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Tobias Ley

**Organizational Competency Management –
A Competence Performance Approach**

Methods, Empirical Findings and Practical Implications

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Internet: www.shaker.de • eMail: info@shaker.de

Organisationales Kompetenzmanagement: Ein Kompetenz-Performanz Ansatz

Tobias Ley

Es ist oft argumentiert worden, dass die Wettbewerbsfähigkeit von Unternehmen in einer wissensbasierten Gesellschaft in zunehmendem Maße von dem Wissen und den Fähigkeiten Ihrer Mitarbeiter abhängen wird. So beschäftigt sich der Personalbereich in Firmen schon seit langem damit, das Humankapital in der Firma zu optimieren. Neuerdings werden Instrumente für das Wissensmanagement vorgestellt, die das Ziel haben, Wissen in der Firma besser verfügbar zu machen und sich dabei häufig den Mitteln der Informationstechnik bedienen. In der Wissensmanagement Forschung ist jedoch immer wieder deutlich geworden, dass die Nutzung dieses Wissens letztendlich von der Kompetenz der Mitarbeiter abhängig ist.

Wie man Kompetenzen der Mitarbeiter, also deren Wissen und Fähigkeiten, im Unternehmen sichtbar macht, damit beschäftigen sich Instrumente des Kompetenzmanagements. So können Stellen- oder Mitarbeiterprofile beispielsweise aufzeigen, welche Kompetenzen ein bestimmter Mitarbeiter besitzen sollte und welche er tatsächlich besitzt. Entsprechende Entwicklungsmaßnahmen können dazu eingesetzt werden, die möglichen Lücken zu schließen.

Die Arbeit unternimmt zunächst eine breite Analyse, indem traditionelle Kompetenzmanagement Ansätze aus den sehr unterschiedlichen Forschungstraditionen des Personalwesens (z.B. kompetenzbasierte Personalentwicklung) einerseits, und des Wissensmanagements (z.B. Expertenidentifikation, Wissenslandkarten) andererseits, untersucht werden. Die Analyse legt den Schluss nahe, dass in den traditionellen Ansätzen verschiedene zukünftige Herausforderungen nur ungenügend berücksichtigt werden, insbesondere die zunehmende Dynamik in der wissensbasierten Arbeitstätigkeit, in der sich die Anforderungen ständig ändern. Auch wird die ungenügende theoretische Fundierung der Ansätze kritisiert, die es erschwert, die Ergebnisse einer empirischen Prüfung zu unterziehen.

Als Antwort auf diese Herausforderungen wird ein neuer Ansatz im organisationalen Kompetenzmanagement vorgestellt. Dieser beruht auf einer mathematisch-psychologischen Theorie von Kompetenz und Performanz, die seit einigen Jahren Gegenstand zunehmender Forschungsaktivität geworden ist. Das zentrale Merkmal dieses Ansatzes ist es, eine enge Verknüpfung von menschlichen Kompetenzen einerseits und den entsprechenden Leistungen andererseits herzustellen und diesen Zusammenhang mathematisch abzubilden. Erst durch diese enge Verbindung lassen sich die entstehenden Modelle empirisch validieren. Auch erlaubt die Formalisierung eine informationstechnische Unterstützung, z.B. um die Wartung der Modelle mit automatischen Inferenzen zu vereinfachen.

Das vorgeschlagene Modell wird anschließend in zwei Unternehmenskontexten eingeführt und evaluiert. Es wird ein praktisches Implementierungsmodell vorgestellt, welches auf Befragungen der Mitarbeiter über eingesetzte Kompetenzen in ihrer Arbeitstätigkeit und die damit verbundenen Leistungen beruht. Zentrales Element ist die Kompetenz-Performanz Matrix, aus der schließlich Strukturen auf der Menge der Kompetenzen und der Performanzen abgeleitet werden können. Es wird so möglich, direkt aus den Ergebnissen der Arbeitstätigkeit auf vorhandene und fehlende Kompetenzen zu schließen. Schließlich wird eine Vielzahl an Evaluationskriterien vorgestellt, die die empirische Validierung erlauben. Diese werden praktisch anhand der in den Untersuchungen erhobenen Daten erprobt.

Abschließend zeigt die Arbeit die praktische Relevanz des Ansatzes anhand eines Szenarios auf. Es handelt sich dabei um die Nutzung der Strukturen für das arbeitsplatzintegrierte Lernen. Der Vorteil besteht darin, dass Kompetenzbedarf direkt aus den Leistungen am Arbeitsplatz abgeleitet und entsprechende Entwicklungsmöglichkeiten aufgezeigt werden können. Die Arbeit schließt mit einer Diskussion der offenen Fragen und zeigt weiteren Forschungsbedarf auf.

Organizational Competency Management: A Competence Performance Approach (Summary)

Tobias Ley

Know-Center Graz
Inffeldgasse 21a , A-8010 Graz, Austria
tley@know-center.at

1 Competency Management in Organizations

This work is concerned with a new approach to Organizational Competency Management. The goal is to develop a method that is practically feasible for organizational settings, is firmly based in psychological conceptions of human competence and performance in the workplace, and employs a degree of mathematical formalization that improves possibilities for establishing the validity of the implementation.

Competency Management is defined to encompass all instruments and methods used in an organization to systematically assess current and future competencies required for the work to be performed, and to assess available competencies of the workforce. Competencies are defined as the cognitive (e.g. knowledge and skills), affective (e.g. attitudes and values), behavioral and motivational (e.g. motives) characteristics or dispositions of a person which enable him or her to perform well in a specific situation (e.g. Boyatzis, 1982; Erpenbeck & Rosentiel, 2003).

A process model is introduced which encompasses five steps that usually guide implementation of a Competency Management initiative. In the first step, setting and purpose of the initiative are analyzed (*analyzing setting and purpose*). The second step encompasses the definition of a model for the specific organization detailing out which competencies should be measured (*defining competencies*). In the third step, available competencies of the workforce are assessed (*assessing competencies*). The fourth step brings about an evaluation of the models and the assessment (*evaluating models*), and finally the last step puts the models to use (*using models*). The steps are used as a frame of reference for reviewing existing approaches and methods.

A review of current approaches in organizational Competency Management in Human Resource Management (HRM) and Knowledge Management (KM) fields leads me to conclude that instruments that are integrated in existing work processes by supporting work integrated competency modeling and assessment, and at the same time employ rigorous empirical evaluation methods, are rare. Current instruments usually neglect the close interplay of human competencies and situational requirements.

Several research issues are identified, including the challenge to integrate psychological models into the methods employed, establishing criteria that measure the quality of the implementation, introducing flexible models that can be easily maintained and bridging the gap between HRM and KM practices in Competency Management.

2 A Competence Performance Approach

Competency Management is built on the fundamental premise that competencies as the underlying characteristics of human beings predict performance in a number of concrete situations. The review, however, suggests that most of the current approaches do not take into consideration a clear model of human competence and performance. Accordingly, some theoretical propositions mainly resulting from research in organizational psychology are reviewed to establish a starting point for a new approach in Competency Management.

The Competence Performance approach (Korossy, 1997, 1999), a psychological framework derived from Knowledge Space theory (e.g. Doignon & Falmagne, 1999; Albert & Lukas, 1999) is then introduced. It is based on a formalization of human competencies and perfor-

mance within a set theoretical and order theoretical context. The fundamental idea of the approach is to establish prerequisite relations on the set of competencies and performances, so as to allow for efficient and adaptive assessment. According to Korossy (1999), the structures that can be derived from these relations can also be interpreted as formalizing learning paths on the competence and performance level. Finally, since the Competence Performance framework is built on explicitly mapping the relationship of competencies to performance, the approach may be better integrated into actual work processes. An application of the Competence Performance framework to organizational Competency Management is then presented and illustrated with an example from the case studies (see below).

3 Empirical Studies

From an empirical point of view, Competency Management is seen as the construction and evaluation of organization specific models of competence and performance (e.g. Schmitt, & Chan, 1998). These models can be evaluated by using an evaluation research strategy and employing quality criteria from empirical research settings, including reliability and construct validation. The quality criteria make use of indices for comparing cross classifications suggested by Goodman and Kruskal (1954), methods for evaluating cluster analytic solutions, and several methods suggested in Knowledge Space research (such as distance distribution and order indices).

The results of two case studies in the automotive industry, and two investigations in an industry based research setting are reported. The first case study (study I) establishes the context for the application and examines general issues for implementation as it is usually employed in traditional approaches to competency management. Several division heads within the engineering unit of a large automotive company were interviewed about required and available competencies of some of their staff. The results were job and employee profiles showing the level of 8-10 competencies that were found to be crucial for performing in the job. The implementation procedure was informally evaluated in a lessons learned workshop. Results indicated that a large potential for a new approach would lie in a reduction of the efforts that are involved in the modeling and assessment phases.

The second case study (study II) was conducted in a very similar setting employing similar techniques. This time, the head of the HR development division was interviewed. The traditional approach of the first case study was altered to encompass the competence performance approach. A central method that is introduced, and which is used throughout the further studies, is the competence performance matrix. This matrix provides a mapping between the tasks involved in a position (performance) and the competencies needed to perform these tasks. The suitability of the competence performance approach is explored. For the further investigations a more dynamic setting is chosen to evaluate the approach.

The first investigation (study III) introduces an implementation method that is applicable for the construction of competence performance structures in dynamic, research based settings. The feasibility of the method was examined in an industry based research institute. Project managers of the company were interviewed about the competencies they had used for producing certain outcomes of research projects (documents). A repertory grid type interview technique was employed.

Competence performance structures were derived from the interviews, and their psychological and practical reality was examined. Results indicate that the approach is generally feasible, that reliable and valid assignments are produced which reflect general theoretical conceptions in Competency Management (e.g. KSAO model, see Schmitt & Chan, 1998). From a practical point of view it was found that the structures reflect the situational requirements of the work performed and organizational level variables such as strategic priorities. Open issues include the inter-individual variability that was found in constructing the models.

The second investigation (study IV) contrasted the implementation from the first investigation by employing a top-down approach and interviewing the supervisors of the employees in investigation I. In line with a long tradition of job analysis research, it was found that there was both agreement as well as disagreement between the resulting models of the two approaches. Agreement related especially to the requirements of the job. Some minor disagreement was found that points to different views of the job between the two groups. The disagreement was larger for the resulting prerequisites. Here, only minor agreement was found. Reasons for this are discussed.

The second investigation also employed an assessment procedure which – in contrast to common practice – was based on an assessment of performance in different tasks, and derived competency requirements from the Competence Performance structures. The theoretical and practical benefits of such an approach are discussed. Comparing this approach to standard procedures of direct competency assessment does not result in significant agreement. Furthermore, some inconsistencies in the assessment point to potential issues of improvement. The reasons are discussed, including validity of the structures for performance assessment and possibly inconsistencies in the two rating tasks.

4 Conclusions and Outlook

In the general conclusions, issues regarding application of the methods in organizational settings are reflected upon. A great potential for the approach is identified in dynamic work integrated settings. A practical scenario which integrates the approach within a work integrated learning environment illustrates these ideas. Furthermore, an alternative assessment procedure that is based on the structures is presented. The approach achieves a better fit with results of a traditional assessment method. It makes

Open research issues are identified especially in dealing with the large variability and differing views of the respondents, and with regard to improving the validity of the structures. Further research directions for the Competence Performance Approach are suggested to encompass integration into interviewing and modeling tools for competency modeling as well as assessment. It is also suggested that the competence performance approach be extended to encompass more data driven techniques such as automated text mining techniques employing the Vector Space Model (e.g. Lee, Chuang, & Seamos, 1997).

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