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 Ministry of Economy, Trade and Industry

Governmental Policies for enhancing the Robotics Industry in Japan

--- Create "Neo-Mechatronic Society" in the Future ---




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Industrial Robots






Welding Robots





Electronic-parts Mounting Robots

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Advanced Service Robots

[Type 1]
Simple task




Clean




Patrol

[Type 2]
Certain task for certain customers




Meal support




Nurse caring

[Type 3]
Multi task



Multitask

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What are Industrial Robots and Service Robots?

- What are "Robots"?
 - Sense:** Recognize circumstances and own-position by using sensors
 - Brain:** Analyze information
 - Muscle:** Move physically
- Categories of Robots
 - Industrial Robots:** Robots for manufacturing in the factory
 - Advanced Service Robots:** Robot used for various services such as house-keeping, rehabilitation, rescue, amusement (*not including combat*)
 - Other robots that work in the space or nuclear plants

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Why We Focus Robots

- Only products that **exceed human abilities** (five senses, calculation, move...) can create new industries like automobiles and computers
- Some of **robotics technologies** like manipulators and gyro sensors are **competitive**.
* Generally, Japanese manufacturing companies are good at integration of technologies.
- The social condition of **aging population and decrease of the labor force** needs alternate labor forces.

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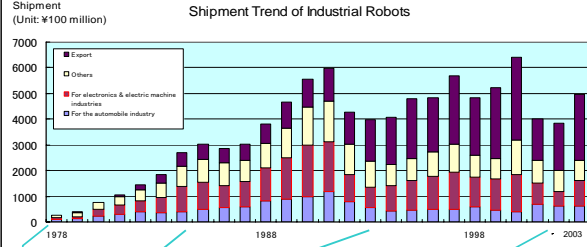
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Market of Industrial Robots is the Largest in the World

Shipment Trend of Industrial Robots

Shipment (Unit: ¥100 million)



- Spot-welding (1970)
- Arc-welding (1972)
- Painting (1973)
- Electronic-parts mounting (1975)
- Assembling (1981)
- Electric-distribution line working (1989)

- Matured in automobile and electrical appliance industries
- AIBO: entertainment (1999)

- ASIMO: Humanoid (2000)

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(Source) Japan Robot Association's Statistics

There are Several Markets for *Advanced Robots*



Type 1: Simple tasks

- Cleaning (wall, corridor),
- Patrol,
- House keeping, House sitting, Amusement,
- Delivery (hospitals, large-scale stores, airports)

Type 2: Certain tasks for certain customers

- Support for rehabilitation
- Support for nursing care

Type 3: Multitask

- Multitask humanoid
- (Rescue, Treat dangerous materials, etc.)



Japan's Government Implements Policies for Enhancing the Robots Industry and Technologies



1. Supply Side Policies (R&D Projects)

(1) RT Middleware Project

- Develop robotics technologies (RT) middleware

(2) Basic RT Device Project

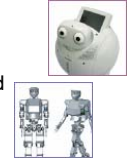
- Develop common basic RT device (audio, visual, motion control)

(3) Advanced Robot Project @ Aichi-Expo

- Develop 8 types of working service robots and 65 types of prototype robots

(4) Human-support Robots Project

- Develop prototype robots that support rehabilitation and nursing care



Japan's Government Implements Policies for Enhancing the Robots Industry and Technologies



2. Demand Side Policies

(1) Information provision program

- Establish the road map of RT and market, "The Technologies Strategic Map"

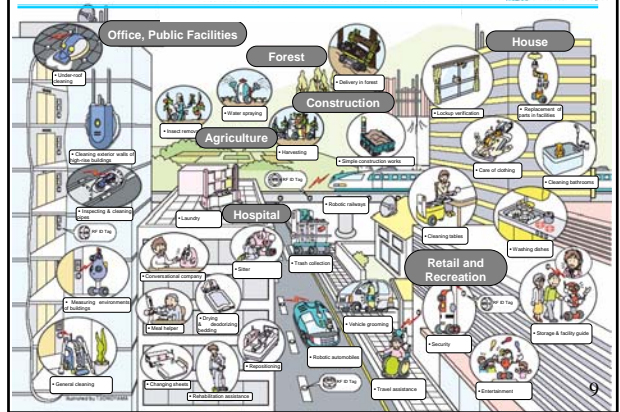
(2) Subsidies for technology adoptions

- Low-interest loan for users
- Subsidies for demonstration experiments

(3) Technical standards ensuring security

- Discuss about technical standards and social rules that ensure security and safety

Create "*Neo-Mechatronic Society*" in the Future



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