

# Visit of Taiwan Team to SWICO Taiwan / Switzerland e-waste recycling Zurich, September 6, 2007



Chang, Hsu-Chang, Department of Waste Management, EPA  
Tsai, Chen-Chiu, Green Environment, Safety and Health Technology Division, ITR  
Reu, Ray Yling-Bin, Green Environment, Safety and Health Technology Division, ITR  
Hsieh, Angus, Quality and Service BU, Acer Inc.

## To understand:

- > Recycling status / WEEE directive
- > DfE trend / incentives for recycling
- > Segregation of waste streams / IPR

**Peter Bornand**  
Chairman of SWICO Environmental Commission  
[peter.bornand@swico.ch](mailto:peter.bornand@swico.ch) / [www.swico.ch](http://www.swico.ch)  
Tel. 0041 44 445 38 09

Member of the WEEE-Forum ([weee-forum.org](http://weee-forum.org))



# 1

**Producers wanted their association to manage a recycling system for them!**

## Introducing **SWICO**

Swiss Association for Information, Communication and Organisation Technology ([www.swico.ch](http://www.swico.ch))

### Six fields of competency:

Information technology and telecommunications  
Organisational technology, office equipment  
Office technology  
Consumer electronics  
Software and services  
Suppliers for the graphical industry

> 400 members  
> 46'000 employees  
> US\$ 15 billion revenue

### Examples of provided services to members:

1. Communication platform
2. Co-partner for trade fairs
3. Training/Education programmes
4. Legal support
5. Safety and security programmes
6. Complete sets of ICT-contracts
7. Intellectual property
8. SWICO Recycling
9. etc.

# 2 How to fulfil individual producer responsibility (IPR) in a collective system?

## SWICO Convention on Recycling

500 members

30 with own recycling activities  
(individual systems)

Integrated register!

## SWICO Environmental Commission

- Agfa
- Canon
- Esag
- HP
- IBM
- Motorola
- Philips
- Siemens
- Sun
- Xerox

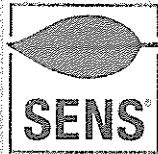
< 1993	Individual systems (producers)
1994	SWICO Recycling Guarantee (IT/Office)
1998	ORDEE ordinance
1999	Cellular phones
2000	Graphical industry
2001	Telephone equipment
2002	Consumer electronics (brown)
2002	Photo
2004	Dental equipment
2005	Medical and Measuring equipment

## Separation of duties

## Processes

# 2b Competence of SENS\* and SWICO

\* Swiss Foundation for Waste Management



- Small household
- Large household
- CFC appliances
- Household tools
- Games
- Light

7 kg per inhabitant/year



swico *Recycling-Garantie*  
*Recycling Guarantee*

- Office and IT
- Telecommunication
- Graphical Industry
- Consumer Electronics
- Dental equipment
- Measuring + Medical equipment

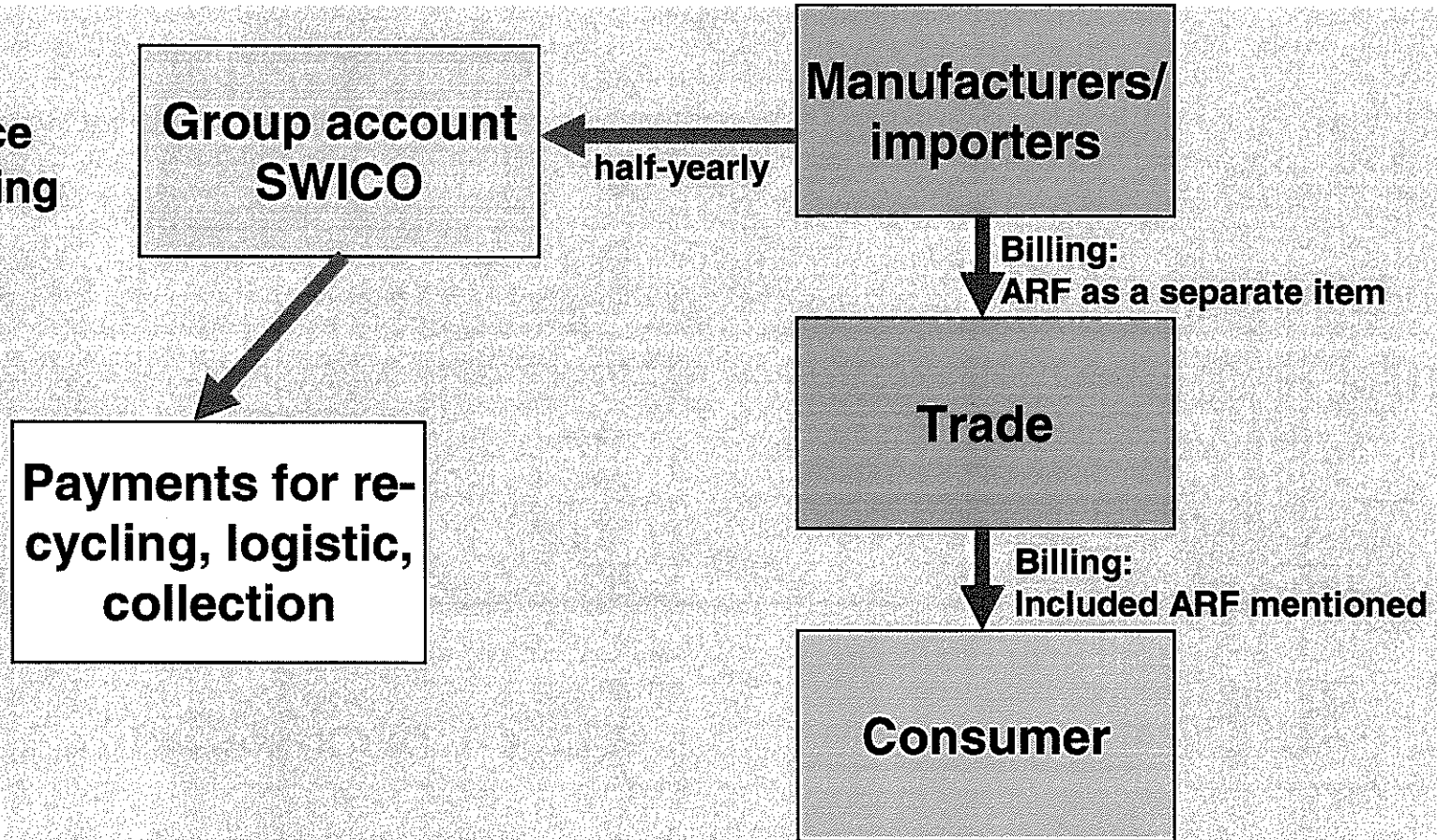
6 kg per inhabitant/year



swico *Recycling-Garantie*  
*Recycling Guarantee*

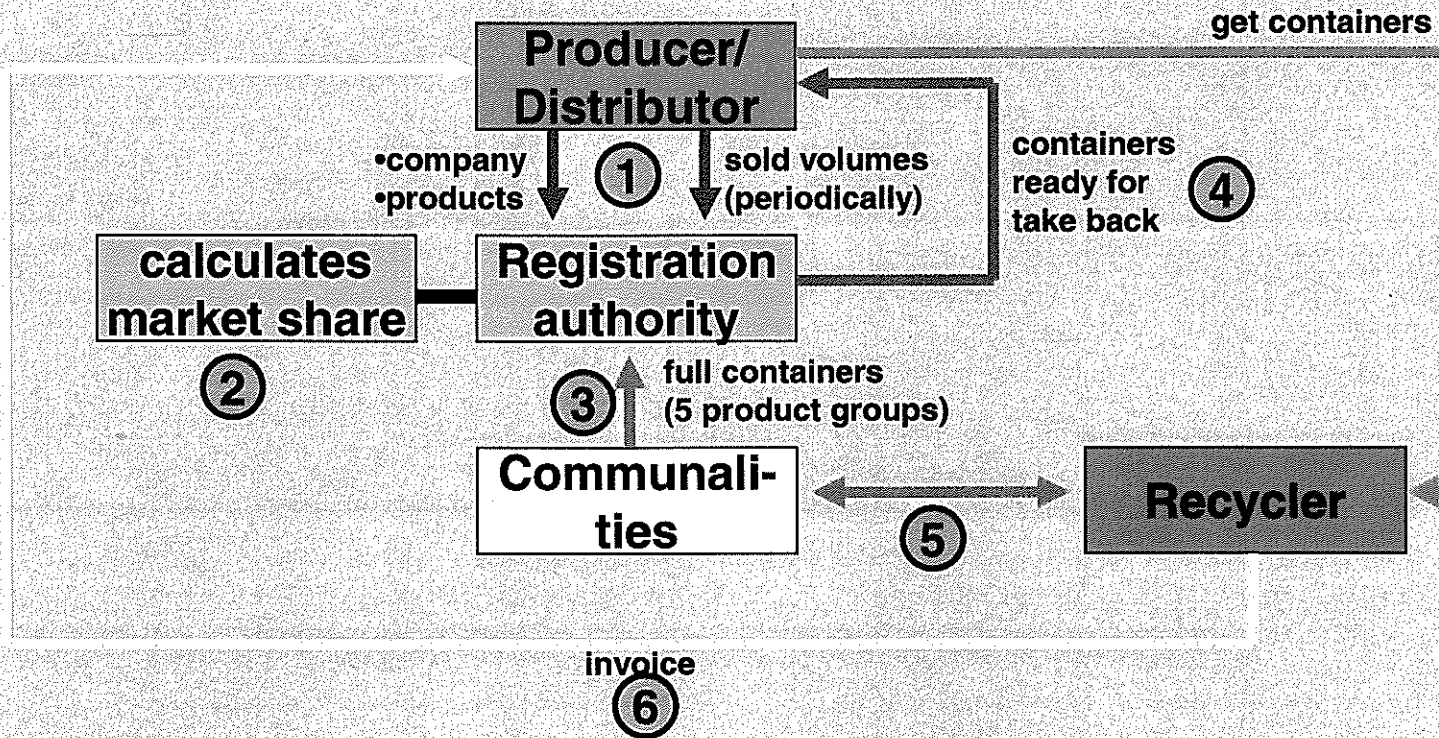
### 3 Direct consumer financing of recycling is very effective!

**ARF**  
Advance  
Recycling  
Fee

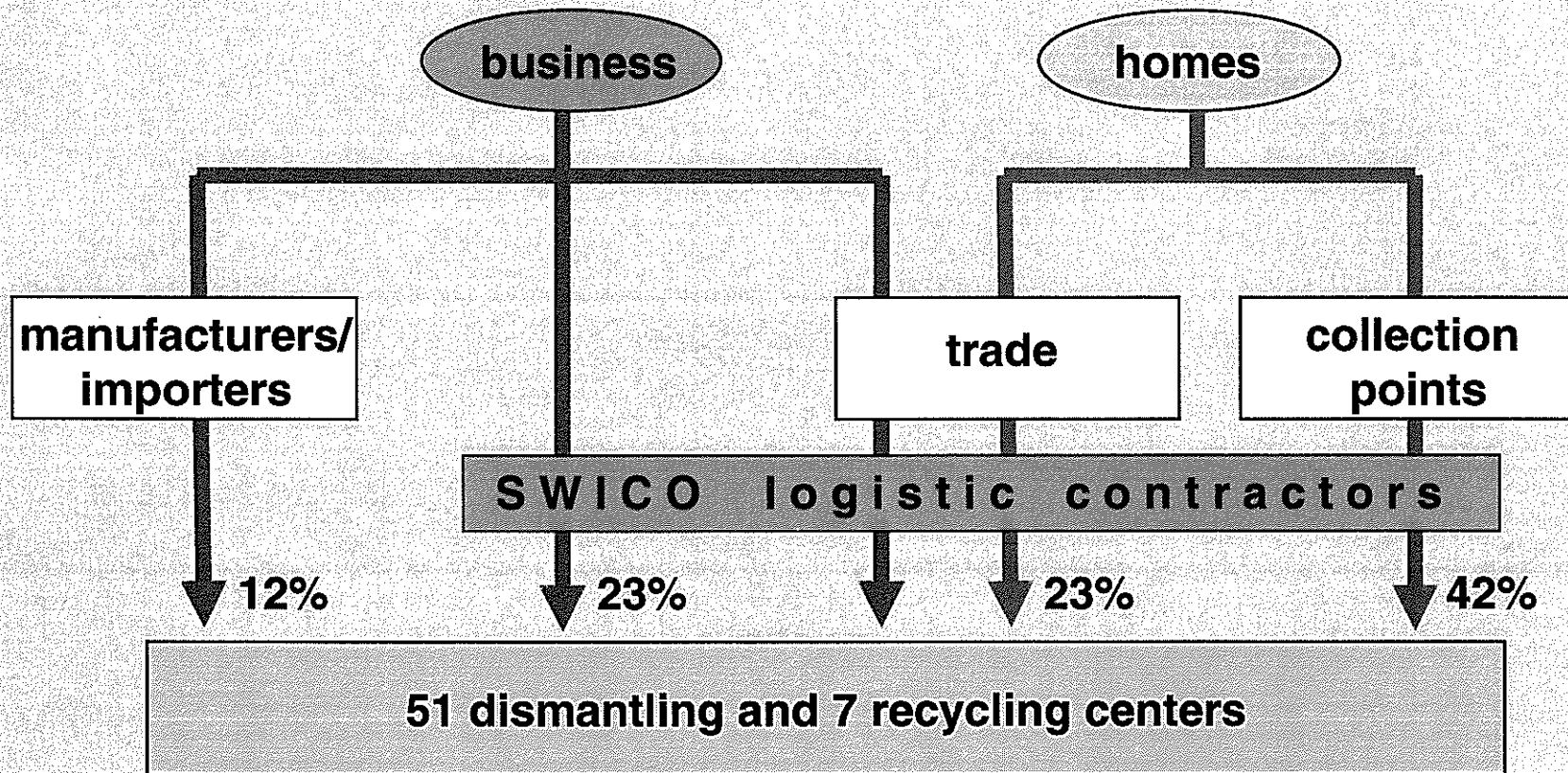


# 3a

## Producer register and clearing house



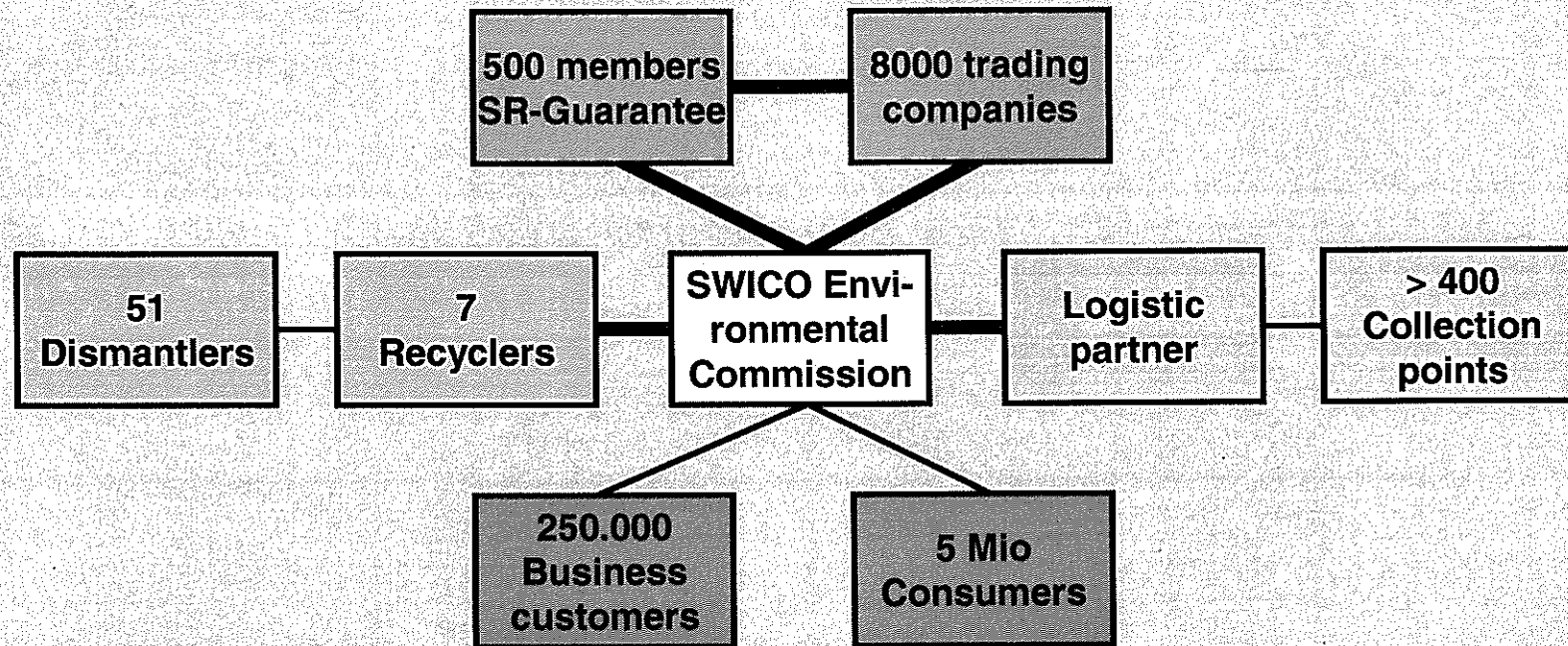
# 4 Give back must be easy for consumers! (B2C and B2B)



SWICO = 6 kg/inhabitant, SENS = 7 kg, Switzerland = 13 kg

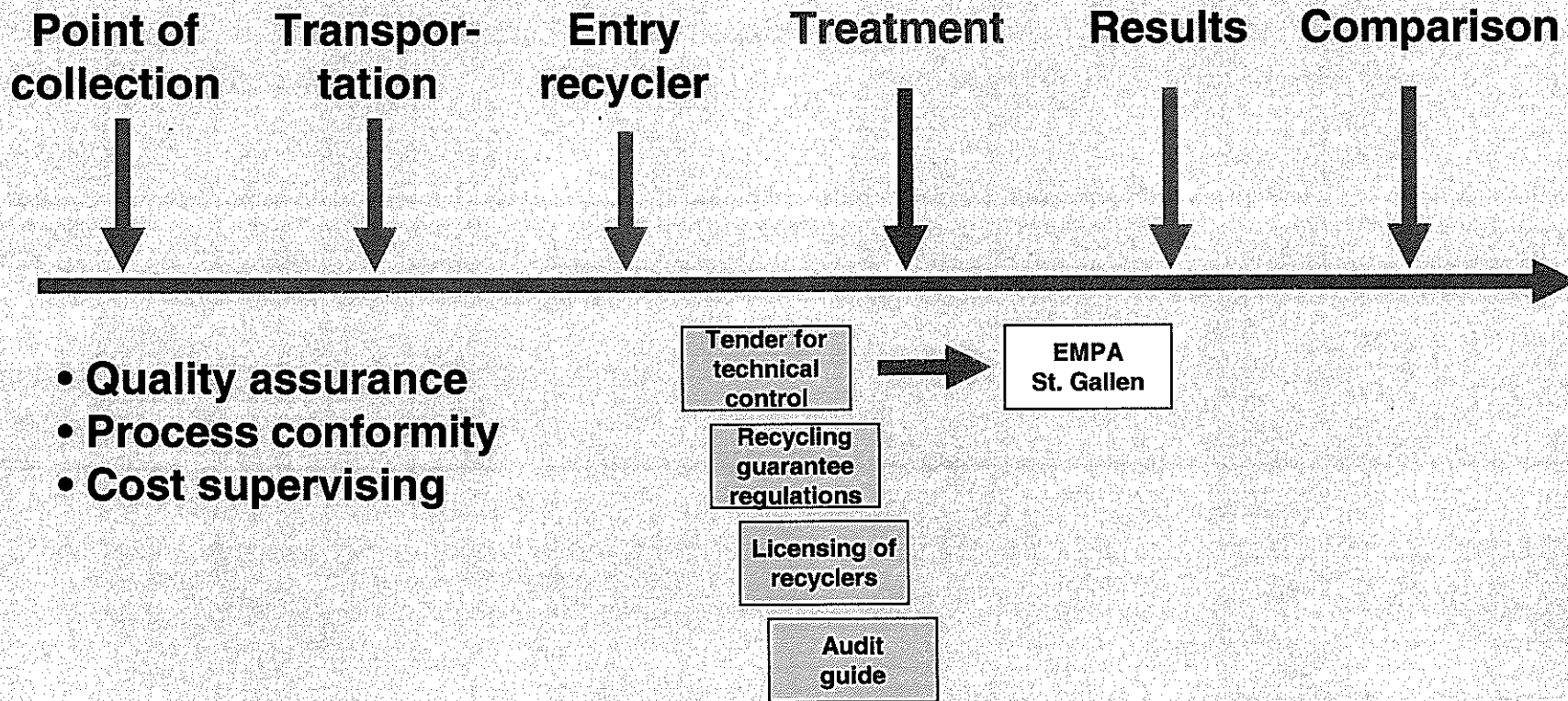
# 5

**The partnership model  
is the base for a successful recycling system !**





# 6 Independent controlling is a key factor for success!



# 7 Influencing the policy makers resulted in what the industries wanted!

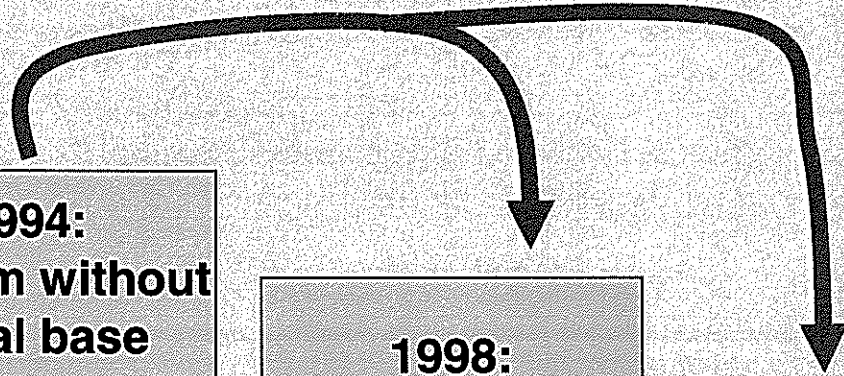
Ordinance Return:  
Double EG

Revised Swiss environmental law (1995)



Collaboration with industry associations

1994:  
System without legal base



1998:  
ORDEE



Ordinance on the return, the taking back and the disposal of electrical and electronic equipment

2000:  
Guidelines for ORDEE

- no historical waste
- no marking
- no B2B / B2C
- no financial guarantees
- no financing rules
- no recovery rates

易其他  
既相同  
亦不同

NTA  
Swicw

NTA 下有很多行子  
- 与 recycler 是 2 个  
后加入 - 与行子



要建的  
回收率

及行别与 2 个是 2 个  
事, 但如 2 个不同  
以行可回收率  
行子

# 8

**Be careful with comparisons – they are often tendentious!**

	SWICO 2006 46'000 t (€/kg)	Other solutions
1. Collection	0.04	
2. Logistics	0.10	
3. Recycling	0.32	→ 2007 = 0.15
4. Controls	0.01	
5. PR	0.01	
6. Administration	0.01	
7. Packaging material recycling	0.04	
8. Battery recycling	0.01	
9. Producer internal cost	0.00	
10. System participation	0.00	
11. Registration	0.00	
12. Financial guarantees	0.00	
13. B2B	0.00	
14. Supplies	0.00	
15. Total	0.54	→ 2007 = approx. 0.37



# 9

## A good bidding process encourages competition!

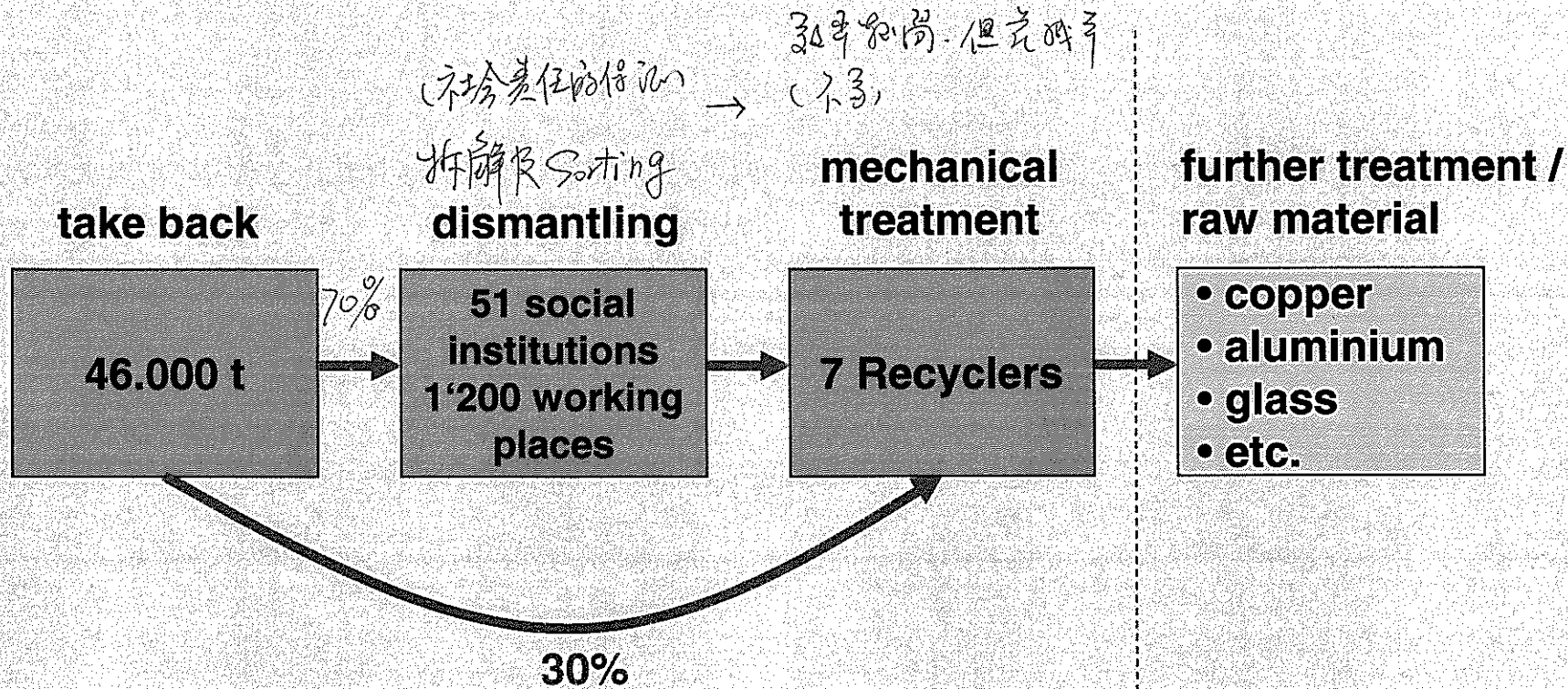
### Transportation

- one logistic partner
- 24 hours service
- 40 km distance
- Standard palette
- Collection points
- Internet orders
  
- 2 years contract

### Recycling

- 35 territories
- Treatment regulation
- Volumes
  
- 2 years contracts

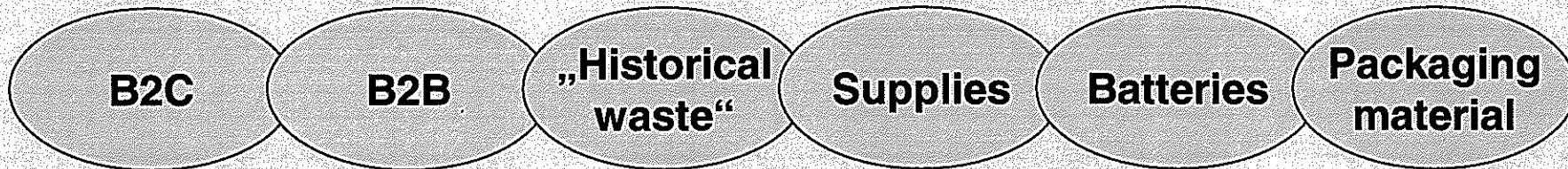
# 10 Treatment in Switzerland (as far as possible) makes sense and is environmentally sound!



# 11 All in one solutions are helping producers to save money!



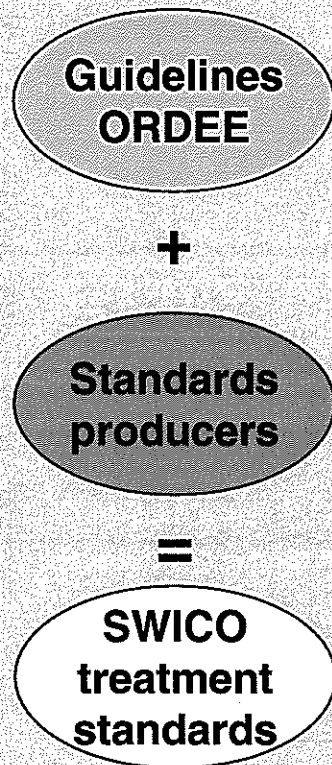
**All in one:**



**Paid by consumers!**



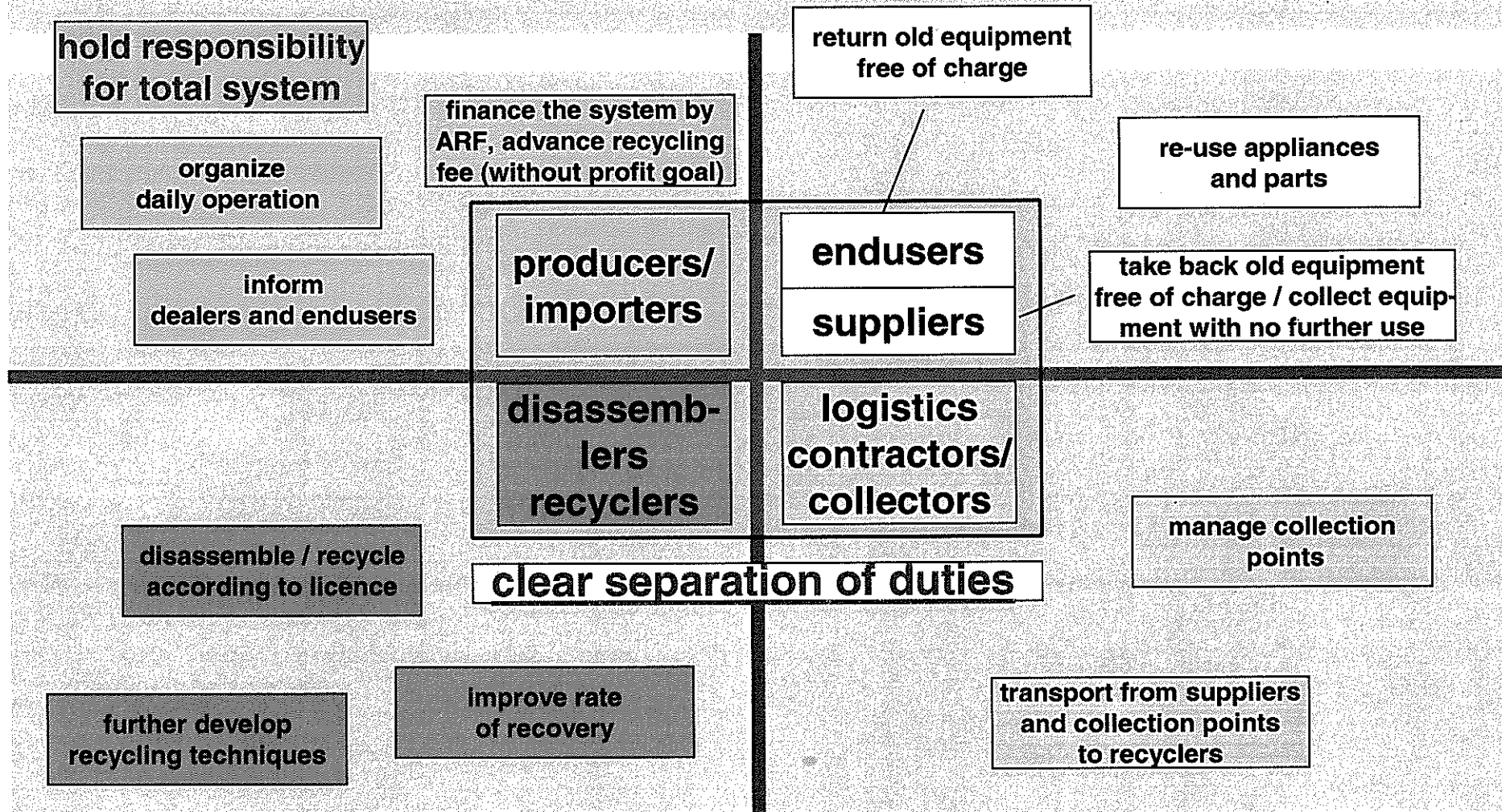
# 12 Recycling costs are influenced by treatment standards and local laws!



Example:

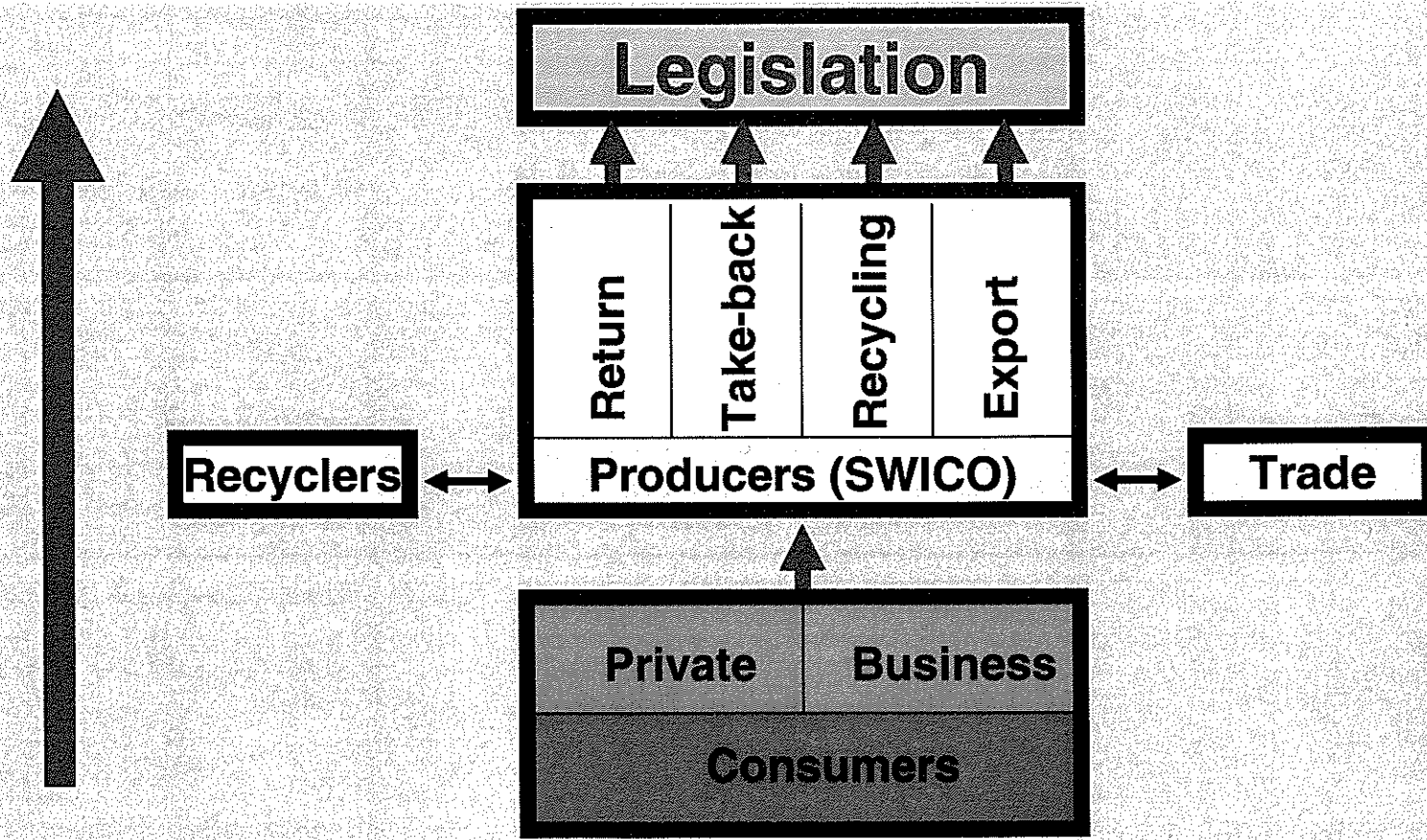
Plastic from electronic products have to be incinerated in Switzerland because of the flame retardants.  
(Cost > 300 CHF/t)

# 13 Producer responsibility – separation of duties must be transparent!





# Swiss Model (bottom up)



# EU-model (top down)

