

Universal Design in an Era of Global Demographic Change

A research project of universal design e.V.
and the Chair of Industrial Design, TU München
Funded by the Robert Bosch Stiftung

(...) „Universal design means the design of products, environments, programmes and services to be accessible and usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.” (...)

Source: United Nations “International Convention on the Rights of Persons with Disabilities“ Version: Annex II to Report of the 7th session of the UN Ad Hoc Committee, document A/AC.265/2006/2 of 13 February 2006

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The following publication is timely as the significance of demographic change in Germany and its impact on social responsibility from all segments of society has become increasingly clear.

This analysis by universal design e.V. and of the chair of Industrial Design at Technische Universität München is based on national and international research concerning the definition and establishment of universal design in the area of products, architecture and services. A variety of national and international projects are concerned with the concept of universal design, however a comprehensive, commonly-agree definition or systemisation has not yet materialised. Even though globalisation has progressed in many areas, cultural, economic and socio-political, working definitions of ‘universal design’ still differ.

One of the main objectives of this analysis is to present varying definitions of universal design and review their relevance to associations, non-profit organizations, political committees, economic organizations and industrial companies.

During the course of this research, the analysts were impressed to learn to about the extent of increasing dynamics in non-profit and non-governmental organizations in Germany and in many parts of Europe. However, even with its given potential, these impulses only minorly impact design development in the industry. The German economy has significant and well established expertise in product development and architectural innovation for heterogeneous target groups, corresponding to the challenges of demographic change. It is time to leave discussions of definitions and the establishment of new norms behind and to implement the many already existing concepts.

It is these researchers’ conviction that universal design is more than simply a helpful guideline for good design. It is a challenge for academia and research divisions that should be able to adapt to dynamic processes of societal groups. Furthermore, with their products, architecture and services they should be able to secure and expand on those economic potentials.

The goal of this publication is to provide incentives to utilize existing creative strengths for user-friendly products, architecture and services and thereby not miss out on potential growth in the global market place. According to our possibilities, we are more than happy to provide further information on this issue.

We would like to thank our Japanese “Universal Design friends” for their substantial support in this endeavour. We also offer our deep appreciation to the Robert Bosch Stiftung, in particular Ms. Dr. Ingrid Hamm, Ms. Dr. Satrapa-Schill and Ms. Dr. Klapper, without whom this project would not have been possible.

Thomas Bade
Executive director
universal design e.V.
Hannover

Prof. Dipl. Des. Fritz Frenkler
Professor
Chair of Industrial Design
Technische Universität München

1 General Remarks

1.1 The Project

The research project **Universal Design in an Era of Global Demographic Change** was initiated by the Universal Design e.V., that commissioned the chair of Industrial Design of the Technische Universität München (TMU) to carry out this analysis.

The first phase of the project financed by the Robert Bosch Stiftung lasted from September 2007 to March 2008. The first part of the projects seeks to research the different national and international definitions of universal design. The focus is on definitions of specific associations, industry and service companies. The current status is evaluated and described based on scientific methodology,. Furthermore, a comparison of existing terms from this field of study is provided.

1.2 Participants

Requester and commissioned project partner

universal design e.V. works to create wide-spread public awareness in the international community regarding the challenges of global demographic change and its effect on consumer goods. Its efforts and activities, including the international universal design award, seek to motivate designers and manufactures to utilize their creativity, competence and experience to produce architecture, services and consumer products for “all” and rather than solely targeting the “elderly”.

Executive director Thomas Bade

Thomas Bade is a licensed disability support worker and holds a diploma in Social Pedagogy (Dipl. Sozial-pädagoge/Dipl. Sozialarbeiter), he is co-founder of universal design e.V. and Executive director of universal design GmbH. His work focuses on the development of service concepts with special regard for criteria of universal design. His has 30 years of experience in social economy and has worked more than 20 years as a corporate manager of a stock corporation.

In his current capacity as Executive director for universal design e.V. and the universal design GmbH, Mr. Bade developed in conjunction with the International Design Forum (iF), the first international universal design award 2008. Other accomplishments include the conceptualisation of universal design projects for exposition and exhibition (CeBIT 2006 – 2008) and a special exhibition on assisted living (“living space” exhibition Altenpflege+Propflege 2003 – 2008).

Mr. Bade has given numerous lectures and expert testimonies (amongst others. Designtage Essen 2007, and abroad: Institute of Technology of the University of Kyoto) and as an expert for the program “Alter schafft Neues” (Age creates novelty) at the invitation of the Federal Minister for Family, Elderly, Women and Youth. He is a member of the selection committee of the Lower Saxony universal design award and of the iF-Industrie Forum Design e.V. in Hannover.

General Remarks

Commissioned Project Partner

Chair of Industrial Design
Technische Universität München (TUM)

For the past two years students of the school of architecture of the TMU have been able to participate in industrial design lectures and seminars.

The chair introduced the first master's degree program in industrial design in Bavaria in the 2008 winter semester. The master's degree program focuses on practical issues such as fusing architecture and industrial design and the challenges of ecologically responsible mass production in conjunction with societal change due to demographic change.

Technische Universität München (TUM), with its large variety of diverse and closely cooperating faculties, its outstanding infrastructure and the school of architecture's excellent reputation, offers the best conditions for research projects and broad academic teaching.

Dipl. Des. Fritz Frenkler, Professor of Industrial Design

Professor Fritz Frenkler is a graduated industrial designer. In 2000 he founded with Anette Ponholzer the f/p design deutschland gmbh and in 2003 the f/p design Japan inc. based in Munich and Korfu near Tokyo. For many years he served as the managing director of Frog Design Asia and the “wiege Wilkhahn Entwicklungsgesellschaft”.

Fritz Frenkler is a long time member of the management board of Industrie Forum, Design Hannover. Since 1996 he has served as the Chairman of the selection committee of the iF product design awards. He has held the Industrial Design Chair at Technische Universität München since 2006.

Fritz Frenkler has developed products and design studies on the concept of Universal Design for numerous companies, primarily in Asia. Products include the phone “Katherina das Große” for the fitage GmbH&Co. KG. He frequently lectures on Universal Design, including a presentation at the “2nd International Conference for Universal Design in Kyoto 2006” , the International Association for Universal Design (IAUD).

Dipl. Des. Sandra Hirsch, Scientific Officer

Sandra Hirsch is an industrial designer and worked after graduation as an eyewear designer for Rodenstock GmbH and FH Eyewear in Munich.

Since April 2007, she works as a graduate assistant and since 2007 also as scientific officer for the Chair of Industrial Design at Technische Universität München.

While as student at the University of Arts in Berlin, she participated in the interdisciplinary research project sentha (seniorengerechte Technik im häuslichen Alltag- technology fitted for the elderly for the domestic every day life) on universal design. The concept project “living longer” and her work “time to read” were presented at an exhibition at the SaloneSatellite in Milan and at the Desingmai in Berlin.

2 Project structure

The project “Universal Design in an Era of Global Demographic Change” is structured in three phases: (report, publication and evaluation. The various definitions of the term Universal Design (UD) were researched at a national and international level and are presented below. Universal design-related projects and research activities have also been described and documented in this report. The main focus is on the definition as relative to specific associations, industrial and service enterprises and their approach to this concept.

Thorough research of digital and print media was conducted. Additionally, research visits to Japan and South Korea inform this report. During the first project phase, relations with businesses and organisations in Asia were established and their activities and laboratories served as research sites during the field visit. In addition to providing background information and meetings with experts, these working sessions allowed the researchers to adjust and compare definitions of UD. Furthermore, researchers gathered information on different ways of integrating UD know how into the product development process.

2.1 Explaining the country selection

The evaluation draws on the case studies of Germany, Italy, Japan and South Korea. The report also draws on access to an already existing network of businesses in Asia.

Demographic change is a controversial subject around the globe, particularly in Japan and South Korea. “Japan, with approximately 20 percent of its population now over 65 years old, is considered one of the “oldest” countries in the world. Until 2025, around 30 per cent of the all Japanese will be 65 years or older” (Berlin Institute for Population and Development).

“Contemporary Japanese society is a mirror of Europe’s future. In Japan you can already recognise the impact of aging. Europe will be confronted with the same phenomena in the year 2020. On October, 1st 2002, approximately 19 percent of the Japanese people, or 23 million people, were over 65 years old. The Japanese government predicts that this number will increase until 2050 when 35 per cent, or 44 million people, will be over 65 years old.” (Weissbuch 2003)

The term Universal Design has its origins in the United States. Until recently however it was Japan that has been the most persistent nation to advance product development while keeping the aspect of universal design at the forefront of their strategic development. One key factor in this may be that Japanese initiatives stem from big business conglomerates, who in 2002 initiated the International Association for Universal Design (IAUD) in order to globally disseminate the philosophy of Universal Design. The decisive factor in this decision was the urgency of the aging population issue in Japanese society.

Since space in Japan tends to be severely limited, particularly in urban areas, the necessity of using wheelchairs and others devices that assist elderly people with mobility results in a real challenge that continues to intensify as the aging population increases.

”An analysis by Prudential Securities shows that in all likelihood one can expect a similar structure in the next 20 years in Hong Kong, South Korea and Singapore.“ (Gassmann, Keupp 2005, Part 1)

The case of South Korea and its current economic development can inform this discussion. The business structure in South Korea has been altered significantly in the last few years and continues to change. These developments result in enormous potential for South Korea to integrate Universal Design. Neighbouring country Japan constitutes the best such example.

“South Korea is regarded as one of the Four Asian Tigers. Until 50 years ago, South Korea was an isolated agrarian country at the development level of poor states in Africa. South Korea has developed at rapid pace since 1960, and has since emerged as one of the major global economic powers. It has subsequently taken on global leadership in some technology sectors. This was achieved through government and private sector cooperation using a package of different measures that included targeted loans, import restrictions, export subsidies, subsidies of specific business sectors and industries, and an enormous manpower effort. South Korea’s per capita gross domestic product has meanwhile reached the average per capita income in Europe. Growth rates continue to be higher than those in Europe or the U.S.” Excerpt from Wikipedia, the free encyclopedia, April 8, 2008

Italy has been chosen as a relevant case study for two particular reasons. Historically, design in Italy has always had a seminal function. Many designers are located there and many key events are held there, such as the furniture fair in Milan. Furthermore, it is a European country and its developments are easily comparable with social trends found in Germany.

2.2 Asia Case Study

A February 2008 research visit to Japan and South Korea allowed for substantive debate of the concept Universal Design amongst experts from businesses, government agencies and research institutes. Prior to the field visit, research was conducted on the status and activities’ objectives in the two countries. This complemented the background information provided by local experts. These two variables, i.e. prior research and experts’ opinions were then used to determine the economic, societal and academic relevance of the subject.

3 Introduction

3.1 Demographic Change

Demographie (Greek) is defined as the scientific research of the status of the population and its numeric change (birth rates, emigration, immigration, structure of age et cetera).” (Schubert, Klein 2006)

”Demographic change is presumed to be very predictable. Demographic predictions are primarily attributed to two trends. In recent decades German life expectancy has been increasing while at the same time birth rates are dropping. Even migration to Germany has not thwarted this trend. The future balance between emigration and immigration is by no means predetermined and is influenced by political and economic developments. The idea of emigration as a formula against Germany’s declining population is however met with reservations by significant parts of the native population. Therefore it is not likely to play a significant role in balancing out the consequences of demographic change. The population in Germany will continue to decrease. There will be fewer children and an increasing percentage of the population will be middle-aged and elderly people.” (de Vries, 2007)

“Our society ages. The number of those living in Germany, who are 60 years or older, has more than quadrupled within the last century. According to the Federal Statistical office, our population of currently 82 million will drop to 65 million in the year 2050. In the year 2050, for every 100 people between 20 and 60 years, there will be 80 people over 60 years old. This development has consequences not only for the pension scheme, but also for the entire working world.” (Belwe 2001)

For many developed nations demographic change is a much-discussed subject. The issue not only engages socio-political debates. Changes in age structure are also relevant with regards to economic considerations. Since a significant part of the purchasing power will rest with older people in the future, many companies need to react to this change. In addition to re-evaluating services, architecture and urban development will have to be reconsidered. The increase of the retirement age means that a discussion on changes in the working world and the related issue of older employees is necessary. Discussion is also needed in relation to skilled manual labour and the use of machines and tools etc. (see example page 63). Against this background, the relevance of Universal Design becomes particularly clear.

It seems obvious to supply this market with specific products, models and services, but from an artistic, creative and financial perspective, it remains questionable at best. In the long run, Universal Design will gain more commercial relevance since sustainable products and concepts should not only appeal to buyers over 60 years old rather ideally the same products will appeal to all consumer groups. The impact of global markets, the diminishment (in the intermediate term) of the purchasing power of older consumers, and the increasing global lack of resources are all factors that will play a significant role in design decisions in the near future. In many countries there is a need to regain the lost respect of the wisdom and life

experience of elder people and to integrate them again as consumers. Some companies have already realised that the handling of the issue of age must change. This insight is now visible in advertising campaigns that stress the amenities of age and are geared towards an aging and confident clientele. One good example of a positive approach to the issue of age is the “Pro Age” advertising campaign of Dove cosmetics company that was produced by the PR Agency Edelman GmbH. The Dove advertisements feature attractive nude women over 60 years who face the viewer with confidence.

From Japan, where elder people are treated in the whole of society with more respect than one finds in most other cultures, comes an example taken from a ZDF documentary on “wealth in the retirement age”. It shows that with the adequate concepts, demographic change can also contribute to economic success.

A Japanese business that delivers decorative floral pieces employs only elderly staff. The reasoning is: those luxury restaurants in Tokyo that need decorative leaves for the table arrangements are willing to pay a considerable amount for the floral pieces to be delivered. These businesses are aware that in rural areas of Japan there are many elderly people who have a difficult time surviving on their minimal pension. The elderly population has time and live on properties with affectionately cared for gardens. The floral delivery business started contacting such people and they now have a wide network of elderly suppliers. The pensioners pick the leaves then wrap them in the material provided by the floral company. A courier then picks up the wrapped leaves to deliver them to various clients. Through this work, pensioners are able to generate an income and have more funds at their disposal while remaining physically and mentally agile.



Fig. 1-3: “Pro Age“ Campaign, Edelmann GmbH

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In contrast to those elderly people who are forced to take their pension (“forced retirements”) and other measures meant to exclude older people from society, those restaurants participating in this scheme are motivated to contribute to the economic well being of the country. It has been proven that people remain healthier and happier with a meaningful occupation, therefore helping older people to find a meaningful occupation could arguably reduce a country’s healthcare costs.

In Germany, some first initiatives to “win back” the skills of older people have been created however the initiatives are generally restricted to volunteer work. One has to keep in mind that not everyone is enthusiastic to work for free and has a concern for social issues. In particular, former business leaders, including managers and businessmen with significant entrepreneurial experience, are known to experience feelings of emptiness once they start their pension age.

Ursula von der Leyen, the Federal Minister for Families, Seniors, Women and Youth, said on the occasion of the initiative „Alter schafft Neues“ (“Age creates novelty”) in Berlin:

“Many elder people have a strong need to create something lasting and to take on responsibilities beyond their families. They are just waiting to be asked to take on more responsibilities but they also need some impetus from society on how to get involved. We know the demands from all sides: local authorities, initiatives and charities are desperately seeking competent and dedicated volunteers, but have a hard time finding people. Citizens who would like to get involved cannot find an adequate assignment. Every third person says s/he would like to get involved, if there was an adequate offer.”

Author Jeremy Rifkins’ observation in “The End of Employment” on the replacement of human labour through machines in the time of industrialisation can also be applied to the fact that now younger employees are replacing older employees:

“For centuries man was measured according to his ‘productivity’, now that machines have replaced human labour, employees feel robbed of their societal function and their self-image.”(Rifkin 1995)

As the previous examples indicate, it is important to perceive demographic change not only as a challenge but rather view it instead as an opportunity. We must find common solutions to the demographic changes and associated problems before we are imminently faced with them. Traditional gender roles need to be reconsidered. Cross-generational cooperation on how to shape our future is essential. Those elderly people whose health allows them to be active should also be asked to contribute to society, be it as an adviser, a critic or as someone who contributes with their knowledge. It is absurd to think that one could develop products for people who are completely excluded from the development process.

The Audi AG corporation for example utilizes the insight of its older employees for its production of automobiles project “Silverline”:

”We rely on the experience of our older employees, particularly with regards to complex tasks and critical processes related to quality. A mechanical engineer is only at the height of his working capacity after 20 or 25 years of work experience. In this sector we’ve been relying for years on employees who are over 50 years old. We need their professional competence, which is grounded in their experience“. (Dr. Werner Widuckel, Audi AG management board)

3.2 Definition of terms

3.2.1 The term Universal Design

The term “universal design” has its roots in rehabilitations techniques of the early 1950s. Due to the volume of World War II veterans and thus the demand for supporting technologies, an intensive debate has taken place on this subject.

Universal design (UD) is a term first coined in the 1980s. In 1997 Ronald L. Mace of the Centre for Universal Design at North Carolina State University offered the following definition:

”The intent of universal design is to simplify life for everyone by making products, communications, and the built environment more usable by as many people as possible at little or no extra cost. Universal design benefits people of all ages and abilities.“

The following seven principles of the UD definition continue to be widely accepted (and in particular in Japan) :

PRINCIPLE ONE: Equitable Use

The design is useful and marketable to people with diverse abilities.

PRINCIPLE TWO: Flexibility in Use

The design accommodates a wide range of individual preferences and abilities. For example right- or left-handed access and use

PRINCIPLE THREE: Simple and Intuitive Use

Use of the design is easy to understand, regardless of the user’s experience, knowledge, language skills, or current concentration level.

PRINCIPLE FOUR: Perceptible Information

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user’s sensory abilities.

PRINCIPLE FIVE: Tolerance for Error

The design minimizes hazards and the adverse consequences of accidental or unintended actions.

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PRINCIPLE SIX: Low Physical Effort

The design can be used efficiently and comfortably and with a minimum of fatigue.

PRINCIPLE SEVEN: Size and Space for Approach and Use

Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.

3.2.2 Differentiation of additional terms

There are several terms that refer to demographic change and design that continue to be debated amongst experts as a certain degree of uncertainty lingers as to how to use these terms. Furthermore, the definitions of the different terms are often intermixed.

One should differentiate between two primary term groups. In one sense, universal design (UD) can be equated with "design for all" (DfA) and "inclusive design." Alternatively, the term "assisted living" refers to products, models and services for people who require particular living conditions. Assisted living products and services are useful to the target consumer in terms of practical use; these are also designed to train the user to lead an as independent lifestyle as possible. Custom-made products are often necessary for this niche market.

In principle the terms UD, DfA and "inclusive design" have the same meaning however those terms were coined in different countries. The term "universal design" is most commonly spread in the U.S. and Japan, while in the UK Inclusive Design and Design for All is most commonly used. In Germany the terms "design for all" and UD is also often used in the same sense, "barrier-free" or "equal access" design is a component in these terms.

Although the terms "universal design" and "design for all" are in principle referring to the same concept, people develop different associations when hearing each of these terms. Universal design more often is related to not specific design, or in a negative sense: "generalised design". In contrast, "design for all" often makes people think about social values. This theoretical association due to the word "all" might not be entirely justified since in fact the intended meaning is not that it necessarily be geared toward "all" rather it targets only a greater number of users.

The comparison between the definition of Paolo Favaretto from the IIDD - Design for All Italia (Italian member of EIDD - Design for All Europe) for DfA with that of Ronald L. Mace (see page15/16) indicate that the two terms have identical meanings.

When asked in an interview what "design for all" means, Paolo Favaretto stated: „It means to make design beyond the standards: this is my favourite definition. In fact, to translate it as "Design for everybody" is not correct: there can't be one

design for all the disabled people. There are specific projects for those who have a particular disability, but in a broader sense everybody, designers like us included, may be disabled people.

This kind of approach to design fully considers the entire evolution of people's life and of our life as customers or users of objects. Over a lifetime, everyone can face disabilities and, anyway, through this span we move from a condition of ability to a progressive disability, which simply means getting old and having needs that are different from the ones we have in our daily lives, and so on.

But, as we know, disabled are also children growing up, pregnant women, obese individuals and the elderly people. We should consider that the normal time of someone's life, which is the phase of maximum physical efficacy and efficiency, is actually confined to a very short time, and beyond these years we all suffer a deficit of normality... There are also temporary disabled people: the number of people who have accidents is always large, and basically any of us could be in such a situation. Therefore, Design for all doesn't include the simple standards at the bottom of the project, but "the life of any of us", as this is not design for a minority – as one may think – but for us, for our lives."

(Favaretto 2006)

The approach of universal design is a cross-generational design. It does not mean the standardisation of products rather it is the integration of the needs of the greatest number of people during the creative thought process in order to make the products useable in equal measure for all.

Professor Karin Schmidt-Ruhland remarks on this issue: "Universal design should not only produce support products for seniors. Elderly people serve as indicators for deficits in their domestic every day life but they are not the sole target group."

(Friesdorf, Heine 2007)

It is critical to draw a clear distinction between the terms "assisted living", "senior-friendly design", "social design" also known as "age design." These terms are used for products designed and marketed especially for impaired or elderly people. Associating UD with those terms diminishes its acceptance in the marketplace. Not only younger people dismiss products deemed as such:

"Even though elderly people are more resistant to advertising than other groups as a result of their extensive exposure, they are not entirely immune to commercials. Rather it is only advertisements that highlight the quality of the product that are most likely to be successful in attracting senior consumers. Notably, elderly people usually feel around 15 years younger than they actually are. Therefore products that carry the connotation "for seniors" are generally not well received."

(Gassmann, Keupp 2005, Part 2)

A multitude of questionable terms used by the media show the professional associations' challenges in their interaction with this target group. Terms such as "50+", "Silver Generation", "Silver Ager", "Silver Surfer" or "Generation Gold" all carry a somewhat negative connotation. In contrast, the terms universal design and design for all are often associated with something positive. It further

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proves that with UD there is a more relaxed handling of this theme. The following synonyms are used for UD: cross-generational design / trans-generational design and human-centred design.

3.3 Laws and guidelines

Germany

There are no set guidelines in Germany with regards to universal design. Certain fixed regulations (DIN) apply to so called barrier-free design of buildings and public spaces. The “Verordnung zur Schaffung barrierefreier Informationstechnik nach dem Behindertengleichstellungsgesetz (BITV)“ (German Federal law against discrimination of handicapped persons on the creation of equal access information technology) applies to information technology.

During the planning stages DIN regulations are observed – there are several examples that show that the expert community is seriously discussing this issue. This however does not apply to the restoration of buildings.

”From a financial and design engineering perspective, it is often not possible to reach complete accessibility according to DIN 18025/2 through reconstruction of existing buildings. Therefore the subject is often disregarded. But even a partial reduction of barriers would already improve its usability.“ (Edinger 2008)

DIN 18024 Part 1

Barrier-free construction and streets, large squares and playgrounds, public traffic centres and parks: In this regulation the neighbourhood is taken into consideration in the equal access design of the living space.

DIN 18024 Part 2

Barrier-free construction, publicly accessible buildings and work places: This includes all buildings that are not exclusively residential buildings. Exceptions are: hospitals, schools, kindergartens (state law). The DIN 18024 Part 2 is applicable according to § 51 Abs. 1 LBauO and Abs. 2 LBauO.

DIN 18025 Part 1

Barrier-free apartments, Planning criteria for wheelchair users: This regulation contains planning criteria for the creation of wheelchair accessible living spaces. This regulation is the last remaining special provision for wheelchair users. This regulation is almost outdated since all its requirements are comparable to other regulations with similar requirements. Only the bathroom and the bedroom differs from DIN 18025 Part 2 with the requirement of a larger area of movement.

This regulation needs to be applied with regards to the planning and construction of apartments according to § 51 Abs. 1 LBauO and in parts applicable to apartments subject to regulation § 44 Abs. 2 LBauO.

DIN 18025 Part 2

Barrier-free apartments:

Recommendation for the application for all kinds of equal access spaces and social barrier-free housing construction This regulation is binding for the construction of apartments subject to the regulation §51 Abs. 1 LBauO.

Further recommendations for an accessible environment can be found in the publication of the Europäisches Konzept für Zugänglichkeit (European Concept for Accessibility (EDAD 2005).

Some of its principles, goals and recommendations are:

1. It is the goal to create an environment that is comfortable safe and accessible by everyone including people with disabilities.
2. By definition, for the concept of universal design objects to the notion that the population should be divided into disabled and non-disabled people.
3. Universal design includes additional provisions as is appropriate.

”The European Concept for Accessibility publication is geared to those individuals who want to help establish a more liveable environment for all. It also targets politicians and professional associations that can exercise influence on the design of infrastructure, buildings and consumer products. Human beings with their specific and diverse requirements and physical needs are always the central focus of attention.“

These guidelines refer to the establishment of public spaces, transport, public buildings, residential construction and public information services.

In early 2003 Rhineland-Palatinate was the first federal state in Germany to pass a state law following the 2002 German Federal law against discrimination toward people with disabilities. “Barrier free” is defined very comprehensively in Rhineland-Palatinate’s state law.

It states:

”Barrier free spaces are constructions and other facilities, public transportation, technical commodities, data processing systems, acoustic and visual information sources and communication systems as well as other designed living spaces, when they are normally accessible to handicapped people and they can be found, are accessible and usable without outside assistance and without any difficulties.”

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This shows that this definition entails more than a simple ramp for wheelchair users. The state of Rhineland-Palatinate has undertaken a multitude of activities to reach the goal of equal access.

Japan

In Japan, universal design is supported at the local and state political levels. In July 2007, the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) presented guidelines deemed "General Principles of Universal Design." This guidance aims to redesign cities under the aspects of UD to provide improved quality of life. The guidelines are a combination of the previous "Heartful Building Law" and the "Transportation Equal Access Law". In 2008 the Japanese parliament will vote on its implementation.

Italy

In December 2003, the Italian parliament passed with the Legge Stanca an equal access law regarding information technology. This legislation goes well beyond the definitions of the corresponding German provision. It is comparable to the American Section 508, which not only regulates the conformity of the Italian government's web offerings but also sets certain standards for the private sector. Currently the application of these standards are voluntary for the private sector).

3.4 Relevance of Universal Design

Universal Design must be perceived as the primary design challenge of the years to come. The quality of new and existing products should be characterised by simplicity. It will be about designing products that will function for all ages.

Against the background of an aging population, it is important for designers and manufacturers to recognise the relevance of this subject. The following disciplines need to pay attention to this issue: product design, interior design, architecture, public design and media design, as well as producers and the services they offer. The work of these occupational group has a direct impact on the daily life of people and on society as a whole.

Buildings, public spaces, products and services can help to extend the independence of older users as well as, if they are intelligently planned, offer more comfort to younger users. Industry and retail will increasingly be confronted with critical consumers because the seniors of tomorrow are demanding better quality and services. Their demands with regards to products, public spaces and buildings will due to growing physical disabilities, in terms of percent increase of the population, change. Quality service will increasingly become important.

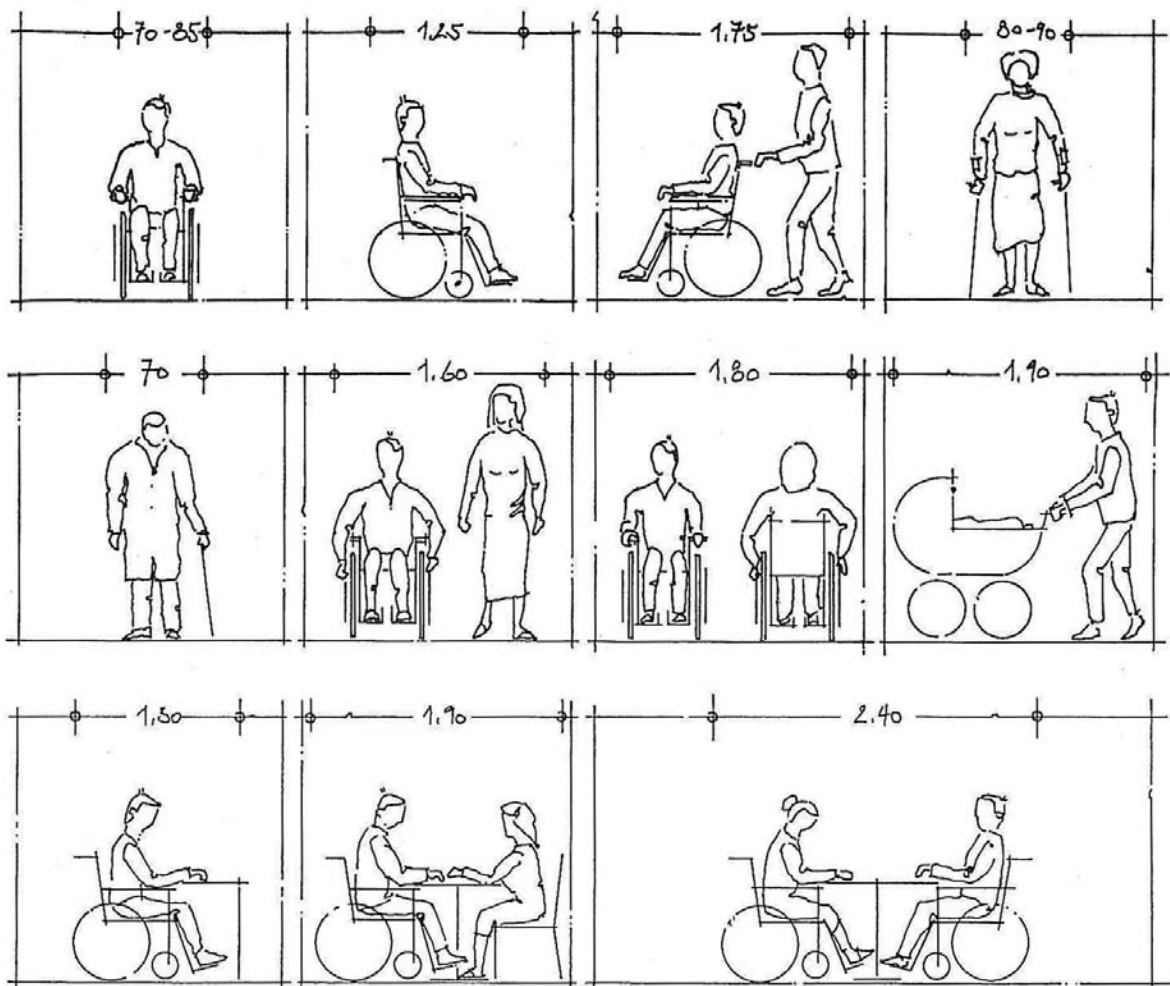


Fig. 4: from Marx, L. 1992: Barrierefreies Bauen (barrier-free construction) , page 13

4. Evaluation

4.1 Company Profiles:

The following list does not encompass all organizations working in the broad area of field design for people with special needs. Rather it is a selection of relevant organizations, companies or associations doing work related to universal design.

Europe:

Non Profit Organization:

EIDD – Design for All Europe
President: Finn Petrén, Sweden
www.designforalleurope.org

EIDD - Design for All Europe is a federation of National and Corporate Member Organisations in 18 European countries. It was founded in Dublin, Ireland in 1993 with the name of European Institute for Design and Disability. The original aim of the network, to use design to achieve the inclusion of disabled people in society in European countries, has since been reinforced with inclusion of a more mainstream approach, enhancing the quality of life through Design for All. The name change in 2006 reflects this development. With a strong inter-disciplinary approach, the majority of members are professionals in design-related fields.

The aim of EIDD is to encourage active interaction and communication between professionals interested in the theory and practise of Design for All and to build bridges between, on the one hand, these and other members of the design community and, on the other hand, all those other communities where Design for All can make a real difference to the quality of life for everyone. For this purpose, the Institute works pro-actively to establish and maintain a series of key partnerships with other European and international organisations active in related areas.

The EIDD is so far the largest European organization, which contributed significantly to the propagation of the design principle 'design for all'.

Germany

Associations:

Deutsche Architektenkammern
www.architektenkammern.net

The architectural associations of the German Federal States are offering counsel for barrier free design. Some participating associations have issued their own publications on this subject. Many organize events for the exchange of information and experiences.

Non Profit Organizations:

Aktion Mensch und Stiftung Digitale Chancen
Contact: Cornelssen, Christian Schmitz
Media contact: Heinemannstraße 36 - 53175 Bonn - Deutschland
Phone: +49 228 20 92-3 77 - Fax: +49 228 20 92-3 33
www.aktion-mensch.de

Stiftung Digitale Chancen
Contact: Jutta Croll
Fasanenstraße 3 - 10623 Berlin - Deutschland
Phone: +49 30 43 72 77-30 - Fax: +49 30 43 72 77-39
www.digitale-chancen.de

”Aktion Mensch“ and “Stiftung Digitale Chancen” together announced the “BIENE” Award for equal access web-design. (see interview anatom5 perception marketing GbR)

Bundesarbeitsgemeinschaft der
Senioren-Organisationen (BAGSO) e.V.
Managing Director: Dr. Guido Klumpp
Bonngasse 10 - 53111 Bonn - Deutschland
Phone: +49 228 249993-0 - Fax: +49 228 249993-20
Email: kontakt@bagso.de - www.bagso.de

The Federal Consortium of the Organizations for the Elderly (BAGSO or Bundesarbeitsgemeinschaft der Senioren-Organisationen e.V.) is a lobbying organization for elderly citizen. It purports that everyone even at an older age should have the option of a independent life and that the necessary requirements should be provided. They lobby for elderly people to be afforded the opportunity to participate actively in their society and lobby in order for this awareness to be reflected in public opinion of the “senior citizen.”

The BAGSO is an umbrella for roughly 100 organizations with about 13 million elderly people as members. The primary mission of the federal consortium is to coordinate the interests and activities of all participating associations and to represent these national and international political processes and issues relevant to issues to elderly citizens. Every three years the consortium coordinates the Deutscher Seniorentag. It also publishes a quarterly magazine “BAGSO-Nachrichten.”

Internationales Design Zentrum Berlin e. V. (IDZ)
Project Manager: Prof. Karin Schmidt-Ruhland
Reinhardtstraße 52 - 10117 Berlin - Deutschland
Phone: +49. (0)30.280 95 111 - Fax: +49. (0)30.280 95 112
Email: universal-design@idz.de - www.idz.de

Evaluation

In the context of the program “Wirtschaftsfaktor Alter – Unternehmen gewinnen“ (the economic factor age, companies win) of the Ministry of Seniors, Women and Youth a competence network is being built at the International Design Zentrum (Centre) Berlin (IDZ) in order to bring together information, ideas and knowledge concerning universal design. The IDZ’s focus is on building a database and consulting and conceptualizing a travelling exhibition to promote these issues to a broader public. In conjunction with the TÜV NORD CERT and the Council for Design, the Berlin International Design Centre has developed a quality marker for user-friendly products.

universal design e.V.
Managing Director: Thomas Bade
Messegelände / IC - 30521 Hannover - Deutschland
Phone: +49 511 8930044 - Fax: +49 511 8930046
info@ud-germany.de - www.ud-germany.de

In 2008 the universal design e.V. has announced the first-ever international Universal Design Award for two categories: “universal design consumer favourite” and “universal design award 08”, awarded by an expert jury (further information p. 7).

Universities, Universities of Applied Sciences and Technical Colleges:

Ludwig-Maximilians-Universität (LMU), Generation Research Program (GRP)
Humanwissenschaftliches Zentrum
Academic Director of GRP: Prof. Dr. Ernst Pöppel
Prof.-Max-Lange-Platz 11 - 83646 Bad Tölz - Deutschland
Phone: +49 8041 79929 0 - Fax +49 8041 79929 11
Email: info@grp.hwz.uni-muenchen.de - www.grp.hwz.uni-muenchen.de

The Generation Research Program (GRP) engages in interdisciplinary generational research which is financed by the regional High-Tech-Offensive (HTO) in Bavaria. It focuses on the so-called “generation plus”, i.e. a greater than ever plurality of generations building today’s societies. The GRP at the Generational Forum in Bad Tölz does basic research on transgenerational issues; it works on the application of knowledge in the medical field and it conceptualizes innovative technologies.

Technische Universität München (TUM)
Faculty of Architecture, Institute for Design and structural engineering
Academic Chair of Industrial Design Univ.-Prof. Dipl. Des. Fritz Frenkler
Arcisstrasse 21 - 80333 München - Deutschland
Phone: +49 89 289286 95 - Fax: +49 89 289286 75
Email: hirsch@lrz.tum.de - www.id.ar.tum.de

(further information see p.8 and 9)

Universität der Künste Berlin (UdK Berlin)
Contact: Prof. Karin Schmidt-Ruhland
Fakultät Gestaltung, Chair of Industrial Design, Prof. Achim Heine
Straße des 17. Juni 118 - 10623 Berlin - Deutschland
Email: www.udk-berlin.de - alt-jung@udk-berlin.de

From 1997 to 2003, the Chair of Professor Heine contributed a design project to the research project “Seniorenrechte Technik im hauslichen Alltag” (sentha) (technology fitted for the elderly for the domestic every day life)”. The Chair has since advised numerous students on conceptual design projects on universal design. The university continues to offer a prize for the student contest “Alternativen – Produkte for eine neue alte Generation” (Alternatives, products for the new old generation), “pack aus pack ein pack zu” (unpack, pack, grap it) and “von Kopf bis Fuss” (from head to toe) concerning the subject of universal design.

National and Regional Political Initiatives:

Bundesministerium für Familie, Senioren, Frauen und Jugend
Alexanderstraße 3 - 10178 Berlin - Deutschland
Phone: +49 30 18 555 0 - Fax: +49 30 18 555 4400
email: poststelle@bmfsfj.bund.de - www.bmfsfj.de
Bundesministerin für Familie, Senioren, Frauen und Jugend: Ursula von der Leyen

The Ministry for Family, Seniors, Women and Youth supports numerous initiatives concerning demographic change and universal design throughout Germany.

Commercial Enterprises / Manufacturing:

Heinrich Wilke GmbH (HEWI)
Executing Director: Reinhard Fenski, Thorsten Stute
Prof.-Bier-Straße 1-5 - 34454 Bad Arolsen - Deutschland
Phone: +49 5691 82 0 - Fax: +49 5691 82 319
Email: info@hewi.de - www.hewi.de

HEWI is a medium-sized company with an international presence. It has its own distribution network of branch offices, subsidiaries and trading partners in Europe, Asia and America. HEWI provides “System-competence Architecture” providing all elements of comprehensive solutions. HEWI business activities include signage, hardware, electronic locking systems, handrails and sanitary accessories, among other products for accessible living. “HEWI design is more than just function and is more than only style. Design starts with reflection; in our opinion, only the inclusion of the architectural and emotional context leads to sensible composition and good design. Human beings and their needs – e.g. how one uses a building – takes center in HEWI design, not the designer.” (www.hewi.de)

Evaluation

Service Industry:

NeumannConsult

Owner: Dr. Peter Neumann

Bahnhofstr. 1-5 - 48143 Münster - Deutschland

Phone: +49 251 16254 30 - Fax: +49 251 16254 34

Email: Neumann@neumann-consult.com - www.neumann-consult.com

NeumannConsult is a spin-off company of the Geography Institute at the University of Münster. NeumannConsult works on city and regional tourism development, as well as accessible composition and design for all. Business activities include analysis, conceptual studies, codes of practice as well as coaching and the realization of training courses, seminars and workshops, and project management. The owner (Dipl.-Geogr.) Dr. Peter Neumann is chairman of the “Europäisches Institut Design für Alle in Deutschland” (EDAD) (European Design for all Institute in Germany) and board member of the “European Institute for Design and Disability” (EIDD). Peter Neumann is also a DIN CERTCO expert in the field of “Barrierefreie Planung, Bauen und Produkte” (equal access planning, constructing and products).

Meyer-Hentschel Institut

Contact: Dr. Hanne Meyer-Hentschel, Gundolf Meyer-Hentschel

Kirchweg 44 - 66133 Saarbrücken - Deutschland

Phone: +49 700 123456-01 - Fax +49 700 123456-02

Email: info@mhmc.de - www.mhmc.de

Since 1985 the Meyer-Hentschel-Institute has supported companies and social services providers in adapting to demographic change. Activities include market analysis, workshops and development consultancy. The institute has developed the Age Explorer®, a suit that simulates the restrictions that come with age, which is utilized in product testing.

Italy

Associations:

IIDD - Design for All Italia

Via Leonardo da Vinci, 14 - 36100 Vicenza, Italia

Phone: +39 0444 323907 - Fax. +39 0444 325118

Email: info@iidd.it - www.dfaitalia.it

The IIDD is a member of the EIDD – Design for All Europe and abides by the objectives of the EIDD, e.g. the “Stockholm Declaration”.

Japanese Associations:

International Association for Universal Design (IAUD)
2-13-18-110, Shin-ishikawa
Aoba-ku, Yokohama - 225-0003 Japan
Phone & Fax +81 45 910 8420
www.iaud.net/en/index.php - info@iaud.net

The International Association for Universal Design (IAUD) was founded in 2003 with the support of leading corporations. It promotes universal design through studies, which go beyond basic conditions of industry and work environments, through project development and in the provision of information and research results. To this end, its dialogue with users is important for all its activities. User-oriented activities are intended to optimize the quality and level of sophistication of UD by means of propagation and implementation.

The IAUD organized the 2002 International Conference for Universal Design in Japan and the 2006 International Conference for Universal Design in Kyoto.

Japan Industrial Design Promotion Organization (JIDPO)
5th floor, Midtown Tower, 9-7-1 Akasaka
Minato-ku, Tokio - 107-6205 Japan
Phone +81 3 6743 3772 - Fax +81 3 6743 3775
www.jidpo.or.jp/en - email contact on website

The Japan Industrial Design Promotion Organization (JIDPO) was founded in 1969 on the basis of a report submitted by the Design Council of the Ministry of International Trade and Industry. It is the only organization in Japan involved in the comprehensive promotion of design activities. Since its foundation, it has been involved in an ongoing series of promotional activities with the cooperation of government agencies, industrial bodies, and individual designers. These activities have included implementation on two occasions of a „Design Year“ campaign, sponsorship of the „Good Design Awards“ (the so-called „G-Mark“), and publication of the quarterly magazine Design News. Now there is also a Universal Design category within the „Good Design Awards“.

Non Profit Organization:

Kyoyo-Hin Foundation, The Accessible Design Foundation of Japan (ADF Japan)
2F, OGA Bldg., - 2-5-4, Sarugaku-cho
Chiyoda-ku, Tokio - 101-0064 Japan
Phone: +81 3 5280 0020 - Fax: +81 3 5280 2373
Email: jimukyoku@kyoyohin.org - www.kyoyohin.org

The foundation seeks to promote the development of Accessible Design Products (Kyoyo-Hin) or services for as many people as possible, including seniors, the elderly and persons with disabilities. At the same time, the organization wants

Evaluation

to raise public awareness that this effort is intended to bring about major improvements to improve the quality of products and services for all people. The foundation is convinced that this movement greatly contributes to the quality of life and the economy in Japan. Activities include studies, symposia, exhibitions and publications.

Universities of Applied Sciences and Technical Colleges:

Kyushu University, Department of Human Living System Design,
Faculty of Design, Contact: Prof. Yoshitsugu Morita
6-10-1 Hakozaki - Higashi-ku, Fukuoka - 812-8581, Japan
Phone: +81 92 642 2111 - Fax: +81 92 642 2113
www.host.id.design.kyushu-u.ac.jp/id/pub/index.html

National and Regional Political Initiatives:

Shizuoka Prefecture, Department of Community Affairs, Universal Design Office
9-6 Ohte-machi - Aoi-ku, Shizuoka 420-8601
Phone: +81 54 221 3233 - Fax: +81 54 221 2827
Email: ud@pref.shizuoka.lg.jp - www.pref.shizuoka.jp/ud/english/index.html

The Shizuoka promotes universal design with the advertising motto “Shizuoka with comfortable city spaces, in which visitors and inhabitants feel at home“ The prefecture hopes to advance the realization of the universal design concept through several projects. It is currently seeking the support of the government, the corporations and the habitants to achieve this mission. The following activities are aimed at this objective: the realization of accessible cities; universal design exhibitions and talk-shows on the subject.

Commercial Enterprises / Manufacturing or Production:

All members of IAUD – of which only a sample of the well known companies is listed here: Canon Inc.; FUJIFILM Corporation; Fujitsu Limited; Hitachi Ltd.; Honda R&D Co. Ltd.; KOKUYO Co.,Ltd.; Mazda Motor Corporation; Mitsubishi Electric Corporation; NEC Corporation; Panasonic Shikoku Electronics Co., Ltd; SANYO Electric Co., Ltd; Seiko Epson Corporation; Shiseido Co.,Ltd; Sony Corporation; Toshiba Corporation; TOTO LTd.; Toyota Motor Corporation.

South Korea:

Associations:

Korean Society of Design Science (KSDS)
314-8, Korea Design Center 344-1 Yatap 1-dong

Bundang-gu Seongnam City - Gyeonggi-do - Korea 463-828
Phone: 82 31 781 5021 - Fax 82 31 781 5023
ksds@design-science.or.kr - www.design-science.or.kr/eng_index.asp

The “Korean Society of Design Science” was founded in 1978 for the advancement of design research in South Korea through theoretical studies and research on design. The society organizes conferences and lectures on design, supports collaborative projects of government, industry and academic institutions, and sponsors exchange programs for members and international organizations.

Universities of Applied Sciences and Technical Colleges:

Seoul National University of Technology (SNUT)
Dep. of Universal Design - IT Design graduate school
308 Chanjo Hall - Seoul National Univ. of Technology
138 Gongreung-gil - Nowon-gu - Seoul - 139-743, Rep of KOREA
www.snut.ac.kr
(further information: interview Seoul National University of Technology, page 50)

Kyungsoong University
Universal Design Research Center - munhwa Hall
Kyungsoong Univ. Daeyeon 3-dong - Nam-gu - Busan - Rep of KOREA
www.udrc.or.kr

Kangnam University
Universal Design Lab - insa Hall-214 - Kangnam Univ. Gugal-dong,
Yongin Si Giheung-gu, Gyeonggi-Do - Rep of KOREA
http://special.kangnam.ac.kr/siri/siri_03.html

Korea Nazarene University
Dep. of Universal Design
Bridge Hall - Korea Nazarene Univ. Ssangyong 2-dong
Cheonan Si - Chungcheongnam-Do - Rep of KOREA
<http://cms.kornu.ac.kr/ud/index.htm>

National and Regional Political Initiatives:

In December 2004 the South Korean Ministry of Construction and Transportation suggested the “Transportation Services Improvement Act for the Mobility of Handicapped People” which was then passed.. This legislation includes a five year framework plan for improving the quality of mobility of handicapped people in public transportation.

Evaluation

Commercial Enterprises / Manufacturing or Production:

Samsung Electronics Co., Ltd., Ui Research Lab,
Corporate Design Center, Jungang-Ilbo Bldg. - #7,
Soonhwa-dong, Chung-gu , Seoul, Korea 100-759

Further information: Interview Samsung Electronics Co., Ltd., p. 46.

USA

Non-Profit Organizations:

Adaptive Environments, Executive Director, Valerie Fletcher
180-200 Portland Street - Suite 1 - Boston, MA 02114
Phone: 617-695-1225 - Fax: 617-482-8099
www.AdaptiveEnvironments.org

Adaptive Environments (AE) is a 29 year old international non-profit organization committed to advancing the role of design in expanding opportunity and enhancing experience for people of all ages and abilities. AE has been the lead organization in the international Universal Design movement, having hosted or co-hosted five international conferences (New York -1998, Providence -2000, Yokohama – 2002, Rio de Janeiro – 2004, Kyoto – October 2006) as well as international student design competitions, smaller regional meetings and publication of web and print materials. They have a formal collaborative relationship with the IAUD in Japan, with the Design-for-All Foundation in the European Union and UN Department of Economic and Social Affairs. Our international network includes colleagues on every continent. AE is working with the UN on the implementation of the new Treaty on the Human Rights of Persons with Disabilities that endorses Universal Design as the basis for design guidelines. Currently AE is exploring an international event that would offer nations in the Middle East multi-disciplinary consultation for post-conflict reconstruction from a Universal Design perspective. Elaine Ostroff, Co-Founder of AE is the editor of the internet webpage “Universal Design Network” and its monthly Universal Design Newsletter.

The Center for Universal Design
College of Design - North Carolina State University
Campus Box 8613 - Raleigh, NC 27695-8613
Telephone: (919) 515-3082 - Fax:(919) 515-8951
Info Line: (800) 647-6777 - www.design.ncsu.edu/cud/index.htm

The Center for Universal Design is a national research, information, and technical assistance center that evaluates, develops, and promotes accessible and universal design in housing, buildings, outdoor and urban environments and related products.

The Center’s work manifests the belief that all new environments and products,

to the greatest extent possible, should be usable by everyone regardless of their age, ability, or circumstance. Part of the College of Design at North Carolina State University (NCSU), Raleigh, NC, the Center promotes the concept of universal design in all design, construction, and manufacturing disciplines through research, design assistance, and training. It also develops publications and instructional materials, and provides information, referrals and technical assistance to individuals with disabilities, families, and professionals nationwide and internationally. Ronald L. Mace of the Center for Universal Design developed the seven principles of universal design, which have been awarded international recognition.

Switzerland:

University St. Gallen, Institut für Technologiemanagement
Director of the Institute: Prof. Dr. Oliver Gassmann
Dufourstrasse 40a - 9000 St. Gallen - Schweiz
Phone: +41 71 224 73 00 - Fax: +41 71 224 73 01
email: contactitem@unisg.ch - www.item.unisg.ch

Further Information, see p.75.

England:

The Royal College of Art Helen Hamlyn Centre
Kensington Gore - London SW7 2EU, England
Tel: +44 20 7590 4242 - fax: +44 20 7590 4244
email: hhc@rca.ac.uk - www.hhrc.rca.ac.uk

The centre was set up by Roger Coleman and Jeremy Myerson in January 1999 to explore the design implications of social and demographic change. Today, its multi-disciplinary team of designers, engineers, architects and anthropologists undertake practical research and projects with industry. The Royal College of Art Helen Hamlyn Centre works to transfer knowledge about inclusive design to four design communities: Students, New graduates, Professionals and Academics. The Helen Hamlyn Research Associates Programme enables new Royal College of Art graduates to undertake one-year industry-funded projects. Aimed at design firms and business organizations is the annual DBA Inclusive Design Challenge. The Design for our Future Selves programme is the Helen Hamlyn Centre's main platform for collaboration with RCA MA students. It offers an annual awards scheme plus associated think tanks, seminars, workshops and user forums. The i~design research programme provides design guidance on inclusive design methodologies for professionals in the design community and industry. Include is an international network and a series of biennial conferences which aim to develop the theory and practice of inclusive design, and to support people working in the field to make inclusive design a reality. It has a special focus on bringing academics and practitioners together.

anatom5 perception marketing GbR (anatom5)

Interview with Jörg Morsbach,
22.01.2008, Correspondence via email

Company details

“anatom5” is an agency for marketing, conceptual design and design located in Düsseldorf. anatom5 analyses the current market situation of companies, provides consulting services and assists companies with communication strategies. As qualified experts in the field of barrier-free Information Technology and with a specialisation on barrier-free web design, they are obliged to observe the legal requirements (BITV). At the same time, they are interested in a general, universal approach to design.

Mr. Morsbach, what is your understanding of Universal Design?

Good universal design is always the result of the best possible compromise against the background of a completely heterogeneous target group. At the same time this implies that universal design does not always represent the ideal solution for the individual person. This gap is then usually closed by assisting technologies, for instance a special keypad in the domain of barrier-free design.

Which objectives do you pursue with your activities relating to Universal Design?

Sound, barrier-free web design also has to reach the above the aforementioned compromise. On the one hand, barrier-free design has to meet the requirements of the respective state and federal law; on the other hand, these technical and creative modifications should not lead to

barriers for the average user. Just because a product is barrier-free does not mean that it automatically is more user-friendly. Barrier Freedom might also be detrimental to user-friendliness for the average consumer, one example of this is the renouncement of Drop down-Menus via JavaScript. Our goal is to combine usability and accessibility as much as possible to come as close as possible to the ideal of universal design. The classic term usability only considers people who are not handicapped. User-friendliness therefore means that efficient access to information and technologies should only be made possible to “normal” people with “normal” eyesight, “normal” intelligence and “normal” physical abilities. Usability and accessibility together make universal design possible.

What Universal Design projects are you working on?

The aim of anatom5 perception marketing is the best possible barrier-freedom. We host and organise the Accessibility Symposium on barrier-free web design (<http://www.best-of-accessibility.de/>), we produce the online magazine *Barrierekompass* (<http://www.barrierekompass.de>). One of the leading portals for the issue of accessibility and usability of German language sites. In 2004, *Barrierekompass* was the recipient of the BIENE-Award for barrier-free web design. This prize is awarded annually by the Aktion Mensch (action humanity) and the Digitale Chancen (digital chances) foundation to the best barrier-free websites. In December 2006 the portal of the city of Straelen am Niederrhein, which we conceptualised and designed, won the BIENE bronze award in the “Complex Information and Communication Offers” class. Additionally, we developed our own test procedure, the *Barriere-Check®* for the analysis of barriers on websites. We also developed the shopping guide to barrier-free internet

and a guide to choose the right service provider.

How do you assess the economic, social and scientific relevance of Universal Design?

The demographic development in Europe clearly shows that the ageing of our society has become a pressing issue. Nevertheless the internet remains an alien thing to many older people. The internet however should be particularly interesting for older people. Doing shopping online can help to maintain some independence, the internet is an inexpensive information source, and it offers the possibility to take part in many social activities despite physical handicaps. With a continually increasing numbers of "Silver surfers", the offers and choices of websites will have to adjust to this development. E-commerce, travel agencies, banks and insurance companies, pharmaceutical companies, public services, service providers, transport companies and municipal utilities in particular should consider this growing target group with increasing purchasing power. This development will inevitably change and influence the image of the internet -- barrier-freedom will become a sign of quality and a competitive advantage.

Do you have national or international UD networks or cooperation with other national or international consumers or agencies?

We are continuously trying to expand our networks and cooperation and do so through our shopping guide, in which we list around 25 agencies from all over Germany, through regular lectures at events such as „Mehrwert für Alle“ (added value for all), „Darmstädter Kongress“ or „Contentmanagerdays“, via our own symposium "Best of Accessibility", and through our membership of the Abl-Projekt.

Best of Accessibility Symposium:
<http://www.best-of-accessibility.de>

Online-Magazin Barrierekompass:
<http://www.barrierekompass.de>

brodbeck design

Interview with Stefan Brodbeck
18.04.2008, Correspondence via email

Company details

brodbeck design is a small bureau for industry design in Munich. Staff members are a designer, an interior designer, engineers and a model maker.

Mr. Brodbeck, could you tell me about initiatives and projects at brodbeck design regarding universal design?

We established cooperation on usability and design in cooperation with the Generation Research Program (GRP) at the Ludwig-Maximilian-University. Design and usability are closely connected from the initial idea to the real product and requires an exchange at various points of the development process. The cooperation between brodbeck design and GRP (Generation Research Program) was established under the guidance of Professor Dr. Ernst Poepfel in order to bundle both competences (design and usability). The alliance between the university and the design bureau allows for new perspectives and promises optimized support in product development. The GRP works on cross-generational research. We are also planning a workshop for the telecommunication company ONE in Austria. This workshop is conceptualized together with the Bureau for Transfer and the ONE Smart Space Center and is directed by brodbeck design. During the workshop seniors are questioned regarding their communication styles, their needs, desires and customs. At the same time, their creativity, potential for innovation and knowledge is being assessed. We are also supporting semester projects at the Freie Universität Bozen regarding trans-generational products.

What exactly do you mean by Universal Design? What is your definition of UD?

Our answers are so called trans-generational products, which are tailored to the needs and requirements of seniors, but do not look like that, thus designed independent of age. They are shapely and as such also attractive and desirable for other target groups. Simplicity and intuitive usability, high operating comfort with adapted ergonomics, security and supporting independence in conjunction with an aesthetics that matches with different styles, are the most important requirements. One should further note that we are seeing a general increase in demand regarding aesthetics interest in design. Design has a high standing with regards to how people of all ages perceive themselves and their self esteem. Design represents an aesthetic sensation and is a sign of one's own values and vanities-- and this does not stop with age. On the contrary, we are dealing with a particularly demanding and heterogeneous consumer group therefore good design is critical

What are some examples of your universal design activities or projects?

1. The Stand-Sit Workstation– YoYo for the office manufacturer Steelcase: Its height can be regulated and this affords all generations (and in particular the older employees) a healthier and more ergonomic working space. The product is easy to use and adapts to individual needs.

2. Trans-Generational-Phone: this product is the result of a design analysis that we conducted two years ago in cooperation with the GRP. The study shows how assorted solutions can assist with physical problems such as amblyopia. These solutions are convincing both in terms of functionality and in visual design. It shows how a product can adapt to individual needs and interests

such as those of an entire family.

3. Barrier-free bathroom handle series for the bathroom manufacturer Lehen edel:stahl GmbH: It is an aesthetic handle series that we developed for equal access bathrooms per specific regulations. This handle series has repeatedly won design prizes such as the Gold Award, among others. The handle provides users of every age group with security and comfort while being functional and shapely. For example the transparent shelf with the handhold below. The handle which points slightly downwards is easily reachable from assorted washing positions and allows for a safe and comfortable use of the bathroom. Aesthetics are the most important thing-- A 30-year-old can use the same product for their bathroom as will a 60-year-old. The functionality adapts to the needs of both groups. Aesthetic design can thus reach the same level of functionality as a purely functional product.

4. WC-Seat Malong for the sanitary manufacturer Haro Sanitary: Emotions and aesthetics are both key factors. Through its concavity and contour as well as the V shaped 'Nut' between lid and toilet seat, the seat gives an Asian impression. The user can easily lift the top through the brink. Even better-- to close the lid, something that no one likes to touch, the user just has to tip the seat. The integrated soft-close mechanism allows to the seat to drop again without the user having to bend down. These are small features that definitely make this a trans-generational product. We also received several design prizes for this product.

5. Kalidro Desk for the office furniture manufacturer Steelcase: Thoughtful and functional details characterise this table while at the same time, it is not too complex nor is it too expensive. The table's height can easily be changed, cables can be re-wired and other adaptations can easily be



Fig. 5: Kalidro Desk



Fig. 6: Kalidro details



Fig. 7: Trans-Generational Phone

added. The user's age is not the main focus of this product, rather the key elements are functionality, user-friendliness, the reduction to the necessary (so-called elementarism) and obviously aesthetics. These are attributes that are important to all generations.

6. Life Time Mobile Phone for the telecommunications manufacturer DFG: The target group for this product is customers aged 70 years and older. When designing, age is never the main focus however it can dictate interests. The most important thing is simplicity, such as phone keypad the options menu. Its use is simple and it is easily readable, e.g. the keypad design features such as key size, font style and contrast of the numerics. It is adaptable to the user's individual needs and its material and shape are of extremely high quality.

How do you estimate the economic, social and scientific relevance of universal design?

From a market strategy perspective, UD offers great entrepreneurial opportunities. The "generation-plus" is and will continue to be a relevant consumer group throughout the next 5-20 years. Therefore it is particularly important that manufacturers make a concerted effort to target their interests. The idea of the elderly being ill and of the age where people cannot move around anymore must disappear from people's minds since it does not apply anymore. The future lies in a product strategy geared towards shapely products with adapted functionality, using the most modern technologies. Those technologies are adapted to the needs of the generation-plus, since this generation will set standards through its economic power. With such a product strategy, they will gain credibility with regards to product and service use, which will convince the critical, experienced consumer.

Are you involved with universal design national and/or international networks?

The Generation Research Program (GRP) based in Bad Tölz, a project of the Ludwig Maximilian University in Munich, seeks to combine scientific, technological and ecological resources thus furthering research and development related to demographic change. The GRP tests products' strengths and weaknesses and strengths for scientific purposes. Those results are then directly used in the product development. This cooperation between science and development guarantees targeted development of usability and design for the target group Generation-plus.

Concept Cabinet is a strategic consultant and business implementer for generational marketing for older target groups. The strategic concept is based on integrated marketing and the development of trans-generational concepts designed to attract various age groups.



Fig. 8: Lehnen edel:stahl GmbH
Bathroom handle series

grauwert

Interview with Mathias Knigge,
01.04.2008, Correspondence via email

Company details

Grauwert is a small design agency based in Hamburg that advises clients on classical product design and on what aspects of their business should be made more adaptable to changing demographics.

Please describe some grauwert projects relevant to the concept of universal design. Why have you chosen this focus?

grauwert develops 'demographic solid' products that can also easily be used by elderly people. We provide advice to companies in the context of universal design. Our goal is not special products rather solutions that are interesting for everyone. We also offer products tested with older consumers and the design of products that will resist demographic change and be usable by all. I founded the agency following my work with the Sentha research project at the University of Künste in Berlin. The goal then was to utilize product development research results to come up with demographically solid solutions for interested companies and to make the visions developed during the research project become a reality.

What exactly is universal design for you, how do you define it?

Universal design is the attempt to increase a potential user group and to increase additional comfort and security. It aims to develop every day products that define themselves not only because they compensate certain deficits, but that are

also interesting to a wider audience.

What are some examples of your universal design activities or projects?

We are scrutinising products for a producer of lawn care equipment (e.g. lawn mower) in order to encourage them to take into account older people's needs for their future products. Those older people who are integrated in the development process serve almost as a seismograph -- they are much more attentive to improvements and deficiencies. Other initiatives deal with the implications of demographic change in public spaces. We developed the trans-generational "Giro Vitale" exercise machines for the Nauener Platz in Berlin. We provide advice for Emden shopping centre so that in the future their older visitors will feel especially comfortable there.

The concept "kitchen plus" offers additional functions. The new grauwert kitchen series combines reduced design and innovative new functions so classical hand movements are better facilitated. The Stand-vegetable peeler is easily used with one hand. The novel, slightly curved blade allows a steady cut. The vegetables can be pulled over the blade of the ceramic bowl, the peelings fall into the flat container and can later be thrown away all together. Small indentions in the device prevent the vegetable peel from sticking to the glazed surface. On the lower side of the ceramic bowl, there is a silicon nut that prevents the working surface from sliding.

How do you estimate the economic, social and scientific relevance of universal design?

Economically, we are only at the beginning of a development with great potential. Socially, it is urgently necessary for us to

deal with the consequences of demographic change. From a scientific perspective, I believe universal design is a fundamental approach that shows greater strength when translated into practice rather than in the theoretical discourse.

Are you involved with universal design national and/or international networks?

I am in touch with national and international researchers and designers who we integrate into our projects as needed. I am also a member of the “Include Network” at the Royal College of Arts.

What are your plans or hopes for the future with regards to universal design?

We hope that universal design will be established as an integral aspect of product development, that it will be factored in more often and to that effect more valued. We continue to do a lot of groundwork to trigger interest and to counter prejudices. This is also a reason why we make a real effort to communicate the advantages of this approach via lectures we give at congresses and fairs.



Fig. 9: Emden Shopping Center user test
Photo: M. Schildmann, Leer



Fig. 10: Vegetable peeler
Foto: A.Franke, Hamburg



Fig. 11: Product test
Photo: M. Knigge, Hamburg

Evaluation

Hitachi Ltd. (Hitachi)

Interview with Eiichi Kubota, Taii Kubota and Yukie Motomiya on 25.02.2008, 3 pm, Hitachi Design Division in Tokio

Company profile

Hitachi Ltd. Corporation is a globally operating electronics company based in Tokyo. It was founded in 1910 as an electro technology factory but rapidly transformed into a productions facility, and in the same year electro motors were produced. In the following years, additional products were added, amongst others production plants, household appliances, communications systems, later also consumer electronics and information electronics as well as software. Hitachi is a large conglomerate that produces products for large companies such as turbine generators, construction machinery and household appliances from air conditioners to home entertainment electronics. Since 1920, Hitachi has also been active in the field of rail vehicles and railway systems. In Germany Hitachi is represented by the plant manufacturer Power Europe GmbH, among others. The company emerged from the bankruptcy assets of Babcock Borsig. Today Hitachi belongs to the 50 largest companies in the world (Rank 38, Status 24. July 2006).“

Excerpt from the Free Online Encyclopaedia Wikipedia, 27.03.2008
[http://de.wikipedia.org/wiki/Hitachi_\(Unternehmen\)](http://de.wikipedia.org/wiki/Hitachi_(Unternehmen))

Could you tell me something about Hitachi's initiatives with regards to universal design?

Universal design means to make the inaccessible accessible and offers a wide range of products and services. It is particularly important to us that in the end we also develop attractive products. We

would like to be as honest as possible with this issue and also apply universal design to the low budget segment.

What exactly is universal design for you, how do you define it?

For us, universal design means to support people through technology.

Do you have examples of products that you developed while keeping the principles of universal design in mind?

Yes, we presented this project at the IAUD conference. It is a touchpad for elevators that we designed while taking into account the co-habitation of the visually impaired and those without any visual impairments. The idea to support the visually impaired through acoustic information has been realised many times. However, we perceive it as a problem, that even though most of the time people without eye sight problems use this transportation, they are nevertheless confronted with acoustic information, which are to some extent perceived as disturbing. Therefore it was our idea to develop a touch panel that does this when a visually impaired person needs help. Using the help of sensors, the panel recognises if someone feels one way for the control element and the acoustic system is then activated. In cases where others push the button, the visually impaired person has the opportunity to ask for the necessary support from the people present.

What are Hitachi's goals with regards to universal design?

We set our goal to apply universal design to our entire product cycle. This also means to optimise productions cycles and possible recycling under universal design aspects.

How do you estimate the economic, social and scientific relevance of universal design?

From an economic perspective we anticipate that the interest in and demand for universal design will increase. For businesses, the social aspect is generally a slightly difficult starting point however universal design means we support people through technology. We do not regard universal design as a science rather as means to gain new knowledge while considering the consumer.

Are you involved with universal design national and/or international networks?

Our network mainly consists of companies within the Hitachi group. Once a month there is a meeting with discussions relating to universal design. We are also members of the IAUD and maintain thereby our external contacts.

Could you describe to what extent universal design is integrated into the development process?

Our User Centered Design Team consists of the universal design team and the usability design team-- considering the size of our company, with 12 people it is relatively small. In addition the employees work part-time in the universal design team and part-time in product development. We have furthermore gathered 50 people from our company who give presentations and workshops on the issue of universal design once or twice a month at approximately 30 primary schools in the greater area of Tokyo.

Evaluation

KOKUYO Co., Ltd. (KOKUYO)

Interview with Akihiro Taketsuna
21.02.08, 1 pm, KOKUYO Office in Tokio

Company profile

KOKUYO Co., Ltd., founded in 1905 with its headquarters in Osaka, started its market entry with the production of book keeping registers. The product portfolio has since expanded from a variety of office and stationary supplies to computer accessories and office furniture to systems for whole rooms. The interviewee Mr. Taketsuna is tasked with promoting universal design within and beyond of the KOKUYO Co., Ltd..

Mr. Taketsuna, are there initiatives with regards to universal design at KOKUYO?

Yes, since 1998 universal design has been an important aspect of product design. In 1999 we launched the first universal design products in the market. Since 2002, we annually announce a KOKUYO Universal Design Award and all of our products that conform to the universal design norms are tagged with our special logo. At this point we have around 800 products that carry this logo in our portfolio. In our showroom in Tokyo we have an ongoing exhibition about universal design at KOKUYO that is regularly visited by school groups. With this we try to create awareness for this subject with our clients.

How do you define universal design?

We do not perceive universal design as a trans-generational design of products however we differentiate clearly between three user groups. Young users (meaning children), adults and older users. We have

therefore defined certain criteria that our universal design products must meet. They should be easy to handle and comprehensive in application, appear to be of high quality, be in accordance with our security criteria, require a low energy input, be designed in an ecologically smart way. and naturally, be profitable.

Which role do you take on with regards to universal design within the company?

I function as a UD consultant at KOKUYO. I support the designers in the development process, train employees and organise user tests and surveys.

How do you estimate the economic, social and scientific relevance of universal design?

A recently conducted survey showed that 93 percent of 2,000 people of different ages who were surveyed reported difficulties in using every day products. Against this background I think that universal design is a very important subject with regards to the design of industrially manufactured products. Today already 10 percent of all localised products are designed according to universal design criteria. In my assessment, this trend will increase.

Are you involved with universal design national and/or international networks?

We give lectures at universities and try to motivate teachers to come and visit our exhibitions with their school groups.

What are your plans or hopes for the future with regards to universal design?

The goal of becoming increasingly involved

in apprenticeship. We have considered guided tours through our exhibitions to a greater extent than now exists. One aspect in our approach to universal design is in our future focus on Eco Design.



Fig. 12: KOKUYO UD exhibition, Tokyo

Evaluation

METI - Ministry of Economy Trade and Industry Japan (METI)

Interview with Dr. Masayoshi Watanabe
21.02.08, 9 am, Ministry of Economy Trade and Industry, Tokyo

Dr. Watanabe, you gave a very interesting lecture at the IAUD conference in Tokyo in 2006, could you tell us about it?

I was then doing research at the Iwate University on the issue of universal design. My lecture was about the management of universal design and the obstacles in its implementation.

Could you elaborate on the obstacles to its implementation ?

The essential problem is that we do not know why the implementation is so complicated. As our study shows, most Japanese companies understand the importance of this subject and 70 percent of those surveyed stressed the advantages of UD. Most of the small and medium sized enterprises surveyed make a real effort to optimise their products with the help of systematic user tests. The lack of understanding in how to apply UD to products, problems with the internal company structure, lack of reference material and the lack of necessary technologies were often quoted as obstacles to the implementation of UD. The difficulties in the implementation are primarily defining the concrete problem, lack of strategy and difficulty in finding an appropriate way for improvements.

I believe that it is necessary to introduce a process evaluation of organisational procedures with regards to UD and to communicate them publicly in order for everyone to recognise his challenges and overcome them. We need a definition of the

organisational structure that is requisite to UD implementation.

How do you define universal design?

According to the seven principles of Ronald Mace.

How do you estimate the economic, social and scientific relevance of universal design?

I think that universal design is a decisive economic factor that can have – when rightly implemented- a considerable impact on the success of a company.

What is the goal of your work with regards to universal design?

I have developed a proposal for a law that prescribes the procurement of UD products in state institutions. Unfortunately this was met with vehement protest from all sides of the finance ministry since it would probably lead to considerable extra expenses.

Are you involved with universal design national and/or international networks?

Yes, during the time I was working on the subject, I met many interesting people and I remain in touch with them.

What are your plans or hopes for the future with regards to universal design?

I am working on a completely different subject and unfortunately have no points of contacts with this issue.

The “Gold Design Award” is Japan’s single comprehensive award system. It has its roots in the “Good Design Selection System“ (generally known as “G-Mark System“) which was introduced in 1957 by the Ministry of International Trade and Industry in Japan.



Fig. 13: G-Mark - Logo of the Good Design Awards
www.g-mark.org

Evaluation

Samsung Electronics Co., Ltd. (Samsung)

Interview with O-Jae Kwon, Hyun-Joo Song, In-Sil Han, Kyoung-Woon Hahm und Myung-Hyun Yoo. 18.02.2008, Samsung UI Research Lab in Seoul

Company profile

Samsung is the largest South Korean conglomerate (Jaebeol). Samsung employs 250,000 people and it is one of the largest companies worldwide with regards to market power and profits. Samsung pays 5 billion in taxes in South Korea, which represents 8 percent of its public revenue; it makes up one-fifth of South Korean exports. The name Samsung means “three stars” in Korean, which represents the three sons of Samsung founder Lee Byung-chull. The company was founded in Daegu as a grocery store in 1938. After the Korean War the company entered into the construction industry and food processing. They established the first wheat mill and sugar refinery at an industrial standard in South Korea. This has resulted in Samsung being the largest food producer in South Korea today. The company started to expand to the production of electronic items with the founding of the Samsung electronics branch whereby it specialised at an early stage in entertainment technology and household appliances. In the 1980s Samsung was the largest producer of portable TVs worldwide. After the Asia crisis in the 1990s, Samsung, like many other Jaebeols had to retire from many business fields. Many branches were sold in order to strengthen its financial base. At the same time Samsung focused on key areas. Since then Samsung electronics has become the most important branch of the conglomerate. Lesser known in Europe are the other company branches such as: Samsung life insurance, Samsung heavy industries, Samsung chemical industry and Samsung

Renault Automobiles in cooperation with Renault. Excerpt of Wikipedia, the free encyclopedia 04.04.2008

Mr. Kwon, could you tell us something about Samsung's initiatives with regards to universal design?

We generally do not label our product with UD. This does not mean that we exclude UD, but depending on the requirements of a project we decide whether it will be applied or not. We trained people with regards to UD, therefore it is always part of the design process.

How do you define UD at Samsung?

There is a confidential handbook for internal purposes in which UD is clearly defined and explained with the help of examples. In contrast to the seven principles of universal design, we only have five principles. Since we are a company that produces mass products our guidelines include product-oriented contents. A customer specific approach has to work for Samsung and in the production process. But the actual detailed criteria cannot be static, they have to be transformed according to the development of the company, so to speak tailored individually for each individual situation. This means that the guidelines are very relevant for our work, but they are individual definitions that constantly need to be updated and reconsidered. They can also never be considered as guarantee for success.

We use our own terminology by the way, Universal UI or Universal User Interface.

What determines the difference between UI and UD?

Universal Design is, from our understanding,

particularly for elderly or physically handicapped people, with UI they are more or less excluded. The emphasis is on user-friendliness. In short, for us “UD” is emotional and “UI” is functional, therefore Samsung focuses on UI. UI means to translate important information as simply as possible through seeing, hearing and feeling.

Do you have an example of products that you developed with regards to universal design?

Yes, there are certain products that we developed primarily under the auspice of UD. The reception of several awards of prestigious design competitions indicates approval of our thinking that this was the right decision. One example is Samsung black TV remote control: it includes Braille writing; the heights of the keypads and the entire measurements are ergonomic; and it guarantees a good grip. At first the remote control might seem complicated since it was developed for a wide user circle; once you look closer it becomes obvious that it entails much universal design. On the basis of studies that show that older people perceive colours differently, the colouring was optimised with regards to this particular eye weakness. The issue of which colours are best recognisable in a particular area and whether certain parts should be coloured or all parts should be coloured or not was also taken into account.

Another example is the refrigerator that is easy to open. An ergonomic aspect that plays an important role in its construction is an easy-to-handle interior design with optimal corners, openings and size proportions. In addition, the easy cleaning of the fridge must be guaranteed.

The third example I would like to highlight is a washing machine. It is the only washing

machine produced in South Korea that has been divided into two openings. For this we also conducted many studies with regards to ergonomic handling.

Generally one can say with regards to “digital appliances” and “digital media products” in particular that we intensively thought about universal design while developing this product group even though it is not obvious at first sight.

What are Samsung goals with regards to universal design?

Samsung is a profit oriented business that aims to become a globally acting first class company. At this time it does not have the necessary market shares but we are on the right path. It is particularly important for the future to produce products that can possibly be used by all consumer groups since increasing sales usually raises the standing and profit of the company. In Japan there are already one or two positive examples of companies that successfully offer products for a different consumer groups with specific product needs.

How do you estimate the economic, social and scientific relevance of universal design?

There are two key arguments in favour of universal design: First, the brand’s image is impacted when one takes into consideration of universal design public. Secondly, even though industrially produced products can only correspond to a certain extent to universal design thought, to keep universal design in mind and orient products towards this thought furthers developments in the right direction. The economic relevance is that new value is created, which can offer incentives to companies to expand their product range. The social aspect of

universal design is that society tries to be more considerate and people deal with one another's needs and demands. One could understand UD as an attempt to design a better, more beautiful world again. With regards to scientific research, UD promotes dealings intersections with other disciplines. Psychological and medical issues gain greater relevance. In order to implement UD, you must know people; you must conduct research and analyses. Of course, one can deal with this subject based on personal experience, but in order to develop products, one needs precise instructions. If you deal with UD without a scientific basis you are going to fail. One cannot take one's own experience as a starting point when developing products for the visually impaired. You need exact knowledge about the difficulties and the perceptions of the users; therefore you need test users with different difficulties. If for example you do not need one, but three or four seconds to react, it can create stress for your senses. You must understand the biological structure of the human body and design the products accordingly.

Are you involved with universal design national and/or international networks?

No, we do not maintain an official network and we have no official appointee for conferences and seminars, but since some of our employees have been dealing with this subject for a long time, they have many personal contacts in this regard, many of those are in Japan. Until recently we had an unofficial workshop on this issue, with all internal people interested in UD, approximately once a month

Can you describe to what extent UD is integrated into the development process at Samsung?

We cannot give you the documents since they are confidential, but for your record, we can show you the training documents. Here we introduce the organisation of the Universal UI evaluation process. Our goal for 2006 was to improve this transcript and in our opinion we succeeded in doing so. We are now much more satisfied with the proceedings.

What are your plans or hopes for the future with regards to universal design?

The aim is to expand our user group and increase profits. Not only to address healthy, agile consumers but also consumers who can independently (with some support) use our products. This would increase our market share tremendously. We are likely to only reach this goal in a few years however it would represent a strong basis with regards to the goal that Samsung becomes a first class global company. This is the task of the UI Research Team.

An Integration of Universal Design in Samsung's development process will not only be achieved through the training of our employees. We need to exert influence and create an internal UD culture. I believe that this will take 5-10 years. It could also take 100 years to create this culture but Samsung is making a real effort to fulfil this process in 5-10 years.

Why do you think will this process take 5-10 years? What do you think influences the implementation time frame, must decision-makers first develop an understanding for the subject? Do you think you will make the anticipated profit in just 5-10 years?

South Korean company structure is in the process of transformation. The managers are increasingly gaining power. In our opinion, the aforementioned culture evolves through

the intertwining of the manager's opinion and the common worker's opinion. First, all people must recognise the relevance of this issue. In a country such as South Korea that is not fully developed, you do not have the opportunity to focus on the management and not sell any products.

Do you think that the demand of universal design will increase if it is more present in the media?

Yes, this is a natural process, but here as well, processes progress much faster in developed countries than in developing countries. For instance, for very poor people in Africa, UD is certainly irrelevant. Once primary needs are met people seek comfort. Since South Korea is in a process of economic upswing things are certainly going to change with regards to UD. This will give us the time needed to further universal design. In the last three to five years, Samsung has gone through enormous economic development. Although we made a real effort, UD was definitely not at the centre of our decisions. In the future, it will hopefully be more at the centre of our attention.

UI already is 80-90 percent relevant to product design. UD in contrast will gain more relevance since functional and technological aspects are not yet perfected. Our main goal is to improve user-friendliness--this includes at least a small part of the UD thinking.

What do you think can help to accelerate the development?

Training is certainly the most important thing for development, after this there is visualisation and information flow. But convincing the management with regards to this issue is absolutely essential. The publication of positive examples can further significantly advance this development. We are confident that through increased positive examples of successful Universal

Design products, with time a culture of UD will develop in a natural way.

www.samsung.de

Seoul National University of Technology (SNUT)

Interview partner:
Prof. Young-Jun Ko
17.12.2007, email correspondence

Background on University:

“Seoul National University of Technology („SNUT“) is one of Korea’s newer universities. The university originated from a Vocational Supplementary School established in 1910 by Emperor Gojong’s Royal Decree. Later the school was re-organized as Gyeongseong Public Industrial School, Gyeonggi Technical College, and Gyeonggi Open Industrial University before it was finally reborn as Seoul National University of Technology in April 1993.”

Excerpt, Wikipedia, the free encyclopedia, 18.04.2008

What is the aim of the activities at SNUT with regards to universal design?

Our goal is to train people who can work for research institutes, government agencies and other agencies with regards to UD via our extensive offerings of masters and doctoral programs. In addition we carry out essential UD research and design projects for industry and government agencies.

How do you define universal design at SNUT?

We have defined UD as design for everyone, including elderly people, the physically impaired, children and pregnant women. In thinking about the future, one should extend this definition to all creatures, including animals. If you construct a road through a habitat of certain animals you must think about solutions with regards on how they

will cross the road without being run over.

How do you estimate the economic, social and scientific relevance of universal design?

Since people are living longer, but older people do not want to use products that have been especially designed for them, more and more companies feel the demand for UD products. With global acceptance of equal rights in societies, UD is widely accepted and promoted since it aims at equal access or use of design. Therefore I assume that in sectors such as “public design” with representative functions for the whole of society, the application of UD will increase.

UD Research

In 2008, we will open the ‘The Centre for Universal Design Initiative’ at SNUT for research in the UD sector. In this centre consumer needs will be researched. In addition, there will be research in the areas of UD product design and UD in public spaces. Later on we will plan an exhibition that provides an overview of research projects tackled at SNUT.

Project examples

1) Electronic Bike Design

By Global Motors Ltd. The design was adjusted to the needs of women and older people. The lowering of the frame allows women to wear skirts and facilitates the getting on and off for elderly people. The user comfort is further increased through the adaptation of the chainless back stay and the baggage area below the backseat.

2) Silbo (Silver + Robot) Design

Silbo uses robot technology to support the mobility of older people. It helps them to

walk and guides them to their destinations. Their freedom of mobility is supported and the user has the possibility to rest vis-a-vis the opening of the seat. Fig. 16-18, page 53

3) Indoor Cycle Type U-health System

When people get older, it is important to maintain the health of one's lower body. This can be used for health support purposes via indoor cycling and building up muscle through the exercise machine.

4) UGTI

UGUTI is an evaluation system that combines, UD, good design, technology and single elements of technology. These four elements of which UGUTI is comprised can be applied to every object. Through changing the platforms with others and replacing them with other platforms, a variety of evaluation possibilities arise.

Are you involved with universal design national and/or international networks?

We have signed a MOU with the Universal Design Research Centre at the Kangnam University in South Korea and cooperate in the areas of teaching, research and information exchange. After we recognised the importance of UD we organised the UD symposium. Professor Abir Mullick from the Georgia Institute of Technology, USA, and Professor Yoshistugu Morita from the Kyushu University accepted our invitation. We believe that we strengthened with this the cooperation with regards to UD.

Are you aware of other UD initiatives in South Korea that do not directly relate to you?

Yes, several South Korean universities deal with this topic. I know the following institutions: Universal Design Research Centre - Kyungsung University, Universal Design



Fig. 14: Indoor Cycle Type U-health System computer model



Fig. 15: Mock-up of the Electric Bike

Evaluation

Lab - Kangnam University and the Department of Universal Design - Korea Nazarene University.

Furthermore, the symposium of the KSDS (the largest design institution in South Korea) entitled “Linking universal design and information technology“ took place in 2007. For this symposium, Professor Abir Mullick of the Georgia Institute of Technology; Professor Yoshitugu Morita of the Kyushu University; the president of GA-TAP Company, Toshimitsu Sadamura, the world class company in ecological design; and president Sang-Young Shin of LG Electronics Corporate Design Centre were invited. They exchanged their very valuable experiences and shared these with the members of KSDS in the form of presentations.



Fig. 16 - 18: Silbo (Silver + Robot) assists older people walking and leads them to their destinations

Evaluation

Toshiba Corporation (Toshiba)

Interview partner:

Kei Tomioka, Yuuichi Izu, Kenji Ido, Masahiro Inoue, Maho Horiguchi
25.02.2008, 10 am, Toshiba Design Centre, Tokyo

Company profile:

The Toshiba Corporation is a global electrical and electronic producer with headquarters in Tokyo. Toshiba was created in 1939; it resulted from the merging of Hisashige Tanakas, the electrotechnology company Shibaura Seisaku-sho founded in 1875 and the consumer goods manufacturer Tokio Denki. The new company was named Tokio Shibaura Denki, but became known under its abbreviation Toshiba. Only in 1978 did it become the official company name. "To" means East and "Shiba" means lawn and comes from the locality name Shibaura.
Excerpt from the free Online Encyclopaedia Wikipedia, 27.03.2008

How do you define universal design at Toshiba?

We perceive UD as an essential element of design. It constitutes two particular aspects. The starting point is consumer surveillance, which is then secondly followed by the implementation of the knowledge gained into the development process. It should further the most user accessibility, user friendliness and social responsibility in a company.

Do you perceive a conflict between the Toshiba's motto "Leading Innovation" and the social aspect of universal design?

No, not at all. Both aspects can in fact be combined.

Could you tell me something about Toshiba's universal design initiatives?

Consumer tests have become an integral part of our product development processes. However, nowadays it is difficult in large profit-oriented companies to combine financial interest with designers' visions. To make sure that UD is integrated in the products that in the end reach the market demands great initiative and also great power of conviction.

What is an example of a product that you developed under universal design aspects?

One example is our refrigerators: before we launched them, we conducted user tests with regards to perception and handling. For instance, through "eye tracking" we researched how the user could find the product faster and have optimised the space division accordingly. Shorter loading times for the fridge and less time locating products also saves energy and increases environment friendliness. We conducted tests with regards to the generally most economic packing height to this end.

What are Toshiba's goals with regards to universal design?

It is the improvement of our sales figures through universal design.

How do you judge the economic, social and scientific relevance of universal design?

We anticipate that this subject will gain much more relevance in the future.

What are your plans or hopes for the future with regards to universal design?

We think that in the future all companies will have to take UD into consideration and therefore we wish for a standardisation. There are too many definitions of UD. It would also be helpful to have guidelines for our engineers, since according to our experience, we conduct most discussions with them.



Fig. 19: MGU-1000A, X-ray mammogram
Manufacturer: Toshiba Medical Systems Corporation, Design: Toshiba Corporation, Tokyo, Japan

Winner of the 2008 Universal Design Award:
“The design of this machine shows great user-friendliness and flexibility, its use is not determined by the body structure of the patient.”

TOTO Ltd. (TOTO)

Interview Partner: Tetsujiro Tomura, Yuko Eto, Akiko Sakata, Hozumi Takeo, 20.02.2008, 10.30 a.m., Universal Design Research Centre in Chigasaki

Company profile:

The Japanese company Totokiki KK (TOTO) was founded in 1979. It is listed in the Nikkei 225, Asia's most important financial index and dominates the Japanese market for sanitary products. The company produces bath tubes, toilets, wash basins and urinal, among other products. It has also made the Washlet popular: this toilet seat, which includes a warm water cleansing function, is the most advanced type toilet in the world. It features an impressive variety of functions. (quoted from Wikipedia, 27.03.2008)

Mr. Tomura, could you tell me something about TOTO's initiatives with regards to UD?

Yes; the universal design research centre was founded in April 2002 and is tasked exclusively with the promotion of universal design inside and outside of the company and with research in this field. It belongs to the marketing group of TOTO. In most Japanese companies like Sony, Hitachi and many others, the universal design team is part of the design centre, which seems to be a good solution for these companies. A special aspect of TOTO is that we operate as a separate entity from the companies and thus have the necessary independence in day-to-day business which allows us to fully concentrate on UD. We think this presently functions very well. At TOTO we are concerned with leaving the design of UD products to the designers. We are working to push through UD as a company philosophy. Therefore it is important that we

enter into a dialogue with marketing, design, development, communications, advertising and sales units to stress again and again the importance of this issue. The UD research centre is also, as its name suggests, tasked with research in this field. The focus of our work is clearly monitoring consumers in this respect; the premise is "the less high tech, the better." We need to remain as close as possible to the user's needs demand and staying on the consumer's 'eye level' is the best approach. We have made it our mandate to integrate the consumer demands and to focus our thoughts on him. The consumer's voice should be published. Thus, in most cases we don't show representative quotations and virtual presentations rather real life videos and interviews.

What exactly is universal design for you, how do you define it?

We differentiate between barrier-free design for the handicapped, visually impaired and elderly people and UD. Universal design is equally useful for everyone, including the physically challenged, etc., but also children or e.g. people who are unusually tall. In our opinion there are three ways to define UD. First, UD and barrier-free design are completely separate from one another. Second, they represent a certain continuum, borders between the two are fluid, i.e. certain aspects of barrier-free design are included in UD. Third, barrier-free design is completely integrated into UD. We have opted for the second definition and regard UD as a cycle. Finally, I would like to stress that for us, UD is not purely an economic feature, it is something close to our heart.

What are some examples of your universal design activities or projects?

A good example of our work is a chair that we developed for use in the kitchen.

Our research showed that the majority of users are sitting on the edge of the chair when working in the kitchen and that it rolls backwards when standing up. We developed a rolling system that prevents it from rolling back. Only with a certain weight can the chair roll back, which minimises the danger of someone sitting down in an empty space.

How do you estimate the economic, social and scientific relevance of universal design?

Presently UD is a very trendy topic in Japan as well as globally. The focus of our action with regards to the demographic change should not only be on elderly people rather on consumers in general. Since the baby boomers, who are a large part of our society, now belong to the elderly people bracket, we need to react accordingly. Should the structure of society change again into a different direction, we need to adapt again. We should not forget that UD means keeping in mind the consumer in the first instance and reacting to his needs. Thus, we are not only turning to the media for advertising but we need to talk to government officials and educational institutions so that everyone appreciates the need to foster UD.

Are you involved with universal design national and/or international networks?

Yes, we are working in conjunction with universities and government institutions and we are a member of IAUD (International Association for Universal Design). The primary issue is to make it a top issue for key people.

What are your plans or hopes for the future with regards to universal design?

We wish for the future that the universal design principal is supported and promoted by all departments at TOTO thus allowing us to concentrate even more on research. Another idea for the future is to announce a UD competition.



www.toto.co.jp/en

Fig. 20: Children's urinals with handle for standing

Universal Design Examples

5.1 Public space and buildings



Fig. 21: Dome of the Reichstag by Foster+Partners
The ramps are arranged like a winding, so that ascending and descending visitors do not cross one another.



Fig. 22: Building in Seoul
The four-story shopping centre functions without any stairs. All shops are accessible via the spiral ramp.



Fig. 23: The seats of the metro in Copenhagen are suspended from the wall. Thus, dogs and baggage find space under the seat and cleaning is easier.



Fig. 24: Metro in Copenhagen by Giugiaro Design



Fig. 25: Hauptbahnhof (main station) in Berlin with escalators and elevators as a design element; by gmp – van Gerkan, Marg und Partner

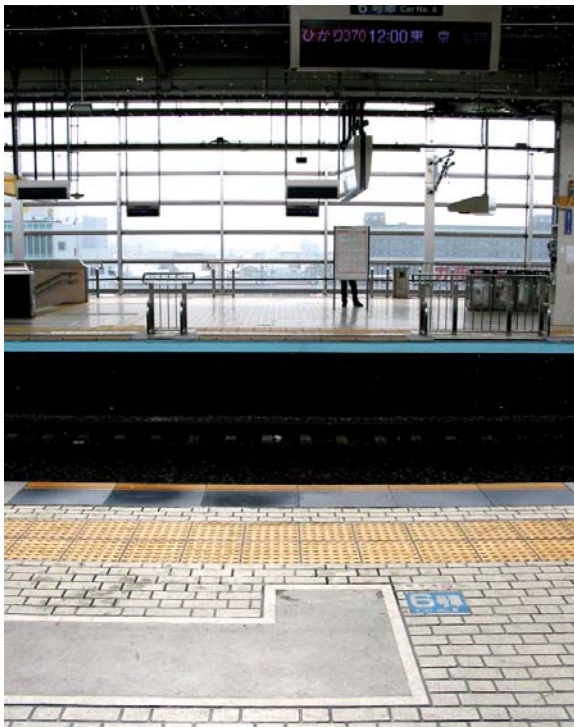


Fig. 26: train platform in Japan: marks for the desired position for the queue of boarding passengers



Fig. 27: train platform in South Korea: marks for the first passengers.

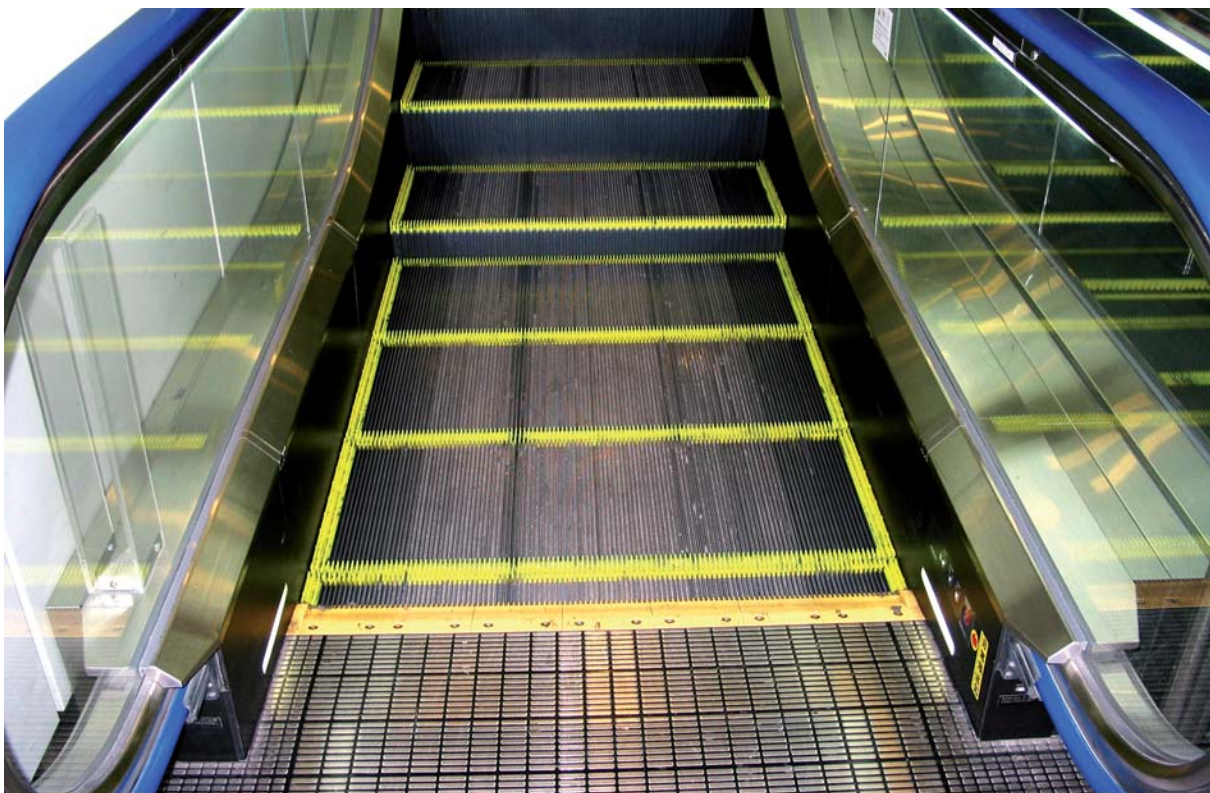


Fig. 28: Escalator with illumination and signal colour to improve visibility of the stair steps, Nanita Airport in Japan

Universal Design Examples

5.2 Universal Design Award 2008 (manufactured products)

The „universal design award 08“ was announced by universal design e.V. Two selection committees awarded 39 prizes in total: An international expert committee awarded 32 contributions with the “universal design award 08”. Visitors at the ABF trade fair choose seven products as „universal design consumer favorite 08“ – three of them received both awards.

The competition is intended to motivate designers and manufacturers to incorporate a new concept of functionalism into the design of products. Prizes were awarded to functional and aesthetic products, architecture and services with special utility or a self-evident usability for “all” and not only “the elderly”.



Fig. 29: mobile phone, emporia TIME
Manufacturer: Emporia Telecom, Linz, Austria



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Dominic Schindler
CREATIONS

Fig. 30/31: The new design of the lathe and milling-machine with improved overview of the work process, it makes the work process more transparent and supports working while standing. Manufacturer: DMG Vertriebs and Service GmbH, Pfronten, Deutschland, Design: Dominic Schindler Creations, Lauterach, Austria

Universal Design Examples



Fig. 32: M-SMART Jumbo, the oversized switch allows for simple handling, for instance with an elbow. Manufacturer/Design: Mer-ten GmbH & Co. KG, Wiehl, Germany.



Fig. 33: SUPERPLAN XXL, Barrier free bathtub. Manufacturer: Kaldewei, Franz GmbH & Co. KG, Ahlen, Germany



Fig. 34: Dry Battery Pack: The batteries are shrink-wrapped. When wrapping is removed it is obvious whether they have been used or not. Manufacturer: Panasonic, Kadoma City, Japan.



Fig. 35: Hearing Aid Battery: The orange clip facilitates the insertion of these small and otherwise difficult to handle batteries.

5.3 Product Concepts

Lebens(t)räume 2008 (Living rooms/dreams 2008)

Competition for students

On the topic “leben, wohnen, arbeiten” (living, living at home, working)

The award competition was announced by Vincentz Network and was implemented by iF international Forum Design. The award’s quest was for visionary solutions for buildings, rooms and spaces, products and services. Demanded was a “design for all” rather than a “design for the elderly”. The category ‘assisted living’ included products, architecture and services to sustain and to foster an independent lifestyle as much as possible for people in specific living situations.

Further information regarding the competition can be found at www.ifdesign.de

Sample of submitted projects:



Fig. 36: Molito, Design Martin Loistl: The tunnel-shaped mortar grinding bowl is intended to prevent shifting of the mill stock. It is sufficient to put the hand on the upper side and exert only gentle pressure to the rotary movement of the mortar. www.martinloistl.de



Fig. 37/38: Volume – Boxes for paper towels: Design Hsu Chun Chia: The folding structure of the box adjusts to the filling quantity, making the very last towel accessible.

Universal Design Examples

Pack aus, pack ein, pack zu (unpack, pack, grap it)

Packaging solutions for old and young

The competition took place at the University of Art Berlin in 2006 and was established by Professor Karin Schmidt-Ruhland. It was sponsored by the German Ministry for Family; Seniors, Women and Youth. The results were presented in an exhibition in November 2006. Advertising partners were Form, creativ verpacken, designtransfer und die Kaufhof Warenhaus AG.

Photos: Andreas Velden

www.pack-aus.udk-berlin.de

Selection of submitted projects



Fig. 39: „Ausreißer“ (Pulling out), Wolf Jeschonnek



Fig. 40: „Heilbronner“, Natali Pilic

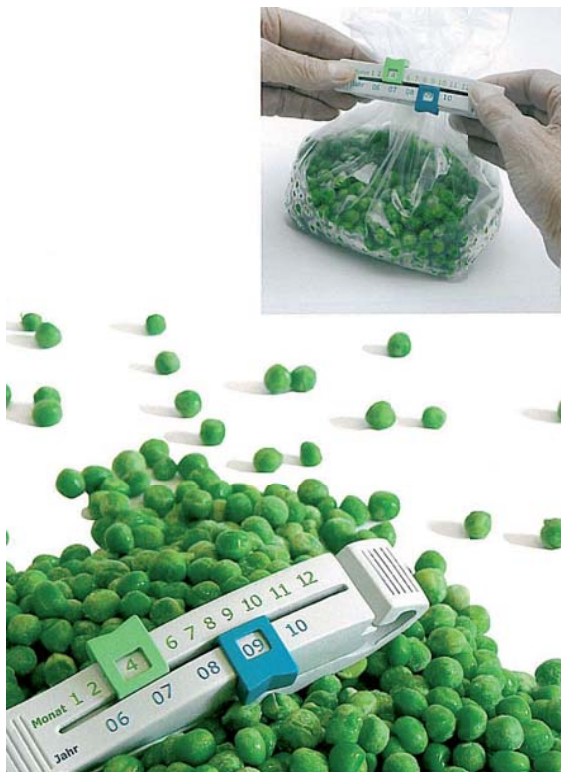


Fig. 41: „Sag mir quando, sag mir wann...“, (Tell me when....) Meike Langer



Fig. 42: Dremi, Sang Woo Lee



Fig. 43: Der rollbare Getränkekasten (Rolling beverage crate), Maike Ahlers

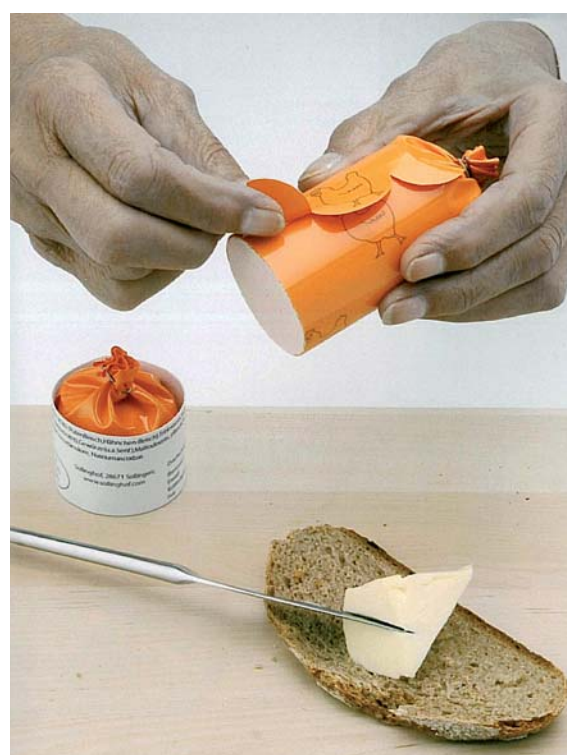


Fig. 44 Die neue Pelle mit der Lasche (The peel with a clip), Gesa Nolte

6 Evaluation

6.1. Design challenges in coming decades

Universal design can significantly contribute to the stabilization of the national economy, since it is supported by products, architecture and services of the independent lifestyle of citizens. Thus UD becomes an aspect of an inter-generational social contract.

Universal design products should be self-explanatory and user-friendly for consumers with the most differing cultures, language and experience, i.e. globally and universally comprehensible. The realization of universal design in conjunction with global demographic change offers significant growth potential and a corresponding raise in employment rates.

As Professor Walter Hardt from Potsdam University of Applied Sciences expressed:

“What is the point if the access to a cash machine is barrier-free, but the handling of the cash machine itself is not understood? Since acceptance and usability are important factors for the products’ economic success, designers and engineers, who deal with the handling and accessibility of products, are likely to have excellent job perspectives”.

UD aims for the greatest possible level of user convenience rather than its limitation by trendy gadgets or poorly designed details. The implementation of an approach UD requires neither special innovation nor a peculiar design. During the process of product development, in which the desirable cycle combining design, product tests and improvements takes place, one can by relatively easy means integrate the UD criteria into the design.

In fact, universal design does not make new demands nor pose additional requirements for the designer. It includes user-friendly and ergonomic aspects, which should be an integral part of every good design process. Universal design essentially embraces a catalogue of criteria as kind of a checklist for the design of sustainable products. This approach conforms to the idea that functionalism purported in the last century: products satisfying ergonomic requirements and customer demand by the simplest means. Thus, if designers employ requisite sensibilities to the current social and demographic reality they will inevitably design appropriate products.

Since commercial enterprises always have to take finances into account, it is necessary to verify to what extent these criteria are to be realized in each specific case. However, if consistently implemented, this approach to design should be both cost-effective and profitable in the long term.

Today’s circumstances however are often extremely limiting in regards to designers’ latitude, which can be obstructive to its implementation. If the forerunners of functionalism had been accountable to marketing directors or product managers, who have to produce profits, we would certainly be in a different situation today.

6.2 Does UD mean standardization?

UD does not imply the standardization of products rather a necessary broadening of consumer groups. There should be no longer a differentiation between young and old, but rather between different types of consumers, since the baby boomer-generation – in contrast to their parents – will have even when their older as many different life-styles as their own children.

“When the baby boomers (born 1946-1958) retire, current conceptions of older people will no longer fit. Elvis Presley; Rock n’ Roll and the 1968-movement defined their youth and more liberal values and paradigms. As a result many researchers are expecting a value shift in the foreseeable future. In the future elderly people in Europe and other countries will be significantly more self-assured and active than today’s 50+ generation. When designing new products and services for the 50+ generation it is important not to label products with “for the elderly” and not to overlook the other segments of customers. It is essential that design is not age specific but rather independent of age.” (Gassmann, Keupp 2005, Part 2)

There is a danger of “segmentation” into ever smaller user groups, which could mean in extreme cases that each product segment develops a version for younger consumers and one for elderly consumers, whereby the group of potential customers would shrink.

6.3 Standardization Yes or No

Experts from all over the world (Alex Lee, Frances Aragall, Roger Coleman, Valerie Fletcher, Fritz Frenkler) agreed at the 2006 International Conference for Universal Design in Kyoto that a standardization of UD via guidelines and regulations is not a viable solution. They raised concern about the possibility of defining whether a product is user -friendly. Guidelines and laws would have to be established for UD standards to be valid. Competition and requests for proposal would certainly be more useful to promote creativity and competition and to avoid an unnecessary regulation.

„I think the only way that UD or Design for All can be standardized is probably through a process in which companies understand users‘ needs and then reflect these when next developing products, and making improvements accordingly.“ (Aragall, IAUD Conference 2006)

Every fulfilled aspect of UD should be regarded as a step into the right direction. The limits of regulations by law are exemplified by the use of guidelines (DIN) in Germany. In most cases they are only implemented if there is a financial advantage otherwise this entire aspect is largely disregarded.

„UD is a process. It’s a process, I think, in which there is no end point. You’re always improving, always advancing.“ (Coleman, IAUD Conference 2006)

Often UD evolves as a result of product improvement because of specific requirements. “Perhaps the most familiar product in this case is the ball-point pen, which was originally designed to deal with the problems caused by trying to write with a fountain pen at altitude, but is now the standard writing implement used by practically all of us, simply because it is so much easier and more intuitive than a fountain pen.” (Kercher 2007)

6.4 Asia, Japan as a Role Model

In 1999 the Kyoyo-Hin Foundation was established in order to spread the principles of universal design. In 2003, 50 leading manufactures from all over Japan (Sony, Panasonic, Sharp and Toshiba, among others) founded the International Association for Universal Design (IAUD) in order to foster common understanding of UD in Japan.

This cooperation brought about not only an exchange of experiences between members of industry but also a major public relations effort by corporations. Through media, education and explanation of universal design in exhibitions, the Japanese people have developed a genuine awareness of this concept. Someone said that in Japan even a child in primary school already has a general idea of UD. In just five years the IAUD and their influential members have clearly developed a solid basis for future developments related to UD principles. If other industrial nations miss following suit, IAUD could turn this into a quality standard that functions like a market place barrier.

It is worth noting that the structure of the Japanese society has accelerated this significantly. Often influential men in executive management positions in different companies have studied together. Since practically all business in Japan is based on trust, this system of personal relationships serves as a strong foundation for the realization of such projects.

Japanese corporations have been striving for a long time for achieve the production of globally competitive and high quality products. Now they are facing the challenge of shifting the focus to the development of products improving the quality of life.

In international comparison, Japan is implementing UD faster and with more courage. This is supported by the results of a study of the International Facility Management Association (IFMA), in which the development in Japan and the USA was compared with regard to the implementation of UD and equal access.

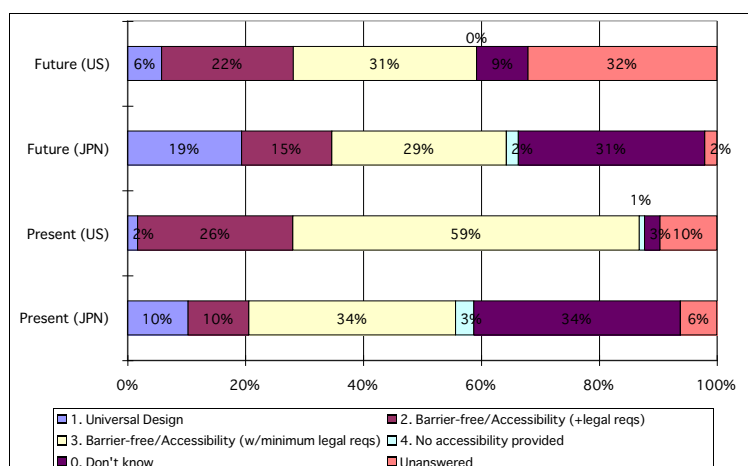


Figure 45: The degree of practice of universal design or barrier-free design / accessibility at present and in future in Japan and the USA

South Korea, Japan's little brother – but how long still?

South Korea with its rapid economic growth and its flexibility to adapt, which other countries appear to lack, looks to Japan regarding UD. Neighbouring Japan has gone the longest way in UD development and due to its geographical closeness, can provide decisive impulses. A relevant network between Japanese and South Korean researchers exists already. For the moment, the standard of living of the average South Korean citizen is not yet high enough to allow for the related additional costs for more comfort but this will change soon. The past practice of state subsidies for big companies to foster economic growth can bring about significant initiative and innovation.

In South Korea several projects regarding universal design are known at assorted universities however the focus remains on assistive technologies and the design of products for the elderly.

6.5 European theorists

European experts (Favaretto, Frenkler, Gassmann und Keupp, Kercher, Schmidt-Ruhland, among others) agree that until now, very few products that are designed according to the seven criteria of universal design of the NC State University (listed in Chapter 3.2) exist on the world market. The reasons for this are multi-fold: lack of knowledge of UD criteria, concerns about profitability, concerns of executive managers due to a lack of examples and unwillingness to take risks. Additionally, many companies seem to doubt whether the social aspects of UD and economic interests are reconcilable.

All across Europe UD and DfA respectively have yet to assume a decisive role in public discussions, though interest is growing. While there is certainly a demand for UD products, companies do not yet sufficiently serve the European market. Companies that will be the first to introduce such products to the market are likely to be very successful.

By now research and the generation of concepts regarding UD have reached a remarkable level. There are many organisations in addition to single actors, though uncoordinated, working for the same goal. Current data on products and architecture incorporating universal design suggest that Germany has assumed a leading position. However, as in many other countries, this is not the result of targeted UD development rather it is due to the influence of functionalism on design.

In Germany, a solid scientific basis exists. Numerous articles, Op-eds, TV documentaries, books and academic papers have been published about demographic change. Regarding universal design and DfA, there also exists by now some written material and reporting, but serious studies in the field by the industry are still lacking.

As illustrated by contribution in the students competition “Lebens(t)räume” and “pack ein pack aus pack zu” (Living spaces/dreams and pack, unpack, grap it) on page 66 ff students have developed good concepts which are basically waiting to be realized. The number of participating universities that have initiated students projects in this field is an indication that serious academic work on this topic takes place throughout Germany.

As a result of the growing demand for aliments for the production of bio gasoline and increased Chinese demand for raw products of all sorts, the possible shortage of resources on global raw material markets has become a major issue. Sustainable economic planning is essential for all countries in the world. Germany’s leading position in ecological and sustainable technologies can support the universal implementation of universal design because the responsible use of resources is an important aspect of the UD concept. German companies however seem not to be sufficiently aware of the importance of this market niche. At least they have not marketed – nationally and internationally - their development potential and depth of possible contribution accordingly. The same is true for the factor quality.

Italy seems to be behind with regards to UD developments. The website Design-Italia suggests:

„In Europe reseach and the spreading of DfA is mainly done through the EIDD ... Over years, the group has through practical tests with users developed user-oriented design methods. In Italy, the situation is different. The experts that mainly work in this research area Paolo Favaretto, Gianni Arduini, Designgrup Italia, Avril Accolla, Isabella Steffan, Fabrizio Bianchetti and Stefano Maurizio.

Some schools for design have organized courses and conferences on this subject in recent years. But currently Italian companies seem unprepared: in most cases they take a medical perspective in developing products suitable for the impaired, presented at the end of a catalogue with a sad and negative image, and overprized.“

6.6 Europe and Asia: Comparative Case Studies

Few industrialized countries can rely on as efficient a network as is found in Japan. Perhaps associations, organization and non-governmental organizations (if supported by industry) might yield a corresponding influence. Due to the lacking “network of trust”, this would require bureaucratically challenging legal contracts and agreements on non disclosure.

Moreover, in Europe activities are still confined to academia and research while Asia is courageously implementing new ideas. In general, consumers in Asia are more ready than producers to experiment and they are more open to new developments. That may be the reason why Asian companies are often realizing innovative approaches directly in their products. In contrasts, Germany is different: development of a new product might be justified from marketing point of view and with regard to the image as a place of innovation, however a new concept and its consequences are always carefully scrutinized before it is implemented.

6.7 Getting the industry on board

Could a trusted organization, which balances the interests of the industry with the desire to implement the theoretical definitions, be helpful for Germany, Italy or possibly the whole of Europe?

A political initiative that has existed in Switzerland since 2004, described in a publication of the St. Gallen Institute for Technology Management of the University, offers another possible approach to the issue of implementation:

“Often, it is financing that is missing rather than the idea when it comes to the development of products and services for an aging population. Switzerland is the world leader in terms of patents per capita and Nobel Prize laureates per capita in various disciplines with regards to publications per capita. At the same time there is still great potential in this country, which is strong in knowledge and sciences as

is Germany, to translate an idea into a market suited capacity: in short, innovation. It is a long path from an idea to a ready product. Especially the so-called “valley of death” (the beginning phase of the introduction of a new product, when after large investments, only small profits follow) frightens researchers due to the high finance requirements for design and development. The initiative «Innovation for Successful Ageing» of the ‘Support Agency for Innovation’ of the Swiss state, therefore links research at universities and other technical colleges in this area with investments with partners from the private sector. The state pays for the research, in particular the salaries of the project personnel, the private sector pays for their investment and make sure that the product is ripe for the market. The success potential is high: from around 700 application every year, around half are accepted.” (Gassmann, Keupp 2005, Teil 2)

6.8 Need for action from the different vocational fields

Product Design

Products for clearly defined user groups are more an exception than usual. Most products in our daily lives are used by customers of different ages, differing needs and capabilities and thus can benefit from universal design. The focus is on products used in the public space because the user is heterogeneous. Moreover, not only products but also environments should be designed according to the universal design criteria. User manuals, packaging, distribution and customer service are playing an equally important role as to the user-friendliness of a product.

In contrast to the barrier-free design of urban places and buildings, universal design and design for all as an overarching concept has only recently garnered public interest while the subject of industrially manufactured products is more important than perceived. Contrary to architecture, where most of the apartments are already built and therefore are very limited to only those technical changes that are possible, product development cycles are much shorter in industrial design, with newly designed products constantly being introduced to the markets. Here is the opportunity to universally integrate universal design criteria into the development process and thereby address the challenges of global demographic changes early on.

Architecture and urban development

Cities and communities appear to be insufficiently prepared for the impact of demographic change. The lack of attractive public spaces, insufficient flexibility in terms of living and ownership offers and shopping malls designed for car users contrasts with the needs expected with demographic change. In order to bind tenants and owners in the long term to real estate you will need in addition to major investments an renunciation of definitions such as senior-suitable, age-suited or barrier free or handicapped usable.

“New constructions must react to new models of family living situations of elderly people, those are: elderly people sharing apartments, or trans-generational sharing of apartments and apartments for seniors. From the beginning, kitchens, bathrooms, and the division of rooms will have to be adapted to the necessities of the elderly.“

(Thomas Willemeit, Executive director Graft Gesellschaft von Architekten m.b.H.)

The population structure of cities (e.g. Görlitz), of town councils and communities can be stabilized and possibly expanded if universal design criteria such as flexibility, accessibility and broadest-possible-use are applied.

In the past two years the city of Görlitz has experienced more immigration than emigration. Most of these “immigrants” are from the Western part of Germany. Joachim Paulick, mayor of the city of Görlitz remarked:

“Our seniors have become an important economic factor, with their purchasing power they contribute to retail, service industries and the gastronomy in our city. They are also using the various cultural offers.“

Services

The design of services could be key to the utilization of unexplored value-added potential for all customer groups of the services industry. This includes not only classical services such as special care, but additional services related to house keeping, hobbies and elder people’s jobs. Impulses in this area should be expected particularly from the private service sector.

Digital Media

In interactive design there is a so called “digital divide”, i.e. that digital media has divided the society into two groups: those who are not familiar with new digital media and those who have no or only limited access to important information and are thereby cut off from society. There is urgent need for action.

Linking of different sectors

Linking products from the construction industry, including public spaces and the service sector has a particular potential.

7. Next Steps

In the course of this research project a universal design network has been established with important companies and institutions in Germany, Italy, Japan and South Korea, which will provide for a constant exchange of information. This network provides an optimal starting point for further research and projects.

In interviews, some companies have already described universal design as an important economic factor. They could potentially serve as role models for other companies. Their positive experience could be an incentive for others to address the issue.

In order to foster the concept of universal design, it should be disseminated broadly and in an easily understandable way. It is not enough to educate the designers, it is also critical to target the marketing and advertisement divisions as well as executive managers. Designers very rarely have the authority to make such decisions alone.

Pete Kercher of EID offered the following comment:

“What good is a product to anyone if the majority of people find it awkward to use? What possible good can that sort of product be to a mainstream manufacturer, who needs to make a profit at the end of the day, keep his shareholders happy and make sure his employees don’t get laid off? But let’s not just blame the designers here: the decision-makers also have to learn more about how design in general, and DfA in particular, can make a fundamental difference to their profitability. Aesthetics has the same role to play in DfA as in all good design in general: the end product (environment, service etc.) must be appealing and attractive as well as functional, otherwise it will never be sustainably profitable, will it?” (Kercher 2007)

Only when widespread awareness of UD has been established can we expect an evolutionary process among companies. This raises the question of whether the establishment of a German counterpart to IAUD would serve this objective. An organization that functions as an interface for industry, organizes events to promote the network, is concerned with media coverage of universal design and possibly advises small and medium sized companies who do not have research divisions.

The following quote of Mitsuo Kawaguchi from IAUD is best suited as a closing remark:

„The targets of UD are individuals in their myriad situations and thus humanity as whole. Therefore, UD does not have a single solution. As members of society, as members of corporations, or just as individuals, we have to use whatever opportunities we can to further this discussion.“

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