

Modelling of remote monitoring services

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Purpose The *remote monitoring service for elderly people*¹ is a service that allows a family to monitor an elderly person living in a distant location. Since many countries are faced with an aging society, the remote monitoring service is a promising way to increase the quality of life of individual consumers (i.e., the elderly, the family, and caregivers). Its use is not widespread yet. To achieve satisfactory and sustainable monitoring, the remote monitoring service must be personalized for individuals. A consumer should be able to select his/her service from many choices based on personal needs and preferences. A personalized remote monitoring service will provide a safe and secure social environment in the aging society. With the growth of ubiquitous computing, a wide variety of technologies are now available for personalized remote monitoring services. However, existing studies² and products are simply taking technology-driven approaches. There is no systematic method to tailor personalized services with appropriate technologies based on individual requirements. The goal of this research is to provide a way to systematically analyze the characteristics of various remote monitoring services in a goal-oriented way. **Method** To accomplish the goal, this paper presents a modeling framework of remote monitoring services consisting of two elements: the three-actor model and essential perspectives. *Figure 1* shows the three-actor model. In this model, we can generalize various remote monitoring services with three actors (called a subject, a watcher, and a target) and relationships among the actors. The subject monitors the elderly person who is living at a distance. A typical example of a subject is a family or caregiver of an elderly person. The watcher directly watches the elderly person, determines the condition of the elderly person, and notifies the subject of the condition. The watcher can be a person or a machine. The person can be a mailman or an employee of a monitoring service provider. The machine represents a system, which monitors the elderly person. Finally, the target represents a person who is monitored by a subject via a watcher. Thus, the target represents an elderly person. *Table 1* shows the proposed essential perspectives with which we systematically analyze individual remote monitoring services. Specifically, every remote monitoring service is analyzed based on perspectives of what, why, who, when, where, and how. The why and what perspectives are described for each service. The other four perspectives are described for the subject, the watcher and the target. The right column represents example results for The World's Smartest Medical Alert service³, clearly showing the essential characteristics of the service.

Results & Discussion The three-actor model and the essential perspectives provide a first step to systematically analyze remote monitoring services in a goal-oriented way. The proposed method currently focuses on the functional aspect of services. We will present the modeling features and scalability in the conference. Our future work will consider the business aspects (e.g., cost).

References

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Keywords: health & self-esteem, remote monitoring service, modeling
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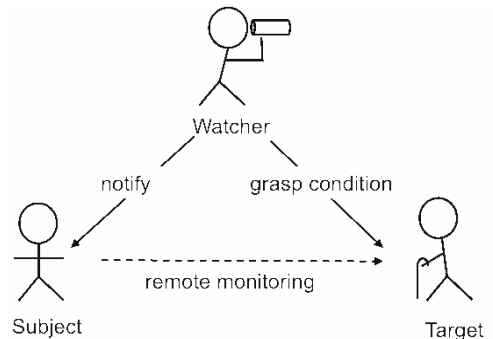


Figure 1 Three-actor model

Table 1. Essential perspectives and results of the analysis

Perspective	Result
What	To increase a quality of life
Why	Each family wants the elderly to live safe
Who	The subject is the family of the elderly
When	Any time, the subject can monitor target
Where	Anywhere, the subject can monitor target
How	Alerted by Smartest Medical Alert Service