



Establishing a Korean Robot Ethics Charter



2007. 4. 14

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Outline

- ▣ Trends of the Robot Industry in Korea
- ▣ Trends of Robot-Developing Technologies in Korea
- ▣ Why Korea Wants to Establish the Robot

Ethics Charter

- ▣ Process of Establishing the Korean Robot

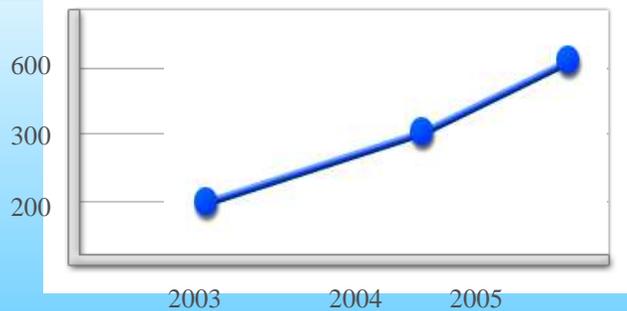
Ethics Charter

- ▣ Contents of the Korean Robot Ethics Charter



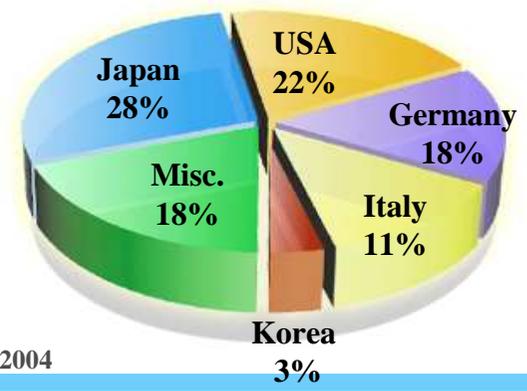
Trends of the Robot Industry in Korea

Domestic Market, approx. \$600 million USD [USD 1Mill.]



MOCIE, Korea, 2006

World Market Share, 3 %



IFR, 2004

Overview of Business and Technology

- Have a Potential Market and Technology for Robots
- Spin-off Small or Venture Businesses

No. of Robot Companies (180)

Business	Manu- facturing	Services	Compo- nents	Total
Large	13 (7)	5 (-)	4 (-)	22 (7)
Small	47 (2)	64 (-)	47 (-)	158 (2)

* () : Selling over \$10 Million USD for a Year

MOCIE, Korea, 2006

Overview of Infrastructure

- Good Environment for the Introduction of Robots
- Positive National Character for a New Culture

Impression of Robot Image



Buying Intent of Personal Service Robot



Legend: Negative (Red), Positive (Blue) [N=1004,%]

Embrain marketing research in Korea, 2005

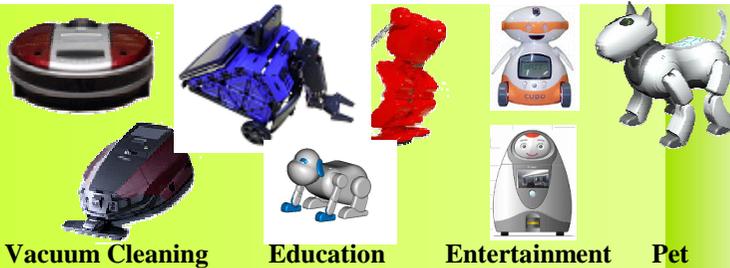
Trends of Robot-Developing Technologies in Korea

2007

2010 ~ 2015

Home Service

Cleaning / Educational Robot



Vacuum Cleaning Education Entertainment Pet

Coexistence with Humans



Silver/Life Care

Health/Silver Care Robot



ChairBot RideBot Siverbot Subar

Silver-Mate assisting Senior Citizens



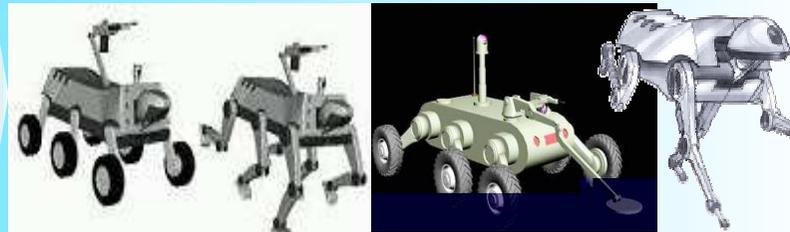
Security/Military

Disaster Recovery/ Rescue/ Military Robot



Robhaz Border-Guard Fibot Hovering

Extension to Practical Applications



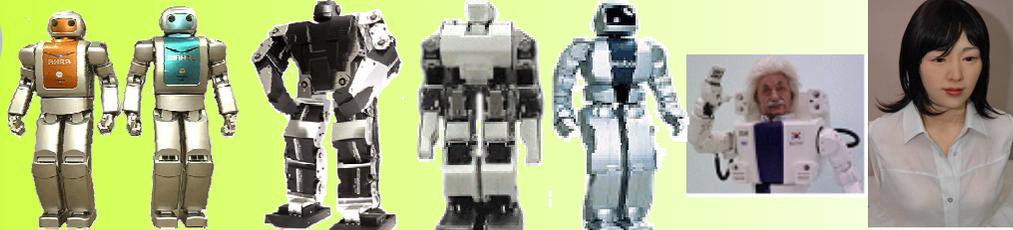
Trends of Robot-Developing Technologies in Korea

2007

2010 ~ 2015

Humanoid/
Android

Prototype Robots



Ara & Maru Robonova-1 Transbot Hubo Albert Hubo EveR-1 Muse



Like *Bicentennial Man*

Network
Robot

URC (Ubiquitous Robotic Companions)

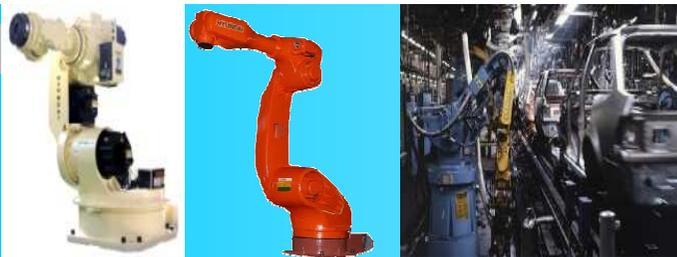


PGR uPostMate iRobi Q Jupiter Mir-H EGIS-SR

*Network Robots
for an ubiquitous
presence in
society*

Nano/
High-precision

Industrial Robots



Cooperative / Intelligent Works



Test Bed Country

- Korea's IT (Information Technology) electronics market is very attractive: mobile phones, DMB, PMP, digital TV, etc.
- Our consumers demand rapid technology advancement.

→ Korea will be able to serve as a **test bed country** for robots, just as with the IT electronics market.

Future Society

- Futurist *Jim Dator* evaluated Korea highly for its dynamic society and its people's determination to accomplish goals.
- Many dynamic changes are occurring within Korean society.
- It is estimated that every household in Korea will have one robot by

2020.

→ Preparing for the **future**, now is the time to establish an ethical guideline on partnership between people and robots.

Social Demand

- ❑ Korea is headed towards an aging society with low birth rates: one possible solution is the use of robots.
 - ❑ Various intelligent service robots, including robots to assist senior citizens, have been developed: 'Silver Mate' robots will soon be seen.
 - ❑ Social demand for robots is forecasted to increase.
- The **social demand** has created a need to enhance partnership between people and robots, and a need to consider ethical issues in Korea.

Why Korea Wants to Establish the Robot Ethics Charter

Characteristics of
a Test Bed Country
for Robots

Preparation of the
Future Society according to
Dynamic Changes

Social &
Consumer Demand
for Robots

**Confirmation of National Consensus
on Robot Ethics in Korea**

Process of Establishing the Korean Robot Ethics Charter

Activity of WG on Robot Ethics

Robot developers, CEOs, psychologists, futurists, writers, government officials, users, lawyers, and doctors: more than 10 members

Draft

opinion / feedback

Online Community

Public Hearings

Global Cooperation

Deliberation of the 'Robot Industry Policy Forum'

38 Members

Deliberation of the 'Industrial Development Council'

29 Members

The Korean Robot Ethics Charter

By the end of this year

Public Relations /
Follow-up Activities

Official Announcement

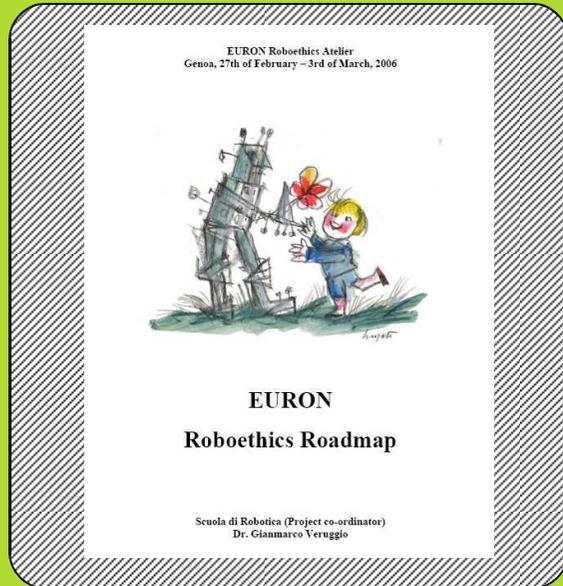
The Detailed Guideline

In the near future

Contents of the Korean Robot Ethics Charter

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Global Robot Ethics **EURON Roboethics Roadmap**



Value and respect the outcome of the EURON Roboethics Roadmap

...

Korean Law *Korean Society* *Korean Industry* *Korean Culture*

Robot Ethical Issues in Korean Culture

Reflect the unique situation in Korea

Conceptual & Proclamatory Contents on Korean Robot Ethics

**We value your ongoing concern &
cooperation.**

Thank you.

