Prospective Work Design for Call Centers – a Practical New Approach

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Abstract. We report the CCall project in this paper, which was primarily aimed at developing a web-based tool for evaluating the work conditions in call centers. A practical approach for tool development is described in this paper.

Keywords. Call center, Work design, Web-based tool.

1. Objective

The changes of work and the fast technological development have led to changes in demands for many employees. However, not only the tasks are changing. The dynamic of markets comes along with the requirement to change organisational structures at the same rate. The need to adapt a company's own work flow to demands of their customers is very high. This is especially relevant for call centers as prototypical organisations in the service sector.

From the employees point of view it becomes more and more difficult to keep pace with the on going changes in workflow and organisational structure. One can imagine that the ability to cope with such demands is limited. This ability is over-strained frequently, as research shows. The management of call centers, on the other side, is in a sandwich position. They have to consider the needs of their employees and keep the costs of their business in mind.

For such problems, the work sciences are offering help in principle. But current scientific approaches in call centers are narrowed to extensive examinations of work situations. This has to be assessed as fundamental research with certain eligibility for sciences. In contrast the derived improvement measures are just partly implementable in daily work. Furthermore the management was complaining about the necessary effort for analysis in many cases. A way out of these contradictions offers the method of prospective work design. In contradiction to the traditional corrective work design, processes are optimized before they are put into practice.

Therefore the Verwaltungs-Berufsgenossenschaft developed a web-based tool to evaluate the working conditions according to EN ISO 10075-1. The management is now in the position of being able to measure the level of stress and strain in their call centers by themselves. Additionally practical improvement measures are given by the tool. The tool is working as follows. After starting the tool at our website, a member of the management has to answer 12 questions to specific work conditions.

The tool then gives an overview about the strain of the employees and derives specific measures to improve the stress. Dependent on the result, you could vary the answers systematically to check the effect on the strain. In this way, the tool is working prospective by forecasting the level of strain you could expect if you would change the work characteristics.

The objective of this contribution is to introduce the tool, his development and mainly the derived improvement measures.

2. Method

Initial point for the development of the tool were data collected during the CCall – project between 2001 and 2002. This data set is representative for German call centers. The development followed several steps as stated below:

1. analysis of data
2. identification of significant most valuable predictors of strain
3. computing multiple linear regression models
4. first webbased version for test purposes
5. conduction of an evaluation study in 5 call centers of different sizes and business areas
6. development of improvement measures
7. final version in the internet

The tool was developed in contrast to the common scientific approach. Neither is it based on a specific theory. Nor was the intention to support such a theory. In fact our aim was to develop an empirical tool which is consequently in line with the "reality" in call centers. Nevertheless we could make valid statements about stress and strain in call centers by using the representative data set. For this reason we were able to picture work characteristics of call centers in our regression models without being unreliable. To make it clear: the forecast of strain is only a means to an end. Our main focus was the development of practical improvement measures for processes in call centers. But before you could give situation depending on recommendations, you have to estimate the situation.

3. Results

The coefficient of determination (R^2) of our 8 Regression models range between 0.42 and 0.83. The corresponding correlations coefficients of predicted and measured values in our evaluation study range between 0.49 and 0.80. These very

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good statistical results are completed by the distinctively positive feedback of the user, the management of participating call center.

4. Conclusion

The online tool has proved his practicality and usefulness in a first evaluation study. The result was achieved without reference to a scientific theory. Anyhow scientific methods were used to develop the tool. From now the tool will be used in our daily consulting service for call centers. The next steps for further development will be:

1. To verify the tool permanently. The regression models will be adjusted in further studies.

2. To evaluate the tool's usefulness in an online survey with all call centers which make use of the online tool. Basically we want to know how to improve the recommended improvement measures.
3. To bring the tool to market. We will publish the availability of the tool in professional journals, internet forums and in call center networks.

From our point of view, scientific research has to be more focused on the needs of the practice. This means, offering help to find efficient solutions for the specific problems of an specific industry sector. The Verwaltungs-Berufsgenossenschaft is currently examining the extension of this approach to other industrial sectors.