

Current Status of Bioindustry in KOREA

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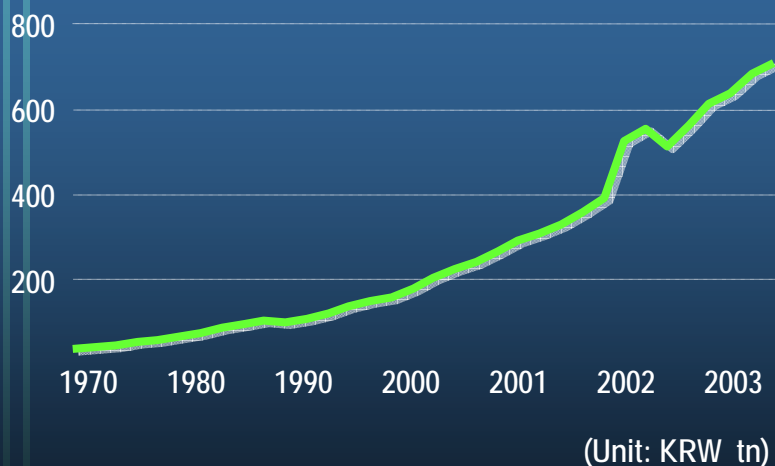


I. General Information of Korea

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- GDP in 2004 : US\$ 667 bn
- GDP Ranking in 2003 : **11th** (US\$ 605 bn)
- Korea's trade amount for 2004: US\$ 479 bn (28% ↑)
- Korea's trade ranking: **12th** (US\$ 373 bn) in 2003

Real GDP Growth (1970-2003)



Export / Import Trends



I. General Information of Korea

within 3.5 hours' flight time

20% of Global GDP
(US\$ 1.7 trillion)

32% of World Population
(197 million)

CHINA

KOREA

JAPAN

China

• GDP US\$ 1,569 Bn
• Population 1,299 M

Japan

• GDP US\$ 4,302 Bn
• Population 128 M

ASEAN

• GDP US\$ 1,100 Bn
• Population 542 M

* Hong Kong included

I. General Information of Korea

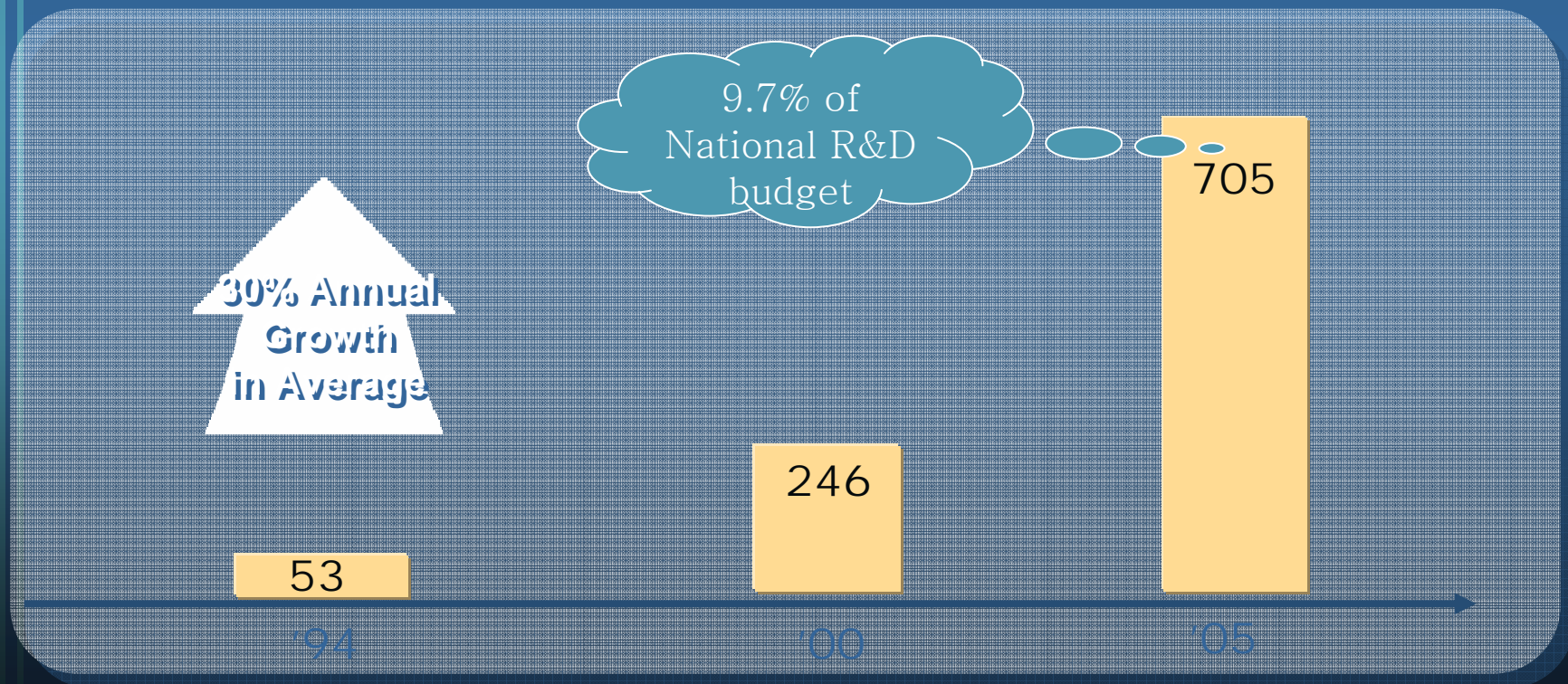


II. Current Status of Bio-industry

Government Investment on BT

- Total R&D spending out of GDP : 0.3%(early 1970s) -> 2.85%(2005)
- Biotechnology budget out of total national R&D budget : 9.7%(2005)
- 30% annual growth from US\$53 mil.(1994) to US\$705 mil.(2005)

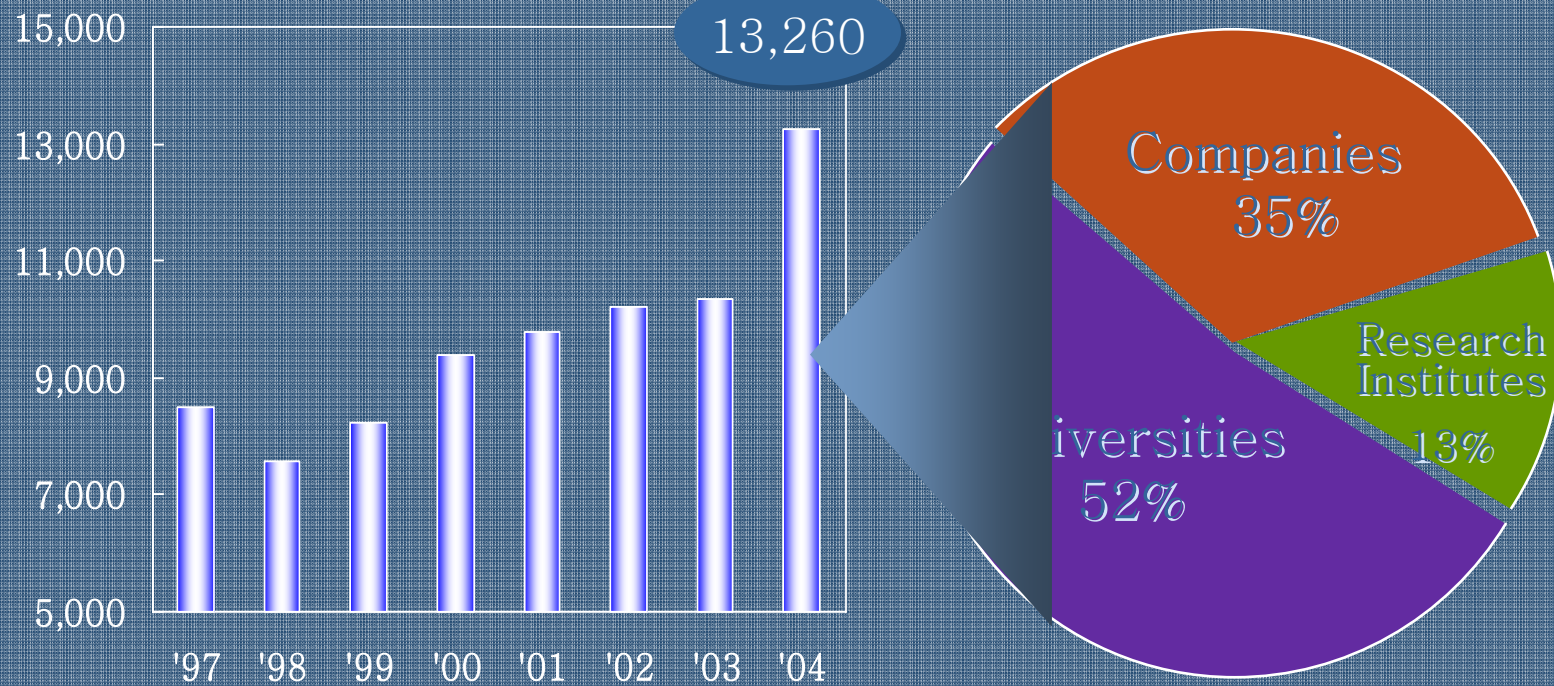
(Unit: US\$ million)



Human Resources in BT

Approximately 13,300 workforce involved in BT area (2004)

Degrees in BT major : Ph.D (6,120), Master (4,925), Bachelor (2,215) (2004)



USPTO Patents in BT('04)

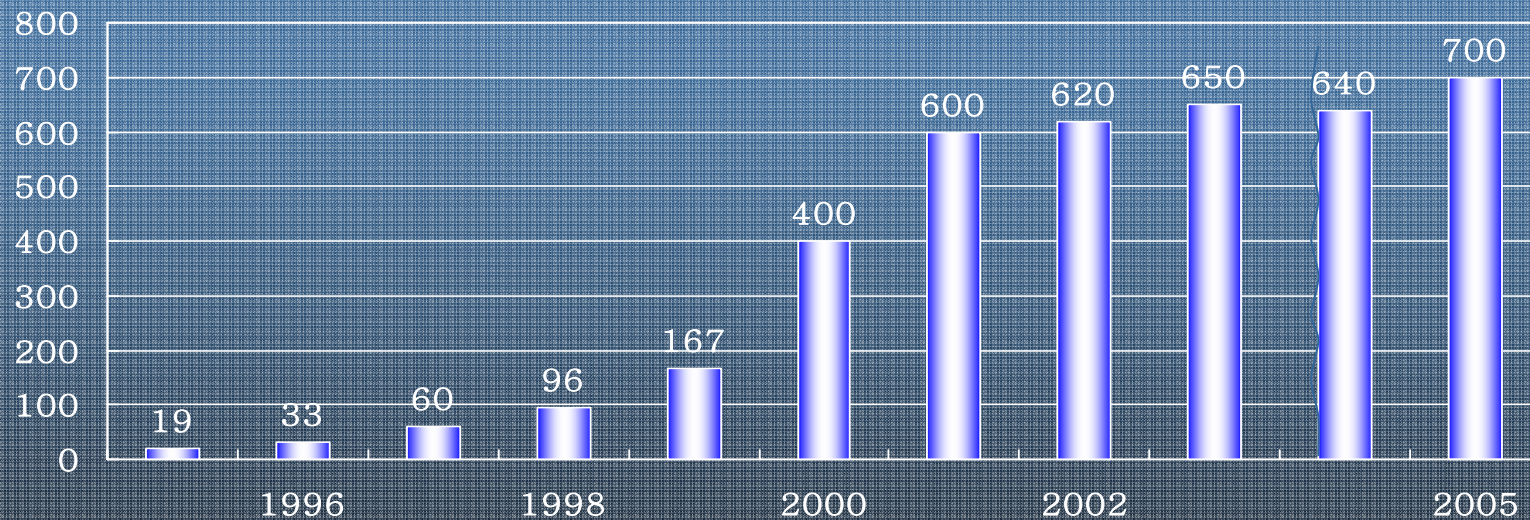
Technological strength: 14th in the world

Patent Impact Index: 7th in the world

Country	Technological Strength	Number of Patents	CPP Citation Per Patent	PII Pat Impact Index
USA	28,372.6	55,931	0.8	1.2
Japan	1,219.5	6,794	0.4	0.5
Germany	1,138.3	4,216	0.4	0.6
UK	1,060.0	2,446	0.7	1.0
Netherlands	497.2	2,367	0.3	0.4
France	606.9	2,336	0.4	0.6
Canada	1,075.6	2,208	0.7	1.0
Denmark	N.A	1,118	N.A	N.A
Korea	107.4	410	0.3	0.4

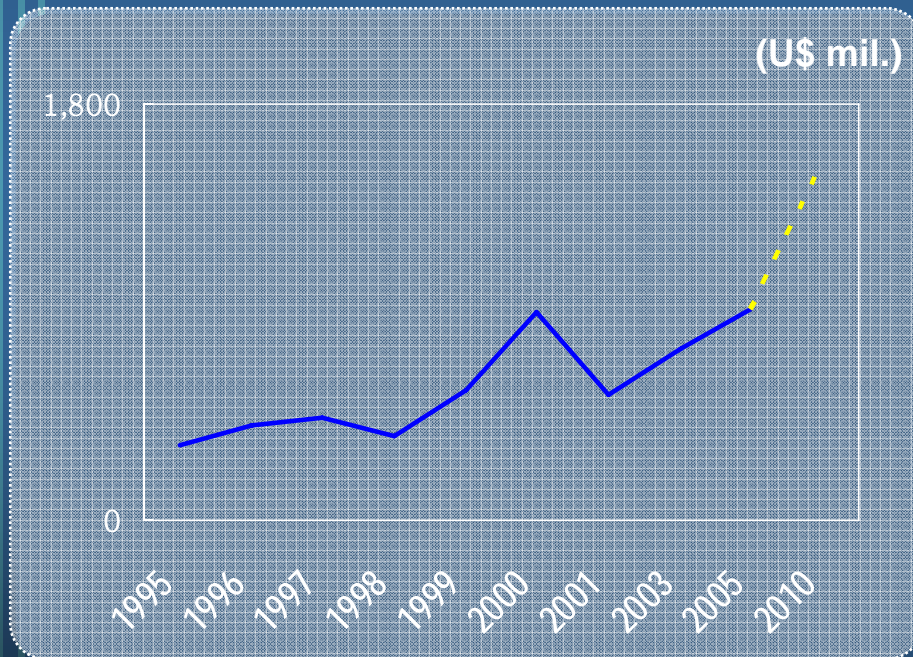
BioIndustry

Number of companies in BT: about 700 (2005)
Number of bioventures: about 600 (2005)

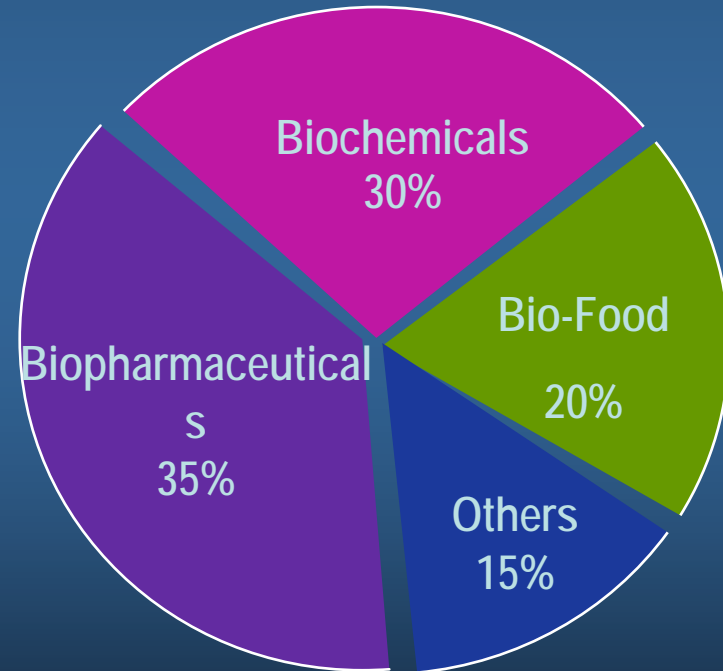


BT Market Size

Continual growth : US\$ 900 mil. (2005) with 11% of annual growth rate



The Korean biotechnology market was valued at US\$ 1.5 billion in 2003. The market has been growing at an average annual rate of 11 percent since 2000.



Bio-pharmaceuticals market took the lion's share, followed by bio-chemistry and bio-food.

Challenges and Opportunities

Strengths

- Strong drive policy by the government
- Good R&D infrastructure in industry, academia and research institutes
- Booming bioventure business
- Skilled workforce
- Strong knowledge and industry bases

Weaknesses

- Shortage of innovative R&Ds for platform technology
- Comparatively insufficient R&D expenditure
- Weak link between industry and academia
- Small domestic market and limited marketing power for global sales
- Poor biodiversity and bioresources

Opportunities

- Paradigm shift in biotechnology for post genomic era
- Top priority in national R&D programs
- Increase of public awareness in health and welfare
- Emerging new technology innovation

Threats

- Growing competition worldwide
- Depression of local investment atmosphere
- Regulatory issues: biosafety and bioethics

II. Current Status of Bio-industry

Bio Cluster Formation of Korea government

Bio-Cluster : 3 zones, total 16 clusters

<Daejeon/Choongchung>

- BIO MEDICINE
- HEALTH CARE
- ORIENTAL MEDICINE
- ANIMAL RESOURCES
- FUNCTIONAL FOOD

<Jeonla/Cheju>

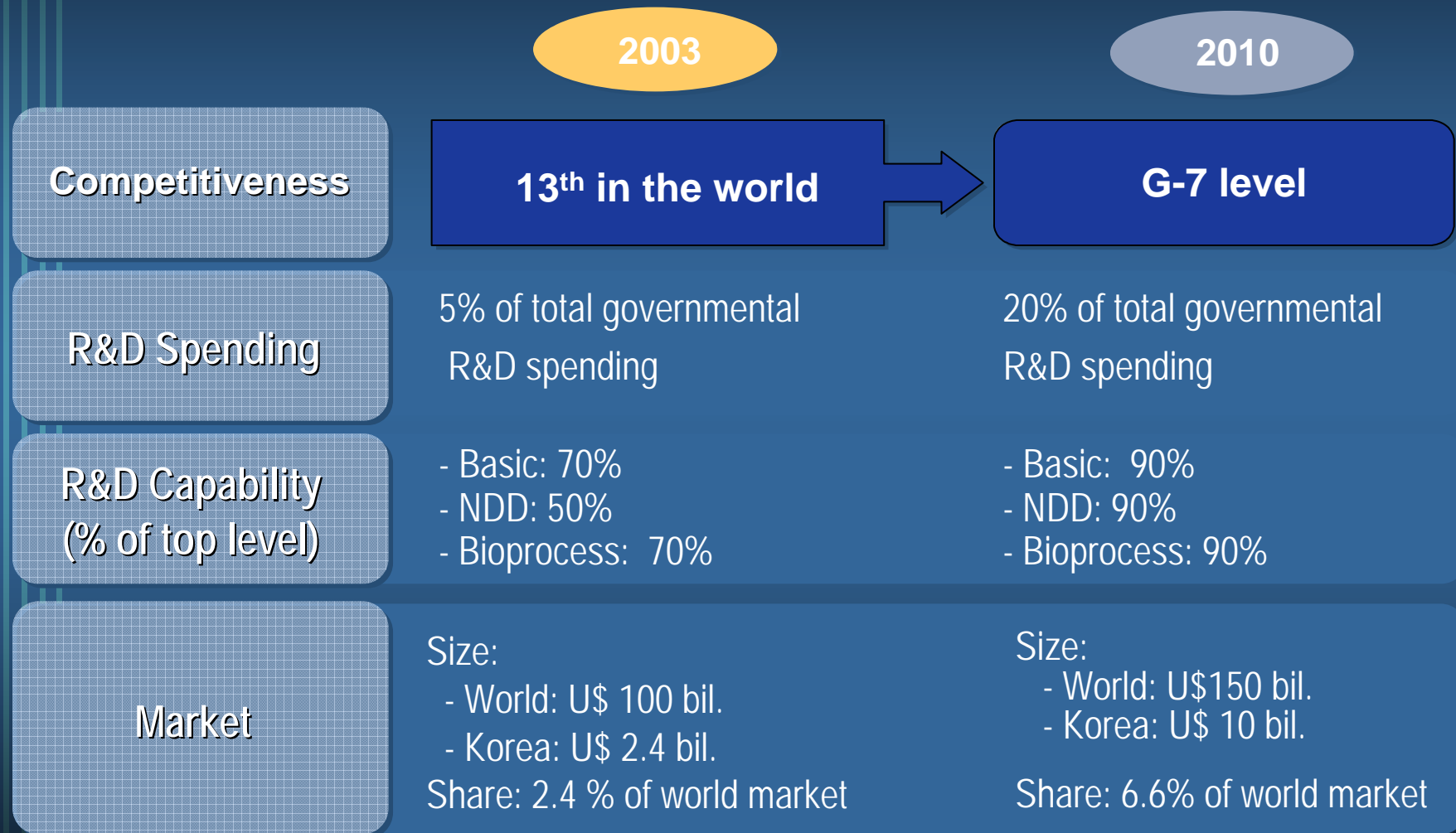
- NATURAL MATERIAL
- BIO FOOD
- BIO AGRICULTURE
- PLANT MATERIAL

<Kangwon/Kyungsang>

- BIO ENVIRONMENT
- SEA MATERIAL
- BIO ENERGY
- BIO HEALTH INDUSTRY
- FUNCTIONAL MATERIAL
- BIO CHEMISTRY
- OCEAN BIO MATERIAL



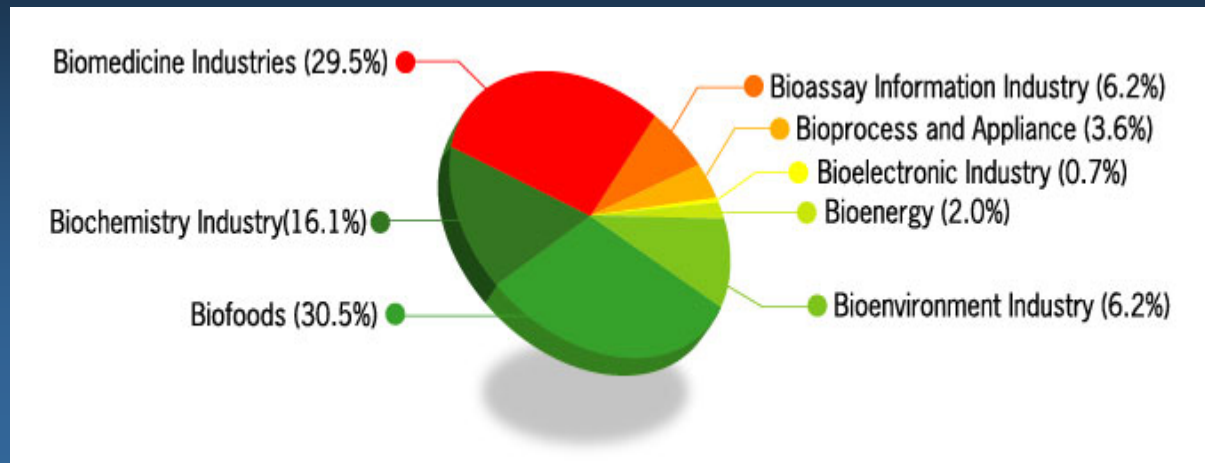
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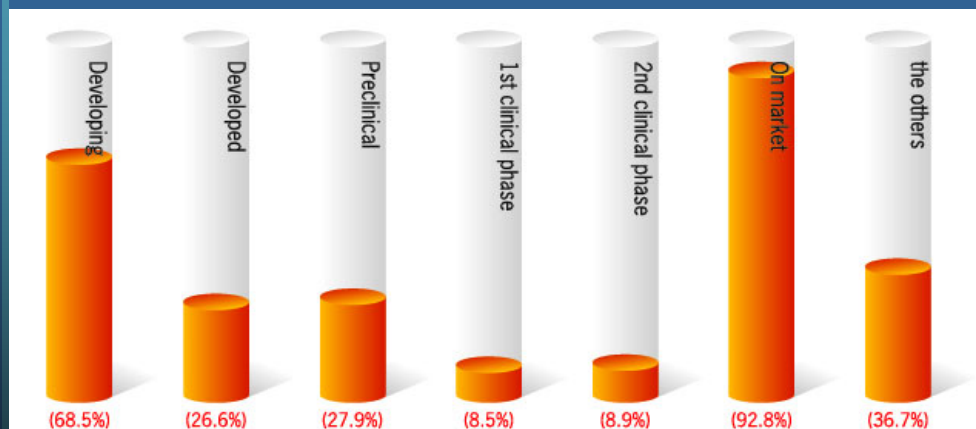
III. Status of Korea Bioventure Industry

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Core Industry



* Bio foods (30.5%) and bio medicine industries (29.5%) account for 60 % of bio industries in total, and since 2002, bio foods, bio chemistry, bio agriculture and maritime industries have been expanding.

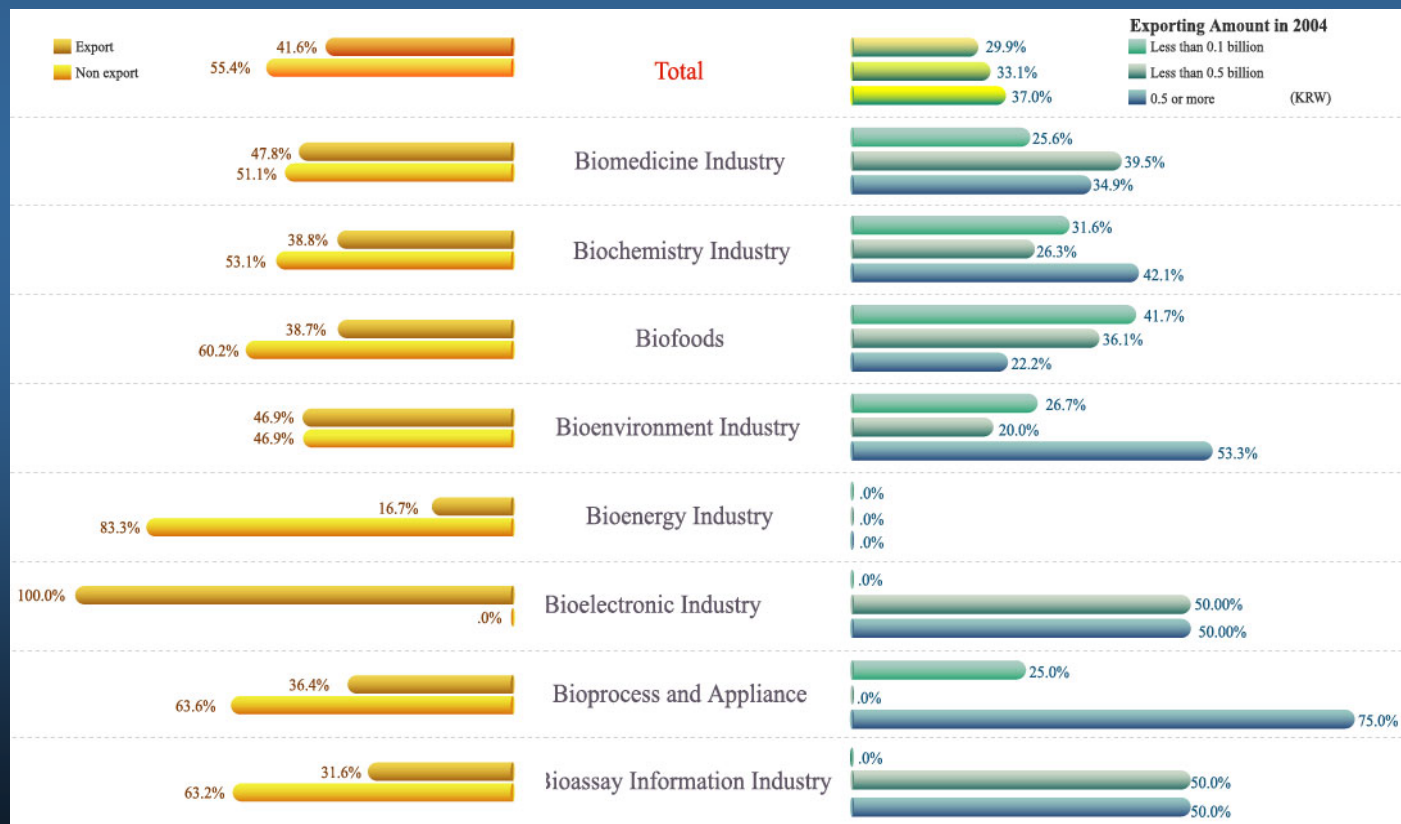
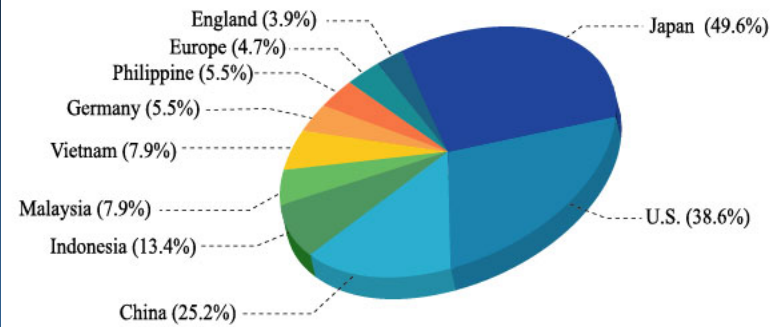


Status of technology development

* 92.8% of the technology retained by corporations is on the market, while currently developing technology nears about 70 %.

III. Status of Korea Bioventure Industry

Export



..... Korea Bio Venture Association

- Established : July 2000
- The Number of Members : 211 (2006.3)
- Homepage : <http://eng.kobioven.or.kr>

Scope of Business

- Enhances mutual cooperation between members in activating Technological exchanges and joint researches
- Supports for recruitment and employment for biohuman resources :
Holds Bio-Job Fair and operates On-Line recruitment section
- Technology transfer supports
- Supports for attracting investment
- Provides bio news
- Supports for overseas marketing
- Education & training for professional human resources :
Plans the program and supports on-the-job training for the unemployed



Thank you !

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