Web and Aging

– How the Web may evolve to a usable technical artifact

as others which we are familiar with ? –

Hans-Jürgen Hoffmann

Darmstadt University of Technology, Dept. of Computer Science
Wilhelminenstr. 7, D-64283 Darmstadt, Germany
HJHoffmann@ACM.org

Abstract

Statistics of Web usage by elder people approach the demographic distribution. It is a fact that there are strong complaints about how difficult it is to profit from what the Web offers. The situation has to be improved. What can be / what should be done?

The paper discusses some pitfalls and how to overcome them, discussing them in view of historical evolution of other technical artifacts which nowadays elder people use with much success as younger people do.

Web offerings profitable for elder people

Observing Web usage by elder people – done by a 68 years old professional computer scientist – I found at least ten areas as overwhelming:

1. How to succeed in computer usage / Web access
2. How to meet others / communities for elder people
3. Financial status in retirement
4. Housing
5. E-Business / E-commerce
6. Travelling
7. Medicine
8. Learning
9. Serious edutainment / hobbies
10. Non-serious edutainment

I will not consider the last topic, what , more directly, may be also called *adult entertainment*. The others have to be considered. Topic 1 shows the problem. Topics 2, 3, 4, and 7 are more important for elder people than younger ones, still in active work with more or less professional computer access and / or supported by Web administrators in their offices. One can really understand what the complaints of elder people are.

Readers may visit, e.g., [1] – a Web portal for "seniors"– and [2], German sites [3] and [4] , US sites [5] and [6]). Are all are good examples useful for seniors (what they are intended to be) ?

To repeat articles discussing the specific problems and highlighting them here again seems not to be useful, see[1], e.g., [7] in scientific context and [8] in public press (already 1997 !).

A general statement about what should be done !

The demographic situation and biologically unavoidable changes in the living circumstances of elder people need special observation in all Web applications with which they may come in contact. Web designers have to be aware of the special needs of elder people. The hype of only considering young persons must be stopped.

Historical evolution of other technical artifacts – the automobile, the telephone, banking by ATMs –

The Web is a rather recent development, less than 10 years old. Are the "childish" ways already put off? From a technological point of view the evolution was rather short. Fine! Fine? W3C, the organisation mainly responsible for standardisation, however, is still working in several areas. And I explicitly want to mention [9], just our topic.

Three technical artifacts, as important for all of us as the Web, are the automobile, the telephone, and banking devices.

10 years later from the first successful realisation of an automobile in the early 20th century, even 50 years later, in the driving school you had to learn a lot of technical features and unavoidable difficulties. Let me mention synchronised gearing without need for "Zwischengas" (when changing gears downwards); and one or two decades later, availability of

---

[1]   I include only some references written in German. Participants in the workshop certainly know similar articles in their own language.

automatic gearing. The pedals are standardised. But still, even in some highly developed, industrialised countries, cars have to be driven at another side of the road as in (most) other countries!

Who remembers telephone switching by human operators? It was only in the fifties, 50 years after general introduction of this service, that automatic long distance calling was introduced (in Germany), some years later also in international traffic. Elder people still have problems with the modern ISDN / DSL devices, with mobile phones having only small keys and multi-level menus, although they have grown up with tele-communication using telephone technology.

Modern, global economy is based on manifold banking facilities. You use Internet Banking – do you? –. You cash from an Automatic Teller Machine (ATM), there is no other choice anymore, isn't it. In my opinion the bankers did it well in designing the user interface: You may choose (in Europe) the language, the characters shown on the screen are rather big[2], you are always asked for confirmation of what you did.

The examples show that it is possible to design technical artifacts usable, even usable by elder persons. For the Web, it needs time; know-how is published (e.g., [9], [11], [12]).

It is good to highlight the problems in order to make designers aware of the problems. In the three examples there was a market where users had to pay. Free-of-charge web usage – we all like it – doesn't give the economic pressure for a rapid improvement in the evolution of the Web. The three examples shortly presented above evolved under market pressure (may be, this was not the case with the telephone, hence the long evolution period with modern advancements!). That marketing (research) and (Web design) engineering have much in common – should have much in common – is, to give an example, discussed in an essay by D.T. Barker [13]; of interest is the observation how marketing people and engineers categorise customers as visitors of interactive Electronic Commerce sites – extracted –:

The *market researcher*:

- ...
- *Mature* (60+ years old with minimum of $60.000 annual income or minimum portfolio of $150.000)

The *usability engineer*:

- *Explorer* (uses Web site for discovery of "surfing")
- *General Learner* (uses Web site for basic education on a broad topic)
- *Specific learner* (uses Web site to find an answer for one or more specific questions)
- *Action taker* (uses Web site to purchase or order a product or service)

There is no specific consideration of elder people! Deplorable!

---

[2] A side remark: Text for elder people should be 12 points or more [10]. I hope that all my readers may be able to read my text where I followed (where I had to follow) a document template with 9 and 10 point font size, resp..

My most important statement: *Less is more*!

I am happy to report that the motto *Less is more* gains growing attention by responsible designers of computerised equipment and computer / communication software. In an international conference / exhibition which I attended in April this year a well-known top computer company used the slogan; my sticker shown below is three years old (name of the company intentionally covered); Nielsen states in a most recent Alertbox: *Why simple wins* [14]. The situation with Web usage by elder people will improve. Not only these people notice the problems, are hindered by in-appropriate complex technical solution, and are angry about the impotence of some (young guru-)designers; it is the general public of users of all the computerised arti-facts who object (unnecessarily) complex solutions.

Just for curiosity I want to add a reference to a recently published essay [15] authored by a well-known consultant in network and Internet technologies for more than 10 years (and journalist), David Strom, *Teens are the new tech influencers*. Even the "gurus" have problems with aging!

References

(Web references as accessed in April 2003)

[1] NN (Webring, Inc.). 2003. *Webring – we bring the Internet together!* . http://dir.webring.com/rw?d=Cultures_Community/Groups/seniors/

[2] NN (International Society for Aging and Physical Activity, ISAPA). 2003: – *Web homepage* –. http://www.isapa.org/

[3] NN (SeniorenNet Hamburg e.V.). undated: – *Web homepage* –. http://www.seniorennet-hamburg.de/

[4] NN (staff of Bonn university). April 2003. http://www.seniorweb.uni-bonn.de/

[5] NN. April 2003: *ElderWeb* (some links, conference events). http://www.elderweb.com/

[6] NN (Capital Area Consortium on Aging and Disability, CACAD). 2000: *Providing Care for the Capital Area of New York State* (with a lot of Web links on the topic). http://www.cacad.org/surf/surf01.htm

[7] NN (Nielsen Norman Group). May 18, 2002: *Web-Surfen – Senioren haben Spaß daran online zu sein*. http://www.aboutit.de/view.php?ziel=/02/17/07.html

[8] NN (gms, Rhein-Zeitung). Dec. 17, 1997 (!): *Auch Senioren sind im Web dabei.* http://rhein-zeitung.de/on/97/12/17/topnews/websenio.html

[9] World Wide Web consortium (W3C). 1999 (!). *Web content accessibility guidelines 1.0, W3C recommendation 5-May-1999* http://www.w3.org/TR/WAI-WEBCONTENT

[10] Nielsen, J. August 19, 2002. *Let users control font size.* http://www.useit.com/alertbox/20020819.html

[11] NN (Nielsen Norman Group). 2003. *Web usability for senior citizens – 46 design guidelines based on usability studies with people age 65 and older*. http://www.nngroup.com/reports/seniors/

[12] Wilhelm, T, and Yom, M. July 2002: *Senioren-gerechte Contentgestaltung* (with further References). http://www.contentmanager.de/magazin/artikel_198_seniorengerechte_contentgestaltung.html

[13] Barker, D. T. Jan. 2003: *Blazing a trail together – researchers and usability engineers need that pioneer spirit.* http://www.itracks.com/Pages/04_Press_room/03_Newsletter/01_Articles.aspx?art=117

[14] Nielsen, J. April 21, 2003. *Low-end media for user empowerment.*
http://www.useit.com/alertbox/20030421.html

[15] Storm, D. Dec. 17, 2002: Teens are the new tech influencers. Web Informant #309,
http://strom.com/awards/309.html