From home telehealth to “Communication and Care”


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Outline

✓ Introduction
  • Typical home telehealth system and the impact of ICT to medical care
  • Challenges to home telehealth systems in Taiwan
✓ Change of concept: From home telehealth to “Communication and Care”
✓ New frontiers of ICT in home telehealth
  • Mobile devices, cloud services, and Web 2.0
✓ Summary and conclusions
Home Telehealth Systems

Information and communication technologies (ICT) have provided many new possibilities of medical care.
Impact of ICT to Medical Care

- Telemedicine, Telehealth, e-Health, telehomecare, or the more modern term home telehealth, has been defined as the use of ICT to enable effective delivery and management of health services.

- In a typical home telehealth scenario, the patient subscribes with a home healthcare service provider. The patient then regularly uses a device to measure vital signs at home and transmit the data to the service provider, who monitors the patient’s status and provides healthcare services accordingly.
Challenges to home telehealth systems

✓ Although the usefulness of the home telehealth systems has been recognized in many studies, and all technologies required are readily available, expectations for its widespread adoption have not been realized in Taiwan.

✓ COMplicated, COst too high, lack of Motivation

  • Current model often involves integration of different business and very complicated infrastructure.
  • The difference between cost and “willingness to pay” for the current centralized, “system + service” model is huge. A monthly fee is required.
  • Lack of motivation on both ends, patients and doctors

Competition in home telehealth systems

➤ Finding the best business model!
Gerontechnology: mission, and scope

✓ International Society of Gerontechnology (ISG):

“Designing technology and environment for independent living and social participation of older persons in good health, comfort and safety.”

✓ Scope of gerontechnology (by ISG): health, housing, mobility, communication, leisure, and work.

Social participation + Communication

=> From home telehealth to “Communication and Care”
From Hometelehealth System to “Communication and Care”

“One of the greatest risks in aging is not necessarily poor health but isolation. Communication with friends, relatives, health care providers, and others is crucial to healthy aging.”

(JOSEPH F. COUGHLIN 1999)
Connect older adults with children, family members, care givers...

**Household**
- External sensor 1
- External sensor 2
- External sensor 3

**Distributed Data Server (DDS)**
- Wireless receiver
- Internet connection
- Processor
- Built-in sensors
- Storage

**Centralized Database / Server (Private Cloud)**
- Embedded system based thin server
- PC-based software
- Tablet app.

**Application server**
- Personal Health Cloud
- Social Network Service (SNS)

**Devices**
- Smartphone
- Tablet
- PC / NB

**Care givers**

**Applications**
- Event alerts & regular reports
- Request data

**Clients**
- Client app.
- SNS app.
- Web browser

**Patent No. US8,111,817 B2; Date of Patent: Feb, 7, 2012**
Android app on the tablet and smartphone

- Uploads vital sign data
- Reminder
- Photo sharing
Vital sign monitoring
Care Delivery Frame can also be your “friend” on Facebook.

- Photo Sharing
- Monitoring data
- Messages
Provide the motivation and content for communication

- Social network services (SNS) such as facebook are the most popular communication platforms for younger generation.

- The various sensors are gathering information not only for healthcare purposes, but also for enriching the content of interaction and communication by knowing what the older adults do or feel.
New frontiers of ICT in home telehealth

Mobile Devices  Cloud Service (SaaS)  Web 2.0
Replacing the dedicated machine with mobile devices

- Home telehealth system can be in the form of apps on mobile devices, rather than developing dedicated home gateways, kiosk, and the other machines.
Developing a customizable SaaS hometelehealth platform

✓ Home telehealth application can be developed as a “Software as a Service (SaaS)” on the cloud.

✓ The home telehealth system can be easily customized by users according to different care purposes and service flow.
Connecting hometelehealth systems with SNS

✓ The concept of Web 2.0 has been described as the “web as a platform” for delivering services.

✓ Consumers → Generators
Summary and Conclusion

✓ We are proposing to change the purpose of hometelehealth systems from health monitoring to communication and care.

✓ Instead of connecting hospitals and patients “Comm. & Care” aims to connect older adults with their children, family members and care givers.

✓ Existing mobile devices, cloud services and social network services (SNS) are integrated in this customizable system.
Summary and Conclusion (CONT.)

- Most importantly, “Comm. & Care” transforms from a home telehealth system into a platform of communication and care between older adults and their family members.

- The various sensors are gathering information not only for healthcare purposes, but also for enriching the content of interaction and communication by knowing what the older adults do or feel.
Thank You

Dank u wel

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