Technology Marketing
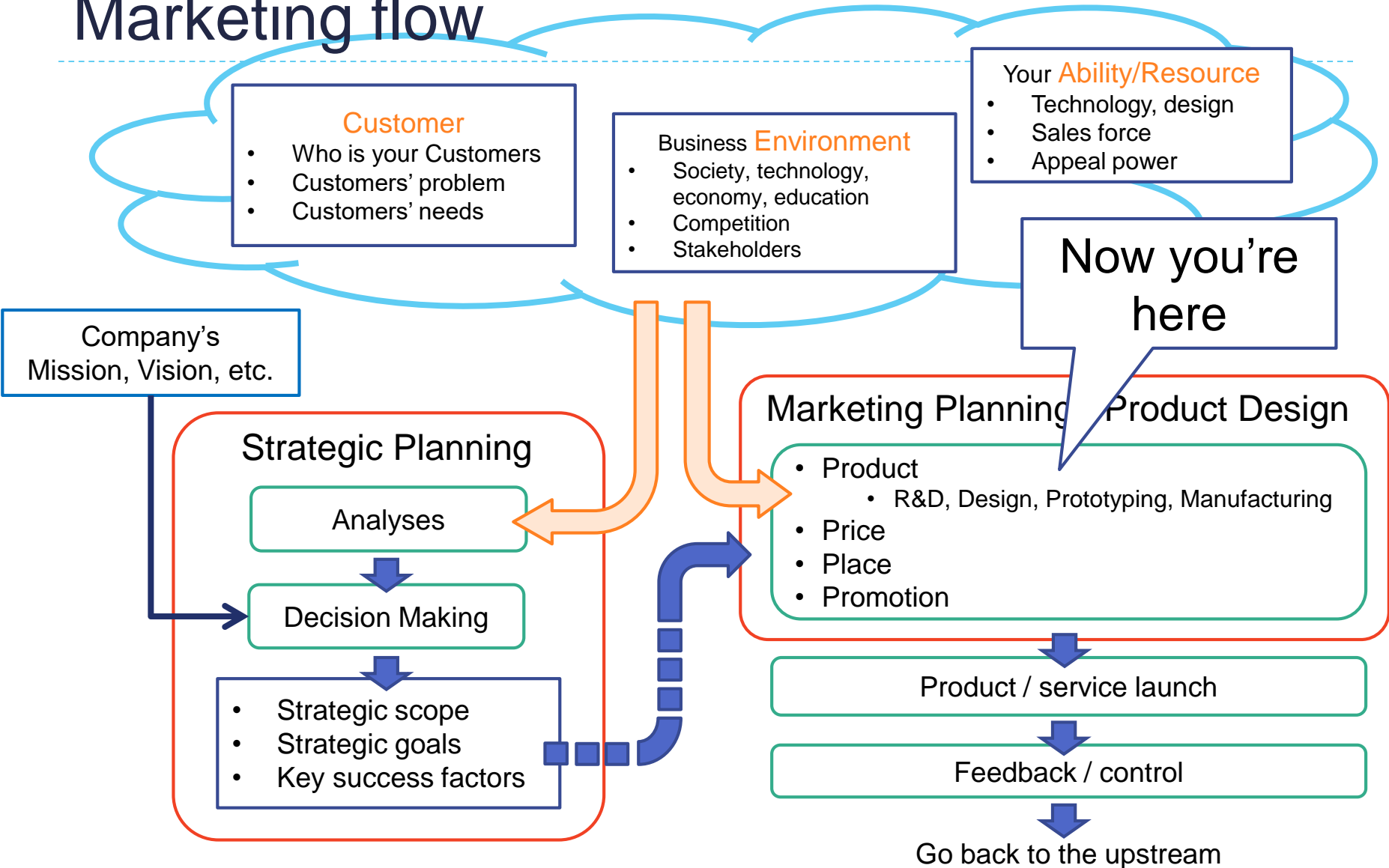# 08 How to seek customers' requirement

Prof. K. FUKUYO, MOT, Yamaguchi Univ.

Marketing flow

Customer
- Who is your Customers
- Customers' problem
- Customers' needs

Business **Environment**
- Society, technology, economy, education
- Competition
- Stakeholders

Your **Ability/Resource**
- Technology, design
- Sales force
- Appeal power

Now you're here

Company's Mission, Vision, etc.

Strategic Planning

Analyses

Decision Making

- Strategic scope
- Strategic goals
- Key success factors

Marketing Planning / Product Design

- Product
  - R&D, Design, Prototyping, Manufacturing
- Price
- Place
- Promotion

Product / service launch

Feedback / control

Go back to the upstream

How to define a problem

▸ Defining a problem of customers is one of the most important task in the product planning

▸ People will buy a product / service, if it will solve their problem

▸ Segmentation of customers helps to define the customers' problem

▸ However, after the segmentation, how do you seek the particular problems of the segmented customers?

Task analysis is one of the measures

▸ Task analysis is one of the measures to seek / find the customers' problems

▸ Customer observation is a source of latent customer requirements (needs/wants)

▸ Task analysis develops acute observation skills

Example of task analysis

▸ HMI task analysis

  ▸ Prof. Toshiki Yamaoka (Wakayama Univ.) proposed this analysis method

  ▸ HMI means human-machine interface

    ▸ Human means a customer and machine means a product or service

  ▸ A observer seeks the problems occurred between the customer and the product/service

Five aspect of the HMI task analysis

▸ Physical aspect
  ▸ Is there any trouble when a customer use it (product/service)?
  ▸ Is a customer forced to take up bad posture when he use it?
  ▸ Does a customer take a massive amount of strength to use it?
  ▸ Is it complicated to use?
▸ Brain/Information aspect
  ▸ Does a customer understand how to use it?
  ▸ Is improper use of the product/ service avoidable?
  ▸ Can a customer read the product labels and understand them?
▸ Time aspect
  ▸ How long does it take to use?
▸ Environmental aspect
  ▸ Does it fit in with the environment around it?
▸ Operational aspect
  ▸ Is it easy to maintain?
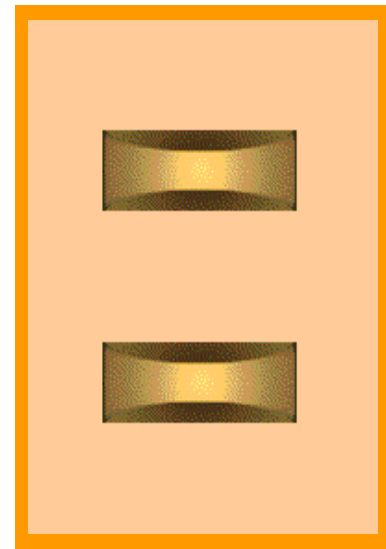
Brain/Information aspect: Mapping

▸ Correspondence of what operates with what to be operated

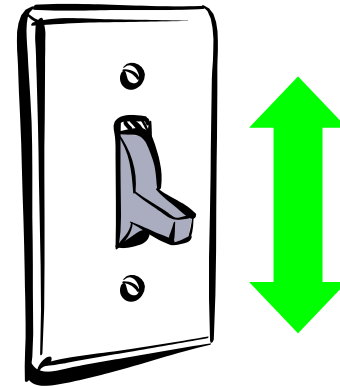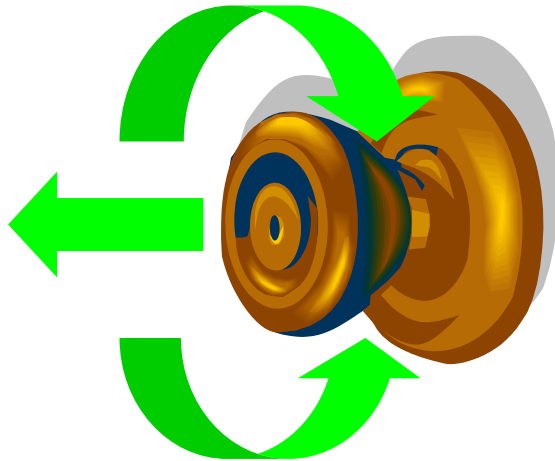▸ Which switch do you push if you want to turn on the left light
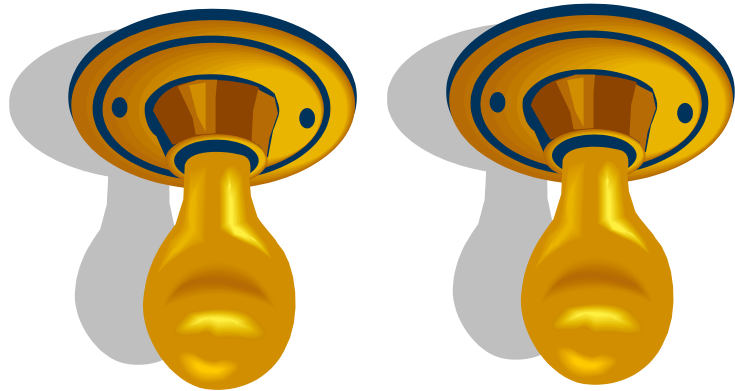
Left and right lights

Upside and downside switches for lights

Brain/Information aspect: Affordance

▶ To guide someone in using products/services without using languages or symbols

Brain/Information aspect:
Mental models

▶ An explanation of someone's thought process about how something works in the real world

  ▶ What is caused if someone riding a car with the steering wheel on the right side rides another car with the steering wheel on the left side?

  ▶ What is caused if someone use a new automated teller machine (ATM)?

▶ An example of mental model: Magic number

  ▶ People can memorize 7±2 elements

    ▶ Psychologist George Miller said. (1956)

  ▶ It is hard to memorize long numbers such as 95378745987, but easy to memorize 953-7874-5987

An example of the task analysis:
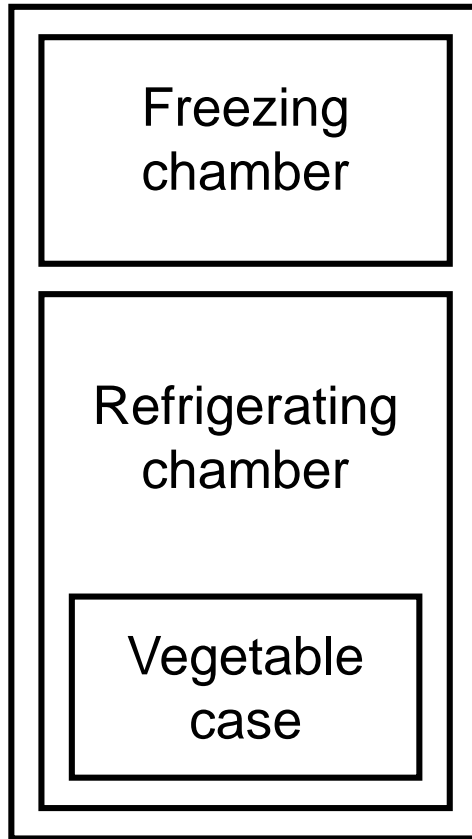# An automatic beverage vending machine

Tasks	Physical	Brain/Information	Time	Environment	Operational
Choice a beverage can		Indications such as "hot", "cool", "sold out", etc. can be seen?			
Put coins		Can the coin slot be found?			
Take the can you chose	Is the can easy to be took out?		Is the can took out quickly?		

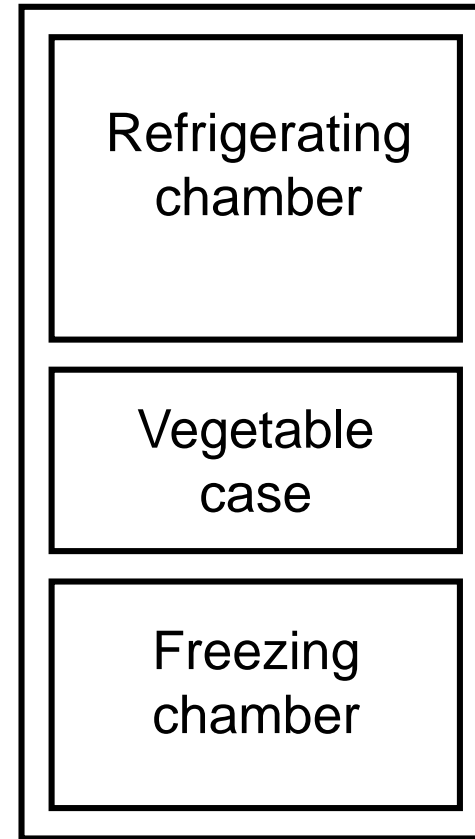# An example of the task analysis: Procedure of hotel check-in

Tasks	Physical	Brain/Information	Time	Environment	Operational
Wait at the front desk	Writing the name, address, etc. is messy		How long?		Can the automatic check-in system be applied?
Take the room key	Easy to carry?	Not easy to lose?			
Wait the elevator	Can disabled person on a wheel chair ride on?	Where is the elevator	How long?		

An example of the task analysis: Domestic refrigerators

Freezing chamber
Refrigerating chamber Vegetable case

Refrigerating chamber
Vegetable case
Freezing chamber

Older type of Japanese refrigerators

Newer type of Japanese refrigerators

Hitachi developed a newer type of refrigerator

Hitachi's new refrigerator sold very well.
Sanyo follows the same idea.
A patent battle was occurred between Hitachi and Sanyo.

Application of the ideas of universal design (UD)

▸ Enhancing the observation power by introducing the ideas of universal design (UD)

▸ What is UD?

> ▸ Broad-spectrum ideas meant to produce buildings, products, and environments that are inherently accessible to older people, people without disabilities, and people with disabilities.

> ▸ North Calorina, The center for universal design http://www.design.ncsu.edu/cud/

Ron Mace, founder and program director of The Center for Universal Design, passed away on June 29, 1998 in his home in Raleigh. He was 56 years old

Seven principles of UD

▸ Equitable Use

▸ Flexibility in Use

▸ Simple and Intuitive

▸ Perceptible Information

▸ Tolerance for Error

▸ Low Physical Effort

▸ Size and Space for Approach and Use

Principle 1: Equitable use

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

  ▸ Provide the same means of use for all users: identical whenever possible; equivalent when not

  ▸ Avoid segregating or stigmatizing any users

  ▸ Provisions for privacy, security, and safety should be equally available to all users
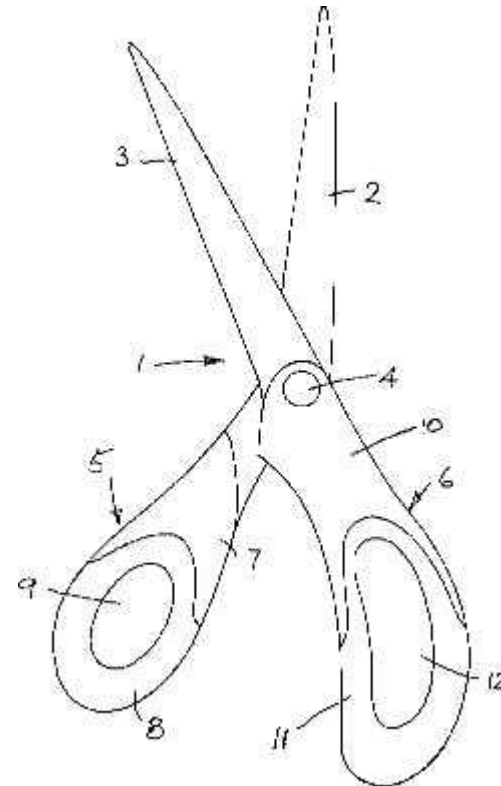
  ▸ Make the design appealing to all users

Principle 2: Flexibility in Use

▶ The design accommodates a wide range of individual preferences and abilities.

   ▶ Provide choice in methods of use

   ▶ Accommodate right- or left-handed access and use

   ▶ Facilitate the user's accuracy and precision

   ▶ Provide adaptability to the user's pace

Scissors for both right- and left-handed persons

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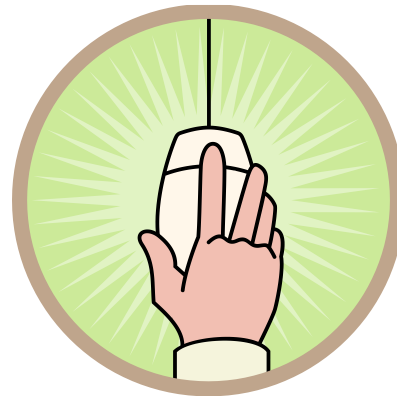
   ▶ Provide adaptability to the user's pace
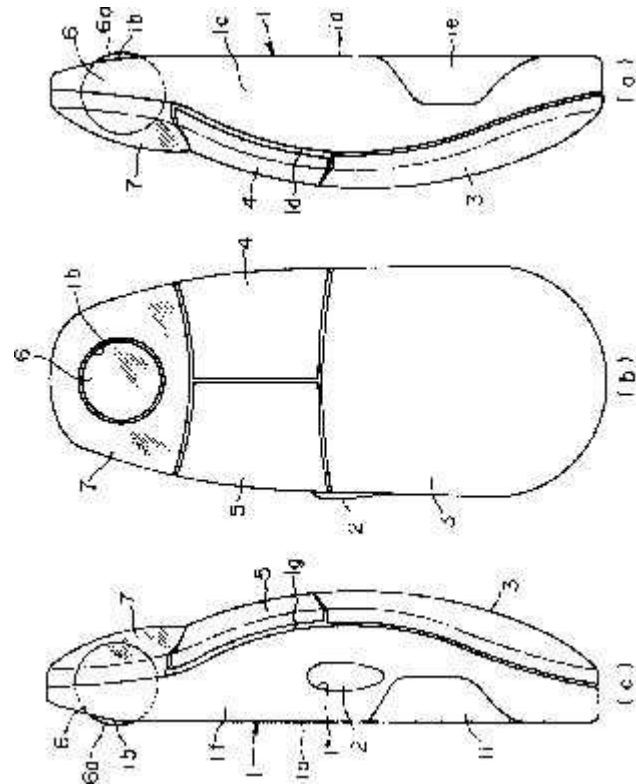
omputer mouse for both right- and left-handed persons

Principle 3: 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.
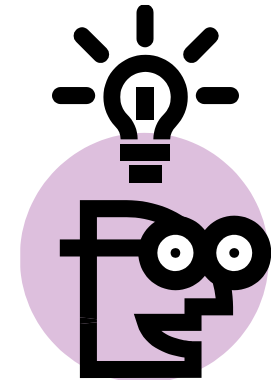
Question: Is there any product, which is used intuitively?

Principle 4: Perceptible Information

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

Can you understand these?

Which is useful?

Principle 5: Tolerance for Error

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

- ▸ Arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated, or shielded
- ▸ Provide warnings of hazards and errors
- ▸ Provide fail safe features
- ▸ Discourage unconscious action in tasks that require vigilance
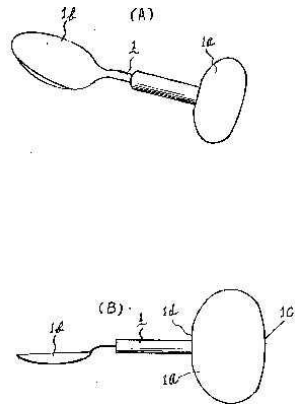
Principle 5: Tolerance for Error

▸ Answers

  ▸ Accident avoidance structure

  ▸ Isolation of dangerous element

  ▸ Warning system
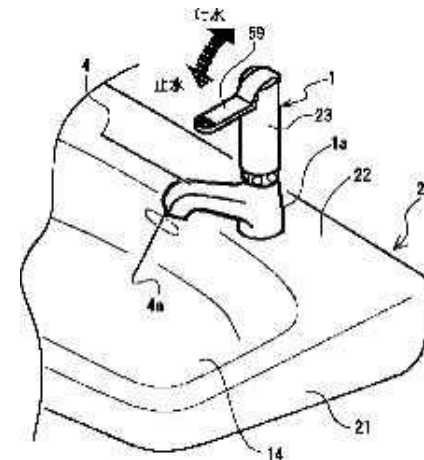
  ▸ Providing security

  ▸ Restoring to the status quo
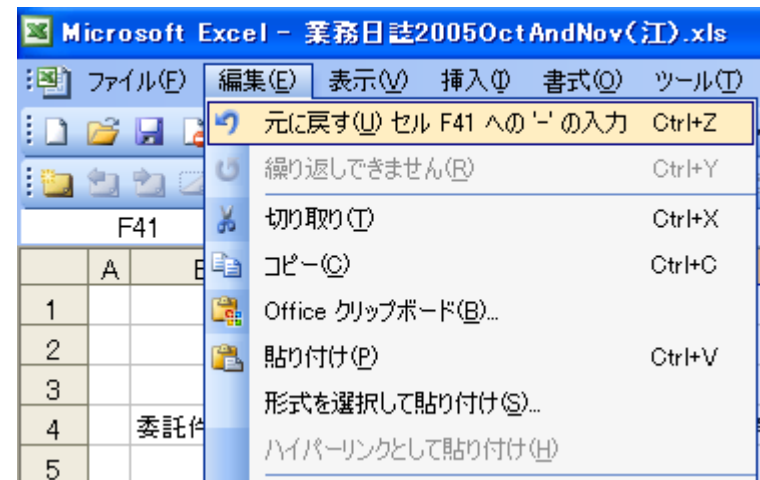
"Undo" function in a software

Principle 6: Low Physical Effort

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

Grips of spoons and forks

Single-lever water faucet

Principle 7: 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

  ▸ Provide a clear line of sight to important elements for any seated or standing user

  ▸ Make reach to all components comfortable for any seated or standing user

  ▸ Accommodate variations in hand and grip size

  ▸ Provide adequate space for the use of assistive devices or personal assistance

Principle 7: Size and Space for Approach and Use

▶ Question

    ▶ What kind of measures are applied to buildings under Principle 7?

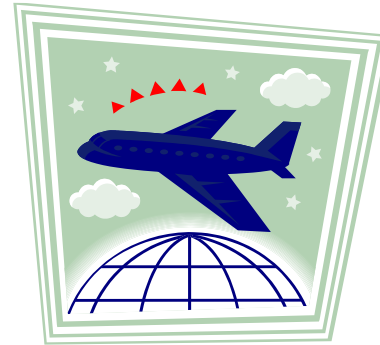# Necessity of UD
UDの必要性

▸ Diversity

   ▸ Diversity of lifestyles

   ▸ Internationalization / globalization

▸ Aging of population

   ▸ Weak physical ability

▸ Care of weak persons

   ▸ Children, pregnant women, patients, etc.

Experiments of UD

- Do you open up a bottle with wet hands?
  - This simulates that a weak person tries to open up a bottle
- Do you enter a building from the outside and then reach to the inside of a room without using your hands?
  - This simulates that a disabled person want to go to a room of a building

Question for report

▸ Find two or three products / services under the concept of UD and tell which principle is applied to each product / service