

4th Conference on Production Systems and Logistics

Why Companies Fail With Objectives And Key Results: An Analysis Of Implementation Frameworks

Clara Herkenrath¹, Gerrit Hoeborn¹, Volker Stich¹¹ FIR Institute for Industrial Management at RWTH Aachen University, Aachen, Germany

Abstract

Objectives and Key Results (OKR) is an approach that focuses on the company's goals through trust-based agreements between leaders and employees. With the OKR framework in its original form, strategic business goals are aligned with the employees' active involvement, which promotes intrinsic motivation, transparency, commitment, and alignment. Inspired by the successes at Google and Intel and shaped by its use in the tech industry, the use of OKR increased across industries. Although companies within all sectors use the OKR framework, numerous implementation efforts fail. The challenges of practitioners are not fully addressed in the development of implementation concepts for OKR. One main reason is that these challenges are not taken into account in scientific publications. The paper aims to investigate to what extent existing OKR frameworks need to be adapted to provide companies with suiting implementation guidance. Firstly, OKR is placed in the context of academically widely discussed Performance Management Systems (PMS). Secondly, criteria for successful PMS implementation are identified and used as a baseline for analyzing existing OKR implementation concepts. A systematic literature review shows the current state of research, identifying existing OKR implementation concepts from practice and theory. The OKR implementation concepts identified are systematically mapped to the series of identified criteria for PMS implementation. It is shown that the existing OKR frameworks do not address the described criteria necessary for a successful implementation of PMS, thus the adaptation of existing OKR implementation concepts is required.

Keywords

Objectives and Key Results (OKR); Performance Management Systems; Implementation Concepts, Success Factors; Digital Leadership

1. Introduction

Ongoing globalization and digitalization, as well as the associated dynamics of the economic environment, cause that companies are constantly faced with new challenges [1]. Companies must react to the accompanying speed and unpredictability of the market environment to remain competitive. This requires continuous adaptation [2]. Performance management systems (PMS) are a key instrument used by companies to continuously adapt to the dynamics of the environment. PMS offer approaches to encompass activities and processes aimed at managing employee contribution to achieve corporate goals [3]. A wide variety of PMS address different perspectives of the organization, such as the perspective of strategy implementation building on the Management by Objectives approach developed by Peter Drucker in the 1950s the Objectives and Key Results (OKR) framework was developed to incorporate operationally feasible strategic planning. Characterized by Andrew Grove and John Doerr, the OKR framework was designed and established in practice at Intel and Google. The framework of Doerr [4] and Niven and Lamorte [5] covers the fundamental idea, theoretical foundation, and underlying principles of OKR, rather than explicit individualized

implementation paths. Implementation in practice and the associated challenges are dealt upon superficially. Despite the great popularity of OKR [6], many companies fail in its implementation and as a result decide to abandon the method that was supposed to assist in the implementation of the strategy [7]. As the OKR framework gains popularity, its practical application is becoming more relevant for research, focusing on the question of strategy implementation in companies. In this context, the crucial question is why companies fail with OKR. Among the reasons, organizational factors and the unmet expectation on the framework are stressed. This paper focuses on the implementation phase, as it is precisely in during the launch phase that companies turn away from the OKR framework. The central research question of this publication is therefore defined as follows:

Do existing OKR implementation frameworks address the needs of organizations for successful OKR implementation?

To answer this question, first this paper positions OKR within performance management theory by analysing its interrelationship along the PMS implementation framework according to Ferreira and Otley [8] with the fundamental OKR theory. Subsequently, a systematic literature review is conducted to identify existing state-of-the-art approaches to OKR implementation. Through this, a holistic picture of the current state of research can be ensured. The differences between the OKR implementation frameworks and gaps in existing OKR implementation frameworks are identified by analysing them according to the success factors for the implementation of PMS by Grünbichler and Klučka [9]. Based on the analysis a recommendation for the design of a holistic OKR implementation framework is derived.

2. Theoretical Foundation

Along with its increasing popularity and application in practice, the OKR framework has gained increasing importance in research. By actively engaging employees, the **Objectives and Key Results** framework focuses on strategy implementation. According to Doerr [4], the strategy is derived from the overarching mission, vision and purpose. In this process, breaking down the objectives and key results from the purpose paves the way for an intrinsically motivated performance. Not only does the OKR framework led to specifying which goals are to be achieved, it also specifies how success can be quantified. For this purpose, the goal-setting process is reflected in a V-shape, initially from the top down and subsequently from the bottom up, including feedback from employees. this encourages transparent communication at all levels. Niven and Lamorte [5] define OKR as „*a critical thinking framework and ongoing discipline that seeks to ensure employees work together, focusing their efforts to make measurable contributions that drive the company forward*“.

Understanding of **Performance Management Systems** in theory and practice, due to the different perspectives, can differ greatly. Among the numerous PMSs, varying degrees of depth, methods of execution, and audiences are addressed and executed with a variety of tools [10]. What the different types of PMS have in common is that they enable companies to measure and manage corporate success effectively and efficiently [11]. At this point, it is important to note that the field of performance management in research is a complex, intertwined field in which research is increasingly ambiguous and different studies are contradictory. The industry's perspective on PMS is strongly influenced by the concept of output in everyday work. Heterogeneity in the conceptual understanding of PMSs in the industrial sector is reflected by the application focus, such as IT-based holistic control for steering positioning or targeting more traditional Controlling tools [12]. Industry's perspective in practice follows its own dynamics and distinguishes less distinctively between the instruments of measuring customer-driven project success and evaluation of project success by employees [13]. Besides the systems and the system elements, the research perspective focuses on the theoretical framework and the classification in existing sciences on the multidimensional measurement of performance [10]. According to Krause [14], performance management encompasses all

activities that are aimed at optimizing the organization while constantly updating the expertise and social skills of the participants at the same time as minimizing the financial, material, time, emotional and social costs.

3. State of the Art

A systematic literature review following the framework for literature reviewing of vom Brocke et al. [15] was conducted to identify OKR implementation frameworks and to analyze them based on their applicability. Therefore, search strings were specified, along which four data bases were examined for existing OKR frameworks. The four digital databases used for the literature review in this thesis are Scopus, Springer Link, IEEE Xplore, and Google Scholar. The search strings are summarized in table 1.

Table 1: Search commands for the literature review

Database	Search string
SCOPUS	ALL ("objectives and key results" AND "implementation" AND "methods") AND PUBYEAR > 2010
Springer Link	"objectives and key results" AND implementation AND methods AND framework
IEEE Xplore	("objectives and key results" OR ("Full Text & Metadata": "objectives and key results" AND "Full Text & Metadata": "implementation" AND "Full Text & Metadata": "method"))
Google Scholar	"objectives and key results" AND "implementation" AND "methods" AND "framework"

The search strings were used to screen the identified sources using three quality gates, summarized in Figure 1. To focus on the relevant search result, quality gate criteria Q1 targets the period from 2010 to 2022. Additionally, Q2 selects publications focusing on OKR and the underlying methodology. Following on from this, quality gate Q3 identifies sources that provide an overarching framework of the implementation of OKR. Publications were extracted that highlight the process of OKR, such as the OKR cycle, rather than a framework for implementation.

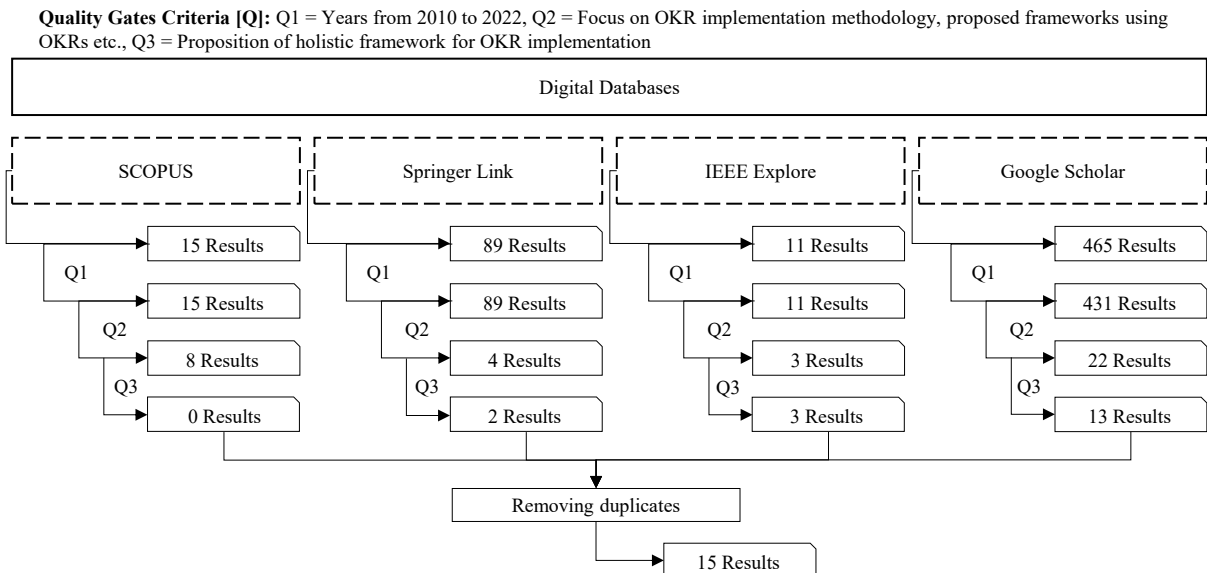


Figure 1: Summary of the literature selection process

In total, the four databases analyzed along the search strings yielded 580 results. Based on the quality gate criteria, 15 relevant OKR implementation frameworks can be identified following duplicate screening. It is striking that the ORK frameworks consider the foundation theory both as a stand-alone strategy implementation approach [4], and from a tool-driven perspective as a component of a combination of tools, on a par with e.g. scrum [16] or Big Data [17]. Following the research question, the 15 OKR frameworks identified are evaluated for sufficiency based on the PMS implementation criteria. These include the following 15 sources [24,17,18,4,25,21,19,26,27,5,22,16,20,28,23].

The study design addresses the relevance of the research question to practice. Using the systematic literature review, existing OKR implementation frameworks are identified which are applied in this form. In order to examine whether these frameworks support the successful introduction of OKR, their applicability is analyzed in the next step. Along the three phases of planning, application, and reporting for the successful introduction of PMS, the different perspectives of the OKR implementation frameworks are examined. Given that the practical application of the OKR implementation frameworks is crucial for the organizational success of the management system, the OKR implementation frameworks are analyzed on the basis of 16 dimensions. This extensive analysis shows how each OKR implementation framework addresses which implementation dimension. As a result of this analysis, it is possible to determine where there is a need to expand the OKR implementation frameworks.

4. Results

First, the OKR framework, widely discussed in practitioners, is placed in the PMS literature for the purpose of research assessment. Based on these findings, the identified OKR frameworks are examined for their sufficiency by analysing them along the core introduction phase for PMS. This systematic analysis identifies blind spots in the introduction systems.

4.1 Relations of PMS and OKR

This chapter of the paper examines the central question of to what extent the OKR framework intersects with the research perspective on PMS. Therefore, PMS are defined, and the characterizing elements holistically identified. Further, the characterizing elements of PMS are matched with the characterizing elements of OKR to evaluate the overlap. Ferreira and Otley [8] present a holistic approach of the structure and functioning of PMS with its performance management system framework. It is based on the respective literature, such as the 5 questions according to Otley [29] and the Levers of control frameworks according to Simons [30]. The framework constructs 12 level according to definition and questions, which provide holistic understanding of PMS. To position the OKR framework in PMS research, the foundational OKR frameworks of Doerr [4] and Niven and Lamorte [5] are analyzed in relation to the 12 levels of the performance management framework according to Ferreira and Otley [8], illustrated in table 2. The relation within the levels of the PMS and the OKR framework are evaluated according to the intensity indices of Probst and Gomez [31]. The intensity of effect, ranges from *o no intensity*, + *low intensity*, ++ *strong intensity* to +++ *very strong intensity*, based on the approach of vom Brocke [32]. If all 12 levels are addressed by the OKR concept it can be deduced that OKR is a PMS.

Table 2: Evaluation of relation within the levels of the PMS and the OKR framework

Levels of Performance Management System [8]	OKR Framework of Doerr [4, p. 10-27, 60-66, 82, 126, 143-148, 163,179,184-187] and Niven and Lamorte [5, p. 13-22, 78-86, 97-114, 151-155, 170-171]	Evaluation [32]
How is the organizations <i>vision and mission</i> brought to the attention of managers and employees?	Alignment with the with organization’s mission, vision and North Star value forms the center of interest. OKR to promote purposeful work, common direction of organization ‘s vision and effort.	+++
What are the <i>key success factors</i> that are believed to be central to the organization’s overall future success?	The implementation of the organizational strategy, which is implemented by OKR in day-to-day work, is identified as a critical factor for the success of the organization, conviction and buy-in at the top to drive alignment are crucial	+
What is the <i>organization structure</i> and what impact does it have on the design and use of performance management systems (PMSs)	Organizational units form the communication level of OKRs, resulting in OKR identifying unclear responsibilities. Open and visualize all parts of an organization, to each level of every department, is necessary.	++
What <i>strategies and plans</i> has the organization adopted that it has decided will be required for it to ensure its success?	Goal planning and reflection to progress are updated in the organizational units agile and short-term. The structure of the goal setting process is characterized by the continuous performance management.	+++

What are the organization's <i>key performance measures</i> deriving from its objectives, key success factors, and strategies and plans?	Employees track progress and check-in on all levels during OKR-Cycle by paring qualitative objectives and quantitative key results they are committed to.	++
What level of performance does the organization need to achieve for each of its <i>key performance measures</i> ?	Modern goal setting promotes cross-functional connectivity, peer-to-peer and team-to-team, not scaling beyond the leadership team's capacity, structure and clarity, psychological safety, meaning at work, dependability, impact of work.	+
Are <i>performance evaluations</i> primarily objective, subjective or mixed?	Measuring Output by focusing on „What“ and „How“ with quarterly evaluation, bottom-up and top-down.	++
What <i>rewards system</i> is conducted by achieving performance targets	OKR promotes intrinsic motivation of employees, particularly purpose-driven motivation with non-financial incentives, failure to achieve OKRs result in future oriented planning are qualitative with focus on the capacity-planning.	+
What specific <i>information flows systems and networks</i> has the organization in place to support the operation of its PMSs?	Through joint qualitative and quantitative goal setting bottom-up and top-down in the organization, transparent communication across the hierarchical levels is promoted, language harmonization is developed, and silo behavior is prevented.	+
What <i>type of use</i> is made of information and of the various control mechanisms in place?	New information needs are addressed obliquely, the definition of goals by qualitative Objectives and quantitative Key Results is based on a vision-based leadership.	+
How have the <i>PMSs</i> altered in the light of the <i>change</i> dynamics of the organization and its environment?	Objectives and key results are modified on an agile quarterly basis and aligned with the dynamic requirements of the organization and the environment. The OKR cycle is adapted to the organization's needs and continuously adjusted.	+++
How <i>strong and coherent</i> are the links between the components of PMSs and the ways in which they are used?	The comparison between annual performance management and continuous performance management is discussed and OKR is classified. Measuring the impact of the strategy implementation is carried out separately from the operational project management.	+

For the analysis of the OKR framework on the theoretical basis of Niven and Lamorte [5] and Doerr [4], a high level of overlap with the framework of performance management systems according to Ferreira and Otley [8] is evident. Among the 12 levels, PMSs use is the lowest fit. Three levels stand out due to their high impact intensity: vision and mission, strategy, and plans, and PMSs change. For both employees and employers, the vision and mission are the focus of attention of the OKR method. Regarding strategy and plans in the OKR method, emphasis is placed on the way to encourage effective communication and transparency. Transformation and its dynamics have been included in the broader framework, summarized in the PMS change. The analysis shows that, from a research perspective, OKR can be grouped among the PMS. Engelhardt and Möller [12] identify OKR as a system part of performance management. In line with the results of the analysis presented above, it is classified along the lines of the St. Gallen Performance Management Model (SPMM) as a comprehensive, normative performance management system with a focus on strategy implementation. Based on the analysis stated above, OKR will be referred to as a PMS.

4.2 Analysis of OKR implementation Framework

Due to the variety of PMS approaches, existing PMS implementation concepts focus on different angles. With the aim of highlighting the different key elements and comprehensiveness of the identified OKR implementation frameworks, an analysis of their scope and depth is conducted along the PMS implementation framework. Various approaches have been developed to understand the dimensions of a successful PMS implementation. The SPMM, designed by Möller et al. [12], offers an approach to guide companies through the introduction of PMS with a heavily focused controlling-related perspective. Building on these implementation models as well as other models and empirical surveys, Grünbichler and Klučka developed a three-phase model that provides a holistic framework for a PMS implementation. The authors extend their model to focus on further management approaches such as knowledge, risk, change, communication, and project management that are relevant for a successful PMS implementation. [9] Given the cross-disciplinary approach, Grünbichler and Klučka's [9] approach is used to evaluate OKR implementation frameworks. The planning phase includes all criteria that address the preparation of the implementation, whereas the application phase covers the practical implementation of the PMS. The reporting phase is dedicated to the overall evaluation of the implementation process [9]. The results of the analysis of the OKR implementation frameworks are shown in table 2. It presents the success criteria for a PMS implementation which were derived using the three-phase model. The table reviews the extent to which

the PMS implementation success criteria are reflected in the OKR implementation frameworks. The qualitative analysis results of the 15 OKR implementation frameworks are broken down into three different stages: full overlap (full ball), partial overlap (half ball), no overlap (empty ball), see figure 2.

PMS success criteria	OKR implementation framework															
[9] p.50-53	[5] p.9-170	[4] p.27-187	[19] p.136-138	[22] p.441-443	[26] p.104-110	[21] p.2-7	[25] p.2-6	[28] p.272-283	[18] p.142-151	[17] p.677-680	[20] p.i-28	[23] p.1-4	[24] p.51-54	[16] p.10-13	[27] p.212-215	
Phase 1: Planning																
Sensitize management for need of PM	●	●	○	○	●	○	○	●	○	○	○	○	○	●	●	○
Define/ concrete vision, objectives & strategies	●	●	●	●	●	○	○	●	●	○	○	○	○	●	●	○
Knowledge management	○	○	●	●	○	○	○	○	○	○	○	○	○	○	○	○
Allocation of resources	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Define key objectives in consideration of vision	●	●	●	●	●	○	○	●	●	●	●	●	●	●	●	●
Define KPIs for all areas	●	●	●	○	●	○	○	○	○	○	○	○	○	○	○	○
Risk management	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Phase 2: Application																
Adapt management system	●	●	●	○	●	●	○	●	○	○	○	○	○	●	○	●
Change management	●	●	●	○	○	○	○	●	○	○	○	○	○	○	○	○
Pilot project	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Communication management	●	●	●	●	○	○	○	●	○	○	○	○	○	○	○	○
Implement measures & KPIs	●	○	○	○	●	○	○	●	○	○	○	○	○	○	○	○
Phase 3: Reporting																
Raise acceptance	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Evaluate project implementation	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Evaluate communication	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Reviewing objectives, KPIs & measures	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Legend Full overlap ● Partial overlap ○ No overlap ○

Figure 2: Analysis of OKR implementation frameworks according to the phases of the PMS implementation

For the analysis of the different OKR frameworks, the three phases structure was used, initially starting with the **planning phase**. The planning phase includes all steps that are necessary before implementing a PMS to ensure further success. This phase defines the responsibilities of team members, their objectives, and the schedule. A closer look at the planning phase reveals that none of the OKR implementation frameworks cover all seven PMS success criteria. Seven [24,18,4,25,26,5,20] out of fifteen OKR implementation frameworks cover four criteria of the planning phase, thus reflecting the highest overlap, mainly focusing on strategy, goal setting and KPIs. On the other hand, further criteria as knowledge and risk management are less discussed. The frameworks of Higgins and Madai [21] addresses only one criterion (*risk management*) and Rahmah et al. [22] and Cao [17] cover two success criteria which also focus on goal setting and KPIs, showing the lowest overlap. The detailed analysis shows that the criterion *define key objectives in consideration of vision* is most frequently represented in the OKR implementation frameworks, within fourteen of fifteen publications. The only exception is the OKR framework by Higgins and Madai [21], which does not address this criterion. In the planning phase the OKR implementation frameworks primary concentrate on goal setting in the light of the overall vision and strategies. In contrast, *allocation of resources* and *risk management* as well as *sensitize management for need of PM* are rarely mentioned. For successful implementation of OKR, the management level must embody and embrace OKR. The leadership team must be convinced of the method so that a successful and long-term implementation is guaranteed. A lack of resource planning for the entire implementation process and a lack of risk management could trigger implementation barriers. Accordingly, it is recommended to define all necessary resources, in terms of time, personnel and consequently budget, in advance of implementation to increase planning certainty. Risk management can help to ensure that implementation risks are identified, evaluated, and corrected at an early stage.

The **application phase** aims to integrate the KPIs within the PMS, resulting in changes of organizational structure, incentive system and processes. In addition, the KPIs need to be included in the overall reporting to systematically control the objectives during the year. In the application phase, the OKR implementation frameworks by Niven and Lamorte [5] and Doerr [4] cover all of the five success criteria, whereas *pilot project* and *communication management* have a complete fit. The criterion *adapt management system* is fully addressed by Doerr [4] and partly considered by Niven and Lamorte [5]. Both, van Oijen [23] and Heinäluoma et al. [25] do not refer to *pilot project*, whereas van Erp et al. [28] does not go into more detail about *implement measures & KPIs*. It is noticeable that Rahmah et al. [22] and Berntzen et al. [24] do not consider any of the success criteria and the implementation frameworks of Cao [17] and Koldyshev et al. [26] only refer to the criterion *implement measures & KPIs*. In the application phase, it is noticeable that the frameworks especially map the PMS criteria of *communication management*, *adapt management system*, and *change management*. Accordingly, there is a high level of awareness that the implementation process requires an adaptation of the previous management system. Organizational structures and processes as well as the general incentive system need to be adapted accordingly. Communication is also considered important, ensuring that all involved parties are informed sufficiently [18,21]. In contrast, the measure of introducing a pilot project is only considered by four authors [4,21,5,28]. With the help of a pilot project, problems can be identified at an early stage and appropriate measures can be taken to increase the success of an organization-wide rollout.

The **reporting phase** serves to review the PMS implementation. Here, it is evaluated whether the KPIs are suitable, the communication fulfills its purpose, and the PMS has been accepted by the employees. Within the reporting phase solely the paper by Cao [17] includes all four implementation criteria *raise acceptance*, *review objectives*, *KPIs & measures* and *evaluate communication*. In contrast, four OKR implementation frameworks [24,18,25,21] make no reference to any of the success criteria in the third phase. Five OKR implementation frameworks [17,25,27,22,20] *evaluate project implementation* in more detail, with a high degree of overlap. *Evaluate communication*, on the other hand, is only addressed in the paper by Cao [17]. Accordingly, a high focus is placed on the evaluation of the achievement of objectives. To *evaluate communication*, on the other hand, is only addressed by one paper and therefore does not have an overall priority. The evaluation of whether and to what extent *communication* within the implementation process was sufficient can contribute significantly to the success of the overall implementation.

It can be stated that the OKR implementation frameworks cover the PMS success criteria differently. Across the three phases, the publications by Niven and Lamorte [5] and Doerr [4] each address eleven of overall sixteen success criteria, thus showing the highest overlap. It is noticeable that those OKR implementation frameworks cover the same success criteria, with different degrees of intensity. Whereas Rahmah et al. [22] covers only criteria of the planning and reporting phase, the focus of the paper by Higgings and Madai [21] is on the application phase and the paper by Berntzen et al. [24] is limited to the planning phase. Each OKR implementation framework sets different priorities and often focuses on a specific phase. The implementation framework of Cao [17] covers two of six criteria in the planning phase, whereas only one criterion is covered in the application phase. In the reporting phase, on the other hand, all criteria are partially or fully covered. The implementation frameworks of Niven and Lamorte [5] and Doerr [4] cover success criteria within all three phases, but important success criteria are still missing which can put a successful implementation at risk. In the planning phase, the criteria *knowledge management*, *allocation of resources* and *risk management* are not covered in both frameworks, and in the reporting phase the success criteria *evaluate project implementation* and *evaluate communication* are not considered. Overall, there is a stronger focus on the application phase, compared to the planning and reporting phase. Each OKR implementation framework covers individual implementation criteria but none of them covers all PMS implementation criteria. Consequently, a holistic and comprehensive framework for implementing the OKR is not available in the literature.

5. Discussion and Conclusion

In a first step, this paper has positioned OKR within the field of PMS. A systematic literature review was conducted to identify the state-of-the-art OKR implementation frameworks, applied in practice. The identified OKR frameworks were put into a comparison to the holistic PMS implementation framework and their underlying success factors of Grünbichler and Klučka [9] to answer the research question if existing OKR implementation frameworks address the need of organizations for successful OKR implementation. The analysis shows that none of the OKR frameworks cover all PMS implementation success criteria. It is striking that the OKR implementation frameworks address the application phase, in contrast to the planning and reporting phase. Furthermore, the identified OKR frameworks mainly cover goal setting and goal achievement factors, which can be measured using specific KPIs. Soft factors that are difficult to measure, such as sensitizing management or knowledge management are less often covered, which equally contribute to implementation success. Thus, a practical and comprehensive OKR implementation framework, therefore addressing the success factors for PMS implementation. Based on the overall findings it can be deduced that there is a critical need for a central OKR implementation model that incorporates all key success criteria of practical relevance. Consequently, consisting of organization- and industry-independent success criteria which include both hard and soft factors. Applying a three-phase model of prior planning, actual application and following reporting helps to specify and monitor the implementation process and may contribute to a successful implementation. Nevertheless, each implementation process requires adaptations depending on company specifics.

Acknowledgements

This research is a part of the findings of the research project "OKReady". The IGF project 21740 N of the Forschungsgemeinschaft Research Foundation FIR e. V. at RWTH Aachen University, Campus-Boulevard 55, 52074 Aachen, is funded by the AiF within the scope of the program for the promotion of industrial joint research (IGF) by the Federal Ministry for Economic Affairs and Climate Action (BMWK) based on a decision of the German Bundestag. Responsibility for the content of this publication lies with the authors. On behalf of the authors, we would like to thank the AiF for the support within the scope of this project.

References

- [1] Buchholz, U., Knorre, S., 2017. *Interne Kommunikation in agilen Unternehmen*. Springer Fachmedien Wiesbaden, Wiesbaden, 46 pp.
- [2] Bergfors, V., 2022. Sich schneller dem permanenten Wandel anpassen. *Digitale Welt* 6 (2), 72–73.
- [3] Demartini, C., 2014. *Performance Management Systems*. Springer Berlin Heidelberg, Berlin, Heidelberg, 215 pp.
- [4] Doerr, J.E. (Ed.), 2018. *Measure what matters: How Google, Bono, and the Gates Foundation rock the world with OKRs*, International ed. ed. Portfolio/Penguin, New York, New York, 306 pp.
- [5] Niven, P.R., Lamorte, B., 2017. *Objectives and key results: Driving focus, alignment, and engagement with OKRs*. John Wiley & Sons, Inc, Hoboken, New Jersey, 224 pp.
- [6] Teipel, P., Alberti, M., 2019. Vision und Strategie verwirklichen mit OKR. *Controlling & Management Review* (5), 34–39.
- [7] Maasik, A., 2018. *Objectives and Key Results: The Book: The advanced guide to using OKRs*.
- [8] Ferreira, A., Otley, D., 2009. The design and use of performance management systems: An extended framework for analysis. *Management Accounting Research* 20 (4), 263–282.
- [9] Grünbichler, R., Klučka, J., 2019. *Die Einführung eines Performance Management-Systems: Ein integriertes Implementierungsmodell für kleine und mittlere Unternehmen*. CAMPUS 02 - Fachhochschule der Wirtschaft FH-Studienrichtung Rechnungswesen & Controlling, Graz, 78 pp.

- [10] Bititci, U., Garengo, P., Dörfler, V., Nudurupati, S., 2012. Performance Measurement: Challenges for Tomorrow*. *International Journal of Management Reviews* 14 (3), 305–327.
- [11] Cocca, P., Alberti, M., 2010. A framework to assess performance measurement systems in SMEs. *International Journal of Productivity and Performance Management* 59 (2), 186–200.
- [12] Möller, K., Wirnsperger, F., Gackstatter, T., 2015. Performance Management–Konzept, Erfahrungen und Ausgestaltung einer neuen Disziplin. *Controlling* 27 (2), 74–80.
- [13] Chowdhury, S., Hioe, E., Schaninger, B., 2018. Harnessing the power of performance management. McKinsey & Company, April 5.
- [14] Krause, O., 2006. Performance Management: Eine Stakeholder-Nutzen-orientierte und Geschäftsprozess-basierte Methode. Zugl.: Berlin, Techn. Univ., Diss., 2005, 1. Aufl. ed. Deutscher Universitäts-Verlag, Wiesbaden, 307 pp.
- [15] vom Brocke, J., Simons, A., Niehaves, B., Riemer, K., Plattfaut, R., Cleven, A., 2009. Reconstructing the Giant: On the Importance of Rigour in Documenting the Literature Search Process, in: , 17th European Conference on Information Systems (ECIS).
- [16] Sowkasem, C., Kirawanich, P., 2021. A Deliverable Delay Management of Software Development in Railway Project using an OKR-Based Scrum Process, in: 2021 The 4th International Conference on Software Engineering and Information Management. ICSIM 2021: 2021 The 4th International Conference on Software Engineering and Information Management, Yokohama Japan. 16 01 2021 18 01 2021. Association for Computing Machinery, New York,NY,United States, pp. 10–16.
- [17] Cao, R., 2021. Research on Teaching Evaluation System of Higher Vocational Colleges Based on OKR and Big Data, in: IEEE the 16th International Conference on Computer Science & Education (ICCSE 2021). August 17-19, online conference. 2021 16th International Conference on Computer Science & Education (ICCSE), Lancaster, United Kingdom. 8/17/2021 - 8/21/2021. IEEE, Piscataway, NJ, pp. 676–680.
- [18] Charoenlarpkul, C., Tantasanee, S., 2019. A Proposed Employee Development Program from Objectives and Key Results: A Case Study of SG Group of Companies. *ABAC ODI Journal Vision. Action. Outcome* 6 (2), 133–151.
- [19] Klanwaree, N., Choemprayong, S., 2019. Objectives & key results for active knowledge sharing in IT consulting enterprises: A feasibility study. *Proceedings of the Association for Information Science and Technology* 56 (1), 441–444.
- [20] Trinkenreich, B., Santos, G., Barcellos, M.P., Conte, T., 2019. Combining GQM+ Strategies and OKR: Preliminary Results from a Participative Case Study in Industry, in: Franch, X., Männistö, T., Martínez-Fernández, S. (Eds.), *Product-Focused Software Process Improvement. 20th International Conference, PROFES 2019, Barcelona, Spain, November 27–29, 2019, Proceedings*, 1st ed. 2019 ed. Springer, Cham, pp. 103–111.
- [21] Higgins, D., Madai, V.I., 2020. From Bit to Bedside: A Practical Framework for Artificial Intelligence Product Development in Healthcare. *Advanced Intelligent Systems* 2 (10), 2000052.
- [22] Rahmah, A., Sukmasetya, P., Syaiful Romadhon, M., Adriansyah, A.R., 2020. Developing Distance Learning Monitoring Dashboard with Google Sheet: An Approach for Flexible and Low-Price Solution in Pandemic Era, in: 2020 International Conference on ICT for Smart Society (ICISS). 2020 International Conference on ICT for Smart Society (ICISS), pp. 1–6.
- [23] van Oijen, P., 2020. Driving Value Creation Through Proper Design of Goal Realization Frameworks. *Journal of Creating Value* 6 (2), 271–285.
- [24] Berntzen, M., Stray, V., Moe, N.B., 2021. Coordination Strategies: Managing Inter-team Coordination Challenges in Large-Scale Agile, in: Gregory, P., Lassenius, C., Wang, X., Kruchten, P. (Eds.), *Agile Processes in Software Engineering and Extreme Programming. 22nd International Conference on Agile Software Development, XP 2021, Virtual Event, June 14–18, 2021, Proceedings*, 1st ed. 2021 ed. Springer International Publishing; Imprint Springer, Cham, pp. 140–156.
- [25] Heinäluoma, E., Lannoo, K., Parlour, R., 2021. Anti-money laundering in the EU: Time to get serious. *Centre for European Policy Studies, Brussels*, 57 pp.

- [26] Koldyshev, M.V., Stoliaruk, K.S., Shpynkovskiy, O.O., Mital, O.H., Yamnenko, H.Y., Dovban, I.M., 2021. HR Management Efficiency Facotor and Their Impact on Creation of a commercial innovative product. *Journal of Management Information and Decision Sciences* 24 (6), 1–8.
- [27] Mangipudi, M.R., Prasad, K., Vaidya, R.W., 2021. Objectives and Key Results for Higher Educational Institutions–A Blended Approach as Part of Post Covid-19 Initiatives for Keeping the Institutions Abreast of the Industry Innovations, Create Future Leaders and Build the Nation. *Pacific Business Review International* 13, 46–56.
- [28] van Erp, T., Rytter, N.G.M., Sieckmann, F., Larsen, M.B., Blichfeldt, H., Kohl, H., 2021. Management, Design, and Implementation of Innovation Projects: Towards a Framework for Improving the Level of Automation and Digitalization in Manufacturing Systems, in: 2021 9th International Conference on Control, Mechatronics and Automation (ICCMA). 2021 9th International Conference on Control, Mechatronics and Automation (ICCMA), Belval, Luxembourg. 11/11/2021 - 11/14/2021. IEEE, [S.l.], pp. 211–217.
- [29] Otley, D., 1999. Performance Management: A Framework for Management Control Systems Research. *Management Accounting Research* 10, 363–382.
- [30] Simons, R., 1995. Control in the Age of Empowerment. *Harvard Business Review* (73), 80–88.
- [31] Probst, G.J.B., Gomez, P. (Eds.), 1993. *Vernetztes Denken: Ganzheitliches Führen in der Praxis*, 2., erw. Aufl., Nachdr ed. Gabler, Wiesbaden, 341 pp.
- [32] vom Brocke, J. Referenzmodellierung. Dissertation, 2., unveränderte Auflage ed.

Biography



Clara Herkenrath holds an M.Sc. RWTH degree in Civil Engineering and Business Administration from the RWTH Aachen University. She is currently doctoral candidate at the FIR Institute for Industrial Management. Her specific focus is in the area of the digital leadership and organization design for the manufacturing industry.



Gerrit Hoeborn, M.Sc. M.Sc., is head of the business transformation department at RWTH Aachen University. He joined the department after his studies in industrial engineering at the RWTH Aachen University and Tsinghua University. His research focus is business transformation and digital business strategies.



Prof. Volker Stich is head of the Institute for Industrial Management (FIR) at the RWTH Aachen University since 1997. Prof. Dr.-Ing. Volker Stich worked for the St. Gobain Automotive Group for 10 years and led the management of European plant logistics. In addition, he was responsible for the worldwide coordination of vehicle development projects.