

## Information Center for Persons with Disabilities

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### Abstract

The paper presents some results of the Romanian Web-based application "**Information Center for PwD (Persons with Disabilities)**" – InHand. The main goal of the application is to contribute to improve the quality of life and health status of this group of people. Our emphasis throughout the paper is on the benefits of universal design. By eliminating barriers that prevent people with disabilities from using your Web site, you actually make your site more useful for all your visitors.

**Keywords:** information center, persons with disabilities, accessibility, design for all, ASP, dynamic database

### Introduction

As government services and important public information become increasingly available on-line, ensuring access to public websites for all citizens becomes as important as ensuring access to public buildings [1]. In the context of Persons with Disabilities (PwD), the challenge consists of ensuring the widest possible accessibility to information technologies in general as well as their compatibility with assistive technologies.

Stephanidis in [2] are defining the accessibility as the global requirement for access to information, communication and social interaction by individuals with different abilities, requirements and preferences, in a variety of contexts of use. Traditionally, accessibility has been associated with disabled and elderly people [3] and reflects the efforts devoted to the task of meeting prescri-

bed code requirements for use by PwD.

It is well known that nothing else but data exchange and shared experience may determine successful concerted actions. That is why the idea of a web site making the domain information largely available to those directly interested and to those who are in charge of the domain was born, and here is the InHand project. We call it "InHand" in the hoped that we will be able to handle this problem, even with low financial support. Our expectations are that in time we will have the necessary support to develop Web-based applications on behalf of almost all categories of disabled people.

The aims of the InHand project are:

- to offer to the persons with disabilities access to a wide range of information and societal resources and a means by which they enter into social contact.
- to develop new Web-based applications for people with disabilities and older people, to enable them to participate more fully in social and economic life;
- to eliminate barriers to employment for workers who are disabled;
- to disseminate the "Design for all" standards for accessibility of information technology products.

### Materials and Methods

The InHand databases that are accessible via the Internet have been designed to back up the information delivery to persons with disabilities who ask for assistance. The databases store data about persons with disabilities who ask for assistance as well as data about organisations having the

wish and the possibility to provide assistance for disabled or elderly people. So, given the access to the databases via the Internet, the two categories (data users and data suppliers) get easily in touch with one another.

The InHand application was developed using HTML, XML and ASP (Active Server Pages) technologies. InHand database was developed using Microsoft SQL Server 2000.

In many cases we have to choose between executing the script code on client, by browser interpretation, or on the web server, using ASP. We used especially server scripts with ASP technology in InHand application, so the source code of the script is executed on server and the user can see only the HTML code who is accessible.

We used some methods for accesibility in InHand application:

1. The web site is resolution independent and the pages extract or contract to fit the screen.
2. Font sizes are not fixed thus making it easier for the users to customize the screen to their liking.
3. Wherever it was possible we used Cascading Style Sheets (CSS) for presentation. In this way we eliminated some elements who overload HTML pages, like: tags for font-face, font-size, color etc. By separating the content from the style the InHand pages become simplified and more accessible.
4. If we could not use CSS, we used layout tables.
5. Other technics for accesibility used in InHand application:
  - a. Pages can be read also with monochrome screens. We used color to enrich the look for users who have not visual disorders, but the colors do not affect the information.
  - b. The link texts were underlined so the assisting equipments can easily recognize them.
  - c. The contrast between text and background colors was carefully choosed.
  - d. Every image has associated an alternative, clear text. If the image is pure decoratif the ALT tag is empty.

The current site complies with the Web Content Accessibility Guidelines, priority 1.

We have developed two databases that contain:

- data about persons with disabilities (PwD-Electronic Record) and
- data about organisations (potential assistance providers), projects related to disability, laws and

regulations, jobs and services offered to PwDs.

To collect the data about Persons with Disabilities a form known as: "Electronic Record" is distributed. The objectives pursued are the following: active identification of the cases in which assistance is mostly needed, monitoring of the categories of beneficiaries, drafting of regulations pursuant to collected data analysis, offering new types of assistance. The PwD Electronic Record contains the following types of information:

- general data about PwD;
  - living conditions;
  - data concerning the health and the care (physical aspects, nursing (Figure 1) , sociability etc.).
- Records and information can be collected and incorporated continuously via Internet without extensive human resource requirements for re-entering information. Users have access instantly to up-to-date information.

## Results

A site presenting the InHand project has been launched and this aligns to the W3C Recommendation - Web Content Accessibility Guidelines. Focused is:

- to make our Web pages accessible to people with disabilities;
- to make content apprehensible and navigable;
- to use a clear and simple language;
- to provide navigation tools and orientation information in pages, maximizing accessibility and usability.

The information on the site are organised in the following main categories: about the site (destination; accessibility, site map, metainformation); assistive technologies (a guide to selection, principles and practice, resources); legislation; documents; electronic record; useful addresses (for vocational rehabilitation and integration, also including legal and medical advice); additional information (travel facilities for disabled persons, social security, hospitals and clinics offering recovery treatments); useful links; forums to exchange messages on any topics of interest.

A great attention was put on the accessibility of the site. If a site is not accessible, it will lose millions of visitors not just those who have disabilities, but also those who work with and otherwise support the accessibility community.

We analyzed the Inhand Web site traffic, using WebTrends Log Analyzer, over a period covering 9 months. The results show a linear increase in the access to the Inhand web site.

## Discussion

We have tested the InHand site accessibility using some accessibility validation tools (Wave, Bobby) and testing with multiple browsers for a variety of conditions (Internet Explorer and Netscape under Windows and the browsers Mozilla and Konqueror under Unix).

First end-user reports are positive.

We are preparing also a sound dissemination programme to make people aware of the existence of the site (mass-media, leaflets, other web sites etc). To note that the success of the application is directly determined by the access of the target population (here PwD) to Internet.

## Conclusions

The InHand application is in accordance with the

Web Accessibility Initiative (WAI) - Page Authoring Guidelines of W3C (World Wide Web Consortium). The InHand project results meet the requirement of a largely uncovered area in Romania: keeping informed persons with disabilities. The InHand database is an attempt to bring together potential assistance beneficiaries and potential assistance providers.

## References

- [1] "eEurope 2002 - An Information Society For All", Action Plan prepared by the Council and the European Commission for the Feira European Council 19-20 June 2000.
- [2] Stephanidis, C., Emiliani, P.L., "Connecting to the Information Society: a European perspective", Technology and Disability Journal, vol.10, pp.21-44, 1999.
- [3] Mueller, J., "Assistive Technology and Universal Design in the Workplace", Assistive Technology, vol.10, pp.37-43, 1998.
- [4] Paciello, M.G., Paciello, M., "Web Accessibility for People with Disabilities", CMP books, New York, 2000.
- [5] Jim Thatcher, Cynthia Waddell, "Constructing Accessible Web Sites", Glasshaus, 2003