



Mobile Health

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Images of “Hertz Handy” of “Vita phone”, taken from Gesundheit Scout 24 Presentation: 24, October 2003
Thanks to MobiHealth, Kameda Medical Center and other UHWISG members at Waseda University for the materials provided and related discussions.

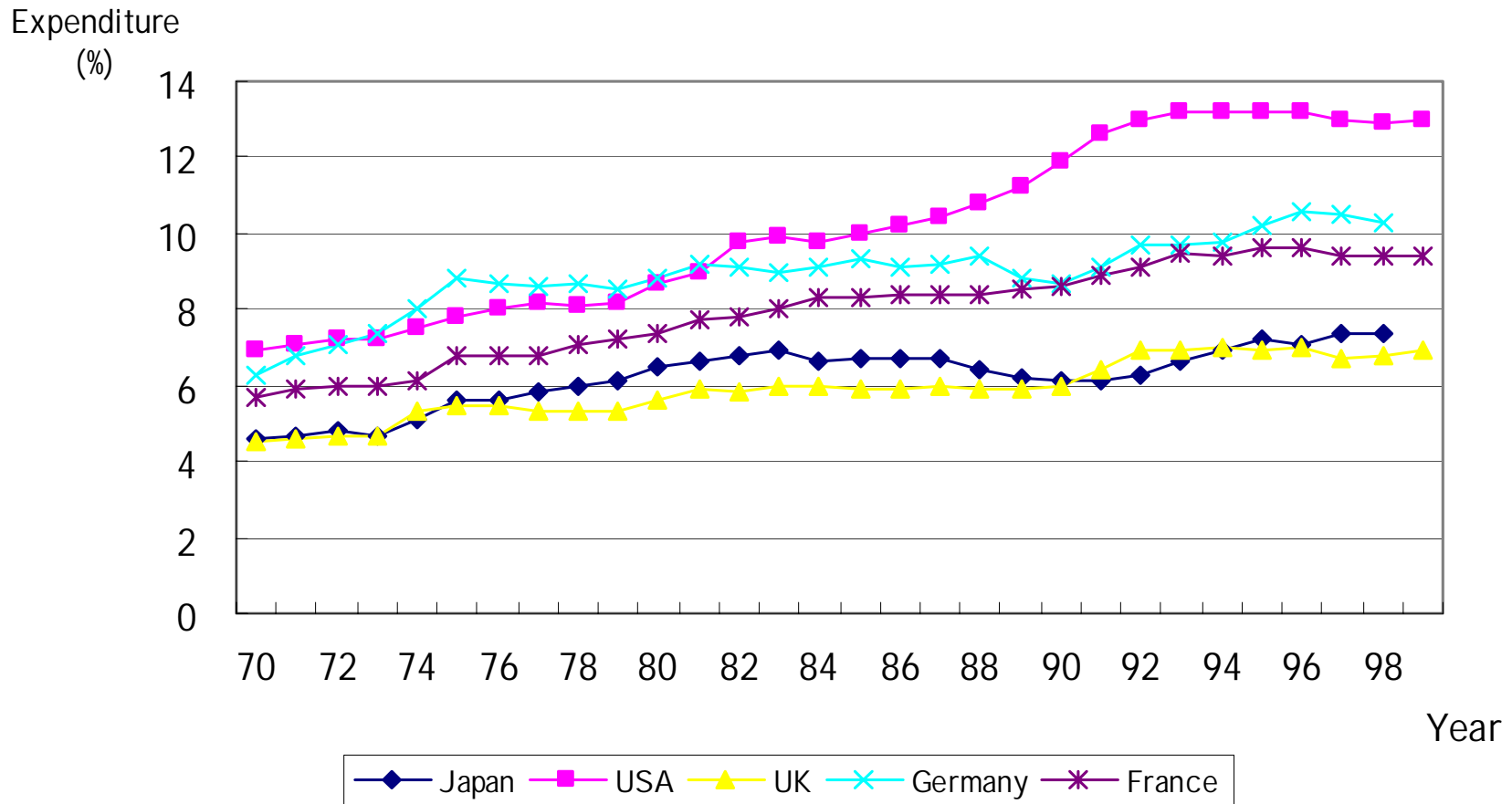


Evolution of Information Society

- Coming of the “Ubiquitous Information Society” after the “Mobile Information Society”
 - *“Ubiquitous” = anywhere, any time and for anybody*
 - *Prof. K. Sakamura (Univ. of Tokyo, YRP UNL)*
- Need for information management, leading to the emergence of “Personal Information Services”
- Focus on the Health Sector in further studying the specific forms of “Personal Information Services”
 - Personal services are the most appropriate and needs are very individualized.
 - Growth is expected and financial constraints are of issue.



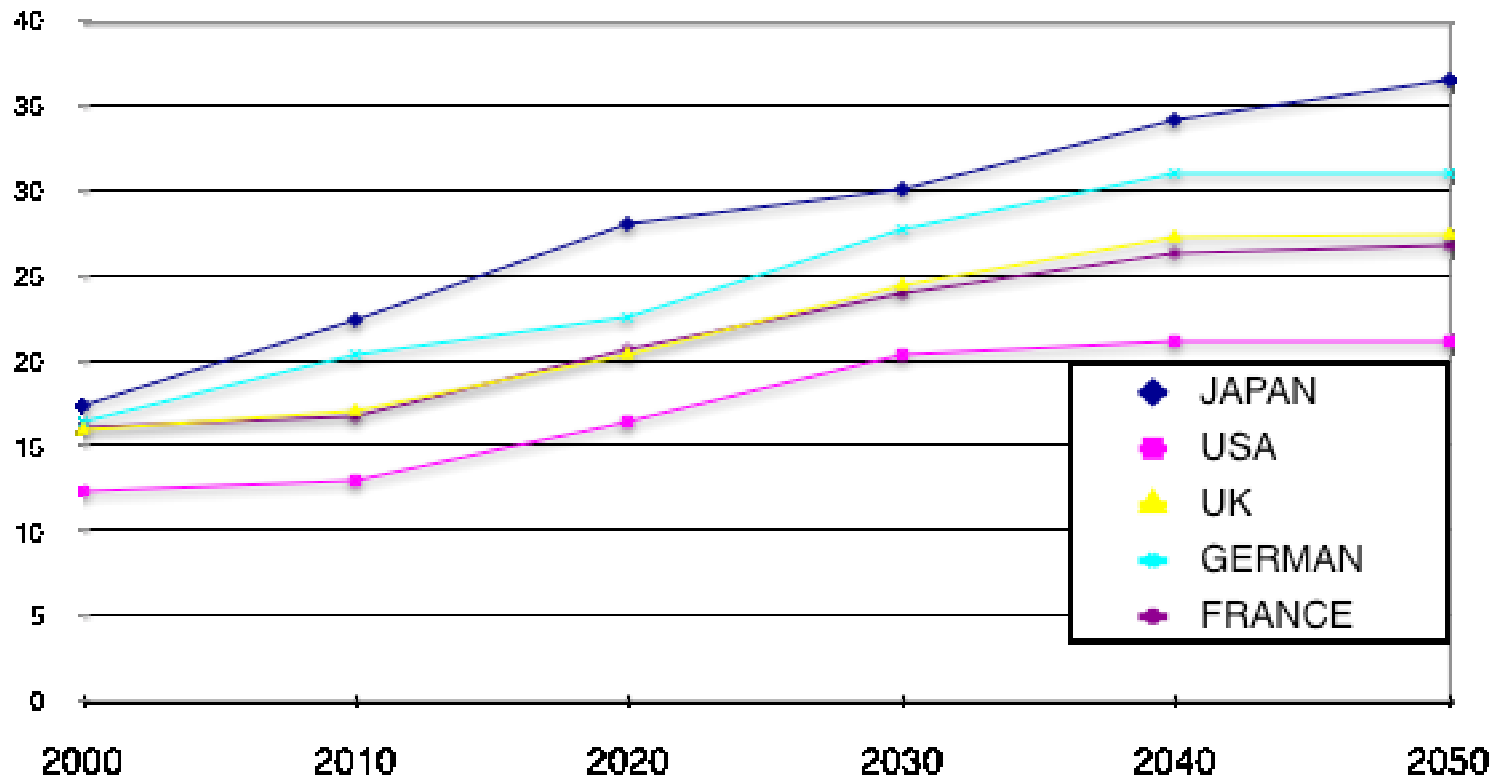
Growth per medical expenditure in relation to GDP 1970-1999



Source: OECD Health Data 2001
http://www.jetro.go.jp/jp/j/Access/iryofukushi_shiryo.pdf



Greying World : Future Prediction of the Aging of Population (Over 65 Year old)



Remark. The rate of aging of population = Population of over 65 year old / Total population X 100

Source: United Nations, "World Population Prospects, 200 Revision"

http://www.jetro.go.jp/jp/j/Access/iryofukushi_shiryo.pdf



ITU World Summit on the Information Society: “Plan of Action”

(Document WSIS-03/GENEVA/DOC/5-e, 12 December 2003)

- “creating a reliable, timely, high quality and affordable health care”
- “access to the world’s medical knowledge and locally-relevant content”
- “alert, monitor and control the spread of communicable diseases”
- “international standards for the exchange of health data”
- “encourage the adoption of ICT to improve and extend health care and health information systems”
- “medical and humanitarian assistance in disasters and emergencies”

“while respecting and protecting citizens’ right to privacy”



Case 1: MobiHealth-project (Europe)

Vital data monitoring via mobile handset

- Funded by: **the European Commission under the "Information Society Technologies" Programme**
- Running: in 4 countries (Germany, Netherlands, Spain, Sweden)
- Initial Focus: development of generic BAN for a variety of health conditions, software & backend system to measure ECG, peak airflow, blood pressure, blood glucose, blood pressure, etc.
- **Current Trials Focus:**
 - 1) **assess function of BAN and MobiHealth System**
 - 2) **validate usability of GPRS & UMTS networks & the offered services**
- Trials Visited
 - *Cardio Monitoring Trial in Duisburg, Germany*
 - *Pregnancy Trial in Enschede, the Netherlands*

More information available on the URL : <http://www.mobihealth.org>



The MobiHealth BAN structure

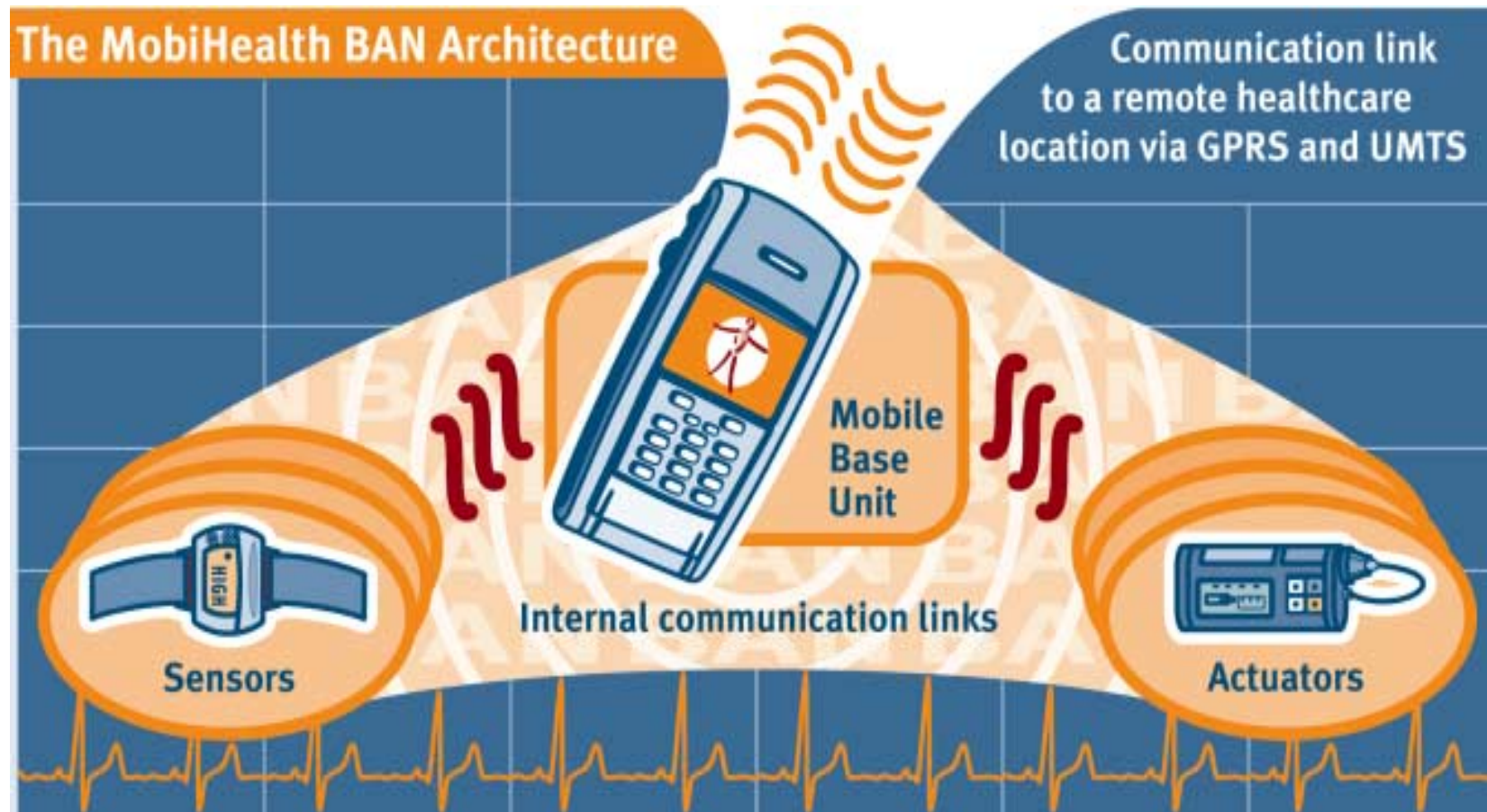


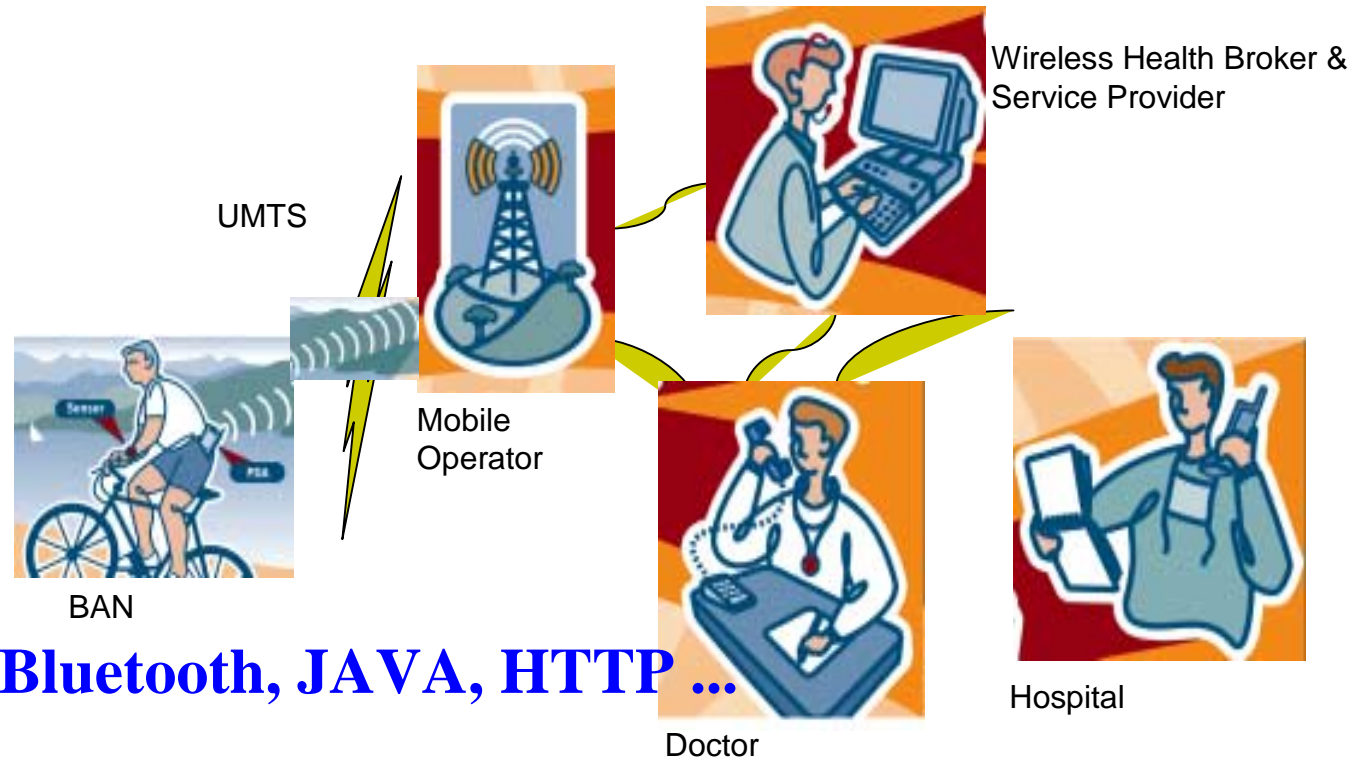
Image from Gesundheit Scout 24 Presentation: 24, October 2003



MobiHealth : Generic BAN



Local Display for Users



Bluetooth, JAVA, HTTP ...

Involved Players for multiple services :
Patient Care, Emergency, Sports, Clinical Research



Factors for Success:

- from the Interviews -

- Besides Technical challenges:
 - Network support . . . GPRS or UMTS network service
 - Updating the 'generic' BAN
 - Providing technical & medical support infrastructure for users.
 - the sensor data formats and protocols: **Hope the VITAL (ISO ECG Standard) standard will be used. Not closed data format!!!**
 - Development cost : **Technically not difficult, but who will pay for the development?**
- Technology will not be the problem in the long-run... Within 2-years, will have a reliable system.
Problem will be '***user-acceptance and getting someone who pays for it***'.



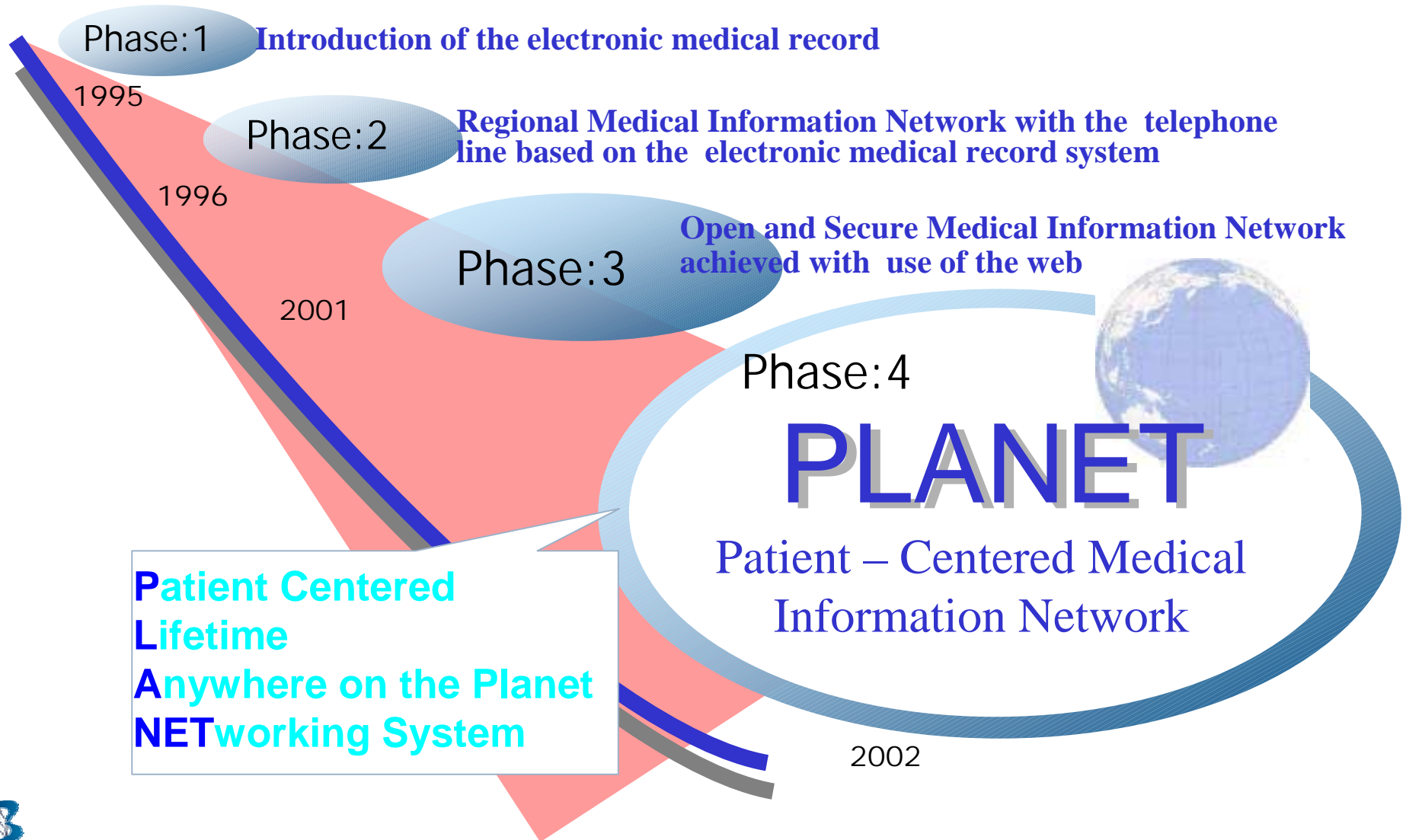
Case 2 : PLANET (Japan)

Patient Centered Web-based EMR

- Kameda Medical Center, Chiba, Japan
- Kameda General Hospital(858 beds) Kameda Clinic(19 beds)
- Staff: 1,839 persons (including 244 physicians)
- IT Development started in 1977, EMR introduced in 1995, partially funded by METI, MHLW of Japan.
- Totally paperless, filmless hospital. Wireless hubs added 1500 workstations.
- Goal is to reduce costs of operation and set standard in Japan for EMR.
- Staff not given option for paper solution.
- Open records policy even to the patients.
- New hospital under construction with VOD, EMR, e-commerce.



Background for the Development of Medical Information Network Systems



Mobile Health : Present

Stream 1

Technical Developments, Pilots

Stream 2

Expansion of e-Health

Plus (Wearable) Sensors
More invasive

Portable EMR
More user Empowered

*Will be merged?
Where will it flow?*



Challenges for the Future

- **Evolution of EMR:** First to EHR and then is there a path to be EPLR (Electronic Personal Life Record) ?

