



THREE TIER DESIGN FOR HEALTHCARE SERVICE SOLUTIONS

Gilmini Geethika Tudawe Dantanarayana¹, Prasad Jayaweera²

¹Department of Computer Science, Faculty of Science, University of Ruhuna, Sri Lanka

²Department of Computer Science, Faculty of Applied Sciences, University of Sri Jayewardenepura, Sri Lanka

gilmini.td@gmail.com

Ever increasing diversity and differentiation due to expansions in service providers, variety of service organizations and constantly created new medical specialties has resulted challenging, complex and highly dynamic environment for e-Health solution developer. Therefore it is necessary to design a systematic approach to capture highly dynamic and emerging organizational requirements in order to achieve successful e-Health solution meeting stakeholders' needs while facilitate systematic alignment between higher level strategic and motivational requirements with lower technical level realizations.

This research work is an initiative contributing to get established a framework catering different modeling aspects of service design work flow. The proposed framework uses value orientation as the basis of the proposed approach. The framework consists of three modeling layers HC Motivation Modeling (HMM), HC Value Modeling (HVM) and HC Service Process (HSP) Modeling together with related artifacts. The adopted value orientation and in particular HVM in the proposed framework is detailed out by means of Value Object (VO) classification schema. A Value Activity (VA) classification and an initial intuition on VA choreographing are fundamental for successful service designing effort and that have been introduced in the framework as the foundation of HSP. Further, one of the promising approaches to tackle afore mentioned interoperability issues are the development of complete and sound enterprise-wide ontologies. However in the proposed framework this requirement has been accomplished by means of defined set of healthcare related meta-models. These meta-models have also been extends with Reference Information Models based on VO schema that capable of covering information modeling aspect of HSP layer.

The work reported here introduced a contribution in an endeavor to develop a complete and sound value oriented service designing framework. Besides modeling and designing higher motivational requirements to be realized on technologies, the importance of addressing value oriented modeling layer was illustrated in detailed. Value oriented modeling layer mainly consisting Value Objects and Value Activities performed by Value Actors and further these layers that serves as an intermediate layers between higher level motivation/goal modeling layer and lower level service designing technological realization layer. Yet another commendable contribution is the facilitation to bi- directional traceability between these modeling layers that designers could be achieve with the adoption of the proposed framework.

Keywords: Motivation Modeling, Value Modeling, Reference Information Models