6 Conclusions and Future Work

This dissertation explores a new and innovative approach for helping users with special needs in navigating the web, named WNH-see for blind users and WNH-read for functionally illiterate users. It also shows evidence of the lack of success in joining these two different populations together with one single and unique tool.

The results from the prototype user study suggest that both WNH-see and WNH-read could be used by blind and functionally illiterate users, respectively, in order to ease their web navigation, provided that a few modifications are made to make them fully operational. Also, a parallel effort toward preparing scripts (automated processes) in advance would need to be made by WNH volunteers, so that end-users could find their scripts of interest.

Most related work presented in section 2.2.1, concerning the functionally-illiterate, try to simplify texts as a way of making them more accessible to functionally illiterate users. But, as pointed out by Hornung and Baranauskas, "…*new methods should be proposed for design…*". WNH-read takes that recommendation seriously and tries to open a new and promising path to achieving web accessibility for these users. Regarding the blind, the related work presents different approaches for helping these users in web navigation: some of them work on how to make web pages more accessible to them, while others work on how to make their navigation more efficient. WNH-see is a tool that falls into both categories. It is able not only to allow users to bypass non-accessible web pages, but also to make their navigation more efficient. Similar to the work proposed by Takagi et al., WNH-see also depends on the collaboration of a group of volunteers to make it work, and because of that it could also be called a *Social Accessibility* tool.

Nevertheless, in future work the put-aside plan A (for automatic script interpretation, as related in 3.2.4) should be recovered, which would reduce the dependency on a group of volunteers and count more on a community of web users for creating and sharing their own scripts.

Also as future work, researchers can begin by implementing the changes and fixes raised in section 5 and explore WNH-see and WNH-read in both other government web sites and other domains. As for WNH-see, it would be rewarding

and useful to see how these new scripts and sites may demand changes and adaptations towards a totally independent direction from WNH-read. The opposite also applies: when increasing the cover area of WNH-read websites, in what way may the required changes and modifications head towards an independent direction from WNH-see?

It would also be challenging to explore in the future the use of both WNH-see and WNH-read with different technologies, such as other browsers, and specifically in the case of WNH-see, with other screen readers.

Researchers can survey and eventually test WNH-see with other non-blind visually-impaired users and WNH-read with other groups of users with difficulties in reading (such as aphasic users).

Finally, in future work, the WNH umbrella should be extended to group together other users with special needs, such as the elderly or users with other impairments, and users with no specific special needs, but simply with difficulties in web navigation.

In general terms, the conclusion is that WNH has opened up a new and promising line of research in web accessibility through the automation, collaboration and navigation of processes.

The long term goal of this research is to help different groups of users to navigate the web and find the required resources more easily. Reducing the barriers to their doing so will bring these populations, currently excluded from the use of the Internet, to benefit from it, as much as its current users benefit today.