
Technology Roadmap in Korea

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STEPi

A collage of technology-related images. In the foreground, two people in white lab coats are looking at a computer monitor. Behind them is a large satellite dish on the left and a glowing globe in the center. To the right, there are several smaller globes connected by a network of lines, suggesting a global network or data flow. The background is a light blue gradient with some abstract light effects.

I. Technology Foresight Activities in Korea

□ National R&D programs as well as S&T development plans

-HAN Program: 400 experts

**-Long-range Plan for S&T Development toward the Year 2000:
800 experts**

**-Long-term Vision for S&T Development toward the Year 2025:
200 experts**

-Extended to other ministries: After 1990s

□ Technology Forecasting

-The First Technology Forecasting (1993)

-The Second Technology Forecasting (1998)

I. Technology Foresight Activities in Korea

□ Technology Roadmap at Firm Level

-Samsung is the leader

-Objective: To secure seed technologies in the 21st century

-Many TRMs: Revised annually

□ National Technology Roadmap(NTRM) in 2002

-Applying TRM approach at national level

-Objective: Linkage between demand and supply

-Identification of 99 key technologies

II. National Technology Roadmap (NTRM)

□ Objective

-To build the national technology roadmap for the need of national strategy and economic growth toward 2012

-To follow top-down vision-driven approach to the identification of key technologies

□ Contents

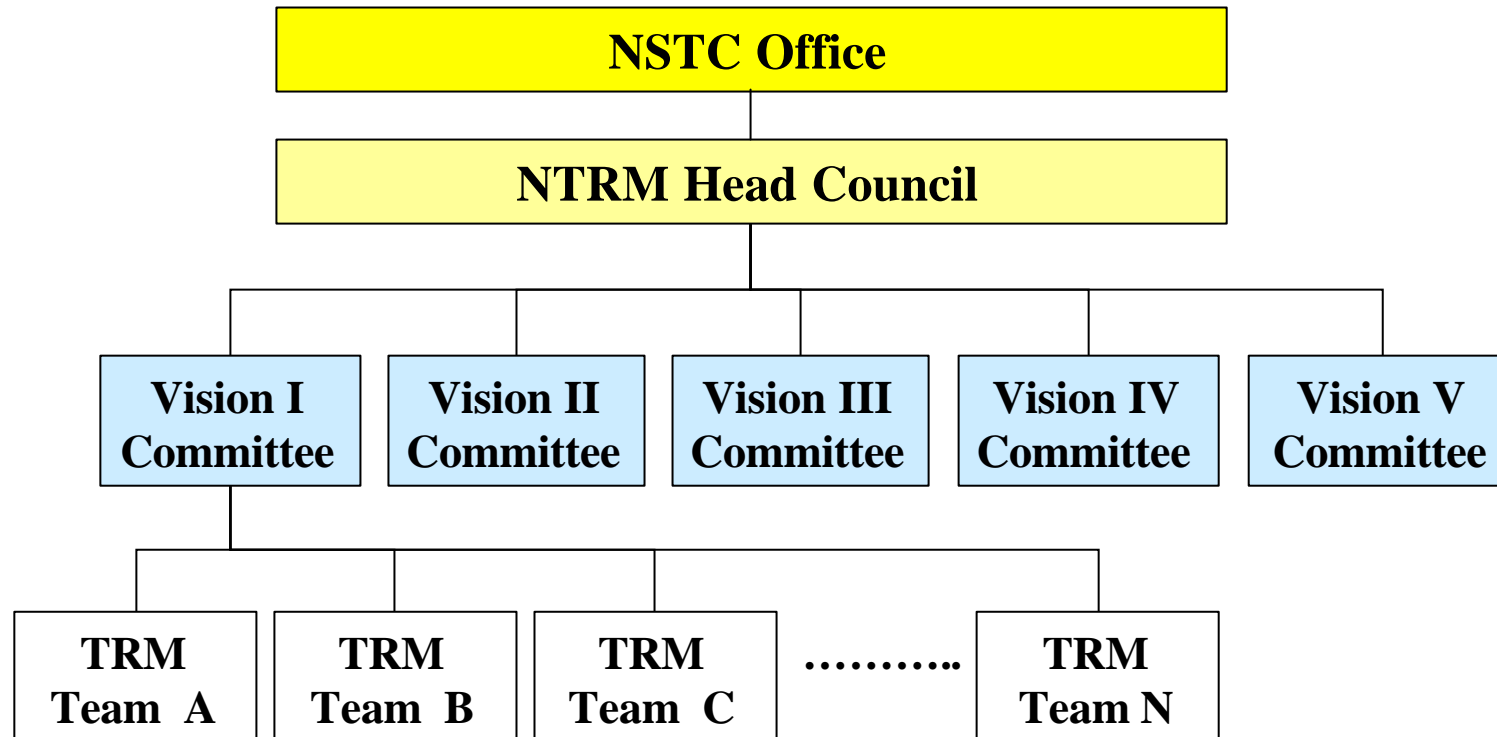
-Analysis of Industrial Need ➡ 5 Visions ➡ 13 Directions ➡

49 Strategic Product/Functions ➡ 99 Key Technologies ➡ **NTRM**

-NTRM include Macro Roadmaps for strategic products/functions and detailed TRM for chosen key technologies

II. National Technology Roadmap (NTRM)

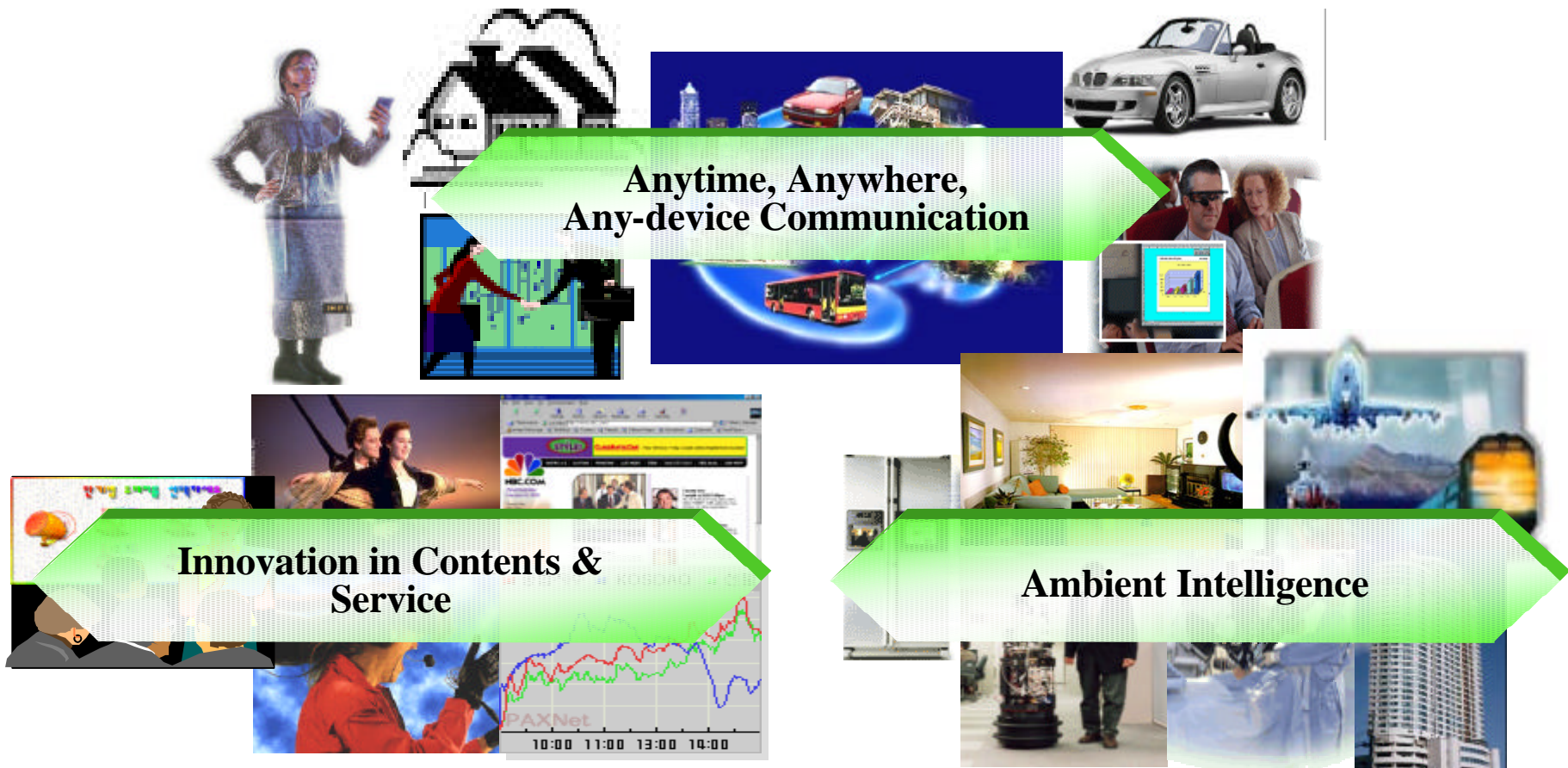
□ Organizational Structure



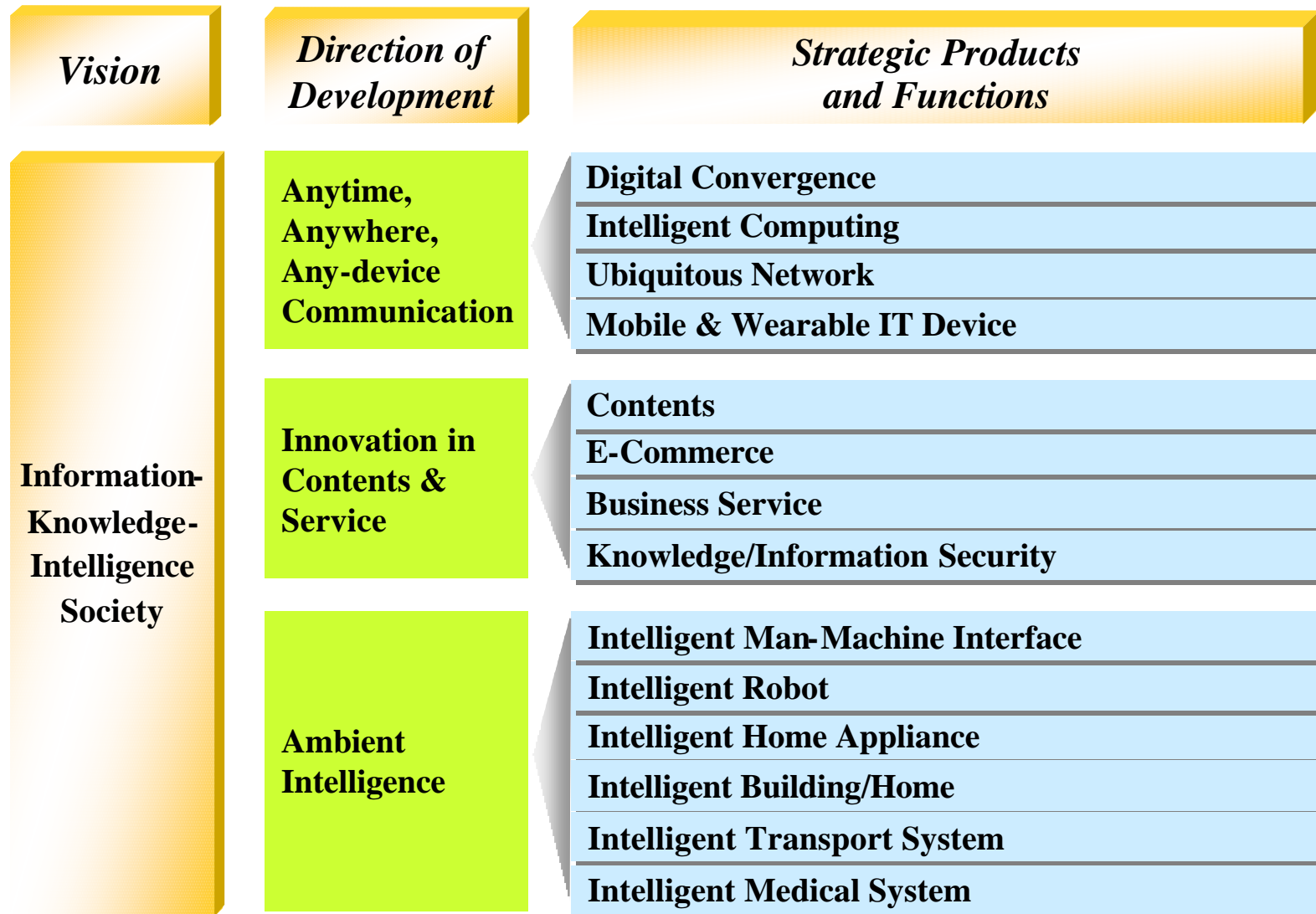
III. Major Elements of NTRM

1. Building an Information-Knowledge-Intelligence Society

Meeting a variety of human needs in all areas of life by making IT service more intelligent, mobile, and user-friendly

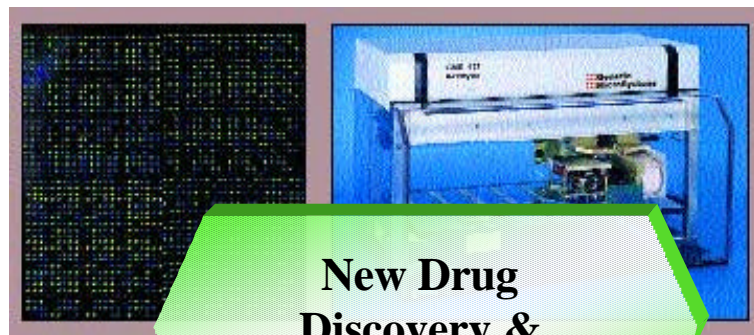


1. Building an Information-Knowledge-Intelligence Society



2. Aiming at Bio-Healthtopia

Building a society with a high quality of life by meeting the increased demand for high-quality therapeutic agents and timely supply of new diagnosis, prevention & therapy

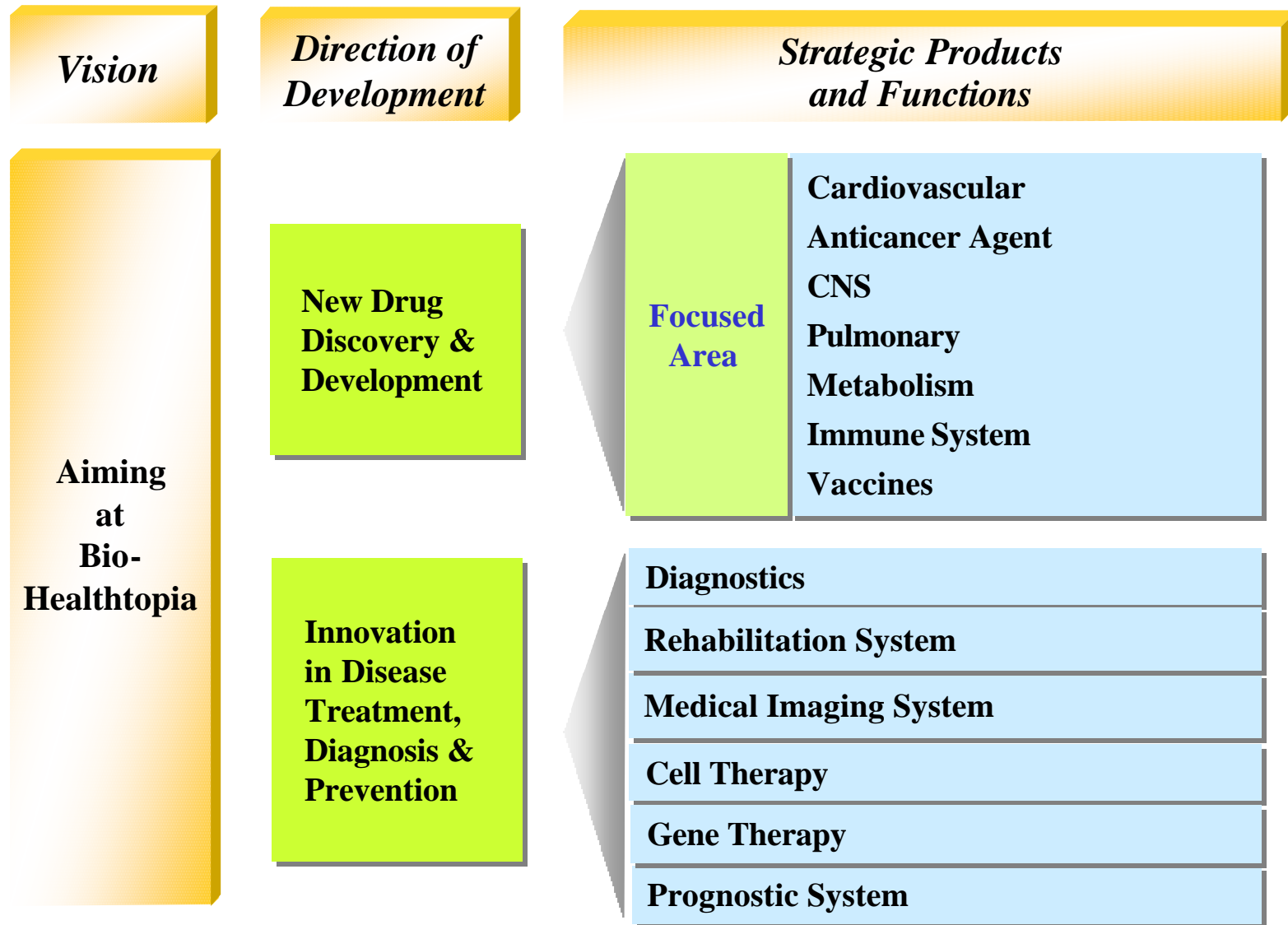


**New Drug
Discovery &
Development**



**Innovation in Disease
Treatment, Diagnosis
& Prevention**

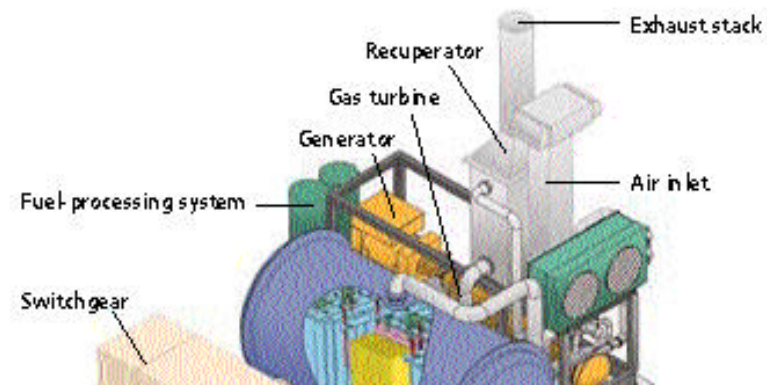
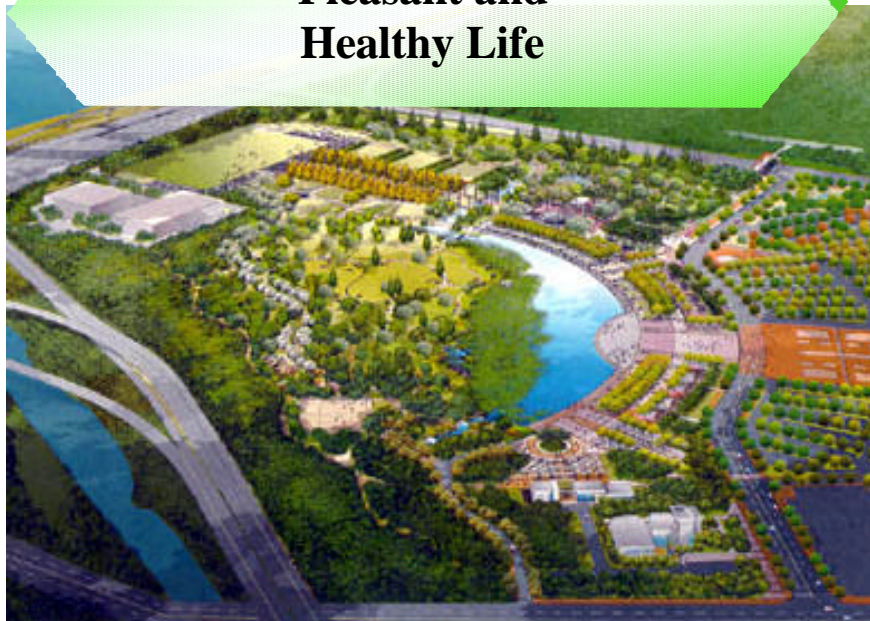
2. Aiming at Bio-Healthtopia



3. Advancing E²(Environment and Energy) Frontier

Building a society that recycles and lives in harmony with nature and making an efficient and stable energy supply & utilization system corresponding to the international environment regulation

Pleasant and Healthy Life



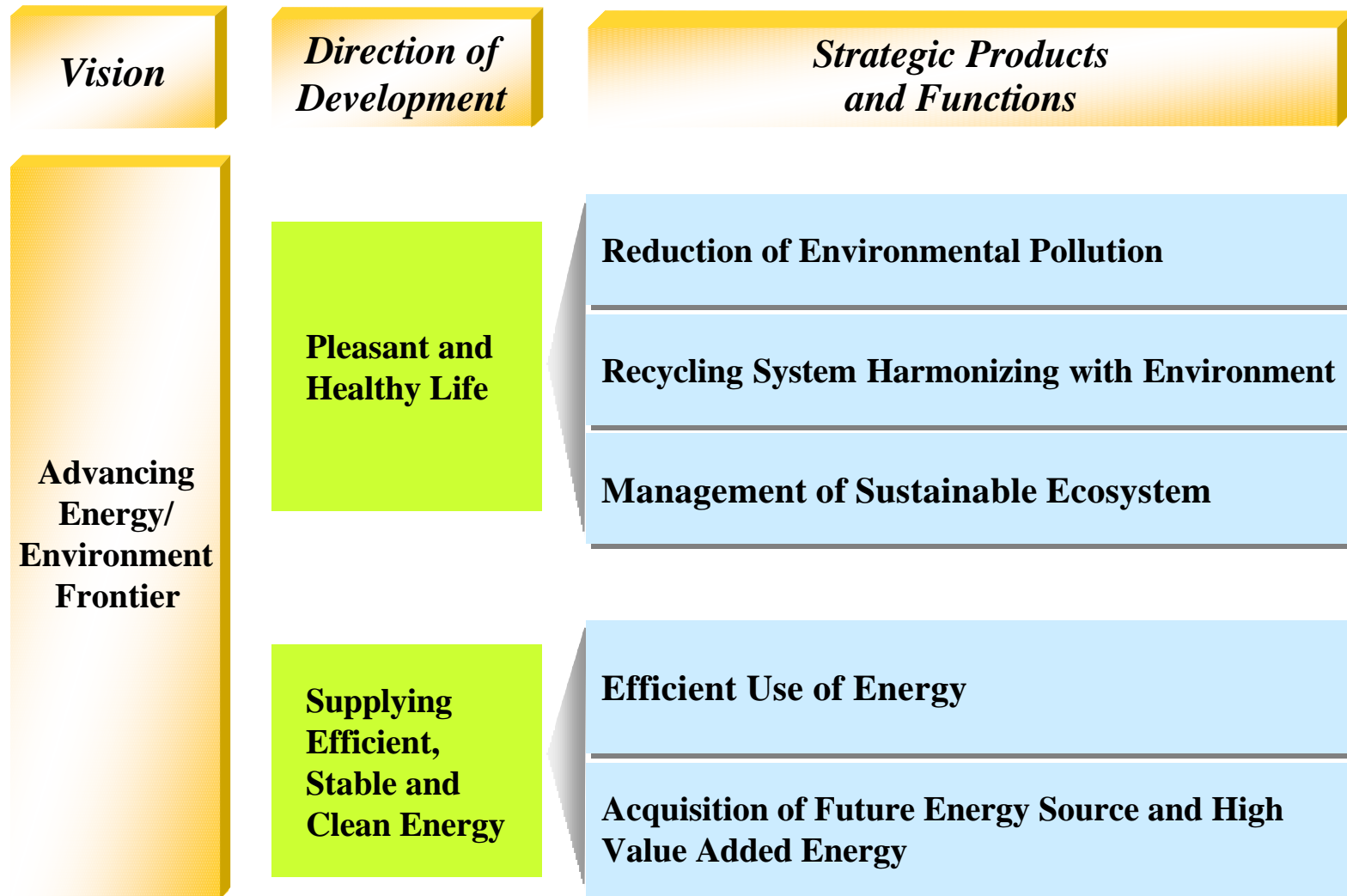
Supplying Efficient, Stable and Clean Energy

Solid-oxide fuel-cell (SOFC) power-conditioning system

SOFC module
operation and controls



3. Advancing E²(Environment and Energy) Frontier



4. Upgrading the Value of Major Industries of Korea Today

To pursue sustainable economic growth through strengthening the international competitiveness of the current main and infra industries



**Transportation Vehicles
and Systems of the Future**



**Advancing Residential
and Social Infrastructure**

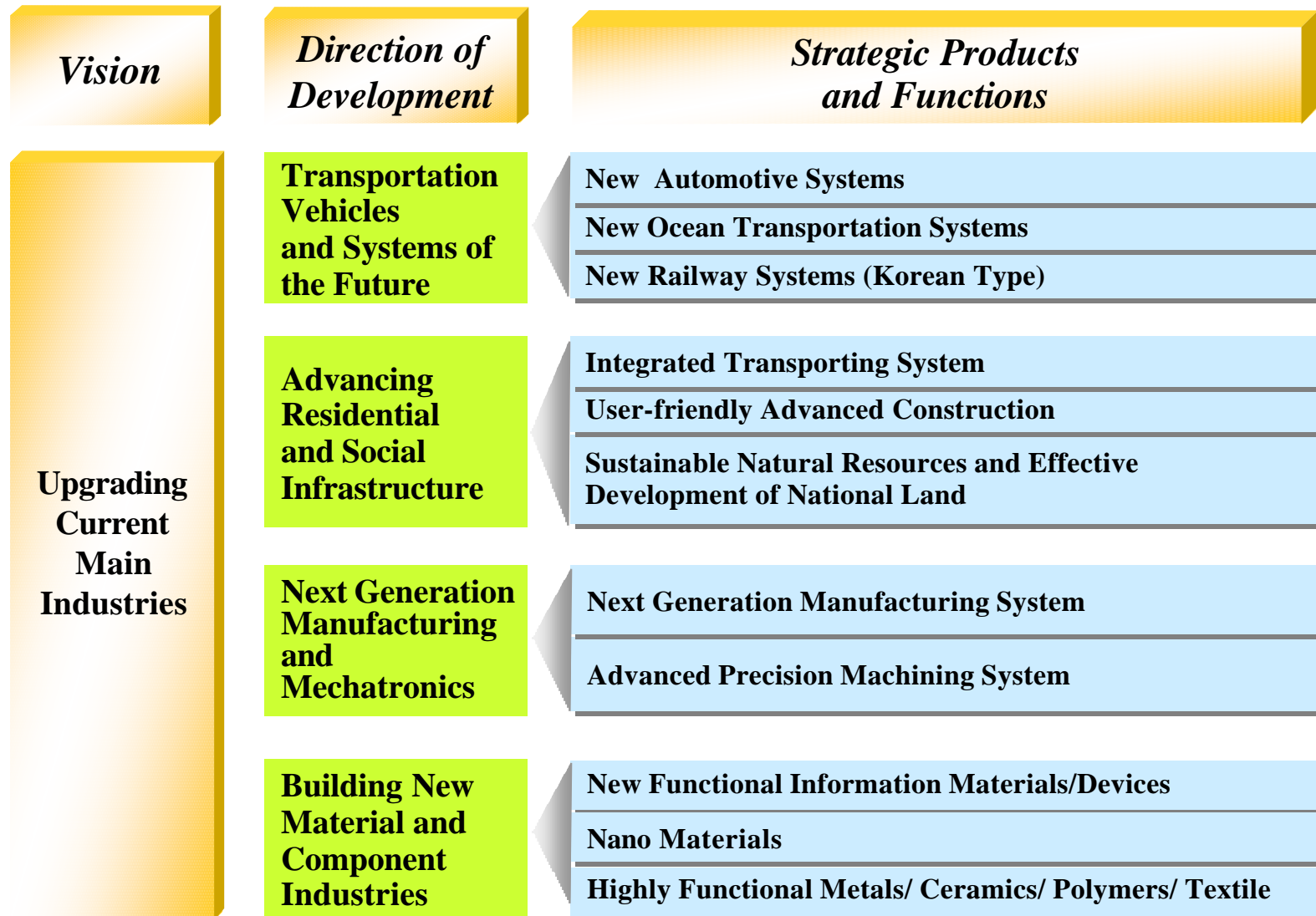


**Next Generation Manufacturing
and Mechatronics**



**Building New Material and
Component Industries**

4. Upgrading the Value of Major Industries of Korea Today



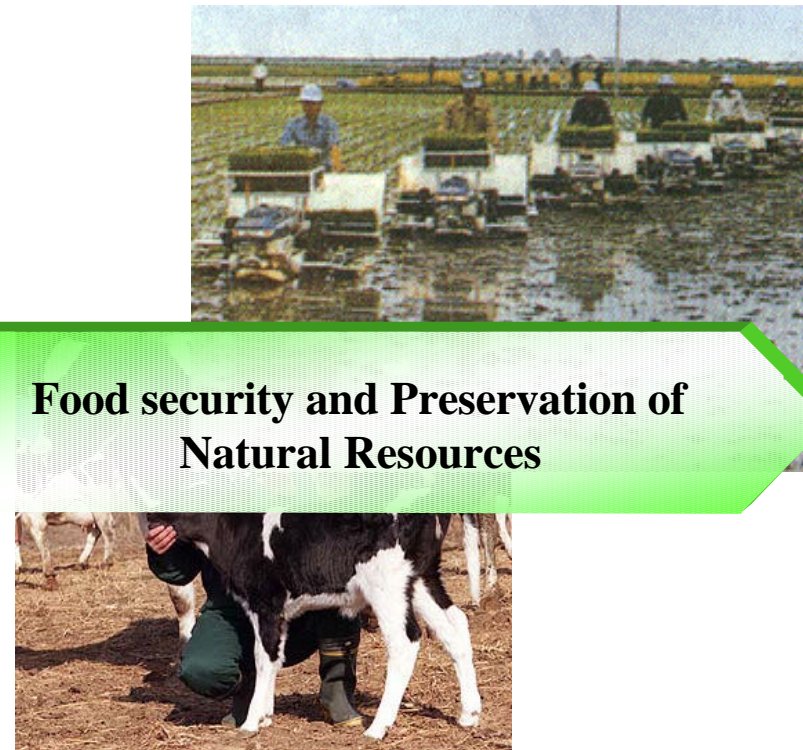
5. Improving National Safety and Prestige

**To build up technological capability in aerospace
and to establish national strategy in food supply**

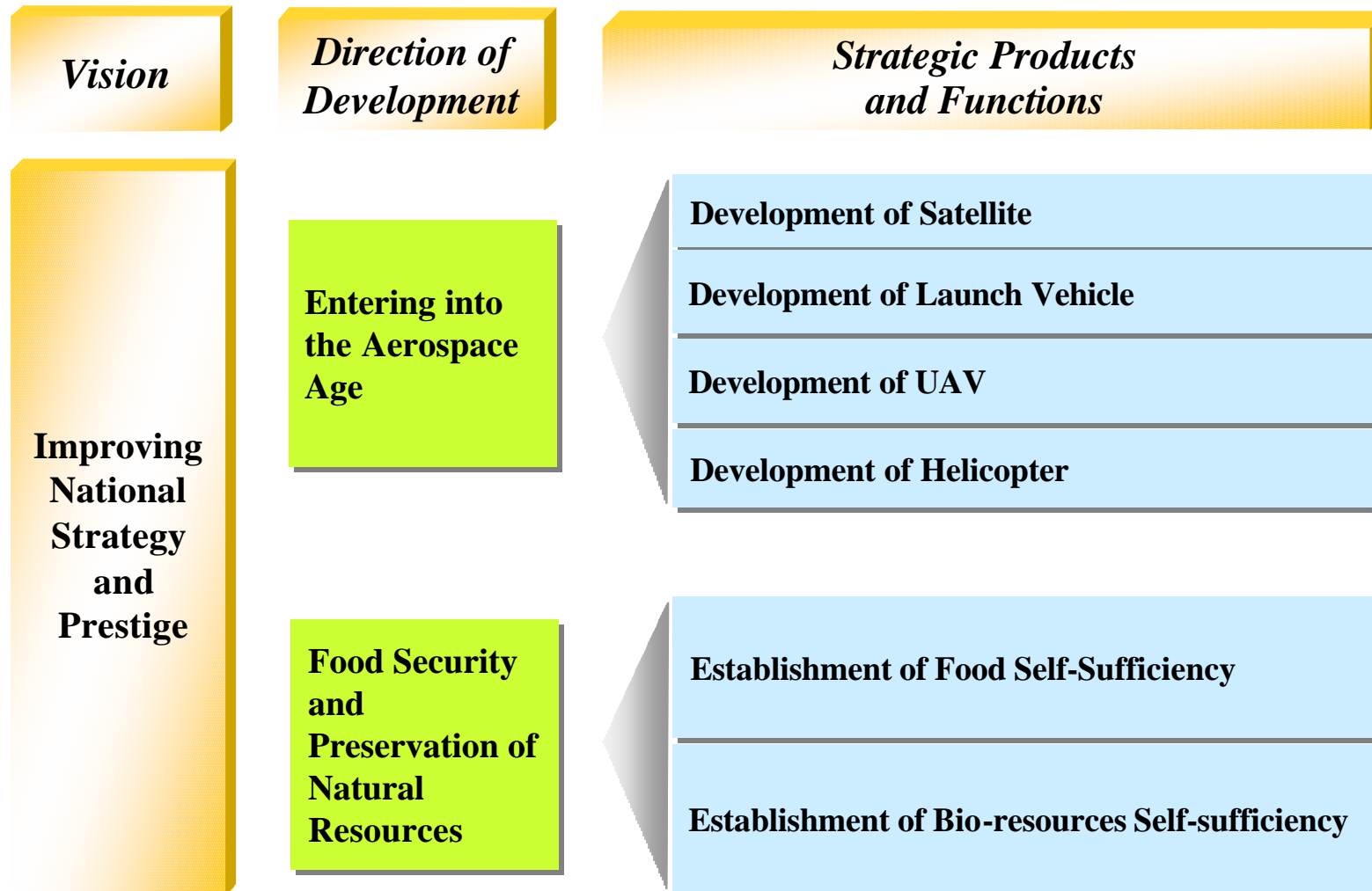
Entering into the Aerospace Age



**Food security and Preservation of
Natural Resources**



5. Improving National Safety and Prestige



IV. Lessons from Korean Experience

□ Difficulties

- Gaps between S&T factors and socio-economic ones**
- Too ambitious targets and many rosy plans:
Gaps between knowing and doing**
- Limited technological insight and capacity: Lack of global S&T leaders**
- Vague boundary between national level and firm level**
- High technological uncertainty in the 21st century**

IV. Lessons from Korean Experience

□ Positive Sides

- Training effects to S&T experts**
- Networking and consensus building in S&T community**
- Increased awareness of the importance of technology foresight activities**