ITU Workshop on
“E-health services in low-resource settings:
Requirements and ITU role”

(Tokyo, Japan, 4-5 February 2013)

Fujitsu Healthcare Business Overview

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EMR Business Overview
Japanese Footsteps of ICT solution biz.

1\textsuperscript{st} generation
1975-1985
Introduction of major Department system
Solutions
• Compliance system
• Accounting system
• Blood test & Labo. system
Rationalization of desk work

2\textsuperscript{nd} generation
1986-1995
Introduction of Physician’s Ordering
Solutions
• Digitizing order form
• Other department system
Direction of Integrated concept

3\textsuperscript{rd} generation
1996-2006
Introduction of Clinical support
Solutions
• EMR introduction
• Integration between EMR and Ordering
• Data standardization
EMR centered integration

4\textsuperscript{th} generation
After 2007
Introduction of HIE
Solutions
• Mutual utilization of Carte info.
• Regional networking
• Patient introduction in the region
Direction of Regional healthcare Network

Adding line-up of department system based on customization
Developing core HIS based on customization
Developing core HIS based on customization
Developing EMR system on Ordering system Customization -> PKG

Solutions for Clerks and technicians

Solutions for Physicians and nurses
EMR installation in Japan

◆ # of EMR introduced in medical Institution nationwide

Change Record of EMR introduction

We cover all range of hospitals
• National Medical Centers, Univ. Hospitals
• Prefecture Medical Centers & Hospitals
• Private Hospitals (Large - Small)
• Private Clinic etc.

Fujitsu currently has >50% share in high-end market in Japan.

(2008)
(2010)

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Fujitsu Healthcare Solution Offerings in Japan

- Fujitsu Japan has over 2,000 SEs and sales staff.
- Fujitsu innovates workflow with standard package applications.

**Healthcare Packages**

- **EMR solution**
  1. HIS
  2. CPOE
  3. Electronic carte
  4. Nursing system
  5. Medical accounting system

- **Department solutions**
  1. RIS / PACS
  2. LIS
  3. Management support system
  4. Health check-up system
  5. HIE

**Business Model**

- **One-stop solution**
  1. IT Prime Contractor
  2. Total integration and maintenance

- **Non-customize solution**
  1. Adopt standard package into all hospitals w/o customization
  2. Std. PKG covers entire workflow in all hospitals.
  3. Annual level-up for the PKG
     - About 350-400 functions are added.
     - User’s meeting decides Level-Up contents.
Fujitsu’s EMR system includes the entire hospital ICT systems (HIS, network and department systems) including electronic carte.

**Continuous updates and improvement**

- Flexibly adapt changes in medical systems and advancements in medicine.
- Periodically reflects opinions from medical staff via user forums.
- Include knowledge collected from all over the country.
HIE solution
# Transition of Healthcare Systems

Healthcare system has been changing to cover wider info.

<table>
<thead>
<tr>
<th>Current</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Network</strong></td>
<td><strong>Information</strong></td>
</tr>
<tr>
<td>EMR (Electronic Medical Record)</td>
<td>Within hospital</td>
</tr>
<tr>
<td>EHR HIE (Electronic Health Record)</td>
<td>Among hospitals and clinics</td>
</tr>
<tr>
<td>PHR (Personal Health Record)</td>
<td>Regional area</td>
</tr>
<tr>
<td>PLR (Personal Life Record)</td>
<td>Regional area (wide)</td>
</tr>
</tbody>
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Needs for HIE network

Change of medical env.
- Rapid aging & Increase in lifestyle diseases
  - Change of disease structure
  - Increase in elderly households, single-living of elderly
- Lack of doctors and nurses
  - Cruel overwork due to lack of doctors and nurses
  - Difficulty in medical care in remote rural areas
- Advancement of healthcare services needs
  - Concentration of patients to large hospital
  - Evaluation of hospitals by patients (e.g. ranking)
- Financial crunch of public medical institution
  - Public hospital reform plan, review of management

Change of medical system
- Optimization of medical expenses
- Reform of medical system, optimization of beds for acute phase
- Decrease in days in hospital by introducing DPC*
- Incentive for computerization & HIE path
- Online receipts  *DPC=Diagnosis Procedure Combination

Solutions
- Medical systems considering regional feature
- Optimization of limited human resource
- Proper role sharing of hospitals / clinics
- Functional differentiation of hospitals in a region
- Sharing medical info in a region
- Remote medical service by utilizing ICT

Equipment of cooperation network is immediately required in order to promote transfer from hospital-closed healthcare to regional healthcare

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EHR Solution in Japan

Enables info sharing among different hospitals/clinics.

- Shares reference of the whole carte information, including prescription, inspection and doctor’s diagnosis.
  ⇒ Patients can receive medical care at any convenient sights.

- Shares long-term info. such as prescription, inspection results, and allergies.

- Realizes optimal emergency medicine.
  ⇒ Patients can receive appropriate medical care at the best hospital.
Realize patient(residents)-oriented, effective and efficient medical delivery system

**Medical facilities**
- Efficient management by selection and concentration of medical functions
- Effective medical treatment by sharing info
- Decreasing burden of medical staff

**Administration**
- Establishing sufficient medical delivery system by effective use of medical resources
- Realizing reasonable medical expenses by differentiation and connection of medical functions

**Patients (Residents)**
- Receiving high quality medical service
- Decreasing economical and mental burden of patients and their families
Feature of HumanBridge
HumanBridge has robust security based on MHLW’s guideline concerning safety administration of medical information systems. The security supports sharing medical information via network. Especially, SaaS model adopts closed network connection using FENICS-VPN, so that it can realize connection from Fujitsu’s data center to hospital’s network without using Internet.

Fujitsu’s data center has leading edge anti-disaster measures, security, and eco-friendliness.

Medical info is provided by on-demand real time search and not retained in EMR server.

Gateway server in each hospital has limited recent images so that it keeps response time.
HIE construction w/o depending on vendors

Any EMR made by any vendor can provide information via connection server, if it outputs data into **SS-MIX standardized (extended) storage**.

(*) Most of vendors has already implemented output of data into SS-MIX storage.

Any PACS made by any vendor can provide information via connection server by means of **DICOM Q/R**.

**SS-MIX: MHLW’s promotion of electronic medical information**

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Clinic staff can refer medical treatment info of core hospitals. Therefore, patients can receive consistent medical service in a region.
Examples of HIE

In 2011 and 2012, many HIEs have been constructed nationwide.
e-Health Pilot Project in Laos

- e-Health Pilot Project in Laos supported by APT Program
- Employ video facility to improve communication between Central and Provincial Hospitals based on the real needs of doctors
- File server implemented also for educational purpose