LOGISTICS
-
PACKAGING, REVERSE LOGISTICS

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The aim of the lecture is to discuss the logistics role of packaging and reverse logistics

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Logistics
-
Packaging, reverse logistics

Structure of the lecture

Logistics function of the packaging

Reverse logistics at different angles

Examples of recycling of selected wastes

Green logistics

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PACKAGING

- component of the storage and material handling
- close relation to overall quality, storage efficiency and performance
- packaging processes have an impact on **marketing** and **logistics**
- relationship between packaging and costs has often been underestimated

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Logistics function of the packaging

1. product closure

- environmental protection
- product will not be damaged
- product is not lost

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2. product protection

- against damage or loss due to external influences:
  - Humidity
  - Dust
  - Insect
  - Infecting

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3. product division

- reducing the output of industrial production to consumer size

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4. unification of the sizes

- associating primary packages into secondary packages having a uniform standardized size
- reducing the number of handling required

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5. consumer suitability

- customer does not have to spend too much time and effort to get to the product

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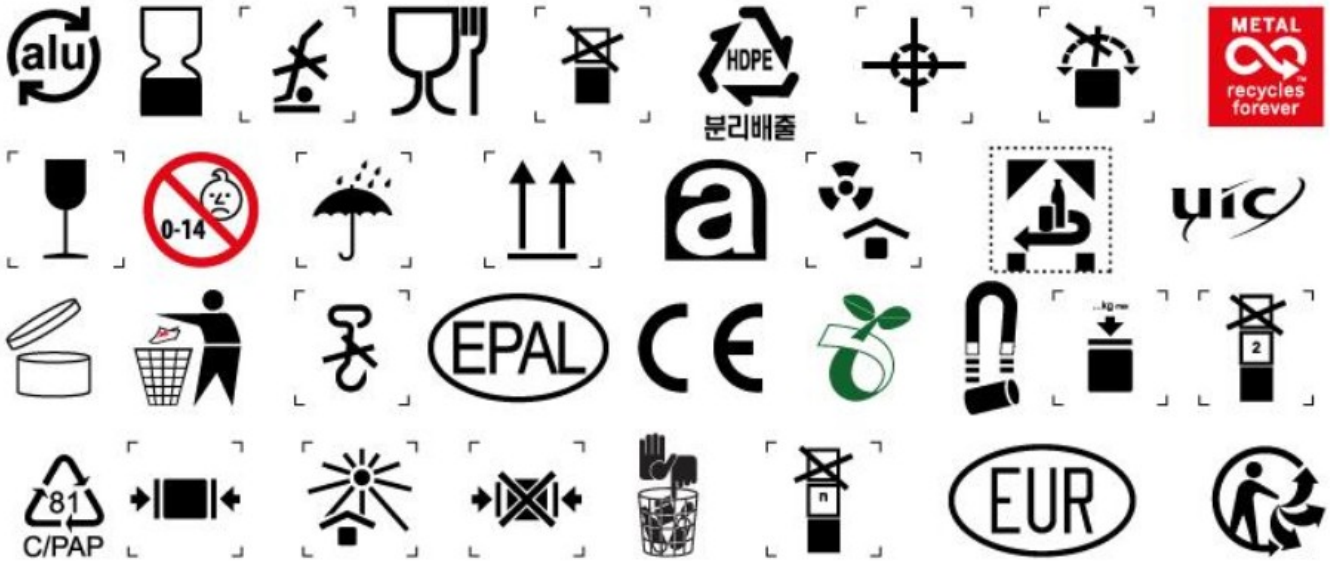
6. communication

- using clear, easy-to-understand symbols
- bar codes



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Positives of quality and well-chosen packaging:

- lower transport costs
- better utilization of storages and means of transport
- decrease of the degree of goods damage and special handling requirements
- reduction of the material disposal costs
- reduction of waste products (returnable packaging)

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Factors affecting packaging

- standardization
- prices / costs
- product or packaging adaptability
- protection level
- handling ability
- ability of the product to be packaged
- reusability and recyclability

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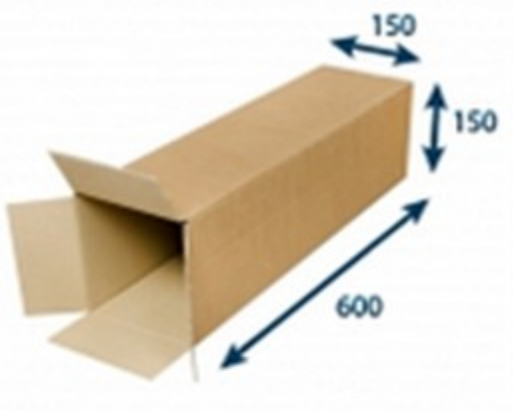

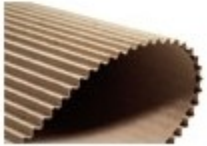

REVERSE LOGISTICS

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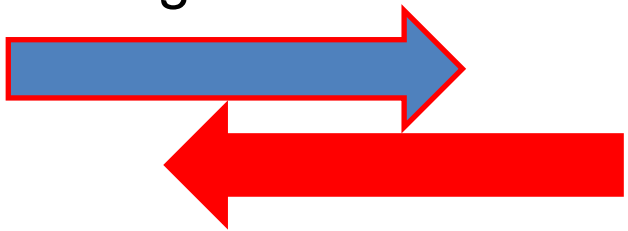
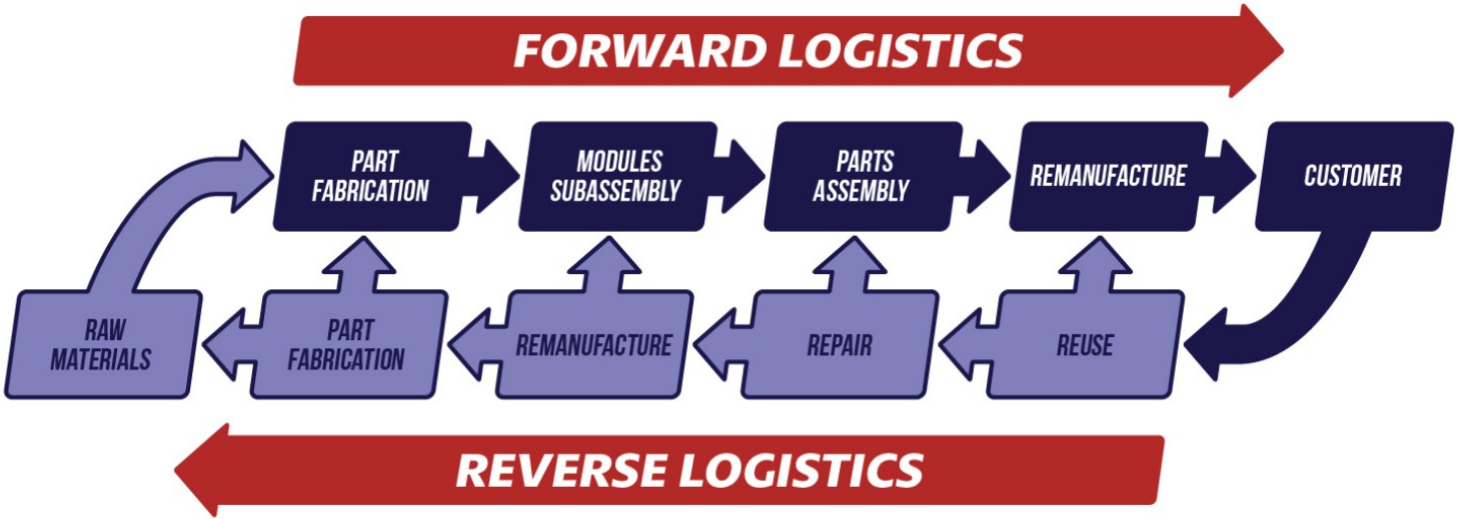
- initially neglected, today the subject of interest
- need to deal with the flow of products from the end-use point back to the point of origin (in the reverse direction)
- originally associated only with the recycling of products and packaging
- deals with the flows of used products, packaging and waste materials that originate from the consumer



- waste removal in the form of consumed products and returned (claimed) goods
- support of the alternative uses of the products and packaging that have already been used or cannot be sold
- any product activity following the point of sale

- 3 narrow concepts of reverse logistics:
  - repacking and resale activities of the returned goods
  - set of activities supporting material recycling
  - organization and management of more complicated ways of recovering old products



http://www.amertranslogistics.com/services/reverse-logistics/

General definition:

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The main purpose of **reverse logistics** is the collection, sorting, dismantling and processing of the used products, components, by-products, surplus stock and packaging material in order to ensure their reuse or material recovery in an environmentally friendly and economically attractive way.

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Reverse logistics tools

1. push tools:

- state intervention
- civic initiative protests
- sectoral union directives
- guidelines for the granting of loans and grants
- environmental awareness of the employees
- environmental behavior of the competition

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Example:

- some entreprises are required by law to take back their products, such as batteries, and to dispose of them in an environmentally friendly manner

Příloha č. 3 k vyhlášce č. 352/2008 Sb.

Potvrzení o převzetí autovraku do zařízení ke sběru autovraků

PČP:	IČPS:

Identifikace provozovatele zařízení, který vydal potvrzení:

IČ provozovatele:
Název provozovatele:
Adresa provozovny, kde došlo k převzetí autovraku:
Přejímající osoba:

Souhlas k provozu zařízení ke sběru autovraků dle § 14 odst. 1 zákona o odpadech:

Souhlas vydal:
Číslo jednací souhlasu:
Datum vydání souhlasu:
Doba platnosti souhlasu do:

Údaje o převzatém autovraku:

Datum převzetí autovraku:
Registrační značka autovraku:
Stát registrace / rozeznávací značka státu:
Kategorie vozidla, výrobce a typ (model):
Identifikační číslo vozidla (VIN):
Hmotnost autovraku:
Hmotnost autovraku dle TP [t]:
Identifikační číslo motoru, je-li uvedeno v osvědčení o registraci:
Identifikační číslo nutných částí vozidla, je-li na nich uvedeno:
Číslo technického průkazu:
Rok výroby / první registrace vozidla ve státě registrace: /

Předávající:
Státní příslušnost předávajícího:
Adresa předávajícího (trvalý pobyt) Dubí
IČ nebo datum narození:

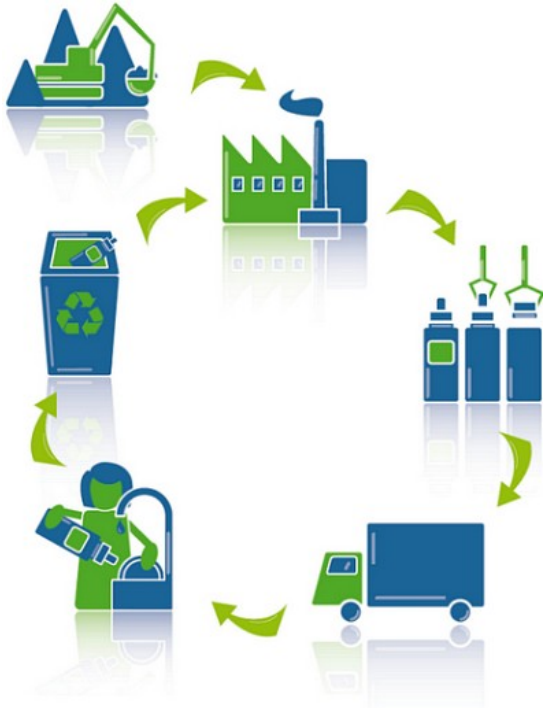
Přejímající osoba potvrzuje, že převzala vybrané vozidlo úplné, obsahující části schválené výrobcem a neobsahuje odpad, který nemá původ ve vybraném vozidle.

Pokud není vozidlo úplné, uveďte chybějící části:

Autovrak přijal a údaje ověřil (Podpis):	Autovrak odevzdal (Podpis):

2. pull tools:

- consumer pressure on manufacturers
- eco-awarding, eco-labeling
- subsidy programs for environmental activities



Eco-consumer:

- types:
  - active
  - activatable
  - passive
- influence of the education and upbringing

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Basic reasons why to deal with reverse logistics

- use of functional parts of destroyed products
- reduction of landfill charges
- complaints, such as feedback revealing design deficiencies
- customer expectations or helpful claims handling as a competitive advantage

- in the future, the importance of reverse logistics will grow:
  - resource efficiency
  - protection of the nature
  - development of e-commerce (need to eliminate hasty impulsive decisions of the customer)
- lack of attention = costs for the society but also for the company itself

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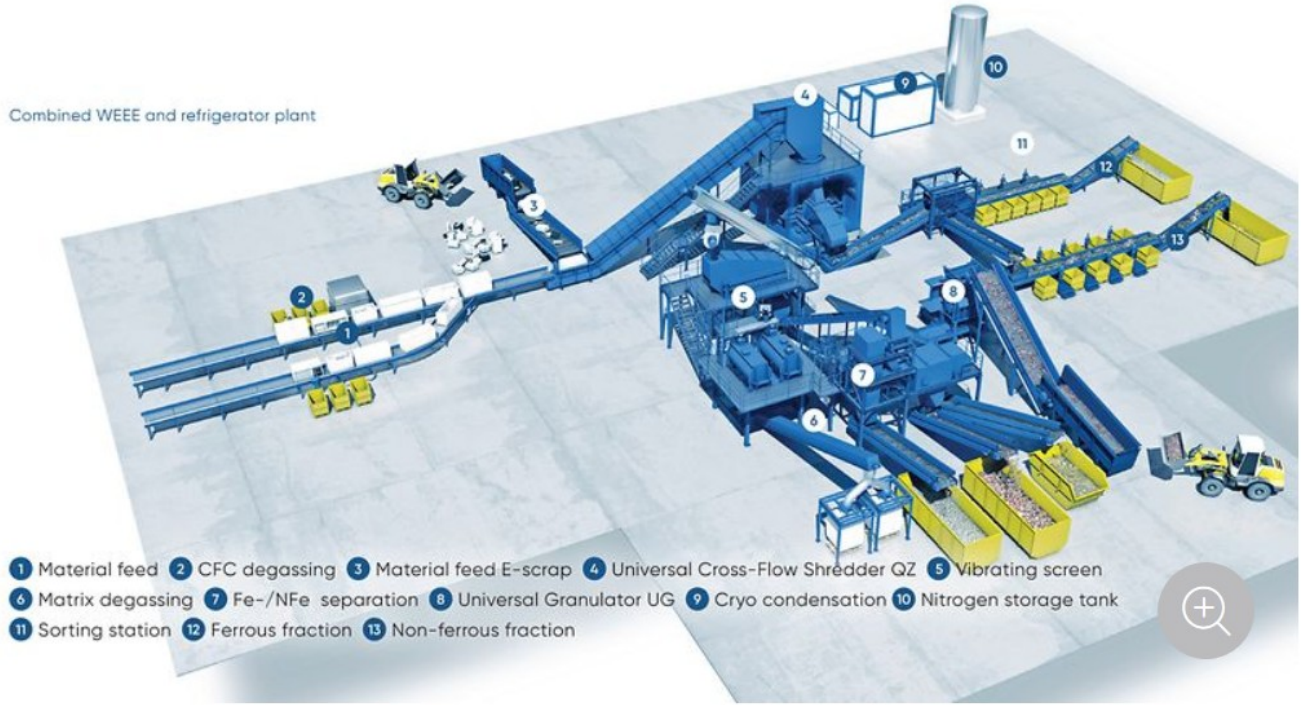
Source: cz.depositphotos.com



Combined WEEE and refrigerator plant

Source: https://www.andritz.com/products-en/group/recycling/electronic-scrap

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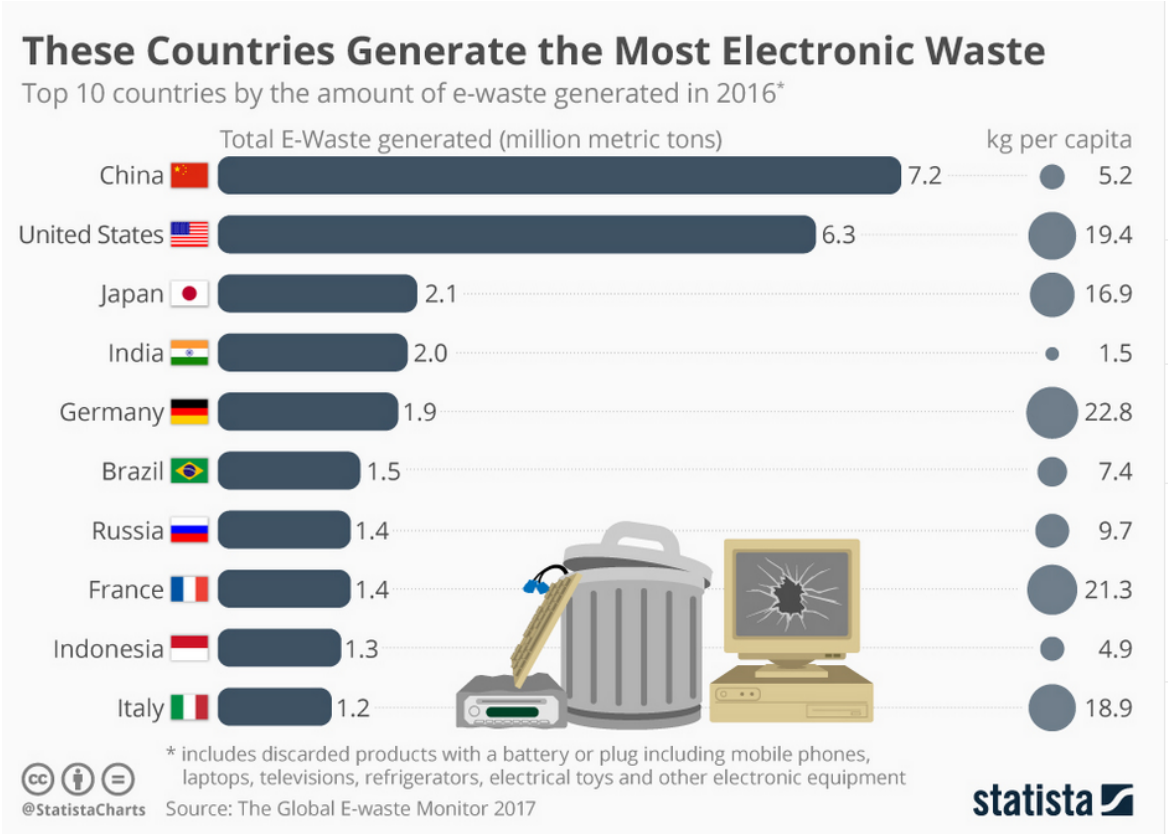

Source: https://www.statista.com/chart/2283/electronic-waste/

- Example: wood waste from sawmill production (sawdust, shavings, etc.):
  - before transport to the dump or used by small breeders and gardeners
  - today the input material for the production of pellets

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GREEN LOGISTICS

- sustainable ecological orientation of logistics = to meet the needs of today's generation without putting at risk the possibilities of future generations
- ecological, economic and social aspects
- optimizing the use of energy and resources in logistics
- green logistics is often limited to transport logistics

- Fraunhofer Institute for Material Flow and Logistics:
  - in in-house logistics systems, on average, around 40% of total costs are spent on energy
  - up to 1/3 of these costs can be saved
  - five areas of action:
    - market and product
    - structure and planning
    - processes, management and measurement
    - technology and resources
    - workers, customers, suppliers and service providers

Source: https://logistika.ihned.cz/

- **Example**: the amount of CO^2 emissions per transported quantity unit is affected by:
  - packaging volume and weight
  - use of means of transport
  - number of pieces in the transport equipment
  - number of rides
  - used storage and handling equipment
  - IT

Summary of the lecture

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You can:

- **Explain the logistics function of packaging**
- **Describe the positives of good packaging**
- **Define reverse logistics**
- **Explain material recycling on selected examples**
- **Clarify the essence of green logistics**