

# **Information Explosion and the Creation of a New Network Society**

## **#3 The Governance of a Globalizing Network Society**

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# MEXT Special Field Research “Information Explosion ‘s IT Basis”



## B01 The Governance of Intellectual Society Formation in the Age of Information Explosion

### Project Research

## Collaborative Development and Governance of an Economic System in an Intellectual Society

**Chief of Research**

**Osamu Sudoh**

# Promotion of Information Infrastructure Streamlining in Medical Institutions

## Program Initiative 2007

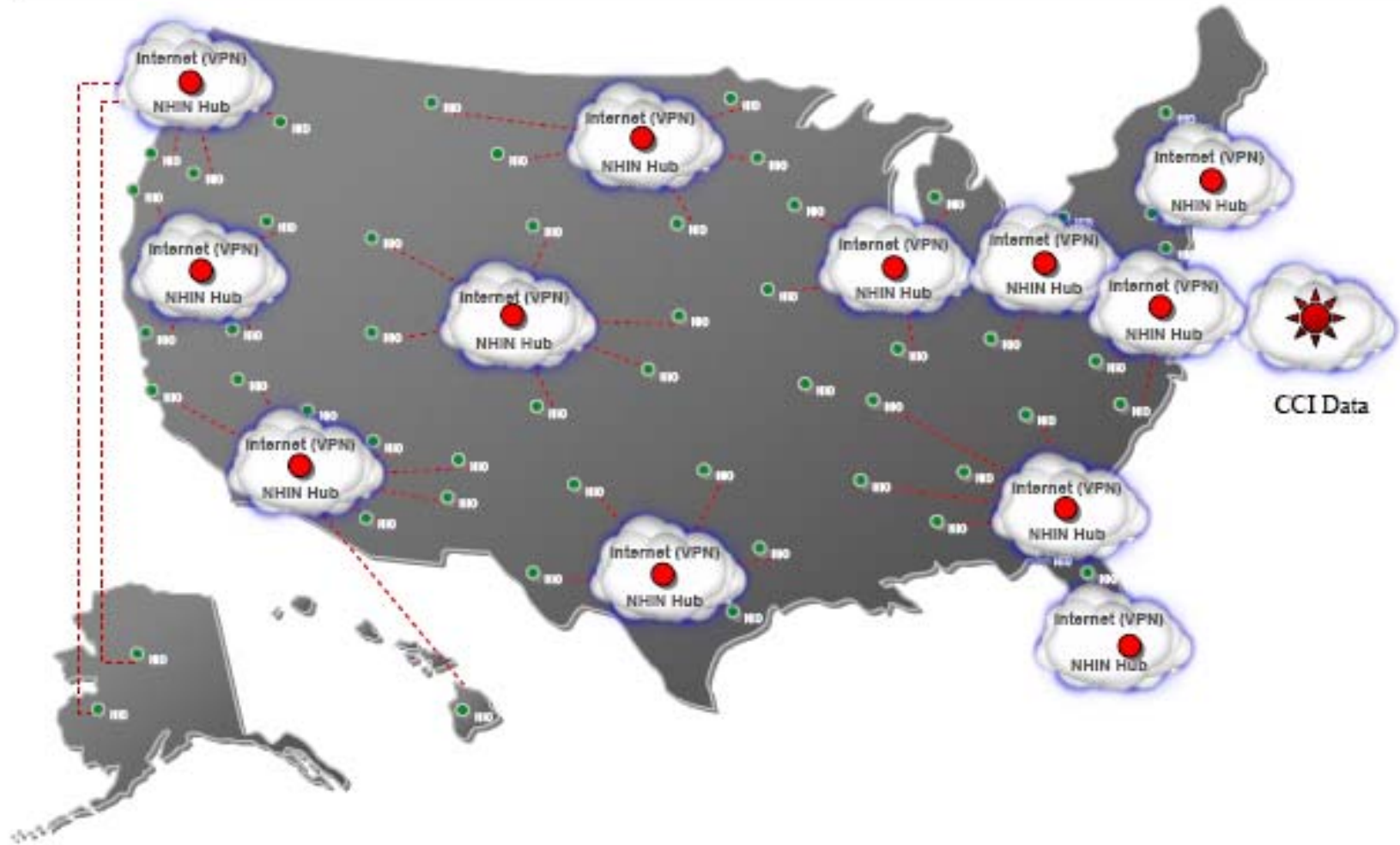
- **Support for Information Sharing Between Community Medical Institutions (Ministry of Health, Labor and Welfare)**
  - To promote information sharing within communities, the Ministry of Health, Labor and Welfare will support the distribution of machinery and software needed to build a system by means of which all medical institutions in a community network can use an electrical medical charting system installed on a web browser in a central medical institution, and a system by means of which all medical institutions can share medical records from local medical institutions collected in a government data center.

## Promotion and Streamlining of a National Healthcare Infrastructure for Information Collection and Analysis

### Program Initiative 2007 (Ministry of Health, Labor and Welfare)

- For academic and epidemiological purposes and to reflect to healthcare policies, with due consideration for the protection of private information granting anonymity, a system for collecting and analyzing national healthcare information, regulating access and maintaining transparency will be considered from 2007.

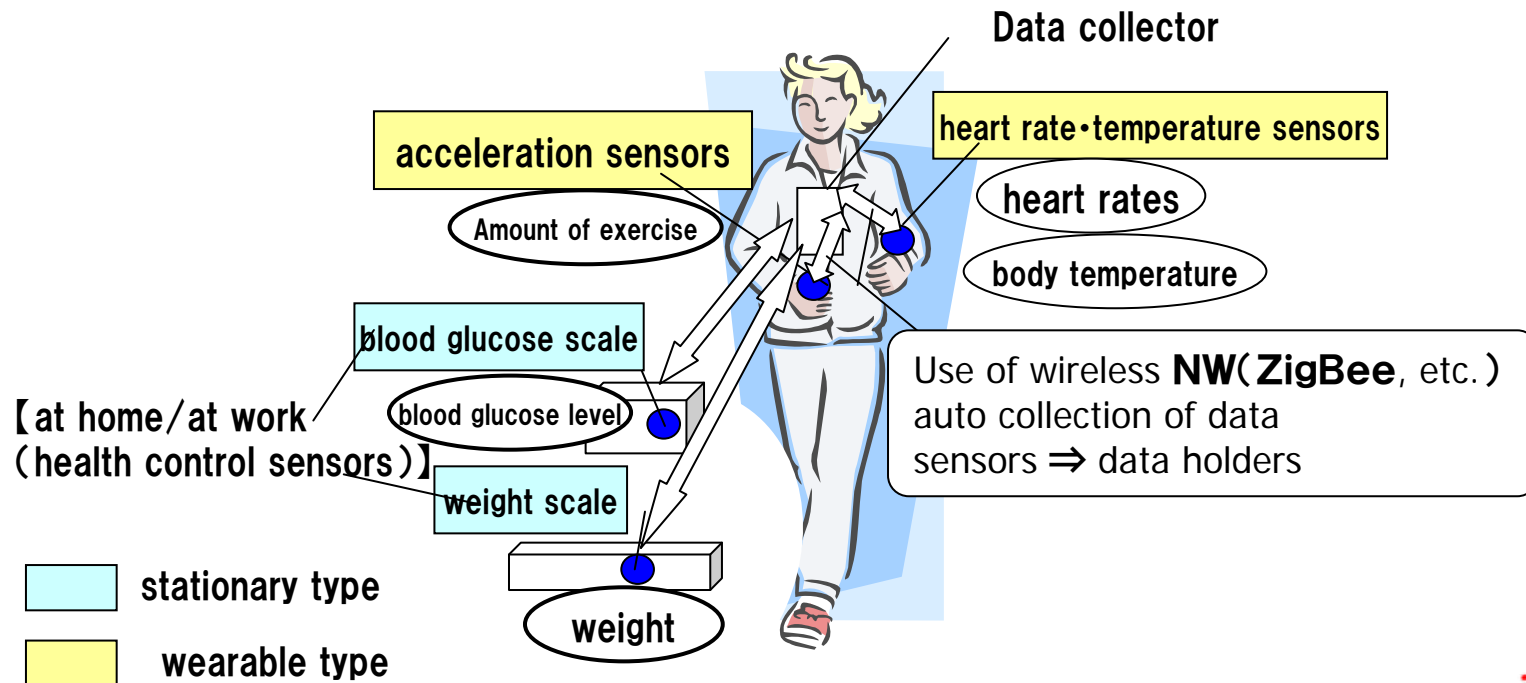
# Regional Health Information Organizations Distributed Data



# Health Monitoring

Data is collected using wearable bio sensors and stationary measuring machinery, and adapted to health monitoring

【outdoor/indoor (anywhere: at home/at work)】



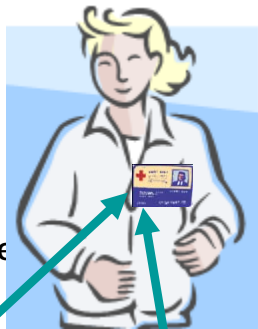
# Image of Health Monitoring: How Information from Sensors is Used

Data is collected using wearable bio sensors and stationary measuring machinery, and is adapted to health monitoring

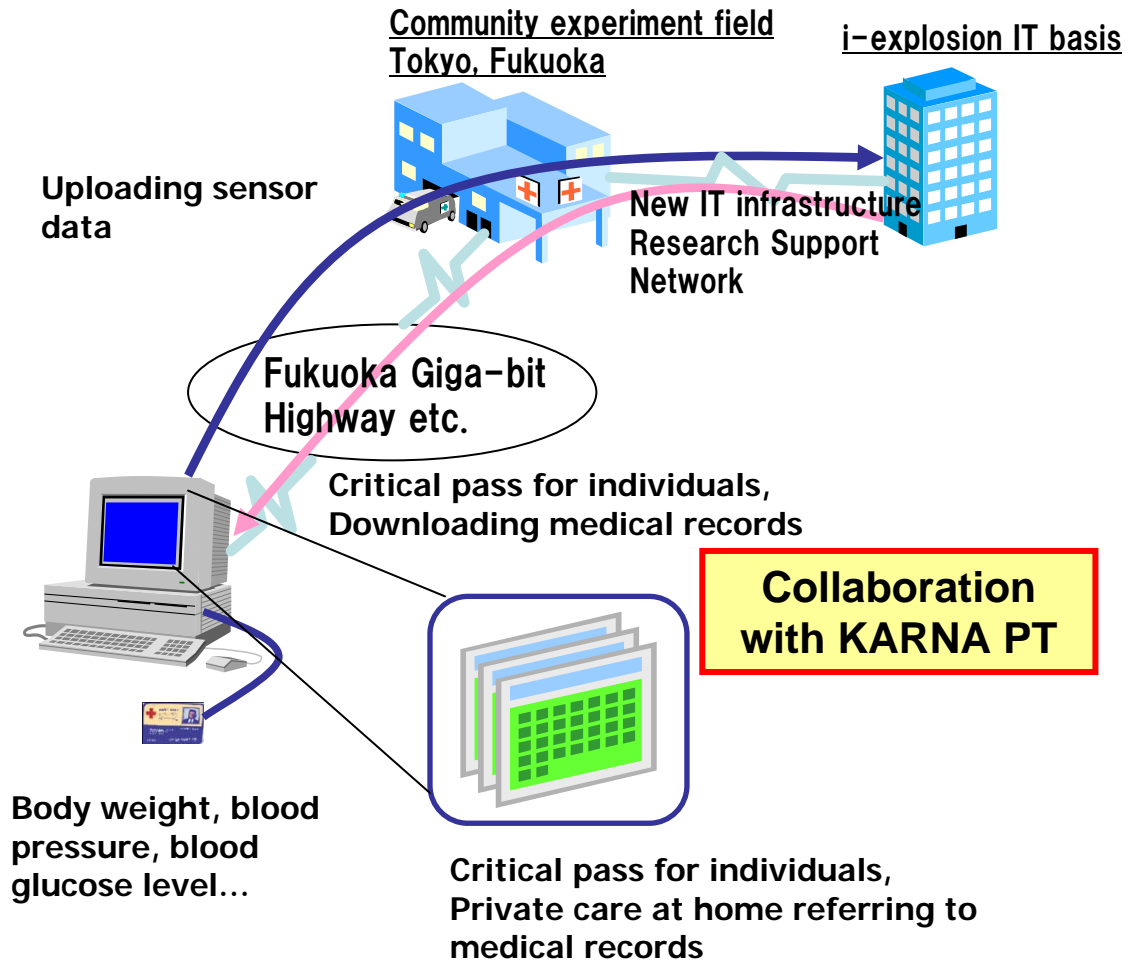
<outdoor>  
【loading sensor data】



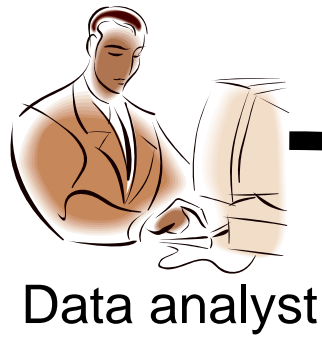
<indoor>  
【loading sensor data】



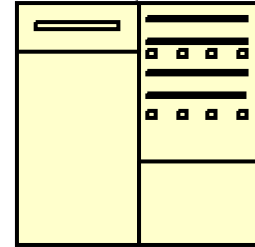
Data such as amount of exercise, heart rate, and body temperature is saved in memory.



**Algorithm construction**  
Dr. Nakajima ( U. of Kyushu)  
Assistant Prof. Inoue (U. of Kyushu)  
Osamu Sudoh (UT)  
collaborative research



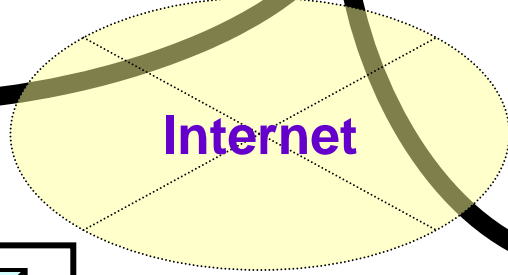
Batch data from other sensors,  
data inquiry, job installation



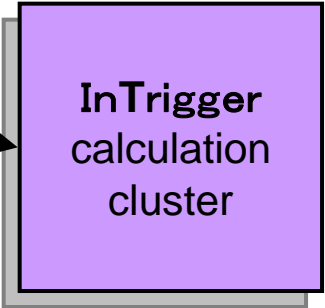
control server



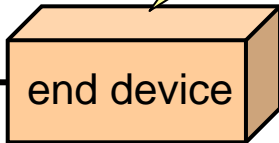
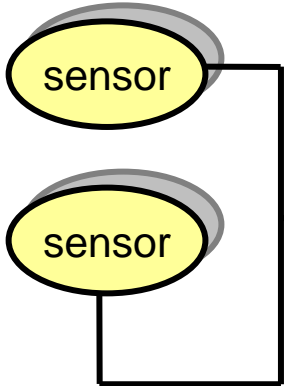
Gateway PC



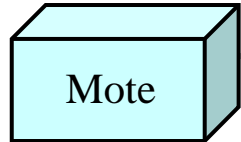
Internet



InTrigger  
calculation  
cluster



end device



Mote

coordinator

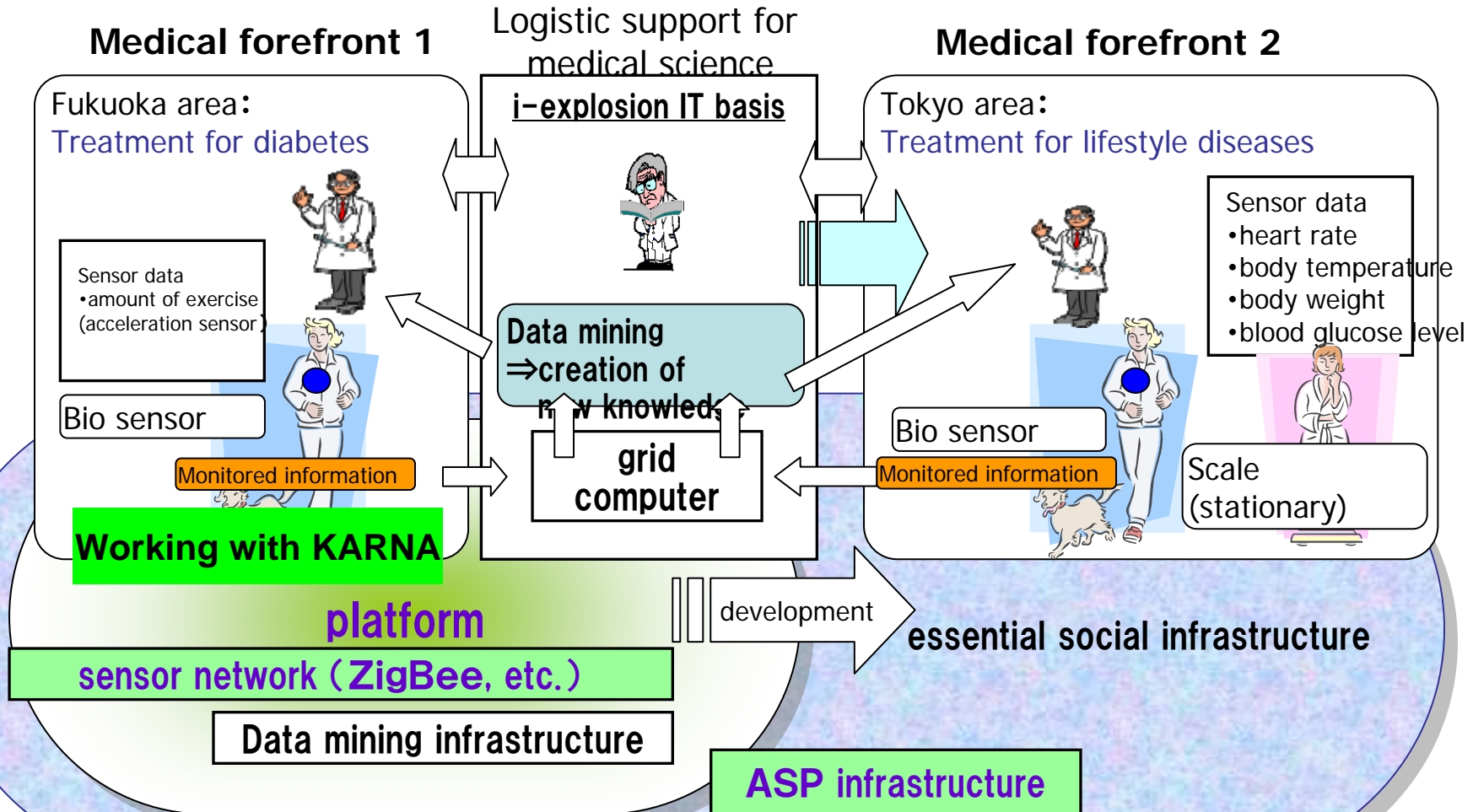
To be developed  
By Ruby software





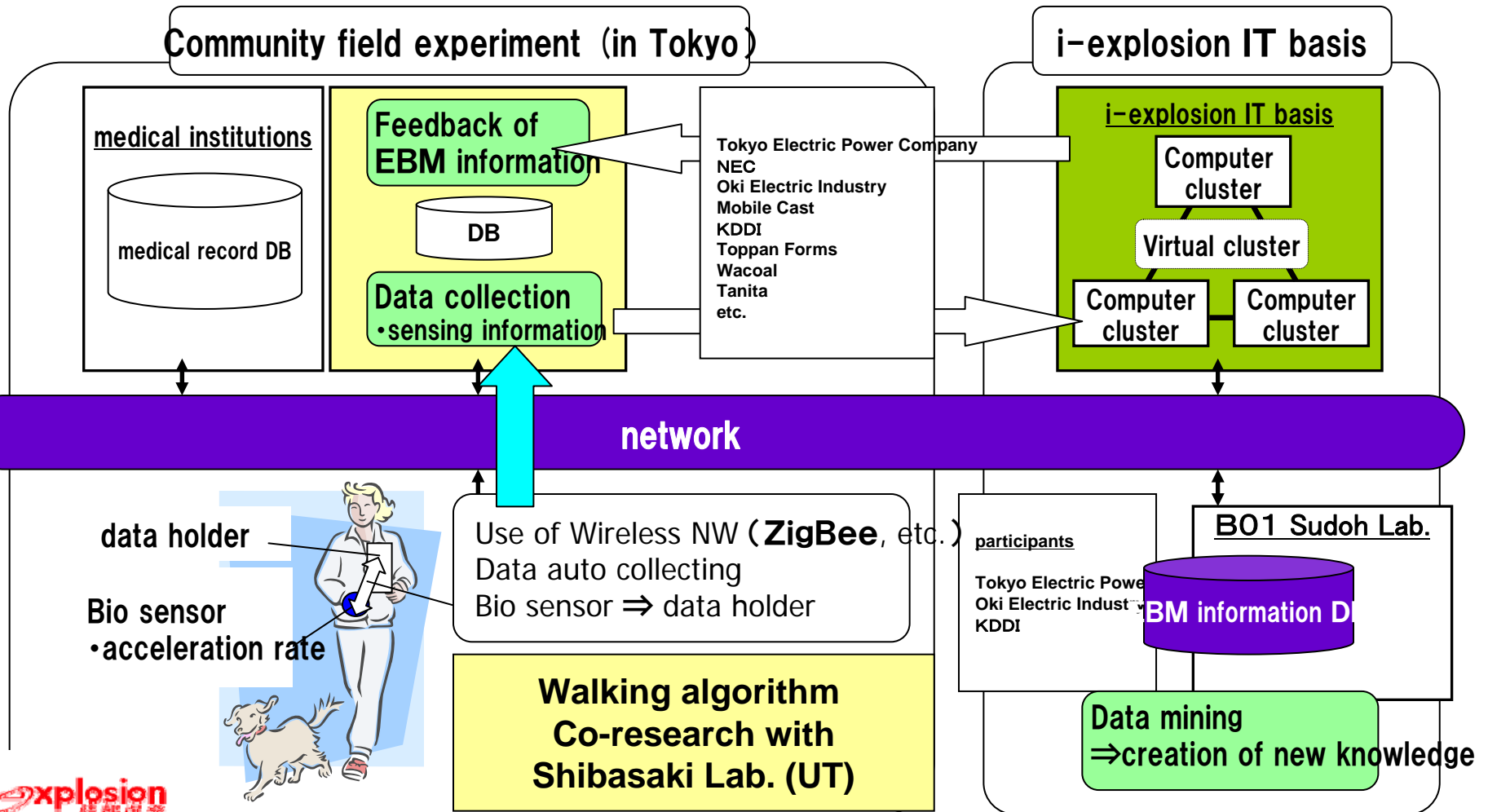
# Creation of a Preventive Medical Care Infrastructure

Platform construction for a preventive medicine and health care service  
⇒ By developing an i-explosion IT basis, an essential social infrastructure is built.



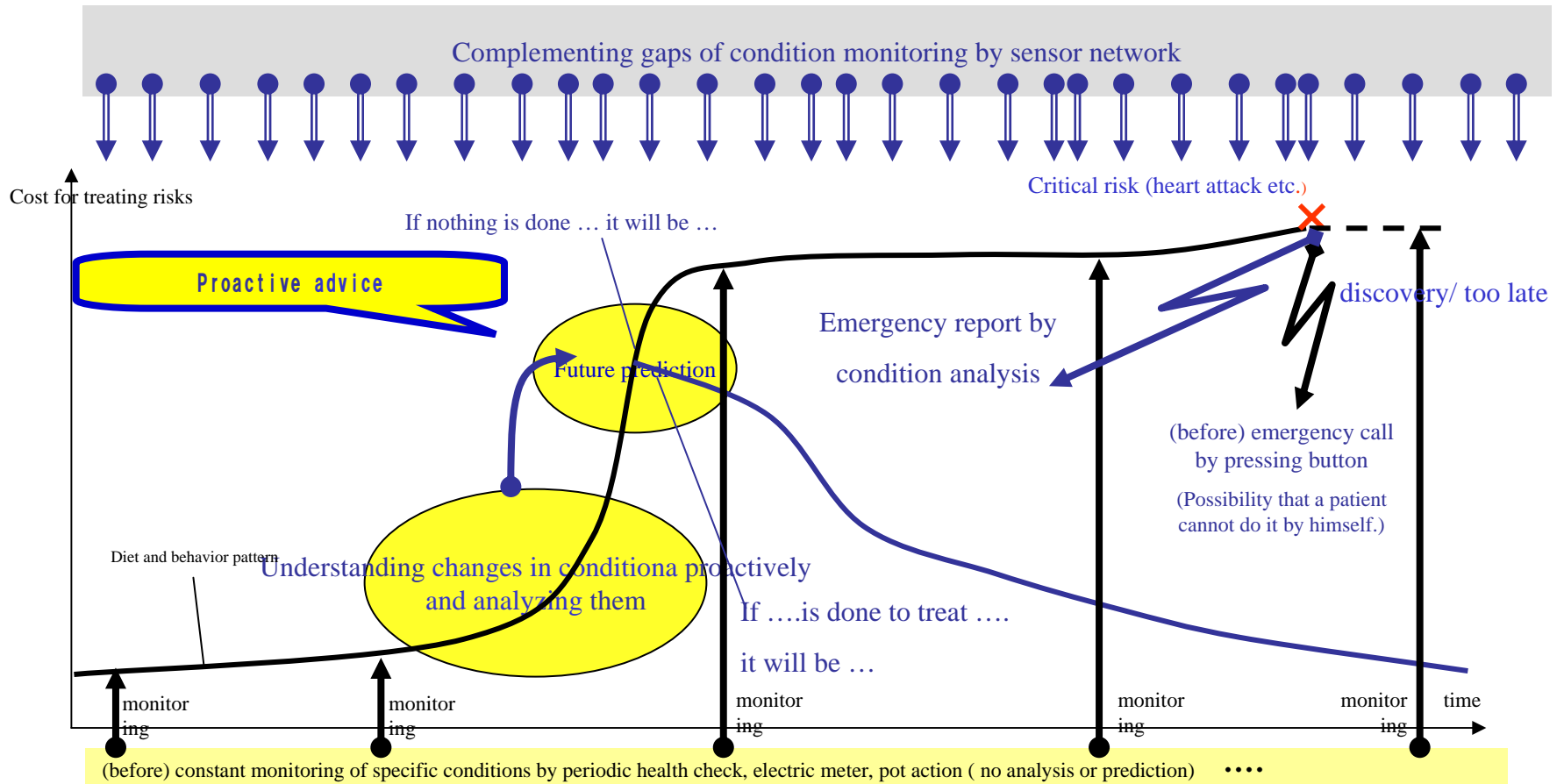
# Experiment in Tokyo System Organization

- ◆ Collection of data such as sensor information from the community field experiment.
- ◆ By using a computer cluster in the center, this data is analyzed for medical record-related information and sensor information, fed back as EBM information, and used in prescribing treatment.



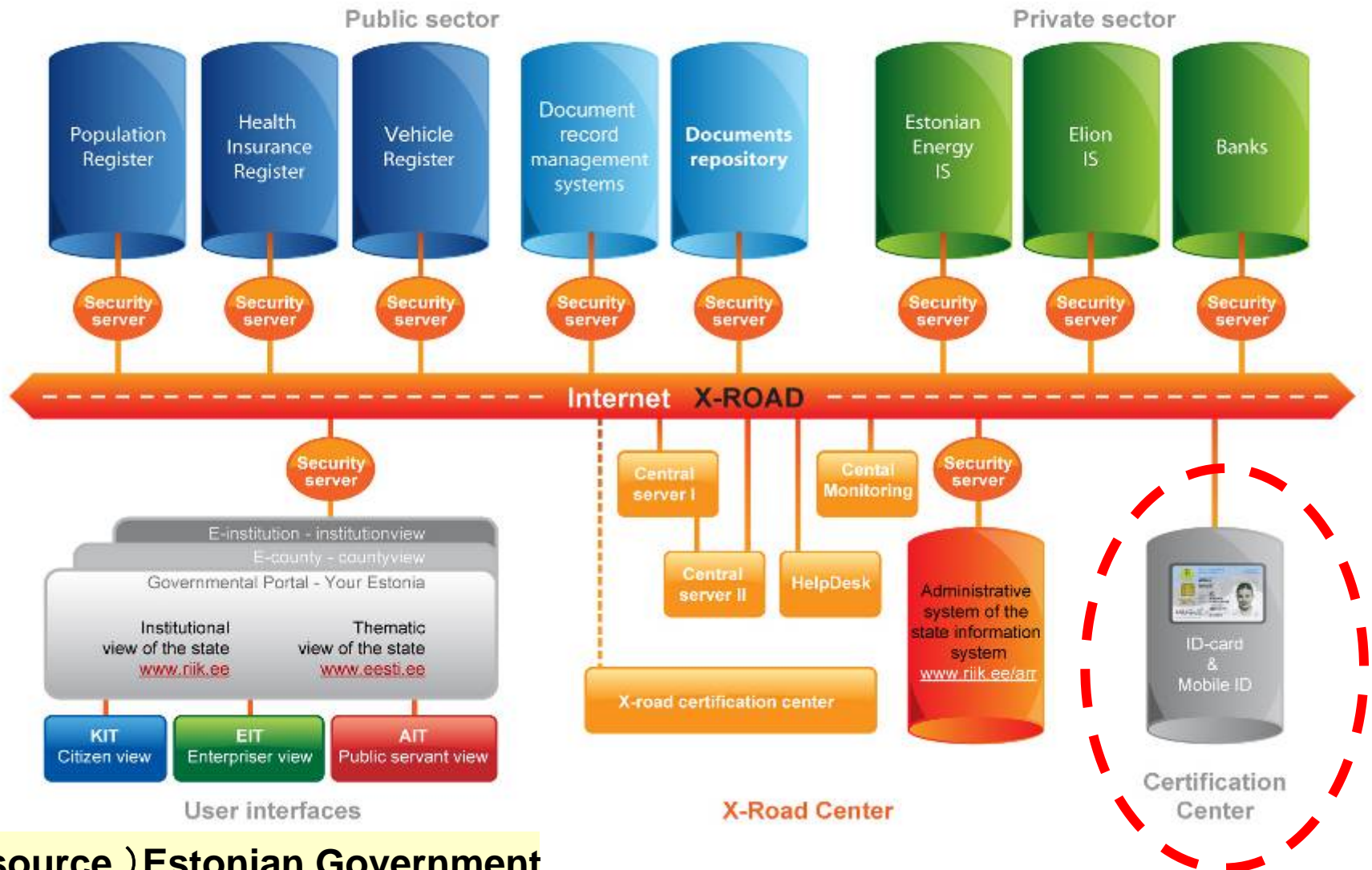
# Sensor Network and Living

- Advice given to individuals by predicting the near future from his/her life style and behavior patterns with sufficient liability and precision (see the figure below)
- A Model service for prediction and prevention of illness or accidents, to cut medical costs and increase productivity is presented here.
- Construction of a cross-industry information flow infrastructure By collaborating with ASP services and sharing information, a high-quality ASP portal infrastructure can be constructed.
- Sensor network technology, SaaS technology and location information technology are utilized to build a safe, high-quality ASP portal infrastructure.



# An Example of an IT Infrastructure Using XML and PKI

## Estonian information system



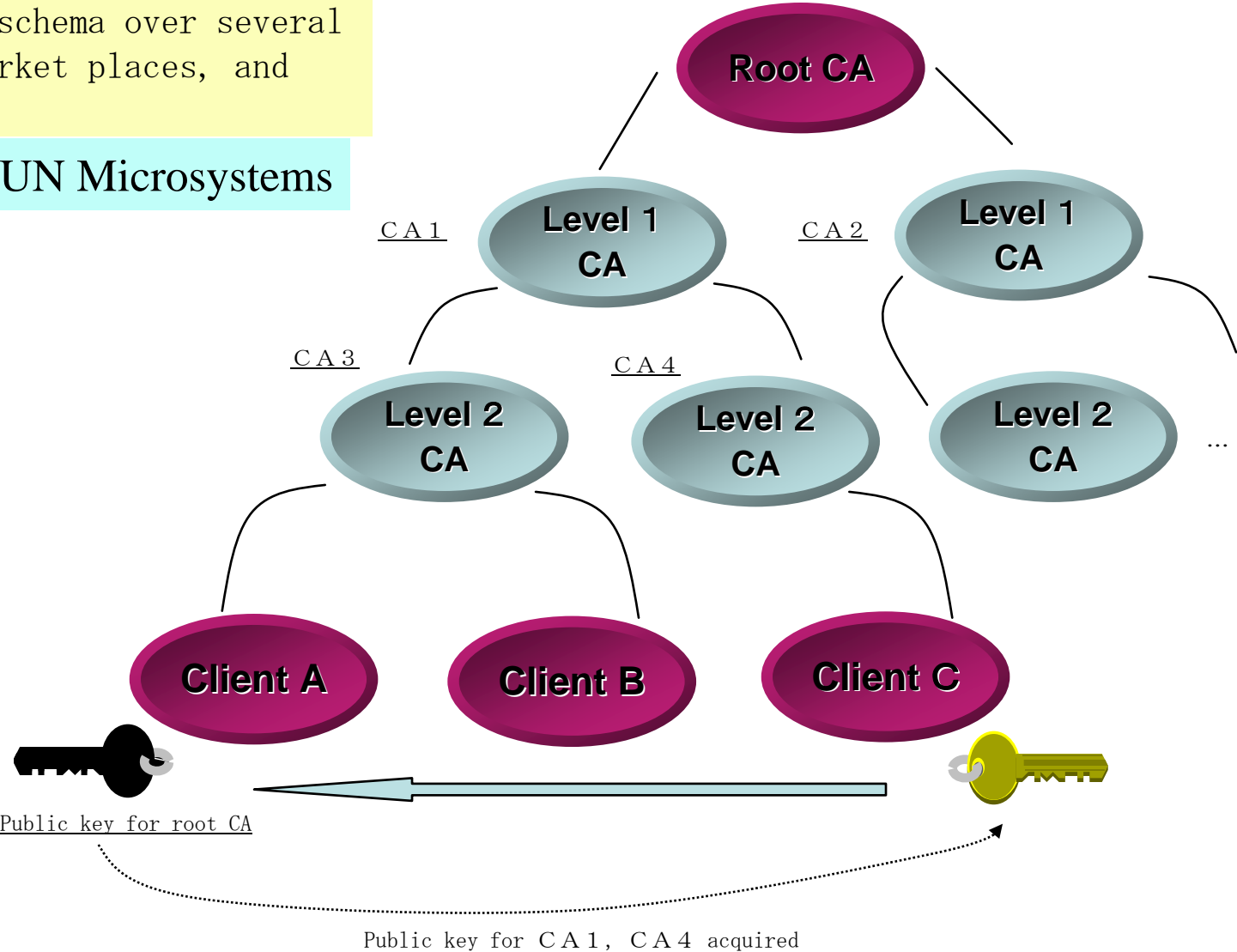
(resource ) Estonian Government

# Recognition Model

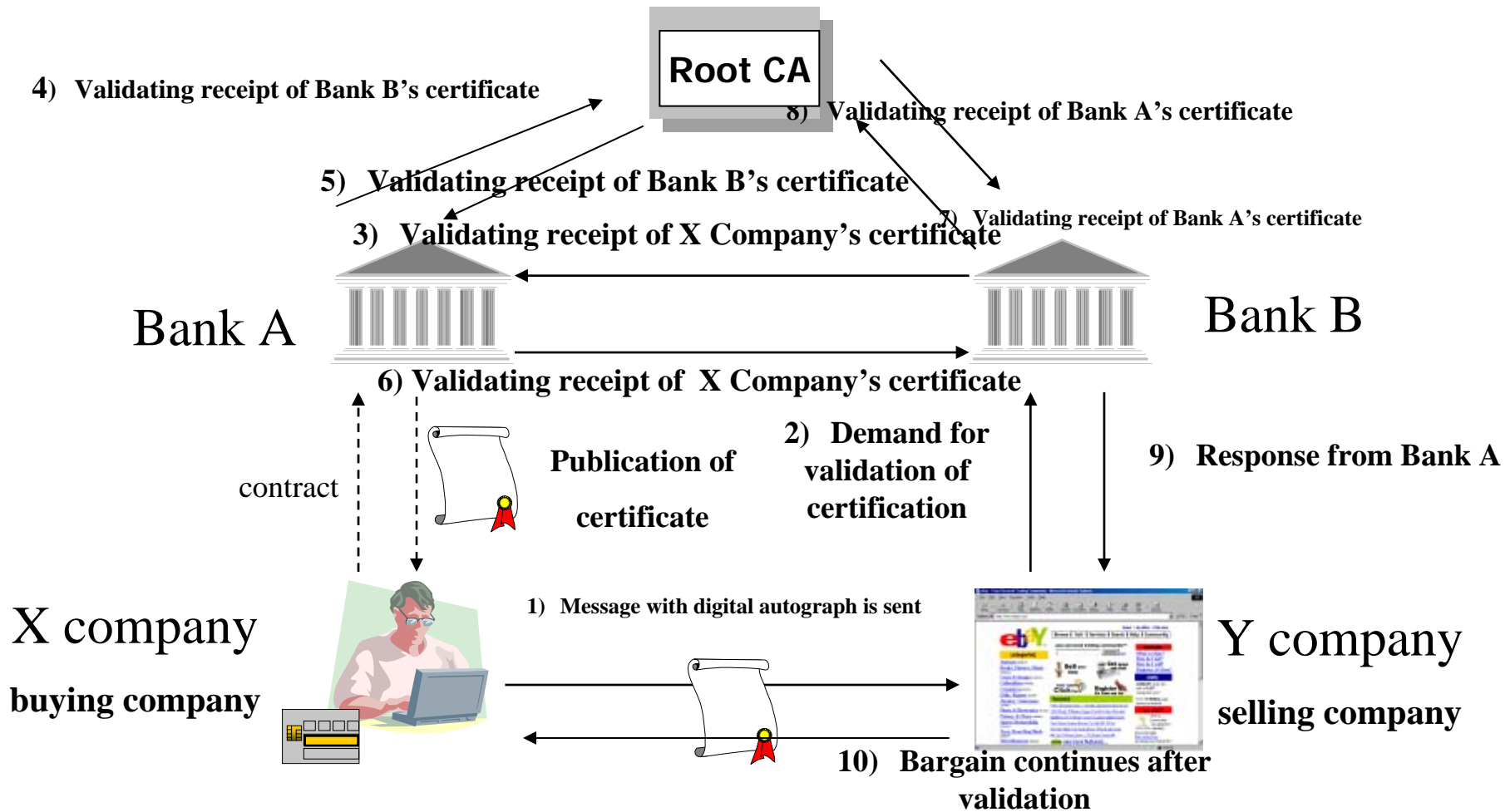
**Hierarchical model**

- Recognition schema over several industries, market places, and countries

copyright SUN Microsystems



# A Validation Service ~ 4 Party Model



Source : SUN Microsystems

# Problems of a Network Society

- ✓ Protection of consumers
- ✓ Securement and recognition of security
- ✓ **Personal information protection**
- ✓ Business models and intellectual property
- ✓ Internet tax system
- ✓ etc.



OECD International Conference, Paris, May 2006



## Network Society and Personal Information

- **A major characteristic of net trading**  
digital + open ( borderless )

- **Personal information protection and usage requirements**

- ① **Protection**

- increase of risk / comfort level

- ② **Usage**

- CRM ~ maintenance of data accuracy

- e-certification ~ ensuring security in e-trading



# Framework of a personal/global information protection system

## ■ 2 methods of personal information protection

- **segment**
- **omnibus**

## ■ OECD 8 principles of privacy

(in the 1980 administrative board's report):

- |                           |                 |
|---------------------------|-----------------|
| ①collection limitation    | ②data quality   |
| ③purpose specification    | ④use limitation |
| ⑤security safeguarding    | ⑥openness       |
| ⑦individual participation | ⑧accountability |

# Laws of Personal Information Protection

## Basic Laws

- Fundamental principles : adequate management of personal information
- Responsibilities and national policies : development of fundamental principles and promotion of integrated policies

## General Laws

- Responsibilities of private personal information dealers
- **Subject:** systematic organization of private information
- **Dealing with private information** ①specification and openness of applications ② handling a range of applications ③proper access ④strict adherence ⑤security provisions ⑥restriction of third party offerings
- Procedures for autonomous complaint processing
- Dealer supervision - ex-post check by minister-in-charge

# Administrative Institutions` Laws for Personal Information Protection (1)

- 1 Purpose: Adequate handling of personal information by national administrative institutions**
- 2 Objective (Institutions) : All administrative institutions in the country**
- 3 Objective (Information): All personal information**
- 4 Adequate handling of personal information**
  - **Possession limit: in a range needed to achieve required functionality**
  - **Functional Specifications obtained directly from documents**
  - **Limit of use and offering Usage or offering of personal information for purposes other than stated in the functional specifications is prohibited.**
  - **Quality Assurance: Personal information should be consistent with all facts in a range needed to achieve specified functionality.**
  - **Security provisions: measures for preventing leakage**

# Administrative Institutions` Laws for Personal Information Protection (2)

- 5 Adequate management and publication of a personal information file**
  - A report to the Minister of Public Management is required to possess these files.
  - A list of personal information files should be made and published.
- 6 Principal participants**
  - Information disclosure system
  - Correction request system
  - Services disconnect system
- 7 Administrative protests**
  - In administrative protests to determine rejection of disclosure, correction and service connection, one has the right to consult the Personal Information/ Personal Information Protection Committee.
- 8 Penal Code**
  - **Leakage of computer-processed personal data**
  - **Offering or plagiarism of personal information to obtain unjust benefit**
  - **Abuse of authority to collect personal data secretly for a purpose outside his/her assigned duties.**

# Important Domains of Personal Information

## 1 Finance • Personal Credit Records (Agency of Finance, Ministry of Economy, Trade and Industry)

- Guidelines must be strictly followed for possession of personal data less than 5000.
- Use of biometrics ( bio certification information) must be restricted to owner's granting permission.

## 2 Medical Records (the Ministry of Health, the Ministry of Education, the Ministry of Economy)

- Handling of human genome and gene information
  - linking-capable anonymization • • • personal information
  - linking-incapable anonymization • • • not personal information

# Excessive Response to Personal Information Protection

## ■ Private Information Protection Law 23-1

- Exceptional cases restricting the offering of personal data to a third person
- Cases involving public benefit or protection of other rights
- ①in compliance with the law ②protection of human life and assets ③healthy nurturing of public and infant hygiene ④in the best interest of the country

## ■ Private Information Protection Law 23-2

- Private information dealers can offer private information to a third party without the owner's agreement by pre-agreement with the owner (opt-out method)

# Excessive Response to Personal Information Protection

- Outstanding examples of excessive responses
  - Listing people requiring support in case of disaster
    - In many cases, there is no problem. (Social Policy Council)
  - List of activities of case workers and child committee members
    - In many cases, exceptions will be granted. (Social Policy Council)
  - Community association's list
    - In many cases, exceptions to restricting information to third parties will be. (Social Policy Council)
  - Emergency contact list for schools
    - Ministry of Education "guideline (Nov.11, 2004)

# NPO's Duty as TTP

## Establishment and Management of a Privacy Mark System by TTP

- Management body ··· BBBOnline, TRUSTe, JIPDEC (Japan Information Processing Development Corporation) and other liable NPOs or recognized groups
- Autonomous Adjustment Mechanism for Personal Data Handling
  - ① Certification and monitoring of policies and management system
  - ② Sanction such as mark deprivation
  - ③ ADR by liable and neutral third person (TTP)による ADR (Alternative Dispute Resolution)



**TRUST** 

Make Privacy Your Choice