G3ict - KADO Roundtable Agenda

Wednesday, June 27
1.30 PM – 5.30 PM
KADO Headquarters
645-11 Deungchon 1-dong, Gangseo-gu, Seoul 157-715

Opening Remarks

***Pauley Tedoff**, Program Manager, Global Initiative for Inclusive Technologies (G3ict):*

Thank you very much. I want to thank KADO, and especially Song Jaeil our contact here. I guess you could say that this meeting was meant to be, because as we were discussing accompanying W2i, the Wireless Internet Institute, from whom we actually have two staff members present right now… around that same time Song Jaeil and KADO contacted us and expressed an interest in collaboration. So we decided only about a month ahead of time of the anticipated trip, that we would have an exchange with what is happening at the United Nations in terms of accessibility and what is happening locally in Korea. So as we quickly tried to prepare the meeting, we attempted to pinpoint certain case studies and best practices that were occurring in Korea that we found very unique in terms of employment for persons with disabilities as well as helping to be independent both in terms of their vocation, their working life, and their home life. And what we found were a very diverse range of case studies, of which we have several today. Most notably we have Samsung's Mugunghwa, an electronics plant that employs strictly persons with disabilities. And a very contrasting case study to that is a new city being built near Incheon Airport, the New Songdo City, that are trying to incorporate provisions for persons with disabilities, again both in the home and in regards to public services within the city. Later on in the meeting, I look forward to sharing with you all what we are doing with the United Nations on a global scale with the hopes that these case studies that we'll hear later today will no longer be case studies in a few years, but will be more the norm with regards to employment and accommodations for persons with disabilities, made by government and other city planners. We are very impressed with what KADO and Korea in general has done with regards to the rights of persons with disabilities and hope that Korea will remain a leader in this area.

- Break -

The New Convention on the Rights of Persons with Disabilities, Perspectives on ICTs Accessibility and Implications for Governments and Industry around the World:

***Pauley Tedoff,** Program Manager, Global Initiative for Inclusive Technologies (G3ict):*
G3ict Initial Findings, Future Goals, and Work Plan:

I'm going to give a brief overview of the Global Initiative for Inclusive Technologies. We're focusing specifically on inclusive information and communication technologies and associated applications, just to make that distinction. The Global Initiative for Inclusive ICTs was an initiative developed in direct response to the recent Convention on the Rights of Persons with Disabilities adopted at the United Nations this year. As I'm sure most of you already know, the Convention on the Rights of Person with Disabilities is the first comprehensive human rights treaty of the 21st century. The area that the Convention focuses on are adaptations for persons with disabilities—to help them to effectively exercise their rights—where the rights of persons with disabilities have been violated, as well as the protection of the rights of persons with disabilities and ensuring that those rights are enforced. There are currently 97 signatures to the Convention, 53 signatories of the Optional Protocol, and 1 ratification of the Convention, meaning that the country in question (in this case Jamaica), is bound to implement the provisions of the Convention into its law. South Korea, we are very happy to say, has signed the Convention, and I am confident that South Korea could successfully be the second country to ratify the Convention, so I urge you to look at that as a goal. With regards to the Convention, G3ict is responding directly to Article 9, the text of which my colleague has passed around, which specifically calls for equal access and opportunity to information and communication technology for persons with disabilities. What we see with regards to ICTs and what we're calling the digital divide, is that as technology becomes more and more accessible to an able-bodied person, it is becoming more exclusive of persons with disabilities. However, we are also seeing with the development of technology, unprecedented advantages of system technologies, specialized technologies. There are increased challenges for the aging population, elderly people, in regions where ICTs are in use the most. Keeping all of these things in mind, we see that the same needs, or at least many of them, that need to be met for persons with disabilities, also need to be met for the elderly population. We are seeking to harmonize and standardize, or at the least to push for policies that harmonize and standardize technologies, not just for persons with disabilities, but for other members of the community who could also benefit from similar applications. In order to do this, we have more major activities that we are seeking to achieve. The first is to promote best practices and solutions from both the private and public sector, and to share those practices with stakeholders around the world. The second, which in my opinion is actually the most important, is to identify core areas of ICT opportunities within the private sector. The reason that I say that I personally feel that this is the most important is because all these assistive technologies are out there and do exist, but the problem is that this technology is currently specialized, so the price is extremely expensive and practically unaffordable to the majority of people who could benefit from these technologies. As such, we are trying to include and incorporate the private sector in the initiative as much as possible to help them see the potential for expanding the market of technologies that are inclusive and accessible, in order to hopefully one day have mass production and standardization of major ICT products, so that they are automatically built to be accessible for persons with disabilities. In order to help us achieve the harmonization and standardization of solutions, we are hoping to develop with the Inter-parliamentary Union, as well as with the ITU, some training programs that will help to

train local legislators and authorities on how to best make the public service they provide on ICTs accessible to persons with disabilities in their local communities. As such we are looking to promote harmonized policies and open standards in order to have a result of mass production in the private sector therefore increasing affordability. Essentially, we are looking to engage the following groups of people: global ICT vendors concerned about accessibility issues (those who buy and sell ICTs), global users of ICTs in key economic sectors (for example, airline and car manufacturers in the private sector). The reason that this particular group is so important is because large employers will need to provide accessible work stations for their employees, which will therefore increase the demand and make it more profitable for the private sector and vendors of this technology. What we've seen already in certain cases, worth mentioning is that of Air France, headquartered in Paris, is that countries like France where they have a mandate which says that 6% of the company work force must be disabled, there is a large need for accessible technology to help these employees be productive and keep up with the work load. If other countries had similar policies, we would have quite a lot of workforce that would need to be employed and need accessible technology in order to perform their duties. So this is just one of the ways in which we hope to put pressure on this sector to establish that this is not only a socially responsible move but potentially a very profitable move. So far, the major roadblocks and challenges in the achievement of these goals have been the lack of awareness among corporations (the private sector), lack of awareness among governments and legislators, costs (lack of funding), fragmentation among stakeholders (lack of cooperation and communication), and no harmonization or standardization in ICT products. The next slide shows the four "A"s or four keys to achieving our goals. They are: availability, applicability, affordability, and accessibility. What we have found is that digital accessibility cannot be separated from digital inclusion. We have to talk about accessibility when we talk about inclusion, which often focuses on socio-economic factors that prevent persons from having access to technology. Because the majority of persons living with disabilities are in developing countries, often there is a correlation between the digital divide in relation to socio-economic factors, and with regard to disability. We find that the major digital accessibility drivers are government purchases, disabled persons labor laws, special needs education mandates, disabled and elderly persons organizations, the Convention on the Rights of Persons with Disabilities, and legislation and regulation.

The next slide shows the inter-working of the major goals we have been discussing, so in the interest of time, I will move on to the next slide which illustrates our goals for the upcoming two years. We will be organizing several global forums where we will invite all of our partners from around the world to come together to discuss accessibility of ICTs with one another and to share our experiences and best practices. We will also have a regional forum. Currently we have six in the pipeline, but we hope to have more than that depending on the interest of cooperating organizations. We will also move forward with our capacity building program and training of local government officials working in cooperation with UNITAR, United Nations Institute for Training and Research, the Inter-parliamentary Union, and the ITU. We will also have specialized forums such as those that we organize with the Wireless Internet Institute, where we focus on specific applications, such as wireless technology applications, as opposed to other information and communication technologies. Also, having thematic focused

conferences on employability and other disability issues is in the plan. We'd also like to have several meetings with the private sector with regards to finance and the idea that venture capital firms can invest in accessible technologies as an emerging market. Perhaps the most valuable resource that we can give to the world is our electronic forum where we hope to create a listing of all countries, a factbook where there are resources and information in regards to what those countries are doing. We also hope to provide local contact information, such as addresses, phone numbers, and news so that cooperation and collaboration is more possible around the world. We also work with organizations and the private sector to identify which technologies most need to be made accessible to create priorities with regards to accessibility. We're also very excited about the project that we are beginning, that we are calling the digital accessibility index, where we will—along with our compendium of resources around the world—will seek to evaluate and measure the accessibility of different cities and countries in the world, and seek to rank those countries based on their level of accessibility. A large part of our evaluation and analysis in regards to this index will be based on actions and achievement taken by local governments around the world, based on specific measures that we will define. We also hope to provide incentives by creating a global awards program for inclusive technologies where we will help to promote those case studies and provide an example. In conclusion, I just want to again thank KADO for hosting this meeting and congratulate Seoul in particular and Korea on all the achievements you have made so far and the goals that you have set as a country for the future, and I look forward to all future collaboration with Seoul and South Korea.

Shadi Abou-Zahra, *Web Accessibility Specialist, Worldwide Web Consortium's Web Accessibility Initiative (W3C-WAI)*
The Case for Harmonization and Standardization:

Good afternoon to Korea. This is Shadi Abou-Zahra from W3C, speaking to you from Boston. It is approaching 2 AM here and in my hometown where I live, in Vienna, Austria, it is 8 in the morning. W3C is the worldwide web consortium. My speech today is about web accessibility, and before we continue I'd like to give a brief definition of this term. Web accessibility means that people with disabilities can use the web. It seems simple, but it's not. Web accessibility includes different assets, such as making the website and web applications themselves accessible, and also the web browsers and media players, as well as the web portals which are used to generate the website and web applications; all these need to be accessible. So why is web accessibility an issue? As we know, the web has become a key resource for many areas of our everyday lives: for news, for commerce, entertainment, etc. However, a significant portion of our population, those with disabilities, face barriers trying to access this information and to participate in the information society as we know it today. There are many different types of accessibility barriers, such as no alternatives to images, video, and audio. So for example, somebody who is not able to see an image or video, may not have access to that information if there are no alternatives in a different format provided but have access to that information if those alternatives are presented. Forms or controls on a website cannot be controlled through a keyboard interface, then for example people using other

devices than a mouse cannot use such websites. Websites that are inconsistent or overly complex in their page structure and navigation are sometimes inaccessible to persons with certain kinds of cognitive disabilities. And finally as an example, if their presentation cannot be adapted according to the user preference, for example enlarging the font size, then websites may be inaccessible to people with different kinds of disability, for example low vision. As a consequence, many different people are affected by web accessibility. The first group I'd like to mention are those with visual, hearing, physical, cognitive, and neurological impairments. Additionally, people with aging related limitations… as we know we are all growing older, and some of us will be experiencing symptoms as we grow older such as loss of dexterity or loss of vision. Sometimes also economic and social actors are impacted by web accessibility, for example not everybody can afford to buy the latest hardware and software, or some people may be less literate and may have more trouble reading and then understanding a website. There are also temporal and situational limitations, for example, after an operation, surgery, or in a loud bar, or when you are driving. In all these situations, the display of a website needs to accommodate your specific needs and your preferences. Having said that, one can see that there are auxiliary benefits of accessible web design. By making a website accessible, one can increase the market reach, because it can potentially reach out to new people and new markets. Accessible web design also improves the website efficiency and the website quality and the corporate world can demonstrate social responsibility with these actions. In many countries, accessibility is a human right and there are laws that enforce one, so it is important to adhere to accessible web design to reduce any legal liability. To address these challenges, and respond to the need of accessible web design, the worldwide web consortium created the web accessibility initiative in 1997. The web accessibility initiative is part of the worldwide web consortium and works in a five layered approach. On the first level, it ensures that core web technologies that are developed by W3C such as html and xml and so on support accessibility. We also develop guidelines and techniques to elaborate how those accessibility features can be used to make a website accessible. We also develop methods for evaluating web accessibility in order to know whether you conformed to the guidelines or not. We also do promotion and awareness-raising as well as carrying out outreach and other communication, such as what I am presenting to you today. And finally, we coordinate with research and development centers worldwide in order to look ahead and see where there are new challenges on emerging technologies on the web before they become problems. Please see the slides on the website to view slide 8 and see the image on components of web accessibility. What this image shows are the core technologies of the web and above these the accessibility guidelines. On the left hand side, you see the developer publishing content on the web. The developer uses authoring tools, which could be things such as content management systems, to create this website. So we have developed the so-called ATAG, an acronym for Authoring Tool Accessibility Guidelines. It defines how such authoring tools such as editors and content management systems can generate accessible content and also be accessible to developers who could have disabilities. On the right-hand side, you see the users. We use browsers and media players to access the content. Sometimes, we also use assistive technologies. Assistive technologies are special hardware or software; for example, screen readers that read out loud what is on the screen for blind users or other kinds of disabilities. We have created

the user agent accessibility guidelines (UAAG). It defines how browsers or media players can render their information in an accessible format or interface with assistive technologies. And finally, in the middle of this is the web accessibility guidelines (WCAG), which defines what accessible content is. WCAG has been adopted in many countries and many organizations and policies, either directly or with slight variations. And those brief three guidelines, and other techniques at W3C, highlight that we ought to address an end-to-end accessibility from the developer to the user. I hope this showed you an introduction to the topic of web accessibility. The sites, and also my contact information, are listed on the slides; if you have any questions, I would be more than happy to answer these. Thank you.

Q&A for *Ki-Kyung Kim,* *General Manager, Mugunghwa Electronics Plant for the Handicapped (whose presentation was unfortunately inaudible*)

Q: We have been listening to the best practices of Mugunghwa Electronics and it aims at increasing employment of disabled persons. So what is the connection between employment promotion and G3ict?

A: The Company has been supporting the electronics plant in the hopes that it will be a success. I didn't necessarily mean for the separation of the idea of the company and the plant, for it was the company that tried to hire the disabled, mainly because of the law. Korean law requires them to hire disabled people to make up at least 2% of the overall number of employees. It was originally thought that if you hire disabled people, it means that the productivity might be lowered. But there should be various ways for the disabled to be employed. Those disabled with high intellectual ability could work in the R&D area, or there are some disabled who might have some disability with their feet, so they could use their hands. Or if they have poor intellectual ability, they could get employed for a simple job, such as assembly. That is what I meant by various sourcing of employing the disabled; there should be many different channels for us to hire the disabled, depending on the different level of capabilities.

KADO Representative:

I work with KADO, and when we organized this meeting jointly with G3ict, we were requested to present the best practices of companies that hired the disabled. So we have therefore included a number of best practices in this meeting. Let me add my point. Actually I didn't elaborate sufficiently. There is a SMT technology, a surface-management technology, creating circuit boards for cell phones or other ICT devices requiring a circuit board. Those circuit boards are being produced through this SMT line, employing all disabled employees with inspection or repairs. This is an example of one of Mugunghwa Electronics' best practices in relation to what G3ict wanted presented today. It does not necessarily mean that that other IT and non-IT companies follow these same processes, however. If we had time we could have an in-depth discussion of these best practices, however because of limited time we need to move on.

JoonHo Hyun, *Researcher, Korea Agency for Digital Opportunity and Promotion*
Current Legislation and Regulations:

As indicated by my presentation title I am going to speak about accessibility regarding law and regulations in Korea. The present law by the Ministry of Information and Communications emphasizes the importance of the employment of the disabled. Also, the ministry knows that there is a problem with disabled-related websites, a need to improve web-accessibility in the present. The minister submitted a report on how to address these issues, and the digital divide legislation was established in 2001, with revisions and the second master plan for closing the digital divide submitted in December 2006. This plan will be carried out from 2006-2010, involving first the establishment of several committees. [See PowerPoint for the rest of the presentation.]

MiYong Jeon, *Manager, Korea Agency for Digital Opportunity and Promotion (KADO)*

So I am going to tell you about the assistive technology related to the service-related devices supported by the government.

First let me tell you about our project. This project aims at providing convenience and efficiency for the disabled, and the assistant technological devices will be provided to the disabled in order to increase their opportunity to get hired. This project is in accordance with the [inaudible] Law. Started in 2004, it was carried out through 2005 and 2006; actually, there are four tasks. At this point, 10 tasks have actually been related to the operation. Let me tell you about the assistive devices for the disabled. We started to provide the devices in 2003, and in 2003 we provided 5,658 devices to the disabled. In 2004, 1,115 devices were provided, and in 2005, 1,280 devices were provided for the disabled. Let me elaborate on the project. The assistive technology development is an important project that is aimed at developing assistive products for the disabled. The government provided financial support, about 200 million for hardware and 100 million for software, and the other target supporters for this device include companies that develop related products and companies in other cities that may take part. [See PowerPoint]

In 2007, almost 3600 products will be provided.

Dr. Cheung-Mun Cho (Moderator), *Korea Agency for Digital Opportunity and Promotion:*

Thank you very much for the presentation regarding the developing assistive technology and producing assistive technology-related products for the disabled. Now the Principal of the Yonsei Rehabilitation School will deliver the speech on education for the disabled.

SukJa Park, *Principal, Yonsei Rehabilitation School*

Education of the Disabled:

Good afternoon, I am SukJa Park, the principal of the Yonsei Rehabilitation School. Our school was established for the first time as a private school for the disabled in Korea, educating a student body where 80% of our students cannot communicate with words. I started to work with this school in 1975 and we immediately began to get support from related medical experts to help those disabled to express their views. In this context, KADO, in collaboration with G3ict, has organized today's meeting. So, thank you very much for the support. The disabled can utilize the ICT technologies in various ways; however we believe that expressing their ideas is the first and foremost important use. Using ICT related tools, we could help the disabled students express their views. I believe this meeting will be very significant for the disabled.

In 1976, I started to study disabled-related studies at the University and then later achieved the graduate course. When I joined this school, I first began to encourage the disabled to express their views on "What I am". In collaboration with the language therapist at Severance Hospital, we tried to support the technologies or services for the disabled. Those who cannot speak are one of our human beings, and they have their own human dignity. We need to respect their own views and opinions and let them express these by using the ICT based technologies. I received a doctorate degree after eight years of study and the subject of my thesis was the Spatial Education for those who cannot speak. Since 80 or 90% of our school's students cannot speak, I had to create a way for them to express their views. By using the voice-out devices, I believed that we could help them to express their views. Those who cannot use their own voice, we can let them use the IT and voice-assistive technologies, allowing them to improve their capability to express their ideas and views. Also by using these assistive technology devices, we actually succeeded in reducing some undesirable behaviors and improved some motor-related capabilities in the students. It is also true that there are not many students at our special school whose IQ is above 100. In fact, only one or two percent might have an IQ above 100, and many of them cannot learn to speak. They may have a lack of voice development due to brain impairment or a malfunction in the brain structure, so they usually use body language, facial expressions, pictures, laughing, crying, screaming, or some hand language or signs. Teachers try to provide the curriculum suitable for the disabled, but it is not easy for them to help the disabled speak. In these cases, alternative techniques or technologies can be used for communication with the disabled. For example if the disabled child wanted to say 'I don't want to have meat today' to their mom, they can express these kind of opinions using this AAT device, an assistive communication device. This will help them to have better communication with their family members, friends, and teachers. Also, if they can speak, they can adapt themselves into the community environment, improving social adaptability. Sometimes I send our students to the department store to take a look at reality, and they can get change after purchasing an item or interact with the workers by expressing their views using high-tech devices.

Now some might say "Why don't you just use body language or crying or laughing to exchange their views and opinions?", and some parents might be worried that if there is too much focus on using assistive technology, then the disabled student might never speak. Sometimes we can make a judgment from a facial expression, however

when the kid has certain disabilities, they cannot express emotion on their face. Some disabled cannot make the appropriate sound from their mouth, or sometimes those who have some handicaps cannot make sign language. Non-verbal language should be developed, however, at the same time we need to provide them all with some assistive technology.

Augmentative Assistive Technologies have been defined on the slide. Also on the slide you can see some pictograph symbols. In 1980, when pictographs were not widely spread throughout the world, the [Inaudible] Hospital located in Ontario, Canada actually developed these pictograph symbols for communication with disabled patients. The Yonsei Rehabilitation hospital, as the largest medical center for the disabled in Korea, tried to follow the lead of this Canadian Hospital. We realized that even in this early era, the Canadian hospital had already adapted this kind of strategy and had begun to organize a lot of forums to discuss the issues. Many of the signs were widely spread throughout the world, mainly using line drawings and police symbols. Centering in Europe and some other regions, pictograph symbols, such as house, book, car, animal, ear, eye, and plus and minus symbols were made and widely used for communication. When it came to complex symbols, several symbols were combined into one. The first one on the slide is House. In the 1990s, the teachers of our Rehabilitation school actually visited European countries that had already adapted this pictograph symbol system. In the 1980s in Korea, these kinds of symbols had not yet been adapted, but now this non-verbal symbol system has been widely adapted. The target group for this pictograph symbol system includes cerebral-palsy or autistic students, those with mental disorders, or head injury patients who lost the capability to speak. In the implementation of this system, there are two groups: one who uses assistive devices and one that does not. Those who use assistive technology devices with this symbol system use a picture board, letter board, the communication board, or IT technology-based voice output device.

So what's the reason for this effort? First, it aims at developing speaking capability and also provides social interaction. My piece is actually reflecting the result of our test, utilizing these kinds of assistive technology-based devices. For example, if the subject of the class is about weather condition, and if the teacher asks the question: "What is the weather condition today?", then the student might respond to the question using this kind of assistive device. I have brought one type of assistive technology as an example. This is a learning assistive device; the teachers record some educational materials in this machine and then let the students use it. If the question regarding the weather condition is being asked to the student, the student can use these assistive technology-based devices in order to respond to the question asked by the teacher.

We have a lot of devices at our school, and we have recorded the tablet material into our PC in order to let the students use the computer. We use computer programs to help them express their views in an efficient way. One case I will share is a case of a spitting student that we once had in our school. When I came close to the student, he would often spit on me. I wanted to know why the student wanted to spit on me; I really couldn't understand why he displayed that kind of behavior to me. When I asked that question to the student's mother, she responded that it was just that the child's way of getting my attention. So, we started to pay attention to the student, and taught him that spitting was not a good behavior. Rather than spitting, we told him to use the assistive technology if he wanted to express certain opinions. Don't spit, just use this technology.

And after he grew up, we heard that he got employed by an American company. I have done a lot of experiments regarding the problems that occur if the students cannot speak, that kind of negative behavior can develop. When the student spit again on the doctor or therapists, they were really upset. They asked why the student displayed this kind of behavior, and I explained that he wanted to get attention. The doctors and therapists started to pay attention to the disabled student and got a very positive result. So if we let the students know that that kind of behavior is considered very bad behavior, then they usually want to correct their behavior. Instead of displaying bad behavior, they want to use assistive-technology based devices to express themselves. And sometimes I give homework to parents, such as asking their child what kind of meal he wants to have for dinner. I ask them to let their child write down and speak their opinion and then submit that homework to the teacher.

I always emphasize humanity and volunteerism, but I also want to focus on the importance of expressing views and opinions. Sometimes we even do oral play activities where volunteers are supposed to take a student role and students are supposed to take a teacher role, a type of role-playing. In education and school, the goal is to provide pleasure and satisfaction to our students, and we want to give them hopes and dreams. This is my lifetime job, so I was very pleased to hear that there would be a meeting co-organized by G3ict and KADO regarding the priority of programs to help the disabled by letting them use ICT technologies. So really, thank you very much for providing us with the opportunity learn a lot of things from you.

Dr. Cheung-Mun Cho (Moderator), *Korea Agency for Digital Opportunity and Promotion:*

Another speaker from KADO will present a paper regarding the vocation of the disabled using ICT.

Wonki Lee, *Korea Employment Promotion Agency for the Disabled*
Employment for the Disabled:

My name is Wonki Lee, from the Korea Employment Promotion Agency for the Disabled. We work towards the employability of disabled peoples using ICT technology and devices. My presentation includes IT and the Disabled, the history of IT training, the vocational programs that we have, as well as a hearing impaired disability story. I'm also going to tell you about the future tasks such as a plan in case management changes. First, let me tell you about the history of IT technologies. We started with the computer and the IT technologies that have been developed based on computers. ICT technologies occupy homes, offices, and the overall aspect of society. ICTs also have a great role in social welfare. There are a lot of services available, as you can see in the picture [in the Power Point], such as remote learning and teleconferencing. We thought that, with work, we could improve the welfare transmission. A third point that I would like to make is that, in terms of selecting appropriate information, there are other various types of services - and we could select a suitable one.

Now let me tell you about the vocation training for the disabled. There are five training institutions throughout Korea for the disabled. Per annum we have trained 2,500 disabled people for employment. First and foremost we provide specialized vocational training; if there is demand for a certain vocation for the disabled, then we try to create a training course. Regarding the rehabilitation program, we evaluate a professional vocational program and then also provide a training course. Also, we provide consulting services for companies to see more disabled people get hired. I've been working for 17 years for this organization as a vocational trainer.

[Referring to slide] This is the person who has a hearing impairment. He was born in 1975 and has first class disability. He graduated from high school and is very shy. He started to get this vocational training in 1996 and continued throughout 1997, majoring in multimedia. He started on PC technology, but after we introduced Macintosh technology, he got training regarding this computer technology as well as an information license. His academic performance was not that great, however he was and is a very patient man. He was admitted to a Polytechnic Institution, and is now actually working with the engineering research center. If you visit the homepage you can have more information. He is now a professor, and his papers are frequently carried in famous global magazines. As I mentioned earlier, he graduated from Seoul Polytechnic College and also, in 2003, he studied Computer Engineering at [Inaudible] University. [Referring to slides] These are the studies in which he was involved through portal site building. And this is a sign language program developed by him. You can see the chatting program on the right sight, and the contents of the dialogue or chat will be presented by this button by using sign language. So, without a sign language translator, you can have instant communication with the disabled. Let me provide you a demonstration of this program. If you log into this program, you can communicate using this sign language program and both the general words or technical terminology would be presented using sign language.

This is a project that we have done with Samsung Electronics, which has become a training program. We made an agreement with Samsung in which they would hire disabled persons, who would then go through evaluations, and if they did not have the capability to work with the company then would not be hired. However, if the evaluation proved that he or she has the capability, he or she would get hired. There are 129 disabled persons who have been hired by Samsung Electronics. This year 143 disabled persons are in the training course. After getting feedback from the company, we tried to correct some poor contents of this program, and now sometimes a lecturer is invited to give a lecture to our program regarding this issue. Last year, the graduates of the program were invited to have a meeting. Future lecture topics will include how to manage case studies and how to implement ICTs.

This is the basic process of how the disabled get a job after this training program through the institute. However, there might be some need to create an individualized plan for the disabled. We have experience with all the jobs regarding ICT and management in our organization, and I believe that we make a very positive contribution in this way. We provide a one-month training course, and then have an ITP meeting to select a suitable job. Then, for the next three months, we provide the specific job training, and then we have another ITP check-in meeting. Then we provide educational training for a maximum of eight months. This is followed by a field survey, after which the students graduate and get hired. Then we have a final ITP meeting and a one-year follow-up activity.

Today in our efforts we are focusing on e-learning. When it comes to e-learning and working, there are a lot of aspects included in this process. The strong point of e-learning is that we can go beyond the limitations of time and space. This is e-learning system architecture, and each and every player has its role. The family also needs to play an important role, the company has its own role, an educational institute has its own role, etc. Sometimes these activities could be online or offline, and learners and family-members need to take the lead in e-learning. This is the development of e-learning technology.

There are four issues that we need to address. The first one is ITP establishment and execution regarding this area. The ITP issues need to be set both online and offline. And the second task is that we need to take into consideration specialized characteristics of the disabled or certain types of disabilities. For example, we could control the content size, or when it comes to those who have a hearing impairment, we could develop a sign language. Thirdly, we need to provide the appliances or some other assistive technology devices. There are various types of disability and also the severity is different, so individualized training might be needed. The speed of progress may need to be adjusted according to the disability or type of disability. And last but not least, it is not easy for the disabled to get hired, even after getting this kind of training. So, we need to do follow-up activities. This concludes my presentation.

***Seongil Lee**, Professor, Sungkyunkwan University*

Wireless Communications Device for the Disabled

Good afternoon. I am Seongil Lee, Professor at Sungkyunkwan University. Today I want to focus on wireless services and how to provide universal access for the disabled to wireless services. At this point there are not many wireless services or devices for the disabled. The concept of universal access is important, and it is defined on the slides. We like to focus on the fact that these kinds of services must be carried out in the mainstream market using a smart phone or the general cell phone with TTS. By using this technology, we can enter the mainstream market, making it available to disabled people. These devices can help those who have hearing impairments or speaking impairments when, for example, they visit the fast-food restaurants and want to place an order. The services can be provided through mobile phones using a location-based service, so facilities will have high accessibility for the disabled.

I would like to share two examples. This interface is shown on PDA format, and is showing a new fast-food menu. If a disabled person was to place an order, he or she could press an icon and then place an order. Or, if he or she pushes the speak icon, then the order will be spoken through this technology. This is also for making a reservation on a train or buying tickets for the bus or trains. This program creates incentives for the disabled, giving him or her the service he or she needs. These services are not only for those hearing disabled or speaking disabled, however. If you push the icon of Starbucks, there is a menu. If an elderly person enters Starbucks, there are various types of coffee. If the elderly person was to place an order of a special coffee, then he can use the network program. So this interface has a universal function; it is not restricted only to disabled groups, but can also be used by other target groups. Also, when the disabled people want

to move to a certain destination, the device can tell them if there are stairways or other obstacles where the wheelchair cannot pass through. This interface will tell them which areas of a city are accessible to them. And if the disabled person uses a GPS and cell-network system, the program also will provide the disabled person with a list of the best or ideal pathways to the destination. Using a smartphone or TTS cellphone with this system architecture, the disabled can use this assistive technology to navigate. This is a screen shot of how to get access to a certain area. When I started this, using wireless network services, the number of services we could provide for the disabled was limited. After the study we realized that there are not many wireless-related services that are available for the disabled. I believe that this is because of a poor return on investment. Companies do not want to pour money into the development of wireless services. This concludes my presentation.

Nick Tomizawa, *New Songdo City, VP Gale International*
Residential Living / City Planning:

Hello, my name is Nick Tomizawa, I am the Vice-President of Gale International. I am a licensed attorney in New York with an advanced degree in urban planning, and I have done work in New York with the Americans with Disabilities Act for government agencies and private companies. To be honest I was asked to do this presentation last week, and it's interesting because as a developer we focus on the issues of access to a physical environment, whereas this conference is more about access to the information on the interface level. However, what I am going to do today is explain a little about our project very quickly and then try to explain to you some of the things that we do in relation to the information in this seminar. Our project was created in the early 1990s. The economic zone was created by the local and central governments to bring in foreign investment and try to create an international economic city in this economic zone. In New Songdo City, our project was the main vehicle to bring this foreign direct investment into Korea. The idea was to create an international city and to create a new standard for quality of life in Korea. New Songdo City LLC was a joint venture between the Gale Company and Pascal Engineering and Construction, with Gale International as the developer in Korea. The city has over 1.7 million pyongs of developable area; it will be a two year project to be completed in 2015 at a cost of about $25 billion. The main point of New Songdo city is to create a new quality of life in Korea, but one of the things that we are pushing for is a commercial area. The first is the convention center to be opened next year, but we will also have the signature Southeast Asia Trade Tower, a 65 story building with apartments, hotel space, and a tower. And as we go we have other projects like the retail mall, the convention center and hotel, and other commercial projects.

Now the projects that are very close to my heart are the next ones, the quality of life projects, which includes over a million pyong of residential units. The first units will open next year. We also have various other projects like the Jack Nicklaus golf course of Korea, which will include luxury villas, the international school to open in two years, the international hospital which is a joint venture of Yonsei Severance and New York Presbyterian Hospital, and the jewel of our project: Central Park, modeled after the

greatest parks in the world. Within Central Park will be an aquarium, a museum, and a cultural center developed by the local economic development center.

Now as master planners around the world, one of our requirements is to accommodate the disabled and elderly, providing access to the physical environment. Around the world there are varying levels of requirements by regulations and laws. For me, going by the Americans with Disabilities Act, we have various requirements in the United States such as automatic doors, separate bathrooms, and various other requirements that I am sure you are aware of. As a company that saw the conditions in Korea and wanted to create a more international lifestyle, we also took a look at the existing conditions within Korea. There are some things that we thought we could offer for a more safe and accessible environment for Koreans within New Songdo City. Some of our problems are access to building, ramps that are steep, and barriers on the street as well. Those are some of the things that we wanted to fix in New Songdo City. Some of the things that we are doing in Songdo are providing multiple entrances to buildings, with no step-ups to any of the buildings. It is an extremely accessible and walkable city.

The interim government is creating a transportation plan for the city which includes bus and subway routes. One of the difficulties is that disabled-ready buses and other transit vehicles, and also the way that they plan the sidewalks, is not under our control; this is a city initiative under the interim government. But nonetheless, transportation is still provided for certain groups of the disabled that access transit. We are also thinking about creating what we call Para-transit in America, or shuttle services for the elderly and disabled.

One of the things we are doing in our apartment building is adding what we call U-healthcare. U-healthcare is being put in by a joint venture company call U-I, and it is a partnership between Pasco, LC, and LGC&S. This is kind of another virtual access to the environment because it is a system that provides body-monitoring services that connect with local hospitals so that the patient doesn't need to go to the hospital all the time.

Another U-Life project, which is not yet implemented, is the intelligent walking guide. This is where what we do matches what you do, where we match the physical environment by accessing information. Using RFID at any spot around the city, we can put information which can be read by an information stick and audibly given to the user of the stick. If we did this it would be a connection between U-life and the government. Other things that can be and actually are being done in Korea in terms of getting information to the disabled is on the transit side. Presently train systems in Korea use advanced train control which uses GPS to monitor locations of trains and provide audio and visual information to passengers. Other audio and visual solutions could be traffic signals that use audio and visual cues for people to walk across streets, and elevators that use visual and audio to help the disabled use them. As a manager for Songdo that deals with the managers for the various projects, New Songdo City can influence how these projects are carried out. For example we have had discussions with the Harvard advisors who are working on our international school about putting these assistive technologies into the school as a showcase for these technologies. We can also work with the city, aquarium, and museum to put in technology to assist customers and visitors to these places. And the citizens, if you want to lobby the city to get more of these services, I would strongly advise you to do that. But in the end the more important solution to all of this is the low-tech initiative of social and cultural change. Once citizens of various

countries are sympathetic to the cause of the disabled and the elderly to get around, then things will begin to change. Thank you very much for having me here today and if you need any more information about our company or what we do, please ask Pauley [Tedoff].

JinHyoung Cho, *Manager KADO*
IT Education of the Disabled and the Elderly

[..(inaudible)..] The ratio between the whole population and the disabled could be evaluated as the additional divide. At this point there is a big gap between the non-disabled people and the disabled people in terms of utilizing the internet. Take a look at this table and you can understand what I am talking about.

We are actually not providing any education or courses; we are just supporting the training education courses. Sometimes the disabled actually visit the center and have education training programs, or those who want to get a job get vocational training. We started this visiting education in 2003. Let me elaborate one by one on the status. We started this education in 1999; first we designated a center of education to provide training and an education program for the disabled. We are now supporting 109 implementation centers. And we are providing a large number of hardware, software, or network devices in support of educational training courses.

The disabled have their own individual characteristics, so we provide them all a specific type of curriculum. We provide 8 types of curriculum from easy to advanced. We teach an easy way to use the computer or the internet, for fun, life, or practical digital projects such as creating home pages over the internet or using the internet in their job. These kinds of programs are being provided by us. This is our client program, targeting the first class disabled. At the end of 2006 there were 712 lecturers and 3400 trainees in the program, and a total of over 10,241 trainees had graduated from the programs. We divide the whole nation into eight regions so that each region can select their lecturers in order to improve the lecturing quality. We also provide the training programs for the lecturers.

Now we move to spatial education, a program started in 2004. This is an IT expert training program where once these applicants have graduated from the course, they then are given the IT expert training program. We designated which centers will offer this program: 7 in 2004, 10 in 2005, and 20 in 2006. And about 30% of trainees have been employed, and this year we expect the percentage to grow. Programming used in the web as well as other additional programs will be combined into some training centers to meet special needs for a specific disability. So PC maintenance and this kind of information relating to programs are being provided, and sometimes there is technology assistance too. We provided 7400 services through the forum last year. When it comes to visit service, we provided 4600 visit services.

This is very important to increase awareness from the people; however, motivation is also important for the disabled. We often organize competitions, for example a contest regarding the success stories and best teachings. We actually have the awards on an annual basis. Information education for the disabled is very important so we emphasize this, and we also want to expand the opportunity for the disabled to have this

kind of education. This future direction, a tailored type of education, will be enhanced, and the quality of education will be increased. This year we also set objectives to arrange customized education programs by type of disability.

***Pauley Tedoff**, Program Manager, Global Initiative for Inclusive Technologies (G3ict)*
Concluding Remarks:

As I saw the presentations, I realized how much of what is going on here is going on in a number of other countries in the world. And I think what is really important is that we are as knowledgeable as we can be about what's going on in other countries so that we don't waste time reinventing things that are already invented, and that is what we will try to do as a global initiative – we will try to make our website as accessible and easily navigable as possible so that anyone can go on the website and see what we have done in other parts of the world and collaborate with other organizations, so as to move on to create new solutions instead of coming up with the same solution over and over again in different countries without those countries communicating with one another. So, after having heard what is going on in Korea, I will do my best to share this information. I will try my best to be available to all of you by email or by phone, should you desire to use us as a resource. We really are rapidly increasing our resources with regards to the role of inclusive ICTs in the areas of employment, education, home life etc., and we are really there to help bring people together and to really push disability initiatives forward. For example, after hearing the principal speak, I have several things that I wish to share with her about what is going on in other schools around the world, as well as some conferences that I know she would like to attend – free conferences that will fly her across the world and show her different schools. So again, just as an example, there are many things I can help with.

Lastly I want to thank KADO again for hosting this very professionally organized meeting. We will be uploading all of the seminar proceedings to our website.