Pioneering Accessibility

Dr. Chieko Asakawa *lost her sight at the age of fourteen. Since joining IBM Japan in 1985, she has been involved in the development of accessibility technology to enable anyone to freely access information on computers and the Internet. In 2009, she was the first Japanese woman and one of only about 75 out of 400,000 IBM employees worldwide to be selected as a Fellow, a person of exceptional technical achievement.* The Japan Journal*'s Osamu Sawaji talked to Asakawa.*

Dr. Chieko Asakawa, IBM Fellow

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What made you decide to go along the path of IT?

Dr. Chieko Asakawa: During my college years, I learned that some visually impaired people had started challenging for computer related work. At the time, computers had not come into consumer use, and I had absolutely no idea what they were used for. But I thought it would be interesting to have a go at something I knew nothing about, so I began studying information processing out of curiosity. I learned about mainframe, computer programming and so forth, which was really tough in the beginning. But, for visually impaired people, there are not so many options to choose from. I had decided that what I had chosen from the few options, I would see through to the end, no matter what.

Please give us an example of accessible technology that you have developed.

We developed the IBM Home Page Reader, which was first introduced in Japan in 1997. The talking web browser, which converts text on web pages to speech, made it possible for visually impaired people to easily surf and obtain information from the Internet. After the launch in Japan, it was offered in eleven languages, and today, the technology has become widely used worldwide. We have received messages from people in various countries, saying, "Thank you for developing this truly wonderful software for me." Thanks to this software, my own international network of friends has expanded.

What is the Social Accessibility Project that your team has launched?

There is a lot of image information on web pages recently. Without alternative text which conveys the essential information about the image, visually impaired people will have a difficult time obtaining information from that web page. The Social Accessibility Project provides a social network site which connects visually impaired people who want to surf the Internet better and sighted users who want to help. Visually impaired users will address accessibility issues, and sighted users will respond by creating and publishing the requested accessibility metadata to help improve accessibility of Web pages for visually impaired people.

The origin of this project was the Braille Forum project in the late 1980s, which was my first job after joining IBM Japan. For this project, I developed software that enabled the text that I typed into my computer to be converted into Braille and printed out easily. Volunteers use this software to translate text into Braille, then share the translated data with everyone online. At the time, texts and books had to be translated individually by hand. Also, it was not possible to access books that volunteers had kindly translated into Braille in a timely fashion and simultaneously in other libraries. The Braille Forum allowed everyone to work together to resolve an issue, and also information could now be shared. This may be said to be the forerunner of what is now called "crowdsourcing."

What is the potential for accessible technology as a business?

According to WHO (World Health Organization) statistics, it is estimated that there are about 1 billion people with disabilities, 500 million elderly and 700 million illiterate people worldwide today. The total is around one third of the world's population. Also, mobile phones have had phenomenal penetration worldwide, and on a contract unit base, it is estimated that over half of the world's population is using a mobile phone. With the advancement of the information society, information accessibility improvement has become an important element which will affect the success of all services and businesses. Accessibility research supports both makers of hardware products, software products and Web content, and users who utilize them. To allow IT to adapt to people, everyone to have equal access to infor-

mation and to use information, accessibility research will play a more important role. For example, NTT DoCoMo's mobile terminal Raku-Raku Phone can be used without stress not only by elderly persons but by visually impaired people, too. This is a good example of how support for people with disabilities and elderly persons led to a business opportunity.

What do you think you can contribute to society in the future through the use of IT?

Together with the University of Tokyo and NHK Science and Research Laboratories, we are jointly working on a research project called senior cloud to study an information and communication technology platform which will support social participation and working opportunity for elderly persons in the super aging society. For example, there are elderly neighbors who want to help parents raising their children, and parents who are raising children who want to help elderly people in the neighborhood who are living alone. We are studying to find ways to enable elderly people's social participation by meeting societal needs through making use of networking and information sharing mechanisms.

When my own two children were still small, I often wondered if there might be someone in the neighborhood who could help out. We are hoping to respond to such societal needs through the research project by using IT to help share information. By enabling anyone to access information, or to put it another way, through the "democratization of information," we, the people, may be able to help make our society a better place for all.