UNIVERSAL DESIGN PRACTICES IN THE JAPANESE CORPORATION

Coordinator: International Association for Universal Design of Japan

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ABSTRACT

The International Association for Universal Design (IAUD) was founded inheriting the philosophy and the accomplishment of the "International Conference for Universal Design in Japan 2002", with the participation of a variety of individuals, organizations, and enterprises in Japan in different industries and kinds of business. Through further popularization and realization of universal design, we seek for the establishment of the foundations of a society in which more people will feel comfortable to live. We also believe that widely disseminating universal design from Japan throughout the world could contribute to the improvement of the welfare of all humankind.

This intensive session was planned in the belief that discussing the practices of universal design and the results it has achieved with many people is extremely significant for the further development of universal design. At this session, six companies that are IAUD affiliates will present their universal design practices and results, and the engagement with universal design in the Japanese industry will be discussed.

APPLICATION OF UNIVERSAL DESIGN TO EMPLOYMENT MEASURES

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In our company, just as in other manufacturing industries, employees, as professionals, are required to provide a high-level of output in their respective areas in order to maintain high productivity and create cars that will please the customer. Many corporations today are building barrier free manufacturing plants for the handicapped, with a view to improving productivity and making the workplace more convenient for the handicapped. Accepting the principles of normalization and the coexistence of the corporation with society, which is the essence of employment of the handicapped, Subaru has promoted and is continuing to promote the building of plants that are both efficient and barrier free. The barriers set up by conventional patterns of production (plants that require workers to have physical strength) do not affect only the handicapped. Women and the elderly are similarly affected, and Subaru is proceeding to include everyone in a true universalization that extends not only to barrier free the workplace, but also to barrier free the mindset of all workers. Creativity is required in a manufacturing industry and Subaru is working hard to create a workplace where the attributes of all employees can be harnessed to enhance our company's creativity.

TOYOTA'S PROGRAM FOR UNIVERSAL DESIGN IN VEHICLE DEVELOPMEN

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Toyota is promoting universal design development as a part of the development of vehicles that are good for a diverse customer base, and conducting vehicle development along the two axes described by the below indices. One is the ergo index (the physical aspect of people), which is an evaluative index that quantifies ease of use in terms of the characteristics of people's functional and physiological aspects. The

other is situational suitability index (the mental aspect of people), which is an index of the extent to which user needs have been satisfied. This index shows how far user expectations and demands are met in a variety of scenes with vehicles. Toyota's conceptual approach and utilization of this original evaluative index for universal design will be illustrated using the example of development of the new model Raum.

UNIVERSAL DESIGN IN PRACTICE AT OKI ELECTRIC

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Oki Electric regards universal design (UD) as a design that includes both accessibility from the perspective of disables and elderly users, and usability from the general users. This approach coincides with Mr. Ron Mace's seven UD principles.

Currently Japanese Industry Standard (JIS) is to finalize the new accessibility standard based on Guide 71 of ISO. Oki Electric has positively participated in this standardization as a committee member, and this has expedited more rapid in-house standardization in a form of modification with Oki culture. If the study of usability is included, this activity has already been carried on for more than ten years. As a practical problem, the ATMs, ticket vending machines, and other such equipment for public use that are products of this company are used daily by disables and elderly people. There exist different requirements however for the various different products. Consequently, Oki Electric is promoting the individual projects through in-house virtual conference system so as to take actual business into account. Members of this company's development teams and the UD specialists have offices in remote locations, so this use of virtual conference system has proved effective and effective with member satisfactions.

Ideally the UD is design for all however from the social aspect it may be difficult to derive a totally satisfactory solution. Conflict trends to emerge in UD where one group takes full advantage whereas another group experience disadvantages. Throughout, various issues and solutions will be introduced by in-house virtual conference system and user-experience accumulated within the company over many years.

UNIVERSAL DESIGN PRODUCTS FROM MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.

MASAKAZU HOSOYAMA

Design Planning Group, Panasonic Design Company, Matsushita Electric Industrial Co., Ltd.

Matsushita Electric's UD Program

Matsushita Electric Industrial has declared universal design to be the basis of its manufacturing artisanship, and established the following five kinds of care and consideration as company rules:

- Care for easy-to-understand operation
- Care for easy-to-understand display and language
- Care for comfortable posture and movement
- Care for safety and security
- Care for the environment of use

A universal design committee was organized in the company in order to realize these in concrete terms, and universal design of products is underway.

Examples of Products (Amplified Phone for the US Market)

Universal design has been promoted in home telephones for the American market by incorporating the innovations described below. The products will gradually be launched in Japan, and also exported to other regions.

- Telephone answering machine messages that can be listened to at leisure
- Dial pad buttons that emit distinctive sounds when pressed so the user can be sure which button was pressed
- The name (number) of the calling party is read out loud
- Amplified sound to allow listening at high volume
- Sound quality with voice enhancement to make speech easier to hear and follow

Matsushita Electric Industrial will continue with the development of universal design products in the future as well.

FUJITSU ACCESSIBILITY ASSISTANCE

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Fujitsu has made a set of software tools to improve accessibility for people with visual impairment and color weakness, known as Fujitsu Accessibility Assistance, and gives away it for free on the Web site. This set of tools caters to Web site designers, creators of presentation materials, and other such office workers. It is made up of the following three items of software: (1) “ColorDoctor” displays a simulation of how the colors in text or video images appear to partially color-blind people. (2) “ColorSelector” allows real-time selection of optimum combinations of background and text color. (3) “WebInspector” diagnoses whether a Web site is easy to read for people with visual impairment and color weakness. This presentation will introduce the specific functions of this set of tools and their usefulness.

UNIVERSAL DESIGN PRACTICES: DEVELOPMENT OF ACCESSIBLE CELLULAR PHONES

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Universal design is the practical design of products to maximize accessibility for the greatest number of users.

Cellular phones facilitate many daily communication tasks and have recently become indispensable aids for many users. Since cellular phones are intended to provide access to information and communication services and offer the potential to improve 'quality of life' for all users, it is desirable to consider universal design when developed. The application of universal design to cellular phones will not only improve accessibility and usability for people with disabilities, but may enhance performance and satisfaction for people without disabilities.

To design cellular phones more user-friendly, Toshiba has been applying user- centered design process since 1997. As part of this initiative, studies of cellular phone accessibility for users with disabilities have been conducted in Japan and the United States, from the perspective of both hardware and software aspects. And those results are adopted to new products whenever possible.

This presentation reports on the processes of those accessibility studies and on some accessibility features such as accessible keypad and audio guidance which supports use of basic functions of cellular phone as latest results of the studies. Those features were adopted to cellular phones newly introduced into the U.S. market. Also, some general issues to achieve universal design raised through those studies will be discussed.