

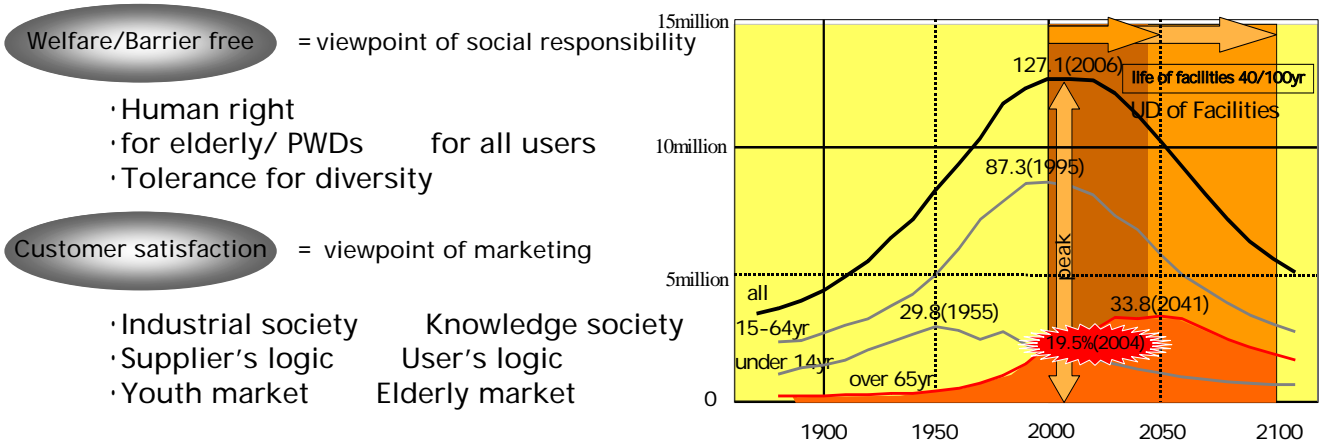
Facilities of Aging Society from Viewpoint of Universal Design

Shiro Nitnai JIA, CFMJ
 Universal Design Committee
 Japan Facility Management Promotion Association

1 Background of universal design

In response to the increasing popularity of universal design, many industries have recently adopted universal design as a main concept for the development of their products, such as automobile, housing, stationary, and information technology devices. One of the underlying aspects of this movement comes from an increase in social attention to welfare and barrier-free design based on the development of an aging society and the social evolution of people with disabilities. More importantly, however, the popularity of universal design is a reflection of a current tendency in the market in which customers/users are more likely to demand more satisfaction with products and environments in terms of usability and accessibility; we are strongly required to rethink every aspect of design in user-oriented ways.

In an aging society, elderly people are not the subject of “care” or “treatment,” but the invaluable resources of knowledge and competence for our societies. Therefore, it is crucial to build environments from the perspective of universal design so as to leverage these resources effectively in our societies.



Welfare/Barrier free = viewpoint of social responsibility

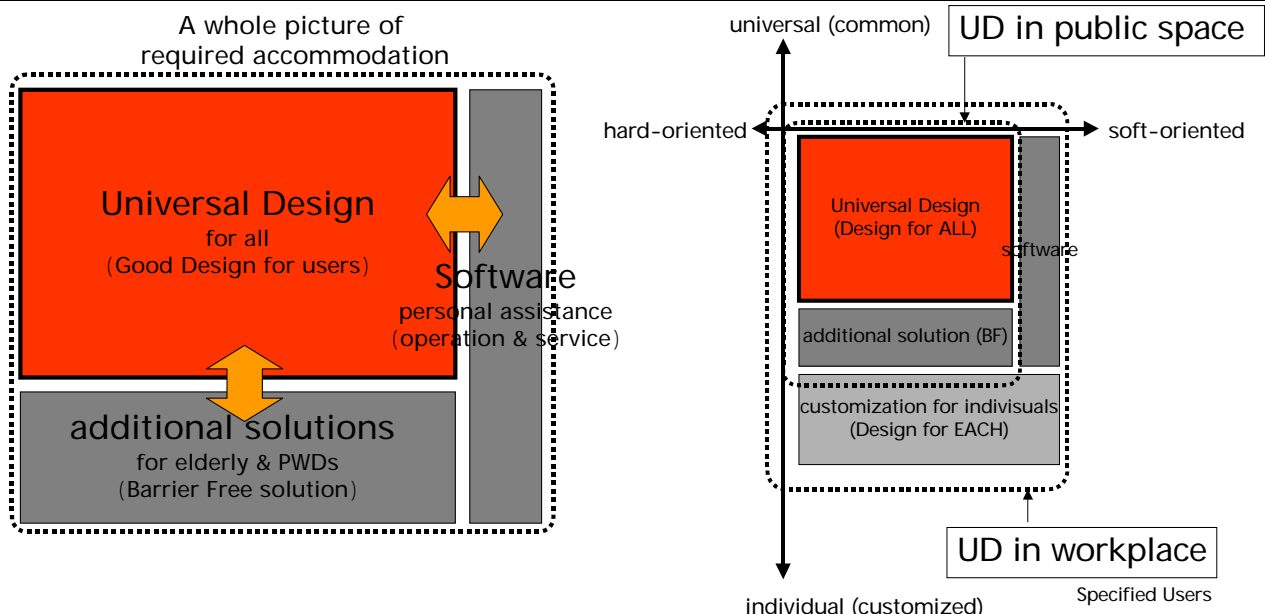
- Human right
- for elderly/ PWDs for all users
- Tolerance for diversity

Customer satisfaction = viewpoint of marketing

- Industrial society Knowledge society
- Supplier's logic User's logic
- Youth market Elderly market

2 What is universal design?

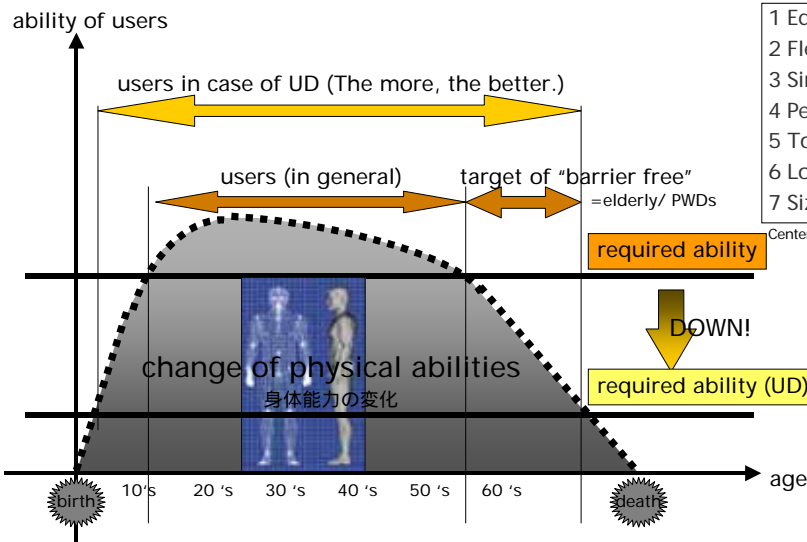
The goal of universal design is to make products and environments usable by and accessible to as diverse users as possible. If a product or environment is designed useably and accessibly, and maximizes the range of the users who are satisfied with it, it is “good design;” if no, it is “bad design.” Namely, universal design can be thought of as good design. In this case, whether the design is good or bad is not judged by only aesthetics, but also by the extent to which a product or environment responds to users and is flexible and adaptable to a variety of user needs.



7 Principles of UD Ron Mace, 1997

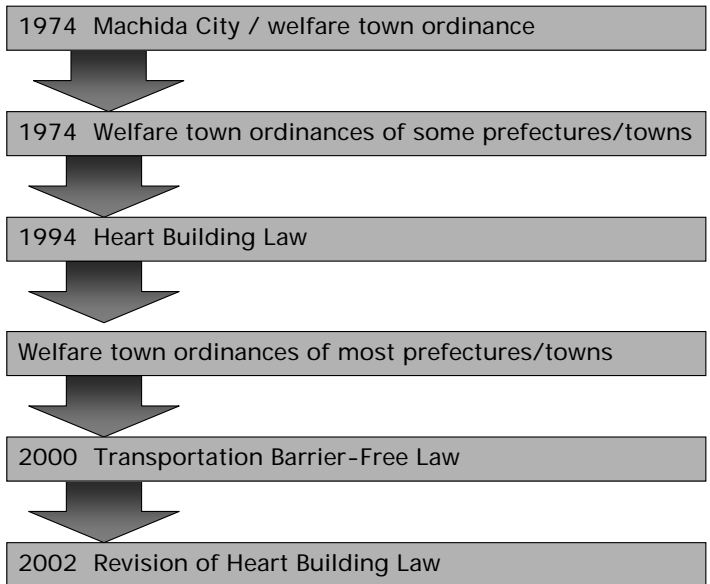
- 1 Equitable use 公平さ
- 2 Flexibility in use 柔軟さ
- 3 Simple and intuitive use 直感的・単純さ
- 4 Perceptible information 情報認知の容易さ
- 5 Tolerance for error 誤用に対する寛容さ
- 6 Low physical effort 身体的負担の少なさ
- 7 Size and space for approach 移動・使用空間のゆとり

Center for Universal Design, NC State University



3 Public spaces and universal design

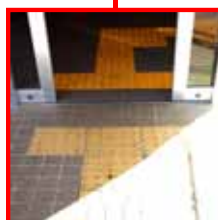
In Japan, architectural accessibility in public buildings has been emphasized since the Law for Buildings Accessible to and Usable by the Elderly and Physically Disabled Persons (the Heartful Building Law) was established in 1994. The regulations of barrier-free design was expanded by the Law for Promoting Easily Accessible Public Transportation Infrastructure for the Aged and the Disabled (the Transportation Barrier-free Law) regulated in 2000 and the amendment of the Heartful Building Law in 2002. These regulations have played a central role to improve accessibility in public built environments. Now, departing from a focus on elderly people and those with disabilities, public environmental design begins to integrate the concept of universal design in order to improve usability and accessibility for all users



Example post office



Auto-door



Floor materials for people with visual impairments

ATM with high usability



Multi-purpose restroom



4 Workplace and universal design

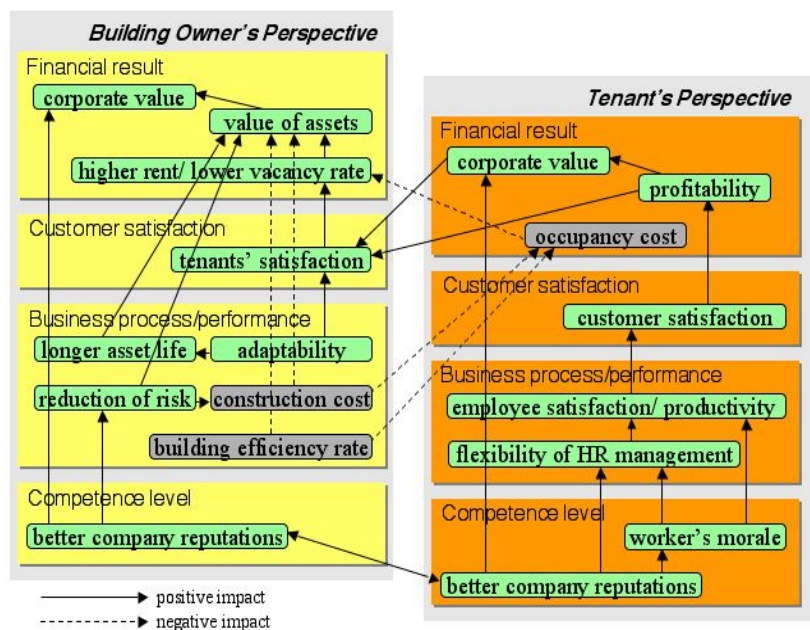
Traditionally, accessibility regulations have not taken into account the issues of workplace accessibility as much as public built environments. However, many social movements surrounding current business environments are accelerating a need for universal design in the workplace beyond mere compliance with regulations. For example, the changes of employment background, such as hyper-aging society, equity in employment, and globalization of the human resource market, affect the increasing diversity of workers. Moreover, societal attention to corporate social responsibility is increasing social responsibility investments, social infrastructuralization of real estates, and corporate responsibility for workers' health and safety. These movements, in addition to prospected regulatory and institutional changes, will consequently drive the further application of universal design in the workplace.

The effectiveness of applying universal design in the workplace should be considered on the broader aspects of corporate management, such as an increase in employee satisfaction, the improvement of workers' productivity, and the enhancement of corporate images.

Step 1: Balanced scorecard analysis

Balanced scorecard (BSC) is a multi-dimensional framework to measure organizational performance from four perspectives: financial, customers, internal business processes, and learning and growth. BSC was developed based on a concept that it is essential for long-lasting prosperity of organizations to keep positive relationships with a wide range of stakeholders.

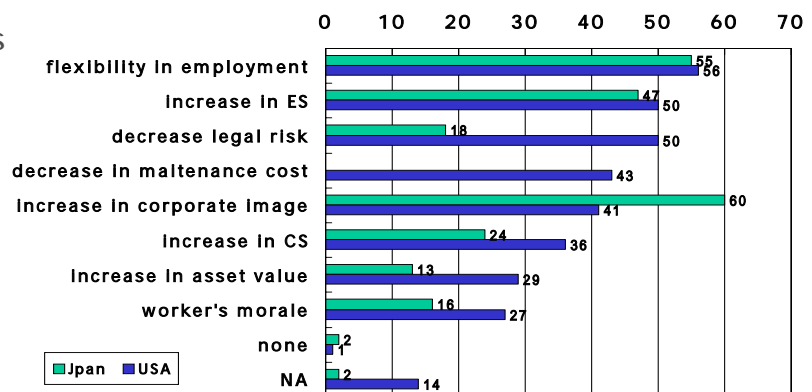
Using BSC as a framework to assess the impacts of applying universal design on corporate management, the first step toward workplace universal design is to analyze the expected advantages and disadvantages of universal design for both facility owners and office tenants.



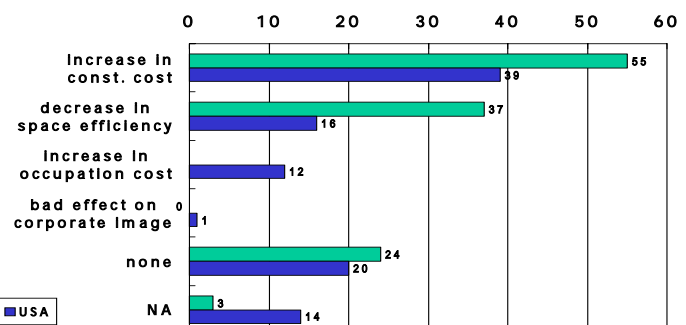
Surveys on the awareness of universal design among facility managers in Japan/ USA

(JFMA/IFMA 2002-04)

Advantage of UD



Disadvantage of UD

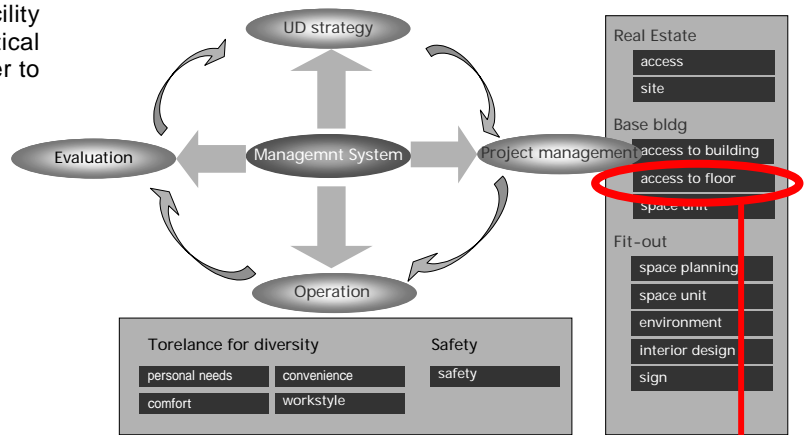


survey by Yoko Saito

Step 2: Critical success factors of universal design in the FM-cycle

The next step is in each stage of the facility management business cycle, to identify critical success factors (CSFs) that are crucial in order to accomplish universal design.

For example, in the stage of project anagement, thirty CSFs, each of which belongs to one of ten categories, can be identified.



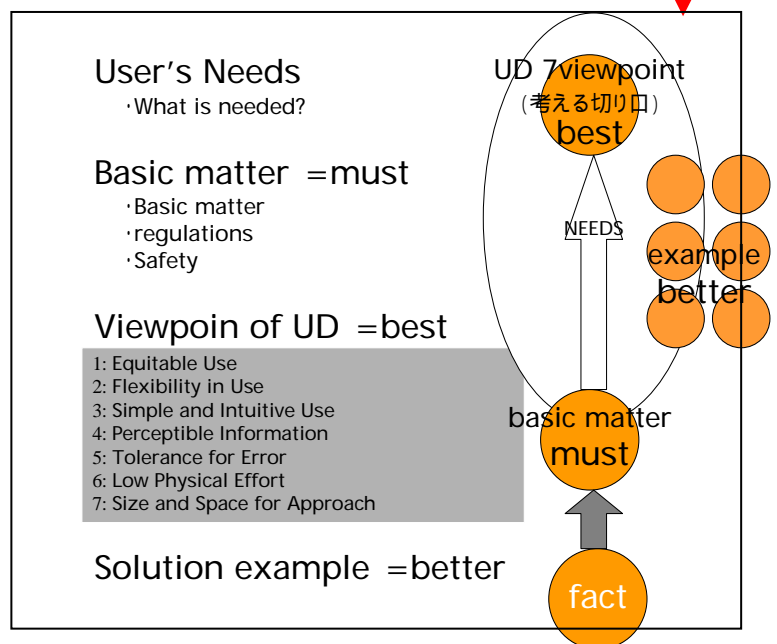
Step 3: Goal of each critical success factor

The third step is to determine the goal of each CSF based on user needs. In order to make goals manageable and practical, it is effective to take the following approaches to establishing goals:

(1) Identify the minimum level of requirements
This level shows basic practices regardless of costs, including compliance with regulations.

(2) Assume the best level of practice
This shows an ideal level of universal design practice, which incorporates viewpoints of universal design to the greatest extent.

(3) Set goals between minimum and best
The realistic level of goals can be determined between the minimum and the best levels, by taking into account the priority of user needs and case studies that provide the ideas of possible solutions.



Step 4: Universal design review

Universal design review is a very simple and effective method to manage processes to apply universal design in a building project.

In each stage of design processes (five stages in total, for example), a universal design team (cold team, which represents users) reviews the proposals of a design team (hot team, responsible for overall design) and offers better alternatives from the perspective of universal design. By repeating this approach, it is possible to continuously improve usability and accessibility without regression.

Representatives of elderly people, those with disabilities, and other diverse groups can be invited to participate in a universal design team if necessary.

