

Global Environmental Policy 2011

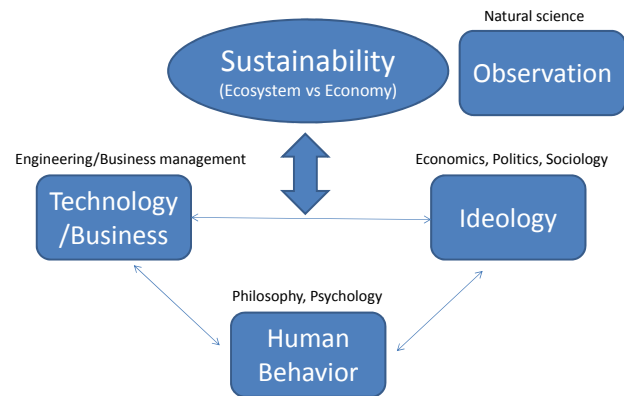
Environmental Management
-Recycling-

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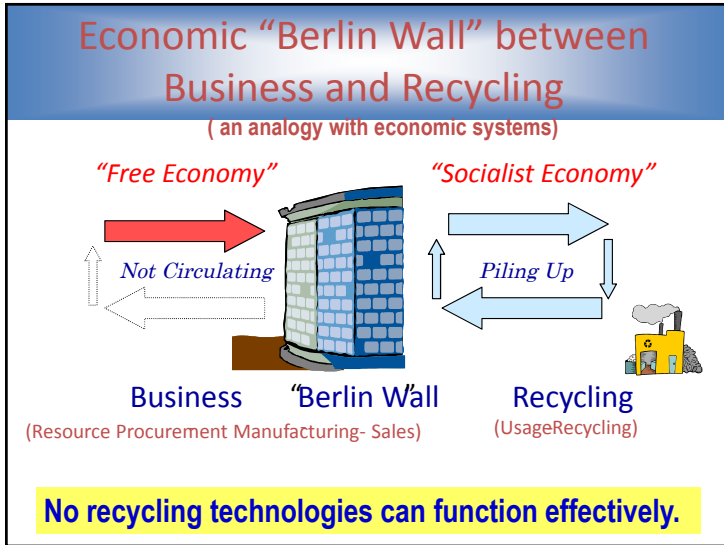
- 1-SOME KEY ISSUES LYING BEHIND RECYCLING SYSTEM**
- 2-SURVEY: PURCHASING BEHAVIOR**
- 3-POSSIBLE SOLUTIONS: SOP'S, DTOS.**

What is Sustainability?



Key Issues

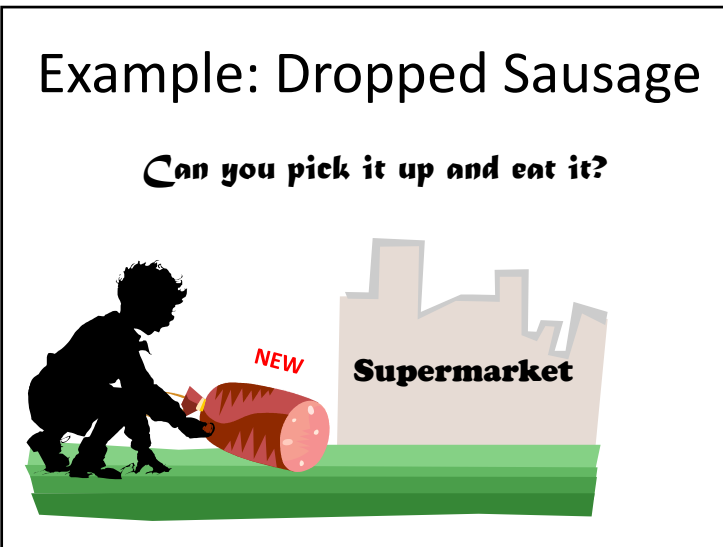
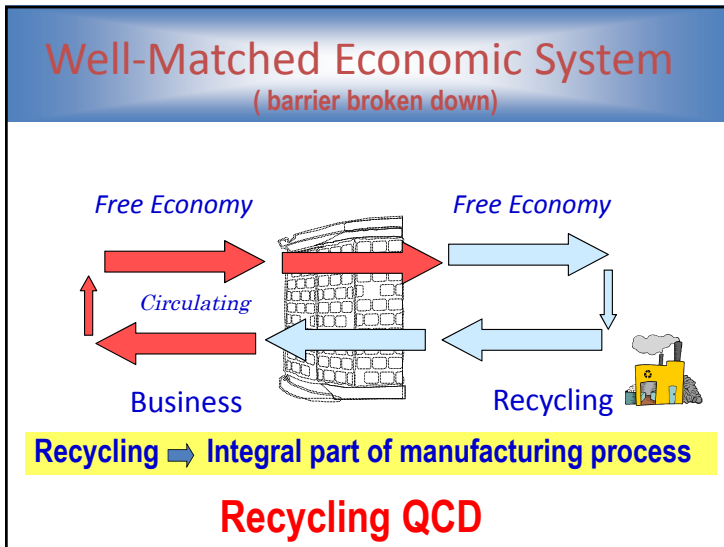
- Recycling QCD
- Conflict between recycling and energy saving
- Invisible flow
- An unsustainable culture of “having”

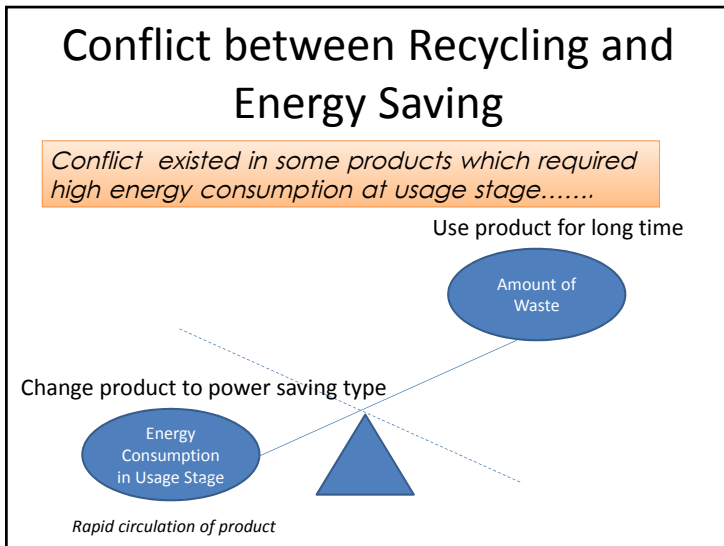
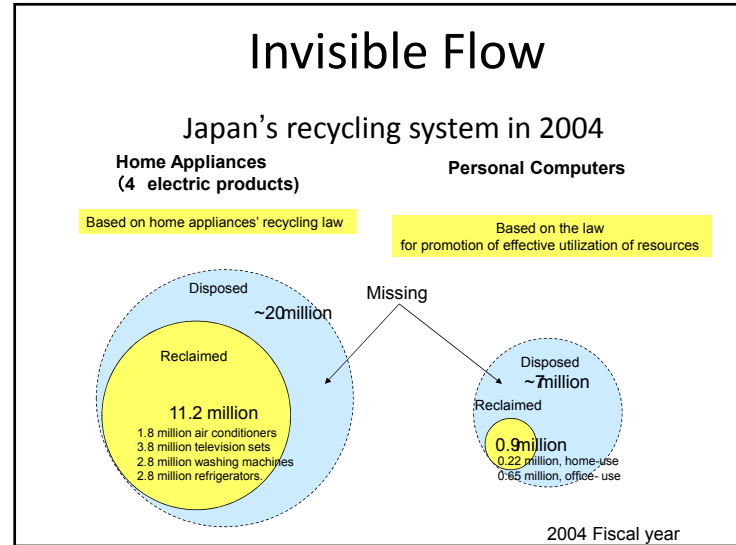
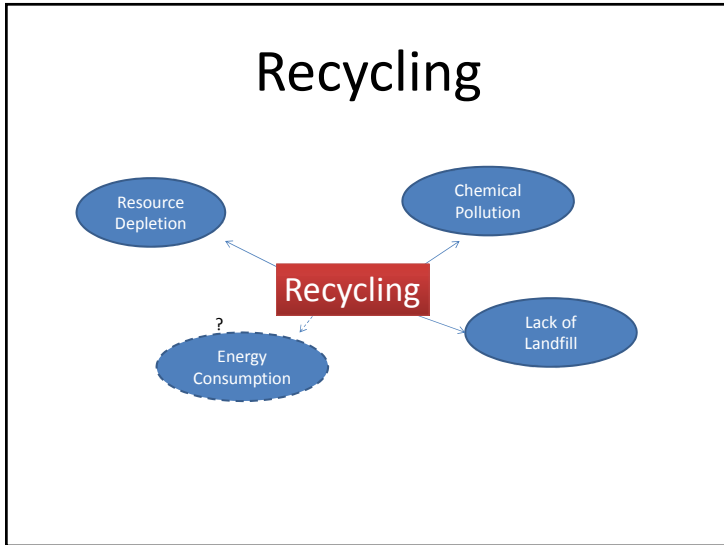


Recycling QCD

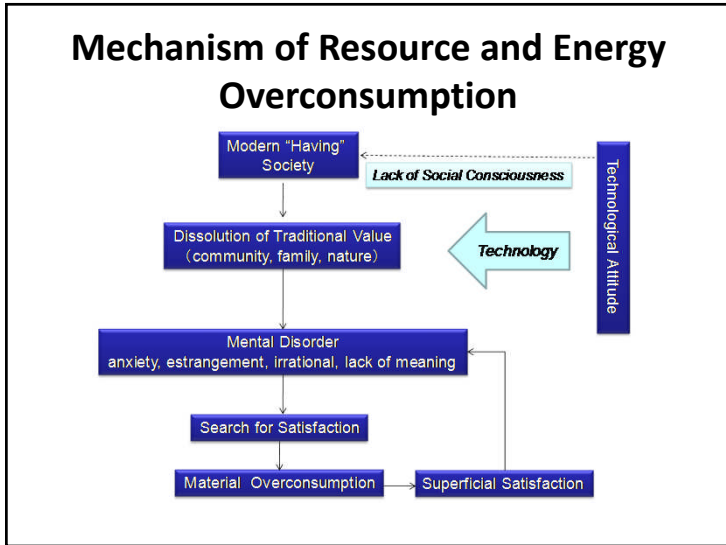
Recycling QCD: Can we get the required quantity of recycled parts and materials which still have the necessary quality level when we need them?

	Products Owned by Customers			Products Leased to Customers
	Conventional	+Recycling Regulations	+Recycling Regulations + IT System	
Quality	Poor	Poor	Acceptable	Good
Cost	Poor	Acceptable	Acceptable	Good
Delivery	Poor	Acceptable	Acceptable	Good



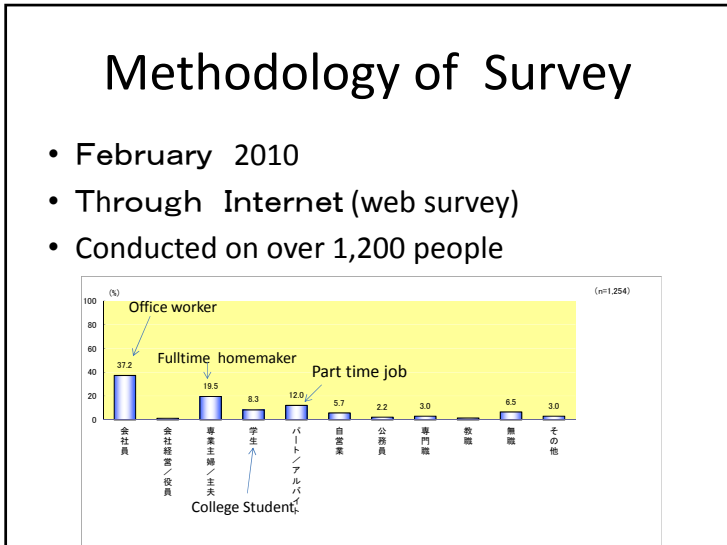
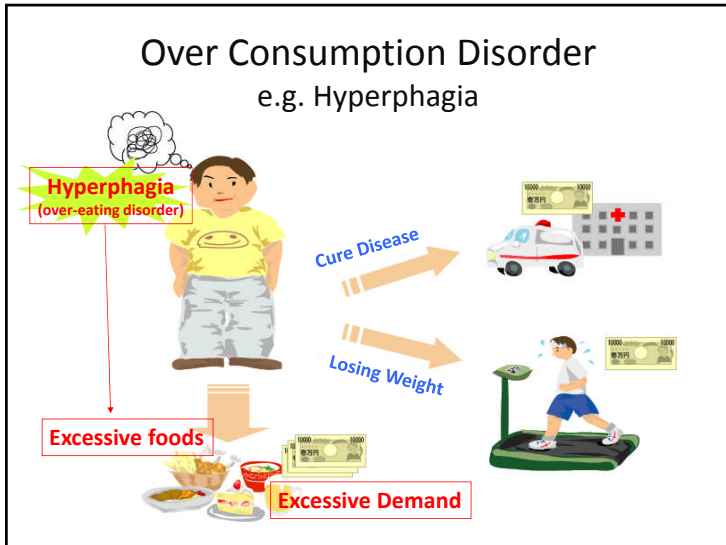


- ## Unsustainable Culture of "Having": Overview
- Subjective well-being does not necessary correlate with high personal wealth (Diener 2004).
 - Social/Psychological mechanisms drive consumer behaviour that is irrational and unsustainable (Boven 2003).
 - 'Weapons of Influence' (Cialdini 2009).
 - Much of irrationality of our environmentally unsustainable behavior could be attributed to a 'false self' system (Winter & Koger 2004).

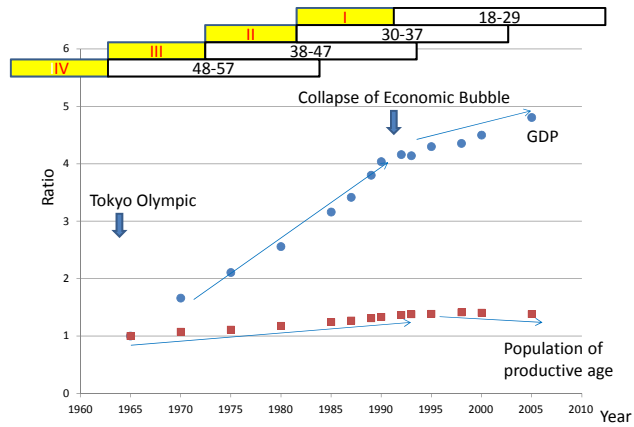


Survey

PURCHASING BEHAVIOR IN JAPAN



Questionnaire & Demographic Age



Questionnaire Survey: Purchasing Behavior

Short Workshop

- Fill in the answers
- Form 3 groups of 5 - 6 students
- How to calculate...

Goods & Service Desirability

Goods & Service	Top 10	Point	Total
Fashion (clothes)			
Domestic travel			
Eating out			
Book			
Music (CD, concert)			
Watching movie			
Car			
Personal computer			
Watch			
Foreign language learning, licenses getting			
Mobile music player such as iPod and Walkman			
Asset management (stock, financial product)			
Museum (art, history, ethnographic, transportation, science) travel			
Game (Soft, equipment)			
Tableware			
AV equipment such as blue ray recorder			
Bicycle including one with electric assist			
International travel			
Audio equipment such as amplifier, speaker and player			
Camera			
Television set			
Manga (comic book), animation			
Jewelry, accessory			
Sporting goods			
Cosmetic, estheticque			
Music (instrument)			
Stationery			
Communication equipment such as mobile phone and smart phone			
Travel place of scenic beauty and historical interest			
Furnishings, interior decorating			
Gardening, vegetable garden			
Home electrical appliances			
Antiques			

Purchasing Behavior

N	Question	Answer			
		Strongly acceptable (+3)	Little acceptable (+1)	Little unacceptable (-1)	Strongly unacceptable (-3)
1	Do you want to buy something which you feel emotional attachment?				
2	Even if a price is high, do you want to buy something which you can use for a long time. ?				
3	Do you buy something suited to your hobby and your sensitivity?				
4	Do you want to avoid a loan and a debt when shopping?				
5	Are you happy to increase your savings. ?				

Q. No	Total points of individual group
1	
2	
3	
4	
5	

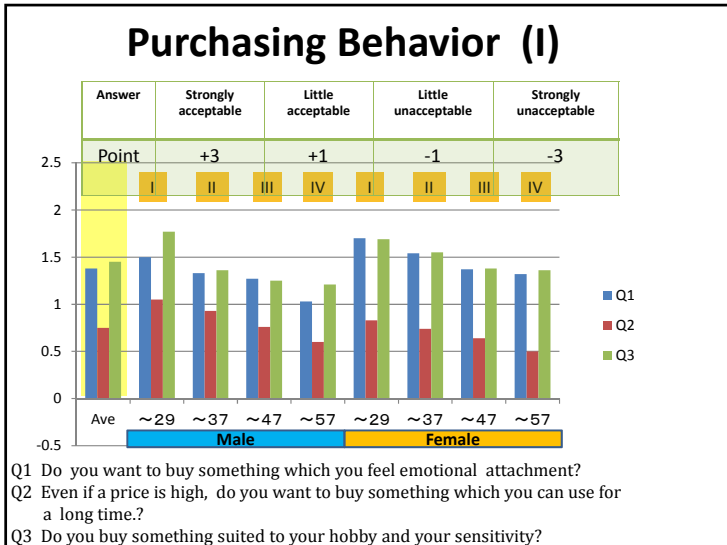
Top 10 What Goods & Service People Want to Have

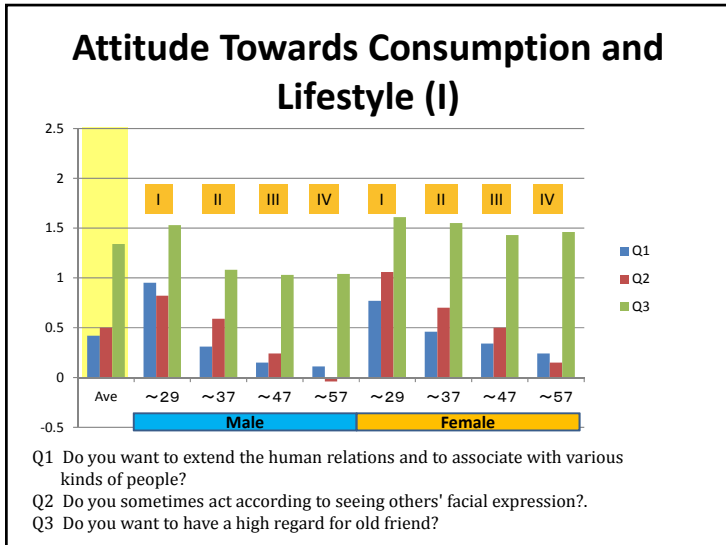
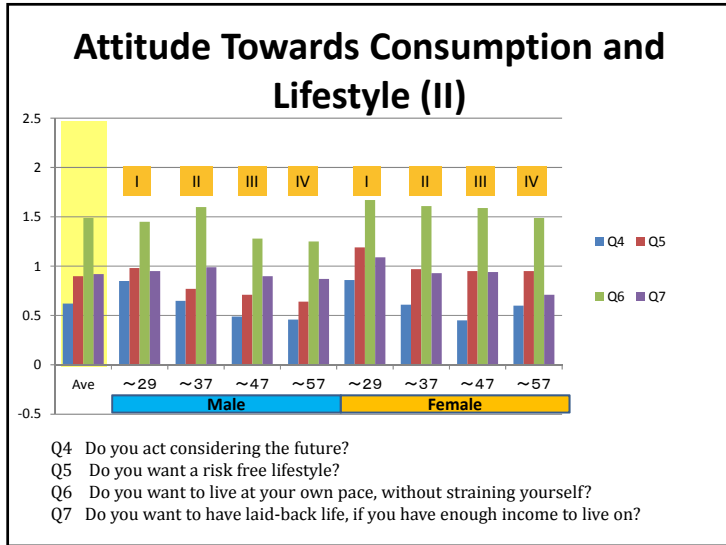
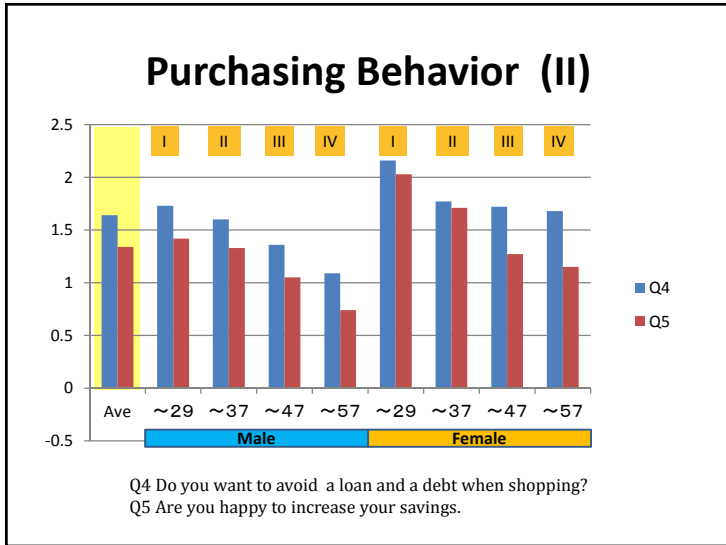
	-29M	-29W	-37M	-37W	-47M	-47W	-57M	-57W
1	PC 4.4	Fashion 6.4	PC 5.5	Domestic Travel 5.9	Domestic Travel 5.8	Domestic Travel 6.2	PC 5.6	Domestic Travel 5.9
2	Domestic Travel 4.2	Domestic Travel 5.7	Domestic Travel 4.7	Fashion 5.5	PC 5.3	Eating Out 5.7	Domestic Travel 5.5	Eating Out 4.8
3	Game 3.4	Eating Out 5.3	Eating Out 3.8	Eating Out 5.2	Eating Out 4.2	Fashion 4.7	Eating Out 3.5	Fashion 3.6
4	Music(CD, Concert) 3.1	Music(CD, Concert) 3.3	Game 3.1	International Travel 3.0	Car 3.3	Watching Movie 3.5	Car 3.1	Watching Movie 3.5
5	Animation, Manga 2.8	Cosmetics 3.2	TV 2.7	Furniture, Interior 2.7	TV 3.1	International Travel 3.1	International Travel 3.0	International Travel 2.9
6	Fashion 2.7	International Travel 3.1	Investment 2.7	Domestic Appliance 2.7	AV Equipment 2.7	PC 2.8	TV 3.0	PC 2.8
7	Eating Out 2.6	Book 2.6	Watching Movie 2.6	Book 2.6	Watching Movie 2.4	Book 2.8	Watching Movie 2.7	Book 2.7
8	Book 2.6	Watching Movie 2.4	Music(CD, Concert) 2.5	Cosmetics 2.6	International Travel 2.0	Cosmetics 2.5	Book 2.6	Music(CD, Concert) 2.7
9	Car 2.6	PC 2.0	Car 2.5	Watching Movie 2.4	Music(CD, Concert) 2.0	Music(CD, Concert) 2.4	Visiting Famous Spot 2.3	TV 2.5
10	Watching Movie 2.2	Animation, Manga 1.9	AV Equipment 2.5	Music(CD, Concert) 2.4	Book 1.9	Domestic Appliance 2.4	AV Equipment 2.2	Cosmetics 2.4

Attitude towards Consumption and Lifestyle

N	Question	Answer			
		Strongly acceptable (+3)	Little acceptable (+1)	Little unacceptable (-1)	Strongly unacceptable (-3)
1	Do you want to extend the human relations and to associate with various kinds of people?				
2	Do you sometimes act according to seeing others' facial expression?				
3	Do you want to have a high regard for old friend?				
4	Do you act considering the future?				
5	Do you want a risk free lifestyle?				
6	Do you want to live at your own pace, without straining yourself?				
7	Do you want to have laid-back life, if you have enough income to live on?				

Q. No	Total points of individual group
1	
2	
3	
4	
5	
6	
7	





Summary of Questionnaires

- Characteristics of young Japanese people
 - Value “communication” over “money”.
 - Don’t care for wasting goods and they tend to be more careful about spending money
 - Prefer to purchase ‘services’ rather than purchasing goods, such as car, TV, and AV equipment
- Reasons for these characteristics
 - Grew up surrounded by an abundance of material goods.
 - Spent a large part of their life under a ‘disinflation economy’
 - Be born into the “Internet and Mobile” era.

Solutions must address the following issues:

- 1- Recycling QCD
- 2- Energy Consumption/Recycling
- 3- Invisible Flow
- 4- Purchasing trends moving towards services/experiential purchases

What are Service-Oriented Products?

(an analogy with the restaurant industry)

Service (cuisine)



Hardware (dishes)

Hors D'oeuvre
Appetizer
Soup
Main dish
Dessert

Fixed course
A set B set



Customers pay money not for the dishes but for the cuisine.
Customers choose a fixed course from the cuisine it includes.
Dishes are used many times by many people.

SOPs are “dishes” on which companies “serve” services.

New Business Model for Consumer Products

Achieving “Recycling QCD”

- **Business on Lease Basis**
 - Customers: New benefits which they couldn't get by owning the product.
 - Ex. Product can be exchanged easily
 - Manufacturer: Increased profitability






**New Business Model Involving
“Service-Oriented Products”(SOPs)**

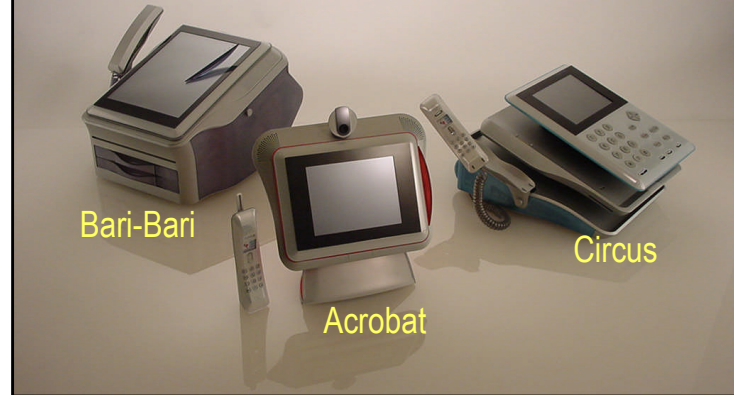
An Approach to SOP Business

1. Create the services and fixed courses
2. Choose the basic product
3. Decide its life-cycle options
 - remanufacturing, reuse of modules, recycling upgrading, maintenance, and so on
4. Design the SOPs
 - Reconfiguration which makes offering of various services possible
 - Structure suitable for life-cycle options
5. Make the business plan

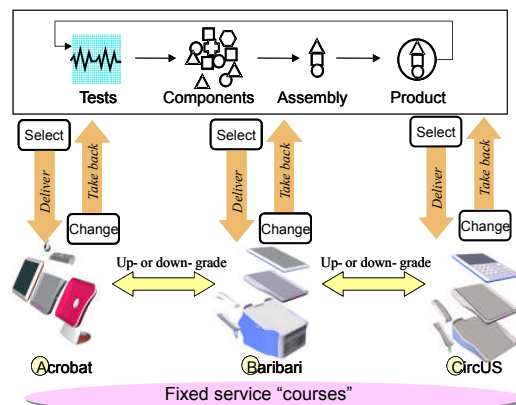
Example Consumer Fax Application

"Courses" and Services	"Acrobat" Image transfer, etc.	"BariBari" Supply high-end functions, etc.	"CircUS" Helper agents for elderly persons, etc.
Basic Product	Consumer Facsimile Machine		
Life-cycle Options	Reuse among Different Customers Moderate Upgrading		
SOPs	Share Functional Components		
			
Business Plan	Under Study		

Concept Models



Business Flow



Comparing SOP concept with conventional products

		Conventional products	SOPs
Customer	choose	product specifications	"service" course
	purchase	hardware	service(hardware rental)
	replace	buy a new one	change with extra charge
Business	profit	product sales	service provision
	manufacture	assembling parts	combining module
	Post-use	disposal/recycling	reuse/recycling

DTOS CAN MAKE THE CONCEPT OF
SOP'S CONCRETE.

OWNERSHIP=RESPONSIBILITY

Consumer Ownership

1. An identification number corresponding to the owner.
2. When transferring ownership during product use, the owner has to follow a set of procedures laid down by law.
3. When discarding the product, the owner takes responsibility for the recycling process. For example choosing an appropriate recycling trader..
4. If the product is discovered in an illegal situation, such as a 'black market' recycling process, the owner will receive a severe penalty.

Dual Traceable Ownership System (DTOS)

1. Individual consumer has complete ownership of the product
2. Company has complete ownership and the consumer hires the product

Company Ownership

1. The consumer pays money not for the product itself, but for the services or functions which the product provides.
2. The consumer can enjoy the product without worrying about its disposal. The company or 'seller' will take responsibility for all the recycling duties that come with 'ownership.'
3. Through the identification code system, the product and its parts can be easily traced back to the company.
4. It may be possible for the consumer to receive new services quickly and at minimal or no extra cost

