

Knowledge Management Success or Failure – What Determines the Performance of a KM-Initiative?

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Abstract: While the importance of Knowledge Management (KM) initiatives is obvious today, successfully implementing KM initiatives still poses a challenge. In this contribution we argue that an overview and integration of existing knowledge about success factors is missing and is part of the problem. Consequently we show the results of a literature review on KM success factor literature. Out of 180 publications that deal with success factors, we determined the nine most relevant publications that can be seen as representative. Homogenizing the nine different publications' terminology, we identified twelve commonly used success factors and elaborate their interpretation with respect to their contribution to KM success. As a first, qualitative step towards showing the dependency between the twelve success factors we propose to arrange them in a three-dimensional model.

1 Introduction

Next to the “classical” resources land, labor, and capital, knowledge has today become a critical determinant for the success of many organizations [20; 24; 23]. Core processes have become increasingly knowledge-intensive and management has become aware of the need to effectively manage and leverage knowledge. While the transformation towards increasingly knowledge-intense work, especially in highly developed economies, is a development that is not questioned anymore, implementing KM initiatives successfully still poses a challenge. The factors leading to successful implementations are not obvious to most companies that strive to improve their knowledge management approach. One reason for the lack of transparency in this field stems from the diversity of different research areas that contribute to a holistic understanding and with it, the complexity of KM projects. Disciplines as diverse as psychology, philosophy, sociology, ethics, economy, business administration, management science, computer science, and information systems concern themselves with KM in general and with its success in particular [15; 5; 27]. Going along with this diversity, there is also a fair number of publications that try to pinpoint the factors of knowledge management initiatives that predominantly contribute to their success. These

articles, case studies and reports each represent a valuable source of experience and information. However, an integrated view that takes the most important results into account is missing. This is especially relevant for practitioners who are unlikely to read the large amount of available literature. This is why this contribution aims at unifying the most important literature on success factors for knowledge management initiatives. The rest of the contribution is structured as follows. In chapter two we elaborate the research methodology we used to obtain our results. In the subsequent chapter we discuss our findings from the literature review. Chapter four proposes a model to structure the identified success factors. The paper concludes with a summary and an outlook.

2 Research Methodology

This contribution builds upon an extensive literature review following the methodology proposed by Baker [4], Watson and Webster [36], Torracco [35] and Fettke [16]. The search for relevant publications started with well-established literature on foundations of KM including among others [12], [30], [31], [33], and [26] and also by searching for KM review articles of respected conferences and journals. The goal of this initial step was to find the right terms to use for the tailored search for knowledge management success factors.

The literature review uses the iterative concept-centric approach described by Watson and Webster [36]. In comparison to other literature review methodologies, the concept-driven approach categorizes and structures the literature around identified phenomena and concepts and does not focus on compiling mere summaries, which is often the case in e.g. author-centric reviews [36]. The main resources for identifying the available literature included:

- Electronic libraries such as the Gateway Bayern and the local university's Online Public Access Catalog (OPAC) especially for monographs.
- The DocumentWEB and DBIS electronic journal and magazine system to access journal articles and magazines. The main keywords applied for searching were "Knowledge Management" and "Wissensmanagement".
- The EBSCO Host database was used to identify journal articles and additionally utilized to perform forward and backward searches. The search terms consisted of Critical/Key/Success Factors + Knowledge Management/KM, Erfolgsfaktoren + Wissensmanagement/WM, Sins/Barriers + Knowledge Management/KM, Barrieren + Wissensmanagement/WM, and literature review, and were applied in all possible combinations.
- The search engine Google and its literature search engine GoogleScholar were also used with the same keywords to identify additional journal papers and conferences.

After analyzing the titles and abstracts and performing forward and backward searches more than 180 sources were downloaded or physically acquired. Once an article was identified in an accessible journal, a systematic spanning search was conducted in order to identify other suitable sources within the rest of the volumes and issues of the same journal. Some of the more widely known journals and conference proceedings included:

- Journals: MIS Quarterly, Journal of Computer Information Systems, California Management Review, Harvard Business Review, IBM Systems Journal, Journal of Knowledge Management, and Knowledge & Process Management.
- Conferences: Professionelles Wissensmanagement – Erfahrungen und Visionen (2003-2009), International Scientific Conference Knowledge-Based Economy (2005), First World Summit on the Knowledge Society (2008).

The selected publications vary with respect to their research objective, applied methodology, and in their final results. They range from pure qualitative and quantitative studies, to studies that use a combined approach by succeeding an initial qualitative research phase by an empirical interview or questionnaire-based evaluation. The studies were conducted either by professionals who have prior working experience in KM or researchers that focus on success factor analysis for knowledge management projects.

3 Findings

Our goal was to identify the core factors that influence KM initiatives' success. While all analyzed publications discuss success factors, the nine publications shown in Table 1 are most often cited in KM-related publications and also cover the remaining publications' proposed success factors. Therefore, they can be regarded as central and the further analysis focuses on these publications. Extracting the nine publication's proposed success factors, we could distinguish a total of twelve success factors. Table 1 shows which of the nine core contributions proposes which success factor. Whenever different terminology was used for the same concept we adopted the most frequently used terminology. In the following we elaborate on each success factor's interpretation.

Strategy: A clear, well-planned, competitive and innovative KM strategy is one of the central means for achieving successful KM projects [28; 14]. It needs to be tightly integrated into the business strategy of an organization. The organization's strategic context provides guidance to identify KM initiatives that support its purpose and mission, strengthen its competitive position and create shareholder value [17; 8; 38; 15].

Management Leadership and Support: Management leadership and support are essential pillars and initiators for almost any business initiative within organizations [18; 2]. Their impact is even more pronounced and important to the success of KM projects, since KM initiatives are fundamentally change management projects [20; 22; 11; 29]. As part of these initiatives, change often occurs in habits and processes, the corporate culture as well as in the underlying information technology and KMS. Managers act as role models and should therefore authentically display the behavior they are trying to promote.

Author(s)	Strategy	Management Leadership & Support	Organizational Culture	Infrastructure & Roles	Measurement	Resources	Processes	Knowledge Structure & Ontologies	Information Technology & KMSs	Motivation	Training	Human Resources Management
Skyrme and Amidon [7]	X	X	X	X			X		X		X	
Davenport et al. [11]		X	X	X	X		X	X	X	X		
Liebowitz [28]	X	X	X	X				X	X	X		
APQC [4]	X	X	X	X	X				X		X	
Holsapple and Joshi [4]		X			X	X	X					
Hasanali [18]		X	X	X	X				X			
Chourides et al. [10]	X	X	X	X	X				X	X	X	X
Wong [37]	X	X	X	X	X	X	X		X	X	X	X
Hung et al. [21]		X	X		X			X	X		X	

Table 1: The extracted success factors for Knowledge Management initiatives and their discussion in the source publications

Measurement: Failing to institutionalize appropriate measurement activities increases the likelihood for KM initiatives to not reach their desired goals and this way to be considered unsuccessful [31; 37]. KM measurement is required to demonstrate the added business value and advantages of a KM project to the organization's management and other stakeholders. Without this evidence leadership support and belief will diminish and required resources will not be granted [1; 31]. The difficulty of implementing suitable measurement vehicles in organizations has been widely addressed [22; 31; 33; 27].

Organizational Culture: When launching KM initiatives the influence of culture should not be underestimated, since it strongly determines the effects of other factors such as IT support and management techniques [29]. While being a key success factors for KM initiatives, a knowledge-friendly culture is difficult to develop and entails a lengthy process if it does not already exist at least in basic form [9; 11; 37]. Based on their study of KM projects Davenport et al. [11] claim that projects which do not fit the culture of an organization will most likely not thrive. In a suitable culture new ideas, insights, and knowledge are valued highly and it fosters their creation, sharing, and application [37]. Another fundamental aspect of a knowledge-friendly culture is trust [34; 19].

Organizational Infrastructure and Roles: A central reason for knowledge not being managed well is the lack of clearly defined and established responsibilities [12]. For KM initiatives to be successful, it is imperative that organizations create a proper infrastructure and appropriate roles. Establishing lasting responsibilities and ownership in addition to making departments and employees accountable ensures the realization of KM missions and planned campaigns [18; 37; 26]. Davenport and Prusak think that “[...] the most successful organizations are those in which KM is part of everyone’s job” [12]. The setup of an organizational knowledge infrastructure involves not only the introduction of different roles. Also, the incorporation of a KM department and its place within the organization needs to be addressed. Possible organizational locations of CKOs are within IS/IT, Human Resources, or Business Management departments [28; 12].

Knowledge Structure & Ontologies: Establishing a common vocabulary plays a key role in enabling an organization’s members to communicate and collaborate with each other. For KM initiatives to be successful it is vital for employees to share this common understanding and “be on the same page” when confronted with knowledge-intensive activities during their daily routines. Davenport and Prusak [4] offer support for this argument. They found that companies who had conducted successful knowledge management projects were also the ones where the concepts of knowledge and KM were well-understood among the employees. Knowledge can be fuzzy and is often closely linked to the people who hold it. On the other hand there should be generally accepted structures to help the transfer of knowledge. Finding the right balance and supporting a common understanding is critical for the success of KM projects [11]. Additionally, as the organizational knowledge is changing over time the knowledge structure needs to be adapted accordingly to reflect the current usage pattern of the stakeholders [11].

Processes and Workflows: The development and execution of KM processes is fundamental for organizations in order (if they want) to be successful in KM [37]. If established in a way that fits the organization’s needs and its business situation the KM processes ensure an effective and efficient usage of an organization’s knowledge [20; 14]. In order to understand which processes an organization should support most, the interplay of KM processes needs to be looked at and mapped to the organization’s setup. KM processes along with their relationship among each other can be found in [3], [25] and [4; 33], of which the last mentioned enjoys most attention in the German-speaking KM community.

Information Technology and Knowledge Management Systems: The suitability and efficiency of IT systems and more specifically KM systems influence the success of KM initiatives. Often they function as key enablers for solving some of the inherent challenges organizations have to face when dealing with organizational knowledge and the implementation of KM initiatives [4; 37].

Motivation: For KM initiatives to be successful it is vital that organizations motivate their members to use established infrastructures and systems, to share and apply knowledge, and to contribute to the enhancement of the common organizational knowledge base. Members of the organization want to understand how their work becomes faster, richer, and more rewarding and how the organizational KM efforts contribute to achieving their project and work objectives more easily and efficiently [32; 22]. Therefore, KM initiatives are most successful when they are part of everyone's job [12]. According to Krcmar [23] and Davenport and Prusak [4] members of an organization are most likely to contribute and share knowledge in the following four cases 1) when they want to express an altruistic attitude and like to contribute to the common wellbeing, 2) when they are internally motivated and convinced that sharing is needed to guarantee the success of the organization 3) when they can increase their own reputation and have the chance to earn the respect of superiors and peers and 4) when they can expect concrete immediate or future rewards.

Training: Organizational KM initiatives risk becoming unsuccessful if they fail to market the purpose of KM efforts and if they do not provide adequate training on how new systems and procedures should be used [10; 22]. Specifically designed KM trainings additionally focus on increasing the acceptance of KM initiatives among employees and to develop their know-how and skills regarding knowledge and KM-related topics. Employees, who understand the importance of KM, are capable of performing KM tasks efficiently and with high quality. They can be expected to take on responsibility for knowledge-related projects and results.

Resources: Successful KM projects are largely dependent upon the amount of available resources within the organization, since their availability practically governs the quantity and quality of KM initiatives [20; 37]. Also organizations have to allow their employees to spend time to identify and acquire existing organizational knowledge and best practices and to enable them to share and contribute knowledge. When resources within a company are scarce, a focus on smaller scale KM projects should be set. They should target the most urgent knowledge-related problem areas and needs of the organization. Improvement in these areas should have the biggest impact for the organization and can help in building up trust in the value of future KM projects [11].

Human Resource Management: "Managing knowledge is managing people; managing people is managing knowledge" [13]. After all, the employees of the organization are the ones that acquire, identify, develop and apply the organizational knowledge in order to create value and achieve business objectives. CKOs and knowledge managers who supervise and conduct KM projects need to be aware of the possible gains offered by effective Human Resource Management (HRM) and the fact that it has a strong influence on the sustainability and success of their KM campaigns [10; 37].

4 Integrated view on success factors

While the analysis of literature in the previous section provided some insight in the relevant success factors for KM initiatives, the relationship between the factors is not obvious. To make a first step in this direction, we propose to structure them and in this way relate them. In KM, the three focus areas persons, organization, and technology have often been discussed as cornerstones of KM initiatives [7; 6; 23; 27]. In an organization, these dimensions can be mapped to different areas. While Technology-centric factors are likely to be implemented by an organization's IT department, the Organization-centric tasks are rather to be supported by (senior) management. In contrast Person-centric success factors strongly depend on the operational level of an organization. However, no success factor is independent of the others and neither can it only be associated to one of the three dimensions. Therefore the success factors are assigned to those parts of the triangle that we believe most influential for their proper implementation (see Figure 1). Knowing which part(s) of a company is most influential for a certain success factor helps practitioners to understand where to engage the most effort. This way the proposed structure of success factors offers practitioners a benefit. Knowing which part of a company is most influential for a certain success factor helps them to understand what to focus on.

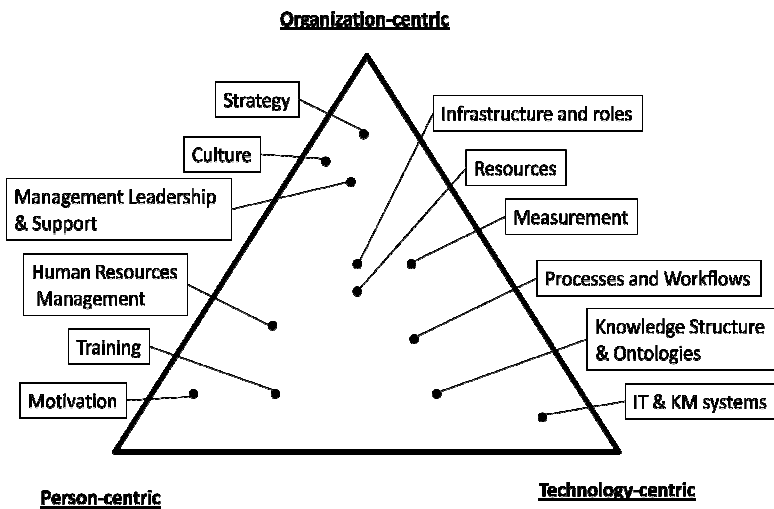


Figure 1: Integrated view on the identified KM success factors

5 Summary and Outlook

In this contribution we argued that an overview and integration of existing literature on KM success factors is missing. Conducting a literature review, we identified and described twelve success factors that were discussed in literature. During our review, we found that especially the technology dimension is often addressed only in limited depth.

Therefore we see a further contribution to the field in detailing the technology dimension to a more concrete level by identifying factors that influence KMS success.

To further point out the relationship of KM success factors and their interplay with the organization we arranged them in a structure that builds upon the three dimensions person, organization and technology. While we believe that the structure reflects the interplay considerably well, it might be a valuable next step in the line of KM success factor research, to find support for the exact arrangement in the structure.

References

- [1] Ahmed, P.K.; Lim, K.K.; Zairi, M. (1999): Measurement practice for knowledge management. In: *Journal of Workplace Learning*, Vol. 11, 8, pp. 304-311.
- [2] Al-Mabrouk, K. (2006): Critical Success Factors Affecting Knowledge Management Adoption: A Review of the Literature. In: *Innovations in Information Technology*, 2006.
- [3] Alavi, M.; Leidner, D.E. (2001): Review: Knowledge Management and Knowledge Management Systems: Conceptual Foundations and Research Issues. In: *MIS Quarterly*, Vol. 25, pp. 107-136.
- [4] APQC (2000): Executive Summary - Successfully Implementing Knowledge Management. (pp. 1-15). Houston, Texas: American Productivity & Quality Center.
- [5] Begona Lloria, M. (2008): A review of the main approaches to knowledge management. In: *Knowledge Management Research & Practice*, Vol. 6, 1, pp. 77-89.
- [6] Bullinger, H.-J.; Wildemann, H. (2002): Wissensmanagement Wissen als strategische Ressource im Unternehmen. (2nd Ed.), TCW Transfer-Centrum, München 2002.
- [7] Bullinger, H.-J.; Wörner, K.; Prieto, J. (1997): Wissensmanagement heute Daten, Fakten, Trends. (1st Ed.), Fraunhofer-Inst. für Arbeitswirtschaft und Organisation (IAO), Stuttgart 1997.
- [8] Chait, L.P. (1999): Creating a successful knowledge management system. In: *Journal of Business Strategy*, Vol. 20, 2, pp. 23-26.
- [9] Chase, R.L. (1997): The Knowledge-Based Organization: An International Survey. In: *Journal of Knowledge Management*, Vol. 1, 1, pp. 38 - 49.
- [10] Chourides, P.; Longbottom, D.; Murphy, W. (2003): Excellence in knowledge management: an empirical study to identify critical factors and performance measures. In: *Measuring Business Excellence*, Vol. 7, 2, pp. 29 - 45.
- [11] Davenport, T.H.; De Long, D.W.; Beers, M.C. (1998): Successful Knowledge Management Projects. In: *Sloan Management Review*, Vol. 39, 2, pp. 43-57.
- [12] Davenport, T.H.; Prusak, L. (2000): Working knowledge how organizations manage what they know. (1st Ed.), Harvard Business School Press, Boston, Mass. 2000.
- [13] Davenport, T.H.; Völpe, S.C. (2001): The rise of knowledge towards attention management. In: *Journal of Knowledge Management*, Vol. 5, 3, pp. 212-222.
- [14] du Plessis, M. (2007): Knowledge management: what makes complex implementations successful? In: *Journal of Knowledge Management*, Vol. 11, 2, pp. 91-101.
- [15] Earl, M. (2001): Knowledge Management Strategies: Toward a Taxonomy. In: *Journal of Management Information Systems*, Vol. 18, pp. 215-233.
- [16] Fettke, P. (2006): State-of-the-Art des State-of-the-Art. In: *Wirtschaftsinformatik*, Vol. 48, 4, pp. 257-266.
- [17] Hansen, M.T.; Nohria, N.; Tierney, T. (1999): What's your Strategy for Managing Knowledge? In: *Harvard Business Review*, Vol. 77, pp. 106-116.
- [18] Hasanali, F. (2002): Critical Success Factors of Knowledge Management - Published by the American Productivity & Quality Center.

- [19] Helm, R.; Meckl, R.; Sodeik, N. (2007): Systematisierung der Erfolgsfaktoren von Wissensmanagement auf Basis der bisherigen empirischen Forschung. In: *Zeitschrift für Betriebswirtschaft*, Vol. 77, 2, pp. 211-241.
- [20] Holsapple, C.W.; Joshi, K.D. (2000): An investigation of factors that influence the management of knowledge in organizations. In: *The Journal of Strategic Information Systems*, Vol. 9, 2-3, pp. 235-261.
- [21] Hung, Y.-C.; Huang, S.-M.; Lin, Q.-P.; Tsai, M.-L. (2005): Critical factors in adopting a knowledge management system for the pharmaceutical industry. In: *Industrial Management & Data Systems*, Vol. 105, 2, pp. 164 - 183.
- [22] Koenig, M.E.D.; Srikantaiah, T.K. (2004): Knowledge management lessons learned what works and what doesn't. (1st Ed.), American Society for Information Science and Technology, Medford, N.J. 2004.
- [23] Krcmar, H. (2010): Informationsmanagement. (5 Ed.), Springer, Berlin 2010.
- [24] Kühner, O.; König, B. (2005): Mehr Wert durch Wissen, Wissensmanagement praxisorientiert. (1st Ed.), Kohlhammer, Stuttgart 2005.
- [25] Laudon, K.C.; Laudon, J.P. (2006): Management information systems managing the digital firm. (9th Ed.), Pearson Prentice Hall International, Upper Saddle River, N.J. 2006.
- [26] Lehner, F. (2008): Wissensmanagement Grundlagen, Methoden und technische Unterstützung. (2nd Ed.), Hanser, München 2008.
- [27] Lehner, F. (2009): Wissensmanagement Grundlagen, Methoden und technische Unterstützung. (3rd Ed.), Hanser, München 2009.
- [28] Liebowitz, J. (1999): Key ingredients to the success of an organization's knowledge management strategy. In: *Knowledge and Process Management*, Vol. 6, 1, pp. 37-40.
- [29] Mårtensson, M. (2000): A critical review of knowledge management as a management tool. In: *Journal of Knowledge Management*, Vol. 4, 3, pp. 204 - 216.
- [30] Nonaka, I. (2001): Knowledge emergence social, technical, and evolutionary dimensions of knowledge creation, Oxford Univ. Press, Oxford 2001.
- [31] North, K. (2005): Wissensorientierte Unternehmensführung Wertschöpfung durch Wissen. (4th Ed.), Gabler, Wiesbaden 2005.
- [32] O'Dell, C.; Grayson, C.J. (1998): If Only We Knew What We Know: Identification and Transfer of Internal Best Practices. In: *California Management Review*, Vol. 40, pp. 154-174.
- [33] Probst, G.; Raub, S.; Romhardt, K. (2006): Wissen managen wie Unternehmen ihre wertvollste Ressource optimal nutzen. (5th Ed.), Gabler, Wiesbaden 2006.
- [34] Stonehouse, G.H.; Pemberton, J.D. (1999): Learning and knowledge management in the intelligent organisation. In: *Participation and Empowerment: An International Journal*, Vol. 7, 5, pp. 131-144.
- [35] Torraco, R.J. (2005): Writing Integrative Literature Reviews: Guidelines and Examples. In: *Human Resource Development Review*, Vol. 4, 3, pp. 356-367.
- [36] Webster, J.; Watson, R.T. (2002): Analyzing the past to prepare for the future: Writing a literature review. In: *MIS Quarterly*, Vol. 26, 2.
- [37] Wong, K.Y. (2005): Critical success factors for implementing knowledge management in small and medium enterprises. In: *Industrial Management & Data Systems*, Vol. 105, 3, pp. 261-279.
- [38] Zack, M.H. (1999): Developing a Knowledge Strategy. In: *California Management Review*, Vol. 41, pp. 125-145.