

Performance evaluation of human resources in a hospital

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Abstract. The main goal of this paper is to explain how semantic web technologies are supporting the evaluation of the performance of medical professionals. Maximizing the effectiveness of the management of human resources in hospitals would permit to increase the quality of health care. Our proposal is based on our previous results and experience working with semantic technologies and pursues supporting the application of 360° performance evaluation methodologies. We have developed a semantic platform that enables the application of 360° performance evaluation methodologies. The semantic structure of the representation renders it easy to analyse key figures on aggregate human resource level. The approach has been validated using real data from the hospital.

Keywords: Semantic Web, Human Resources Management, Ontology

1 Introduction and background

Maximizing the effectiveness of the management of human resources in hospitals would permit to increase the quality of health care. Many studies [1, 2] have demonstrated the impact of the human resources management in several clinical indicators, but the lack of well-defined common semantic models makes really difficult to perform user-defined analyses, comparing the results of different hospitals and linking of data to external resources are required.

The main goal of this paper is to explain how semantic web technologies are supporting the evaluation of the performance of medical professionals.

2 Methods and results

Our proposal is based on our previous results and experience working with semantic technologies and pursues supporting the application of 360° performance evalua-

tion methodologies [3]. We have used Semantic Web technologies for transforming a human resources management system into a semantically enabled one.

We have implemented our performance evaluation model developed in an OWL ontology. We have developed a semantic platform that enables the application of 360° performance evaluation methodologies. The semantic structure of the representation renders it easy to analyse key figures on aggregate human resource level. The approach has been validated using real data from the hospital. The Semantic Web platform, which is in use since 2013, has worked with real data of a hospital and our semantic data store contains information about 21 evaluation calls, with 377 evaluations of workers of 19 different job positions evaluated. Nowadays, there are 1,520 users of the platform including evaluators and managers. The mean of the desirable levels of the different clinical departments is 4.33 (out of 5) and the mean of the last evaluation was 3.95, obtained at the end of 2014. Our semantic repository has 100,384 triples.

3 Conclusions

We believe that our results are an example of how semantic web technologies can contribute to improve knowledge management processes in healthcare and to improve the quality of care.

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