eAccess+ Network?

17. Can you point me to any other organizations (or people) that would be interested in the eAccess+ network?
## Appendix 8: Interview responses in tablular form

<table>
<thead>
<tr>
<th></th>
<th>Core Business (Whole, Component, Software, Maintenance Etc.)</th>
<th>Domain (General, Or Specific (ATM, Travel, etc))</th>
<th>Acc. Aware?</th>
<th>What Acc. Features</th>
<th>Want help</th>
<th>Where</th>
<th>Interested eAccess+</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Whole</td>
<td>Public, Travel, etc.</td>
<td>Yes, because of public sector, it is tender</td>
<td>Wheelchair, large button and labels on screen</td>
<td>Never know if they have satisfied all requirements (changes) Clients don’t know what they want</td>
<td>Guidelines and good practice (Online Yes, must be easy to understand)</td>
<td>No</td>
</tr>
<tr>
<td>2</td>
<td>Whole</td>
<td>general</td>
<td>Yes</td>
<td>Screen height, raised lettering on keyboard, large print lettering, trackball</td>
<td>Difficult to do understand client’s requirements</td>
<td>Want guidelines (had to borrow a wheelchair to measure it Suggest certification Want all kinds of information</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>Whole</td>
<td>Mostly ATMs, now all</td>
<td>Leader in Accessibility</td>
<td>Tactile markings on keyboard, audio access, etc.</td>
<td>New factors: social acceptable, level of availability, standards behind</td>
<td>Problem: business case Legislation helpful Low literacy</td>
<td>Yes, but have time problemsn to commit too much</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>4</td>
<td>Whole</td>
<td>General Information and Payment</td>
<td>Understands accessibility</td>
<td>Height, peripherals, etc.</td>
<td>No clear guidelines</td>
<td>Online access to guidelines and good practice</td>
<td>No, small company and business is small</td>
</tr>
<tr>
<td>5</td>
<td>Whole</td>
<td>Payment equipment, parking tickets museums,</td>
<td>Yes, especially people with reduced mobility Do not specify</td>
<td>Do not specify</td>
<td>Do not specify</td>
<td>Yes, maybe</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>whole</td>
<td>General</td>
<td>Yes, wheelchair users</td>
<td>different heights for terminals, for</td>
<td>Extra costs</td>
<td>No</td>
<td>Our clients should join</td>
</tr>
<tr>
<td>7</td>
<td>whole</td>
<td>ATMS - Financial services</td>
<td>Provide technical spec. for other countries</td>
<td>Reduced mobility, blind &amp; visually impaired</td>
<td>How do client needs translate into specifications expensive</td>
<td>Interested in all types of help and info</td>
<td>yes</td>
</tr>
<tr>
<td>8</td>
<td>? not clear travel cards</td>
<td>Travel</td>
<td>?</td>
<td>?</td>
<td>?</td>
<td>Want info</td>
<td>no</td>
</tr>
<tr>
<td>No.</td>
<td>Characteristics</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
</tr>
<tr>
<td>9</td>
<td>Whole</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
</tr>
<tr>
<td>10</td>
<td>components</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
</tr>
<tr>
<td>11</td>
<td>Service and maintenance</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
</tr>
<tr>
<td>12</td>
<td>Software</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
</tr>
<tr>
<td>13</td>
<td>Bespoke design Peripheral</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
</tr>
<tr>
<td>14</td>
<td>Bespoke Design</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
</tr>
<tr>
<td>15</td>
<td>Bespoke kiosks, also deployment and service</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
<td>:---</td>
</tr>
</tbody>
</table>

<p>| 9 | Whole |:---|:---|:---|:---|:---|:---|
| 10 | components |:---|:---|:---|:---|:---|:---|
| 11 | Service and maintenance |:---|:---|:---|:---|:---|:---|
| 12 | Software |:---|:---|:---|:---|:---|:---|
| 13 | Bespoke design Peripheral |:---|:---|:---|:---|:---|:---|
| 14 | Bespoke Design |:---|:---|:---|:---|:---|:---|
| 15 | Bespoke kiosks, also deployment and service |:---|:---|:---|:---|:---|:---|</p>
<table>
<thead>
<tr>
<th></th>
<th>Peripherals</th>
<th>No</th>
<th>Only needed if I can sell more</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>Stands to transform tablets to kiosks</td>
<td>No</td>
<td>But stand is flexible enough to accommodate different heights</td>
<td>Yes</td>
</tr>
<tr>
<td>18</td>
<td>Peripherals for POS</td>
<td>No</td>
<td>“We just sell parts”</td>
<td>No, not our problem</td>
</tr>
<tr>
<td>19</td>
<td>Paper roll components</td>
<td>No</td>
<td>“we just sell the paper”</td>
<td>Not our responsibility, but those who build the machines</td>
</tr>
<tr>
<td>20</td>
<td>Payment systems</td>
<td>Yes</td>
<td>Particularly interested in accessibility for the blind – e.g. locating card slots</td>
<td>Used prototyping and testing with blind users</td>
</tr>
</tbody>
</table>