



# e-Health Industry in Korea

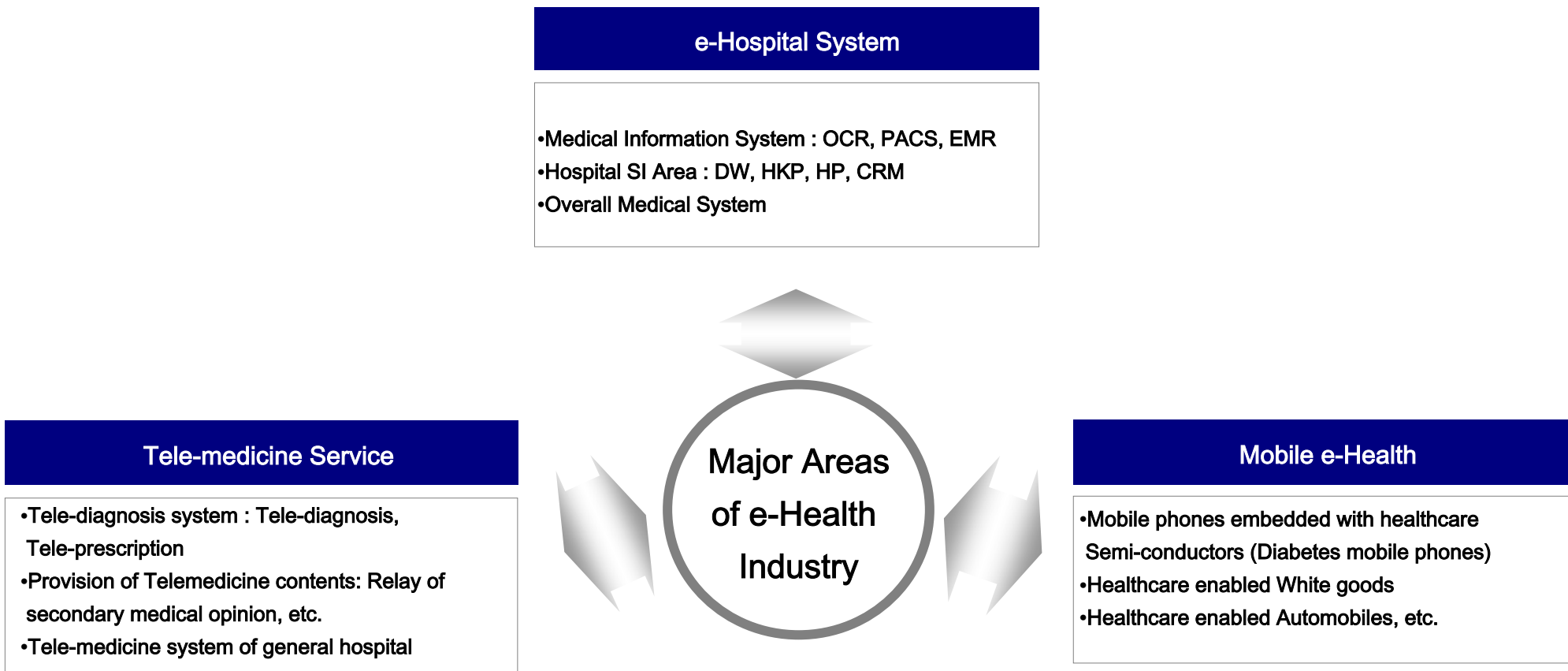
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# 1. Overview of e-Health Industry

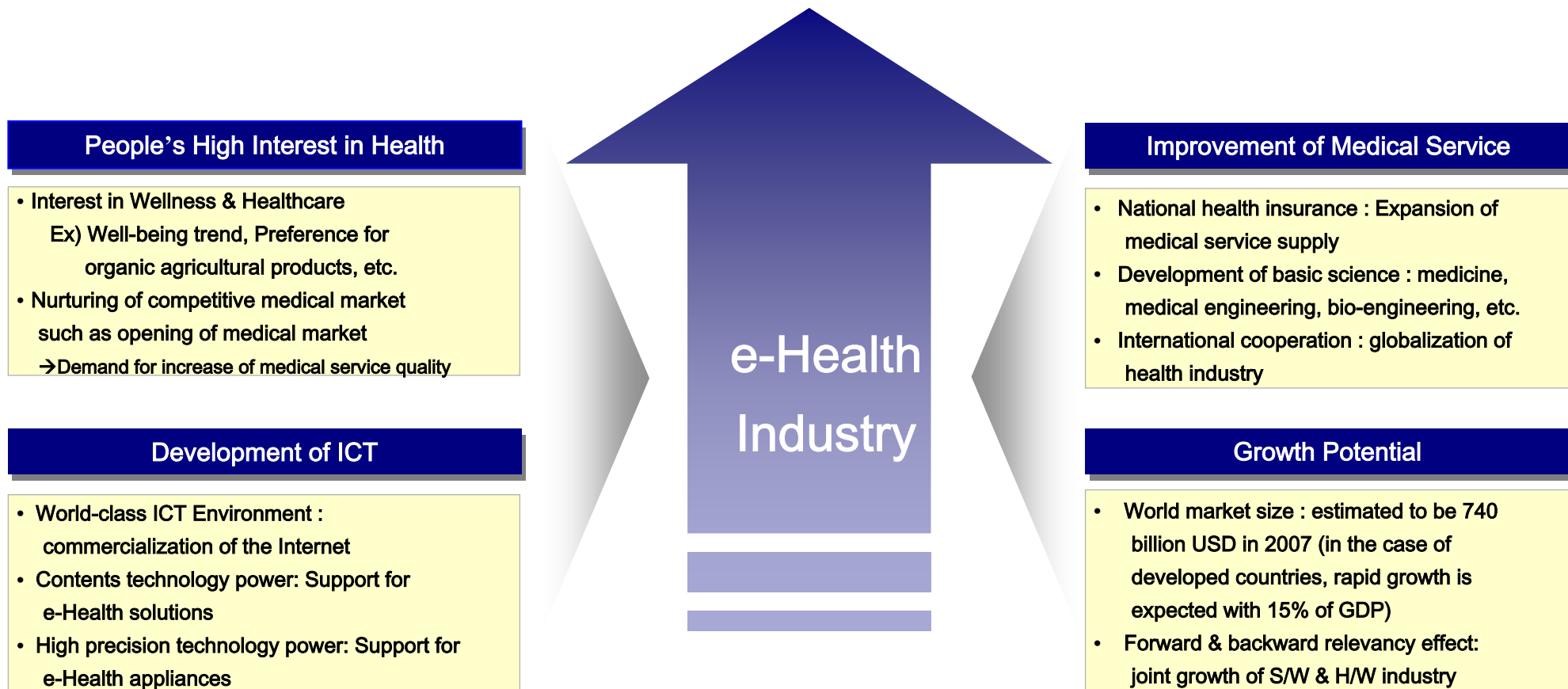
e-Health industry is a new paradigm of health industry enabling to check the health status of customers anytime and anywhere by applying ICT to the existing health system and providing medical treatment, healthcare, knowledge, relevant service and product to customers (individuals, medical institutes and corporations).

Major areas of e-Health industry can be divided into e-Hospital system, Tele-medicine service, and mobile e-Health and they are currently in the pilot stage or developmental stage.



## 2. Status of e-Health Industry

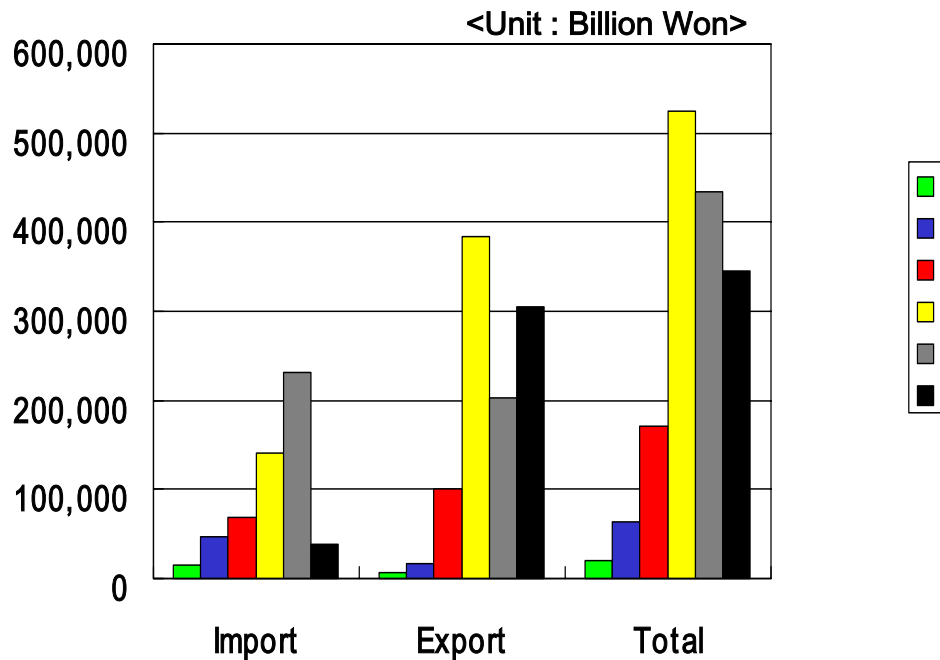
Four core factors for the growth of e-Health industry are: ① People's High Interest in Health, ② World-class ICT(Information and Communication Technology) Infrastructure, ③ World-class Medical Service and ④ Limitless Growth Potential of e-Health Industry.



# 3. e-Health Status in Korea

Korean export-import market size, industry status by relevant company size and status by the number of employees of domestic e-Health industry are as follows:

Export-Import Market Size



(Source : Ministry of Commerce, Industry and Energy)

Status by Company Size

<Unit : Number of Company>

	1999	2000	2001	2002	2003
SME	473	608	696	796	896
Big	5	1	2	3	5
Total	478	609	698	799	901

Note 1) Status of medical appliances by company size  
 Note 2) Big: companies with more than 300 employees  
 Note 3) Including those companies not reported output

Status by the Number of Employees

<Unit : Number of Company>

# of Employees	1999	2000	2001	2002	2003
1~20	255	315	299	321	343
20~50	86	104	117	131	145
50~100	29	37	43	50	56
100~200	17	15	15	15	14
Over 200	9	12	13	15	16
Total	141	168	487	530	574

Excluding those companies not reported their size and output

# 4. Government Support Policy for Korean e-Health Industry

## Ministry of Commerce, Industry and Energy

- May 03: e-Health was chosen as one of Next-Generation Growth Force Industry - SmartHome (Healthcare), Electronic medical appliances (Silver medical appliances, imaging diagnosis devices, Mobile Healthcare appliances, Oriental medicine appliances)
- 3rd ASEM e\_Commerce Seminar (Oct. '03) : e-Health adopted as a major cooperation agenda
- e-Health Research & Support Center Program('04): plan to support study and development of e-Health industry infrastructure

## Ministry of Information and Communication

- Issued “3rd Basic Plan for the Facilitation of Informatization (02~06) in 2002
- Broadband IT KOREA Vision 2007
  - Digitization of information on treatment and diagnosis and establishment of base for joint utilization
  - Establishment of cooperative system among medical institutes
  - Establishment of information system for the advancement of healthcare service

## Ministry of Health and Welfare

- Established information system on medical service based on “Strategic Plan for Healthcare Informatization” of 1995
- Formed an Advisory group on Healthcare informatization to collect the opinions of industry and academic field(Dec. '03.)
- Information systems in 9 areas:Healthcare information, epidemics, blood distribution, organ transplant, emergency medicine, outpatient treatment, tele-medicine, tele-treatment of imbecility, Integrated healthcare information service

Inter-Ministry Cooperation System

# 5. e-Health Status and Prospect for Other Countries

Country	Status	Prospect
UK	<ul style="list-style-type: none"> <li>Digitization of medical record, establishment of national healthcare e-library, new information service to patients and citizens (NHS Direct)</li> <li>Medical informatization ISP: modernization of NHS(National Health Services)</li> </ul>	<ul style="list-style-type: none"> <li>Healthcare informatization: set three-stage plan</li> <li>Full-scale implementation of EMR to primary healthcare, electronic exchange of patients' information among doctors, and Preparation of 24-hour medical record access system for emergency treatment</li> </ul>
USA	<ul style="list-style-type: none"> <li>Regarded as a market leader with the biggest investment</li> <li>Maturity in relevant market such as B2C, connectivity, content e-Health, etc. in addition to e-Health</li> <li>Service commercialization : tele-diagnosis using Internet, online pharmacy, online will storage service, check service for medical fee charge</li> </ul>	<ul style="list-style-type: none"> <li>Prospect for e-Health market size of USA : total of 867 billion USD in 2004 excluding B2B market</li> <li>Investment increase rate for e-Health venture : 856% increase from 1998 to 2000(average increase rate of 138%) → reflecting the market's expectation</li> </ul>
Japan	<ul style="list-style-type: none"> <li>Pilot project in process based on government program</li> <li>Togane hospital : Medical network, online prescription system, home diabetes support system, etc.</li> <li>Kameda hospital : Medical network, digitization of clinical information</li> </ul>	<ul style="list-style-type: none"> <li>Realization of e-Health by combining technology of communication service company and medical technology of hospital (Hospital informatization project of NTT)</li> <li>Try to introduce more effective and innovative system by giving up current conservative management system</li> </ul>

## 6. Strategy for Nurturing e-Health Industry

Realizing “Leading e-Health Industry Country” by 2013 with the goal of becoming a developed nation and welfare society

### Goal

- Nurturing e-Health industry as a next-generation growth industry
  - Development of world-class e-Health products including health phones
- Provision of substantive framework for people’s healthy life
  - Provision of efficient and equal medical service using e-Health

### Strategy

- Improvement of e-Health related laws & institutions
- Establishment of e-Health industry infrastructure
  - Support for technology development
  - Standardization
  - Nurturing human resources
  - Building information infrastructure
- international cooperation on e-Health
- Inter-Ministry cooperation for the development of e-Health industry

## Issues in Laws & Institutions

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- OECD Report on e-Health(03.6): “most important barrier to the implementation of e-Health is human psychology, organization and institution”
- Facilitation factor for patients’ antipathy to e-health: Lack of trust on privacy, lack of solution for medical dispute occurrence
- A clause on e-health was created by revising medical Act, etc., but not enough for the development of e-Health

## Future Direction

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- 1) Revise medical law so that tele-treatment between doctors and patients is possible
- 2) Relieve the qualification requirement for the provider of tele-medicine service
- 3) Strengthen Security and privacy
- 4) Allow cyber pharmacy
- 5) Classify medical appliances according to purpose, security need, danger, etc. to obtain trust on e-Health appliances
- 6) Revise National Health Insurance Act so that tele-medicine is covered by health insurance

## Strategy

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Revision of relevant laws is discussed by an e-Health WG within KIEC



# 8. Building e-Health Industry Infrastructure (Support for Technology Development)

## Current Status and Issues

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- Have certain competitive advantage in e-Health related items such as electronic medical appliances because of good capability to develop electronic appliances.
- World-class broadband technology, but very weak in core technology necessary to implement e-Health

## Future Direction

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- 1) Support for the development of core technology : support the development of core technology (High-speed mobile multimedia, next-generation display, REID) necessary for the establishment of e-Health related system such as PAC(Picture Archiving and Communication System), EMR(Electronic Medical Record), etc.
- 2) Nurturing as a next-generation major export item

## Strategy

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- 1) Prepare e-Health industry technology roadmap
- 2) Establish e-Health Research Support Center



# 9. Building e-Health Industry Infrastructure (Standardization)

## Current Status and Issues

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- International discussion on transport standard : Health Level 7(HL7) & DICOMR 3.0
- Domestic e-Health standardization is not satisfactory – barrier to the commercialization of relevant technology
- Restriction on efficient provision of medical service due to lack of standardization among hospital, pharmacy, administrative organizations, etc.

## Future Direction

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- 1) Standardization of terms and codes
- 2) Standardization between heterogeneous systems (hospital-hospital , hospital-home, hospital-insurance, insurance-home)
- 3) Standardization of communication technology

## Strategy

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- 1) Publication of e-Health Standardization white-paper
- 2) Establishment of integrated e-Health standard body & operation of e-Health WG
- 3) Strategic dealing with international standardization talks



# 10. Building e-Health Industry Infrastructure (Human Resource)

## Current Status and Issues

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- There are only 10 schools with e-Health related major in Korea
- Considering the size of domestic e-Health industry, two thousand and ten thousand professional human resources are respectively required in hospital and industry after 5 years

## Future Direction

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- 1) Establish mid and long term basic plan to train e-Health professionals
- 2) Improve e-Health education environment : development of cyber lecture contents, Establishment of Virtual Reality Laboratory\*
  - \* Virtual lab. Conducting research through a computer for the experiment with high possibility of damage to human body
- 3) Prepare a curriculum on e-Health courses and research in universities
- 4) Strengthen training on e-Health related ICT program to the existing medical specialists

## Strategy

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Utilizing e-Business Human Resource Development Center in KIEC



# 11. Enhance e-Health International Cooperation

## Current Status

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- Discussed a measure for e-Health cooperation in Korea-UK e-Commerce Policy Initiative (03.10.02)
- ASEM e-Health Seminar(03.10.2)
- Discussed e-Health at the ASEM TFAP e-Commerce meeting(03.10.29)
- Proposed “APEC e-Health Initiative” as a new work item at the 9th APEC ECSG

## Future Direction

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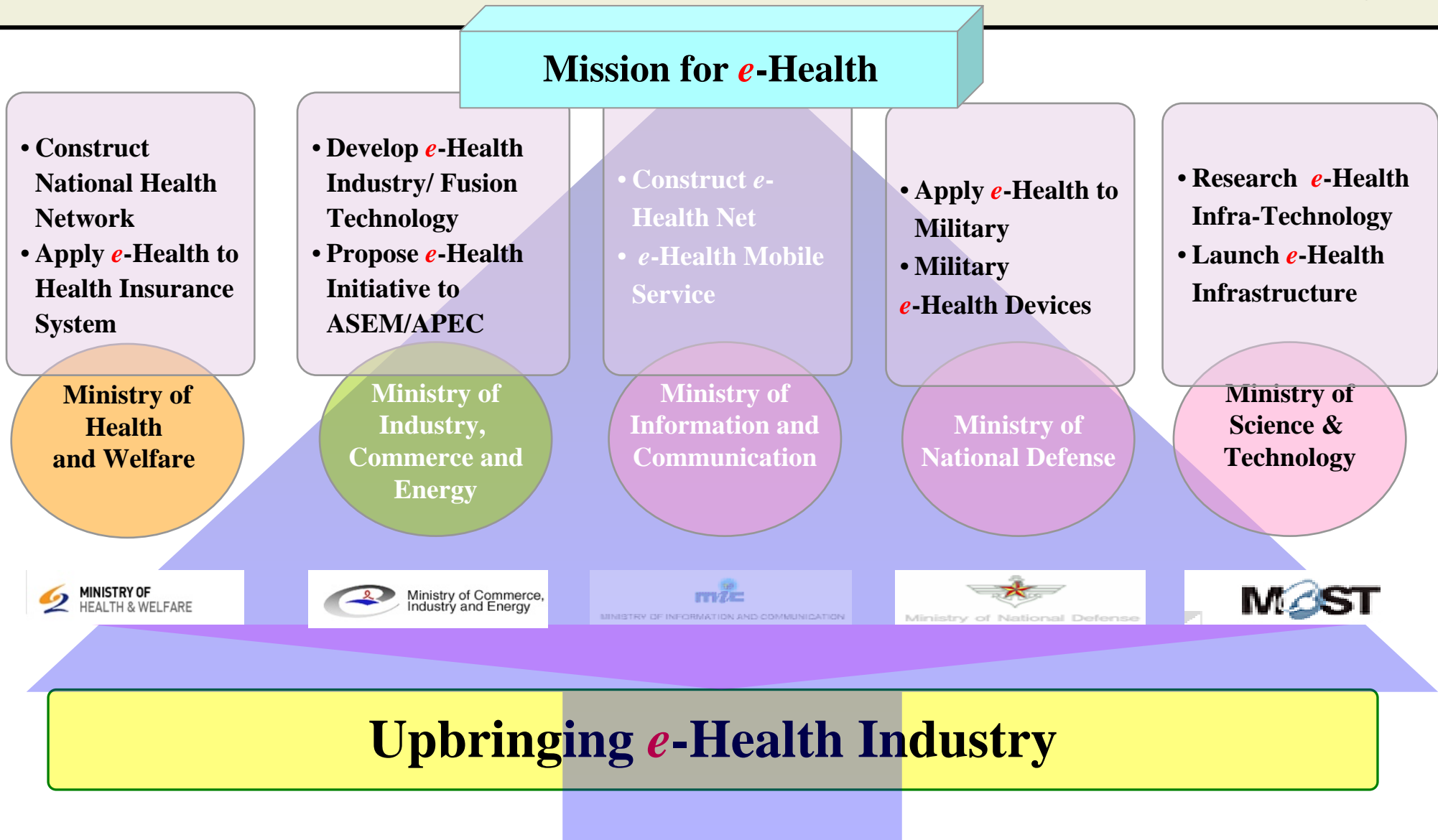
- 1) Facilitate discussion on a measure for e-health cooperation at the bilateral level
  - Korea-UK, Korea-Japan e-Commerce Policy Initiatives, Finnish-Korean ICT Workshop, etc.
- 2) Strategic participation in such multilateral discussions as ASEM, OECD, APEC, etc.
  - Follow-up on e-Health trend, international joint research, facilitation of overseas market entering for related industries
  - Effort to hold “APEC e-Health Task Force” Meeting

- 3) Establish private sector\* led cooperative channel

\* IeHA(International e-Health Association), UKeHA(UK e-Health Association), ATA(America Telemedicine Association), EHTEL(European Health Telematics Association)



# 12. Cooperation between Ministries for the Development of e-Health Industry



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**KILLIOS**