Application of the fuzzy-intuitionistic approach to the dependency model developed within a complex e-health platform hosting environment

Daria Kurochkina

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The Swiss health insurance market has ruthless competition and continuous alteration. The operational challenges include increasing customers’ demand regarding service quality, responsibility, and availability. The success of the service provider business is highly correlated with quantity and the quality of business processes. Presence and importance of the current dependency increases the requirements for the service level monitoring and management.

Following thesis presents the application of the fuzzy-intuitionistic approach to the dependency model developed within a complex e-health platform hosting environment. This model relates a set of fuzzy-related components to a business service with corresponding performance parameters. The direct and indirect dependencies of model configuration items and their business impact become a main focus of the current research.

The practical implementation of coupling metrics calculation provides the insights of the dependencies’ nature and supports root case and business impact analysis. Current research and the prototype can support the discovering the root cause of SLA violations and it may help to provide more accurate analyses to make appropriate adjustment decisions at runtime. The combination of academic research and practice oriented business scenarios by expanding IT reliability engineering with fuzzy mathematical models provides high value to the service business.

The research is supported by the leading provider of IT solutions and outsourcing services Centris AG. The work presented in this theses can be used as part of an improved Business Service Monitoring at Centris AG, and allow Service Management to proactively analyse these observations and predict on impacts of monitored back-end component failures to business services.

Professor Andreas Meier