

LASEWICZ: This is an oral history interview conducted on October 30, 2003, with IBM researcher Chieko Asakawa and IBM Corporate Archivist, Paul Lasewicz, conducted the interview. Thank you, and welcome. Thank you for coming.

We'll start with the first question. Can you please describe your current position and title? What is it that you do?

ASAKAWA: I'm currently a group leader for accessibility research at IBM Tokyo Research Laboratory. And when I first started accessibility research in mid 1980s, the word accessibility was not commonly used.

It was during the last several years that more work has been done to help people with disabilities make use of new technologies such as the Internet.

I am doing research to find ways to enable people with disabilities and senior citizens to live more easily by using information technology.

LASEWICZ: Can you talk about some of the schooling and the education that you've had that would have prepared you for this field? What courses interested you the most and why?

ASAKAWA: Okay, so I became blind in an accident when I was 14 years old. At that time I wanted to be a sprinter in

the future, I really liked playing sports. So it was very hard for me to decide what I wanted to do in the future.

So anyway I graduated from university majoring in English literature. Then I needed to think about what I could do, since it was very hard for blind people to find job opportunities in Japan.

And one of my teachers suggested to me that I study computer science at Lighthouse Japan. They provided a course for blind students to learn information technology.

Well, I didn't know much about the area, but I decided to take on the challenge because I felt there was something attractive in that area.

LASEWICZ: What was it that you found attractive?

ASAKAWA: Well, it was 1981 or 1982 when I studied computer science. There was no device such as voice synthesis or a Braille pin display, which I could use to access a computer.

So I really wondered how blind people could operate computers at that time. But still they provided a course for blind students, so I became really curious how I could manipulate

computers if I could not see. And if I could do it I thought maybe my life could be opened up.

LASEWICZ: Well, it sure sounds like it has.

Okay, could you give a summary of your work history? Where was your first job, and when did you start working for IBM?

ASAKAWA: Okay. As I studied computer science, I had an idea that a computer could help to bridge the gap between sighted and blind people. I wanted to pursue my career to realize such dream.

I thought I could effectively use my own experience as a blind person working in science and technology to make it come true. So when I heard about an opportunity for a student researcher at IBM Tokyo Research Lab, I decided to apply for it right away even though I would have to move away from my home and live alone.

After a year as a student researcher conducting research on a Braille translation system, I joined IBM as a regular researcher. That was in March of 1985.

Since then I have been conducting research and development for accessibility technologies and my life has been opened up since then. It has really changed and I have been enjoying my life a lot.

LASEWICZ: What professional organizations do you belong to? How have they been of value?

ASAKAWA: I have been a member of ACM (Association for Computing Machinery), IPSJ (Information Processing Society of Japan), IEICE (Institute of Electronics, Information and Communication Engineers), and WITI (Women in Technology International).

When I first started accessibility research in 1980s, there were no special interest groups for accessibility-related work in such academic societies. These days, it has changed quite a lot and all of the three societies that I belong to have special interest groups for accessibility.

Every year, conferences to focus on this area have been held. These conferences are great opportunities for us to share results and discuss progress in the field.

LASEWICZ: I noticed you belong to a lot of associations relatively speaking. Is this something that you devote time to? And again, this is a question that isn't...that you haven't been able to prepare for, but as you belong to these conferences or go to these conferences, do you participate on

committees and the special interest groups, or do you just go and attend to network with your peers?

ASAKAWA: Actually I participate in a special interest group, ACM SIGCAPH. It is a group for accessibility research area. In Japan, I am a committee member of a special interest group, IEICE WITA (Welfare Information Technology).

LASEWICZ: Can you describe your early experiences with science and/or technology? You mentioned when you were 14 that you went blind. Were you primarily focused on athletics before then, or was there something about sciences that was attracting your attention?

ASAKAWA: So during the first 10 years of my work, I worked on braille related projects such as a braille editing system, a braille information network system and a braille dictionary system in Japan.

And those systems helped to open up the digital braille era to people with visual impairments, braille librarians and braille volunteers. For example, braille editing system allows you to input braille directly into a computer. You can use [shift keys] on the normal keyboard like FDS and JKL, and you can directly input braille.

And you can check the braille directly on the screen. So it is really like a braille word processor. Before such editor was developed, braille volunteers needed to write braille directly on the braille paper. In that case, there was no way to modify their mistakes.

So it was usually said that it took one year to translate one book into Braille. The Braille editing system really helped braille volunteers.

And a braille information network was a network system to share braille data in a timely way all over Japan. So when one Braille book was transcribed somewhere in Japan, then it could be uploaded to the host computer, then from other area in Japan, people could download this braille data. So it means braille volunteers don't need to transcribe the same books all over Japan, which had been happening a lot before such a network system was built up.

So through these experiences I became sure that computers could truly improve the quality of life for the blind.

LASEWICZ: The next question talks about your family. Did your family and/or teachers provide you encouragement along the way? You mentioned early on that you had moved away from home to go to school. If so, what kind of encouragement, how did they provide you encouragement?

ASAKAWA: My parents always supported me in doing whatever I decided to do. They never blocked my decisions even when they were really challenging or seemed to be very difficult to achieve.

When I was 18 years old, I went to the United States for one year as an exchanging student. That was only four years after I had become blind.

However, they encouraged me to do so, and especially my father, who passed away four years ago, was always confident of me. He always said that I could live actively by overcoming the difficulties, since I'm flexible to adapt to the environment.

LASEWICZ: This is a question that is a follow on question. How important to you do you think that encouragement was?

ASAKAWA: Well, I'm not sure if I am really the person that he thought I was, but I was able to overcome problems without giving up on anything. And I think his encouragement has always helped me.

So when I first faced to any difficulty, I feel like, oh, I cannot solve the problem, but anyhow I could overcome it. And at that time I always remember that oh, my father told me

that I can adapt to the environment, so I think I should be able to do that.

So anyway, I have been overcoming difficulties, so I think their encouragement was very helpful. And since they let me do whatever I wanted to do even when I became blind, my life was always active.

LASEWICZ: It sounds like a terrific message to leave you with, a life lesson. The next question deals with mentors. Have you had a mentor at any time during your career, and what role did he or she play?

ASAKAWA: Actually, I did not have mentors officially but I have been mentored by my peers and co-workers. Their suggestions and encouragement always help me to overcome difficulties and pursue my goals. So they are my mentors.

LASEWICZ: The next question is going to deal with your technical training. Can you talk about how you used your technical training and degree...and/or degree today and how has it helped you?

ASAKAWA: These days there are various research projects to help people with disabilities. I always try to catch up on such academic papers, and I always try to keep my own goals as high as possible.

LASEWICZ: How do you set your goals and how do you keep them as high as possible?

ASAKAWA: I have been presenting papers about our research project at least once every year at international conferences. In addition, I try to write a journal paper and submit a patent every year. So I always try to accomplish this goal.

LASEWICZ: And you find that to be very challenging.

ASAKAWA: Yes. And so far I have 10 patents, and I have three journal papers, and in addition I'm submitting two papers and I've been waiting for their decision. [LAUGHTER]

LASEWICZ: Can you talk about what you find most satisfying about your work?

ASAKAWA: Since 1996 I have been focusing on the Internet to deliver its enormous benefit to people with disabilities.

I have a belief that visually impaired people should benefit from the wealth of information that the Internet can provide. And that there should be no need for special formatting like Braille. In this way, visually impaired people would not need to wait to have things translated into Braille, but could

simply surf the Net to obtain necessary information and updates on the latest news and discoveries.

So this motivated us to offer a tool that would provide easy access to the Web for blind people. That was the reason I moved on to the challenge of developing Home Page Reader (HPR). Home Page Reader offered a new information resource for the blind by allowing them easy access to the Web using a numeric keypad.

I received lots of feedback from HPR users after it became a product in 1997, the first release in Japan. They said they never thought they could access the Web in such an easy way and they are very happy...they are very happy to surf the Net all by themselves.

That feedback really encouraged me to keep working in this area. And I will introduce the Home Page Reader quickly.

ASAKAWA: If you use Home Page Reader, you can navigate through the Web using the numeric keypad. And it is like Sighted users use Graphical User Interface (GUI) based browser, which is very simple, to surf the Net. But in 1997, there was no way for blind people to access the Web simply as sighted people. So we blind people needed to struggle to access the Web.

But I found that the Web is very useful for blind people since I can get any kind of information all over the world through the Internet. So I thought if we could offer an easy tool to blind people, then they can get benefit from the Web as sighted people do.

LASEWICZ: How has being a woman has affected your experience as a technologist?

ASAKAWA: It hasn't been as much of an issue as blindness, so I have not felt much difficulty being a woman.

LASEWICZ: I guess when you stack some of the issues you have to deal with here, I can see why you would say that. Okay, question number 13, and we've talked a little bit about some of your challenges in terms of your greatest challenges, you've had to overcome more than some other folks. Can you talk about some of the challenges that you've had to overcome?

ASAKAWA: Yes. It has been very difficult and challenging for me as a blind researcher, and I know it never ends... Information technologies overall are moving directly forward to a visually rich environment, which is impossible for me to perceive by myself.

However, I always wanted to catch up with these visual environments to provide non-visual user interfaces to support people with visual impairments. I have been overcoming such difficulties by getting support from my team members and co-workers at Tokyo Research Lab (TRL). Their sustained support has been helping me in overcoming these difficulties.

LASEWICZ: This is question number 14. Can you talk, how you've balanced your career and your personal life? Were there any corporate or professional programs that helped you advance both personally and/or professionally? And is there anything that you wish looking back from where you are now that you could have done differently?

ASAKAWA: It is a very difficult question but I will try. I think the student intern program was very helpful. I could experience if I could really work in this area before joining IBM. So in the case of my experience, it was a good experience being able to conduct research with other researchers at TRL before hand. And I could start working at TRL without worrying if I will be able to do this and such or if I can communicate with others and so on.

LASEWICZ: The next question. What do you consider to be your most important contributions to technology?

ASAKAWA: Recently one of the blind leaders in Japan told me that Home Page Reader appeared in the world in a timely period, since that was a time when the Internet started spreading out all over the world among sighted people. He said HPR contributed to avoiding the Internet being a barrier for blind people, and HPR contributes to opening a new culture in the Internet era for blind people.

I'm very happy to hear such feedback at this time because it has already been six years since HPR was introduced in Japan. And I did hope to be able to contribute in just the way he mentioned. It really assures me that computers and technology can truly help to bridge the gap between sighted and blind people.

I also feel very responsible to continue supporting such a valuable information resource for blind people by using the benefits of technology. These days, the information has been increasingly relying upon visual expressions, and this has been making the Web inaccessible to blind people. I am currently facing the challenge of solving these issues.

LASEWICZ: Okay, the next question is, what do you think has made you successful?

ASAKAWA: So I'm still on the way toward my goal. To date I have believed that nothing is impossible by working hard,

by making continuous efforts and by never giving up throughout my career and my life.

However, I should say it is not easy to keep one's passion throughout a career. To date I have been able to pursue my passion because the people around me such as my co-workers, peers, and friends, have been supported me to achieve my goals. So without their sustained support I could never achieve any goal and keep pursuing my passion.

LASEWICZ: Well, this is the last one. What is your next goal?

ASAKAWA: These days the Web has been becoming much more visual and less accessible to blind users. I feel it's very dangerous that we blind people could lose Web as a valuable information resource if such trends of visual presentation continue.

Currently my goal is to provide accessibility and usability for the Web for persons with disabilities and the senior citizens to protect access to the Web as their information resource.

My team has been collaborating with IBM W3 team to make IBM site more accessible and usable for these people as well. We [aim] at creating content that is visually attractive, it is

a very important thing, so visually attractive and non-visually accessible and usable.

For this purpose, we are developing Accessibility Designer. We call it aDesigner. It is a research prototype. aDesigner simulates lower vision users views on the screen so you can experience how lower vision users will read your Web by using aDesigner. And also it presents blind users usability. It is really hard for sighted people to understand.

So it allows sighted people to understand these issues more clearly and effectively. aDesigner helps Web designers and developers create more accessible Web content easily and intuitively.

For example it shows designers how long it takes to get to the main content and how important the alternative text is for voice browser users. These days the Web and the HTML tags are really complicated, but voice browsers only can read from the top to the bottom by tag orders.

But the main content usually is just in the middle of the HTML file. So it often takes one minute, two minutes, to get to the main content by blind users. We visualize that kind of issue on the screen. So sighted users can easily figure out how long it takes for blind users to get to the main content.

It would encourage sighted Web authors to provide skip navigation link at the top of the page. Skip navigation is very useful. If I click that link it will directly take me to the beginning of main content.

And alternative text is also very important for blind people. Alternative text is described for image fields. If there is an image, it is proposed to provide an alternative text. And if there is appropriate alternative text, it is very helpful to blind people.

But these days, people know they need to write the alternative text for some accessibility reason, but they don't know why it is so important. When I visit some Web page I can easily find out inappropriate alternative text such as [space image], blank line, button or image.

It doesn't mean anything. So our aDesigner tells you to check such kind of usability issue, we try to help sighted Web authors to create not only compliant pages but also usable pages.

Our goal is to provide usable accessibility environment on the Web. Everything is the first step of this goal.

LASEWICZ: Okay, well then I guess that's it. Thank you for your time.

ASAKAWA: Thank you.

[END OF INTERVIEW]