

# Revisiting the knowledge management audit: learning from practice in a highperformance sport organisation

Conference or Workshop Item

Accepted Version

Sohal, D., Ragsdell, G., Hislop, D. and Brown, P. (2020) Revisiting the knowledge management audit: learning from practice in a high-performance sport organisation. In: European Conference on Knowledge Management, 2-4 Dec 2020, Coventry, UK. Available at https://centaur.reading.ac.uk/92915/

It is advisable to refer to the publisher's version if you intend to cite from the work. See <u>Guidance on citing</u>.

All outputs in CentAUR are protected by Intellectual Property Rights law, including copyright law. Copyright and IPR is retained by the creators or other copyright holders. Terms and conditions for use of this material are defined in the <u>End User Agreement</u>.

www.reading.ac.uk/centaur

CentAUR



# Central Archive at the University of Reading

Reading's research outputs online

# Revisiting the Knowledge Management Audit: Learning from Practice in a High-Performance Sport Organisation

Divyata Sohal<sup>1</sup>, Gillian Ragsdell<sup>2</sup>, Donald Hislop<sup>3</sup>, Peter Brown<sup>4</sup> <sup>1</sup>Henley Business School, Henley-on-Thames, United Kingdom <sup>2</sup>University of Sheffield, Sheffield, United Kingdom <sup>3</sup>University of Aberdeen, Aberdeen, United Kingdom <sup>4</sup>English Institute of Sport, Bath, United Kingdom <u>d.sohal@henley.ac.uk</u> <u>g.ragsdell@sheffield.ac.uk</u> <u>donald.hislop@abdn.ac.uk</u> <u>peter.brown@eis2win.co.uk</u>

Abstract: In the academic literature and applied practice, there is no 'one size fits all' model of knowledge management (KM), contributing to the persistent dilemma of how practitioners introduce KM in organisations. The multiple definitions and perspectives in the field have varied implications for KM implementation. Further, the organisational context plays a key role in shaping an organisation's KM strategy and how it is implemented. The literature points to the need for an integrated effort for effective KM implementation, recognising the need to simultaneously account for organisational strategy, culture and infrastructure, and multiple networks of knowledge. Knowledge audits have been cited as a critical first step in designing and implementing KM. However, the current knowledge audit methodologies predominantly adopt a systematic, snapshot and fragmented approach to inquiry conducted by external consultants. This appears to be inconsistent with the need for integrated KM, considering the interconnectedness between multiple factors or dimensions for effective KM implementation. Further, an isolated, snapshot evaluation of the context would be insufficient to study and design practice in organisations marked by complex system dynamics. This paper builds on Sohal, Ragsdell and Hislop's (2017) work-in-progress paper that proposed a KM audit methodology for conducting a systemic inquiry in a case study organisation, aimed to enhance sustainability of KM. The study was conducted in a high-performance sport organisation, identified as knowledge intensive and public sector, and characterised by complex system dynamics. The study adopted an action research approach to contribute to theoretical and practical knowledge as well as the lead author's (LA) own learning, which in turn was instrumental in the evolution of the methodology. This paper discusses the implementation of the methodology as well as LA's reflections and learning, highlighting specific revisions to the methodology.

Key words: Knowledge audit, KM strategy, complex organisations, action research.

# 1. Introduction

Over the last three decades, KM has gained significance in the academic literature and professional practice as a source of organisational competitive advantage. However, due to multiple definitions and perspectives in the field compounded by the lack of a 'one size fits all' model for practice, practitioners often face uncertainty regarding how to introduce and implement KM in organisations (Earl 2001; Becerra-Fernandes and Sabherwal, 2014). It has been stipulated that the first step towards a successful KM strategy is understanding the organisation's context and needs, the knowledge that currently exists and where it is needed, and the internal and external relationships of the organisation (Liebowitz, 1999; Latif, Drus and Shariff, 2016). Knowledge audits are thus regarded as the critical first step in designing an organisation's KM strategy by understanding the context and specific organisational needs and its subsequent implementation (Latif et al., 2016; Serrat, 2017). A knowledge audit has been defined as a gap analysis between an organisation's current knowledge health and capabilities and the desired state to achieve its strategic objectives (Liebowitz et al., 2000). Knowledge audits can help identify specific changes or improvements that can be made in an organisation's culture, business processes and technological infrastructure to leverage its knowledge for competitive advantage (Burnett, Williams and Illingworth, 2013).

This study was based in a high-performance sport organisation, positioned to conduct a knowledge audit in order to inform its KM strategy and initiatives. The knowledge audit followed the methodology proposed by Sohal et al. (2017) based on their critique of the literature and preunderstanding of the context. Specifically, they questioned the snapshot and systematic approach predominant in existing knowledge audits conducted by an objective, external consultant and their effectiveness for designing KM praxis in a dynamic, complex organisation (Sohal et al., 2017). This paper revisits their argument and the proposed methodology and discusses its application in a real-world context.

The study followed an action research approach, placing equal emphasis on theoretical knowledge, actionable insights and the researcher's own learning (McNiff and Whitehead, 2010; Reason and Bradbury, 2008; Coghlan and Brannick, 2014). Specifically, drawing from Coghlan and Brannick's (2014) insider action research approach, the research was conducted in two simultaneous and parallels cycles of actions and reflection. First, the KM audit was conducted through iterative cycles of action and reflection, studying and addressing organisational issues. The other, meta-cycle of learning (Coghlan and Brannick, 2014), stressed the LA's reflections on the research process. As such, this paper adopts an unconventional paper structure, specifically emphasising the LA's reflections from the meta-cycle of learning and critique of the KM audit methodology, which was critical in evolving its principles and practice.

# 2. Literature review

A KM strategy is defined as a plan for KM implementation, outlining the strategic objectives and focus of KM initiatives, processes and tools to leverage its knowledge resources and improve organisational effectiveness and performance (Dalkir, 2013). The literature stresses the need to align the KM strategy to the specific organisational context and strategic objectives (Hansen, Nohria and Tierney, 1999; Dalkir, 2013). Knowledge audits thus play a critical role in the evaluation of the organisational context and the design of a KM strategy.

Knowledge audits are significant as the first step in designing an organisation's KM strategy (Latif et al., 2016). Audit methodologies predominantly terminate with recommendations for KM initiatives and programmes for the organisations with little discussion on the subsequent implementation or success of these initiatives. Further, although knowledge audit authors generally recommend conducting a re-audit to monitor KM initiatives in the organisation (Latif et al., 2016), most methodologies are structured as a snapshot evaluation of the context conducted by external consultants. Sohal et al. (2017) questioned the effectiveness of this snapshot approach for designing KM praxis in a dynamic and complex organisational context. Specifically, a snapshot evaluation will lead to periodical improvements in KM practice at best, fail to account for dynamic changes in the context and leave the strategy redundant.

KM authors further stress the need for an integrated approach to KM implementation, emphasising the interaction between the organisational context, KM strategy and processes, technological support, management support, social interactions and employee motivation (Rubenstein-Montano et al., 2001; Wang and Wang, 2016; Al-Hakim and Hassan, 2016). Yet, knowledge audit methodologies predominantly involve a systematic and structured evaluation of multiple factors in the organisational context. It is argued that, although such an approach will help systematically explore multiple factors in the organisational context, it is insufficient to study interactions between these factors. Further emphasising the scientific evaluation of knowledge resources and needs, a majority of the audits are conducted by external consultants, mirroring a financial audit (Latif et al., 2016). Sohal et al. (2017) questioned this approach in organisations following the practice-based approach to KM where knowledge is inseparable from practice and context. Within a complex organisational context, a snapshot evaluation of the context conducted by an external auditor may fail to understand the emergence of practice due to historical evolution of interactions between constituent elements.

Informed by this critique of the literature, Sohal et al. (2017) proposed a KM audit methodology to address the research question: How does an iterative, systemic and participatory approach to knowledge audit increase the sustainability, integration and success of KM practice? The methodology was implemented in a high-performance sport organisation, positioned to inform its KM strategy.

# 3. Case study organisation

The study was based in a high-performance sport organisation with the strategic purpose of developing and delivering sport science knowledge and support to various sports in the UK. The organisation is identified as knowledge intensive and public sector and deemed a complex system, presenting a unique setting for the research. Ladyman, Lambert and Wiesner (2013, p.57) defined a complex system as "an ensemble of many elements" that are interdependent and interact in nonlinear ways; a linear cause and effect relationship is difficult to establish, and the interactions evolve historically. Such systems cannot be reduced to individual elements because they are "intimately intertwined" (Snowden, 2002, p.105). Internally, the case study organisation consists of multiple departments and teams, each responsible for a different aspect of sport performance. These departments and teams interact and are highly interdependent. Further, complex systems (Ladyman et al., 2013). Similarly, the case study organisation sits within the hierarchy of the UK high-performance sport system, interacting with multiple organisations to collectively develop high-performance sport in the country. Through these complex interactions, individuals operate within and across the permeable boundaries of their team as well as the organisation itself. As a result, knowledge flows within and across the organisation and the UK high-performance sport system.

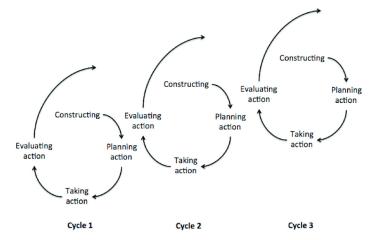


Figure 1: Action research cycles (Coghlan and Brannick, 2014, p.11)

# 4. Research methodology

The study adopted Coghlan and Brannick's (2014) insider action research (IAR) approach, emphasising the iterative nature of inquiry facilitated by the embeddedness of the LA in the case study organisation. Coghlan and Brannick (2014, p.439) defined action research as

... an emergent inquiry process in which applied behavioural science knowledge is integrated with existing organisational knowledge and applied to solve real organisational problems. It is simultaneously concerned with bringing about change in organisations, in developing self-help competencies in organisational members and adding to scientific knowledge. It is an evolving process that is undertaken in a spirit of collaboration and co-inquiry.

They described the purpose of action research as generating scientific knowledge and practical solutions as well as fostering learning from the actions. Following their conceptualisation of IAR, the study proceeded with two action research cycles operating simultaneously. Figure 1 depicts the core action research cycles that were

followed to implement the KM audit methodology, reflecting and making informed judgements about the organisational context, deciding to act and subsequently evaluating the actions (Coghlan and Brannick, 2014). Parallel to this, the meta-cycle of learning was undertaken, with the LA continuously reflecting on the research process itself. This involved assessing how each step is being implemented and how it shapes subsequent steps.

The inquiry was conducted by the LA actively participating and collaborating with the organisational members, co-creating knowledge about the context and simultaneously implementing actions. Reason and Bradbury (2008) stress that action research is emancipatory as it involves facilitating reflective inquiry in organisations, empowering organisational members to reflect on and improve their own practice. Accordingly, the implementation of the KM audit involved not only creating practical knowledge but also facilitating transformation of attitudes and practice. Further, this participatory approach to inquiry was deemed critical to highlight complex and nuanced insights on the context as well as reduce resistance to change, contributing to the success and sustainability of subsequent recommendations (Coch and French, 1948; Pasmore, 2006).

# 4.1 Data collection

The term action research refers to a research approach, rather than a specific methodology (Reason and Bradbury, 2008). It is an orientation to participatory form of inquiry, consisting of multiple qualitative and quantitative methods for data collection and analysis to facilitate triangulation and develop a rich understanding of the phenomenon under study (Craig, 2009; Bergold and Thomas, 2012). As such, multiple data collection methods were incorporated in this study. Specifically, 22 interviews were conducted across the organisational structure, supplemented with data from content analysis of strategy documents of the organisation, notes from participant observations and reflective journal entries. Data from these multiple sources was used to create a systemic understanding of the challenges, needs and opportunities in the wider high-performance sport system.

#### 4.2 Data analysis

Data was analysed following different approaches, as evident in action research studies (Craig, 2009). Primarily, a grounded theory approach was used to identify emergent themes from across the data sets (Glaser and Strauss, 1967). Further, following Craig's (2009) conceptualisation of the descriptive reality approach, multiple data sets were analysed in an integrated manner to develop a vivid descriptive narrative of the events and actions in the context. This narrative was critical to explain the process and learning that led to impact for the case study organisation. Finally, to facilitate systemic understanding and emergent practice, systems mapping was used specifically highlighting interconnectedness and interdependence between themes and actions in the context (Burns, 2014).

#### 5. Proposed KM audit methodology

Informed by their critique of the literature, Sohal et al. (2017) proposed a KM audit methodology (Figure 2), split into three iterative and interlinked parts: Pre-Audit, Focused Audit and Ongoing Audit. The Pre-Audit was positioned to clarify the rationale and scope of the audit aligned to the organisational strategy. In response to the systematic and methodical approach adopted in most existing knowledge audit methodologies, Sohal et al.'s (2017) methodology was designed as flexible and emergent, deliberately including multiple lines of inquiry from across the organisational context (Burns, 2014). Specifically, data was collected from sources not originally linked to the ongoing and historical KM efforts in the organisation. This helped highlight implicit factors in the wider context that can indirectly influence the success of KM initiatives. The Focused Audit was proposed to collect data on organisational objectives, strategic needs and enablers and barriers in the context. Finally, the Ongoing Audit encapsulated the iterative and collaborative aspect of the methodology wherein the LA collected ongoing reflections and analyses on the changing context and collaborated with the Knowledge Manager to translate them into timely actions (Sohal et al., 2017). The methodology was conducted through multiple iterations of the action research cycle, developing an emergent understanding of the challenges and needs in the context (Coghlan and Brannick, 2014; Sohal et al., 2017). This was in direct response to the snapshot approach predominant in the literature whereby the methodology aimed to collect data on the context, facilitate analysis and generate actionable knowledge in an iterative manner, resulting in emergent practice. This contrasts with the outcomes and solutions that emerge from traditional knowledge audit approaches and are structured as independent programmes to be introduced and implemented in the organisation. This iterative, emergent and participatory approach was positioned to enable systemic organisational KM, sustainable and resilient in complex and dynamic contexts.

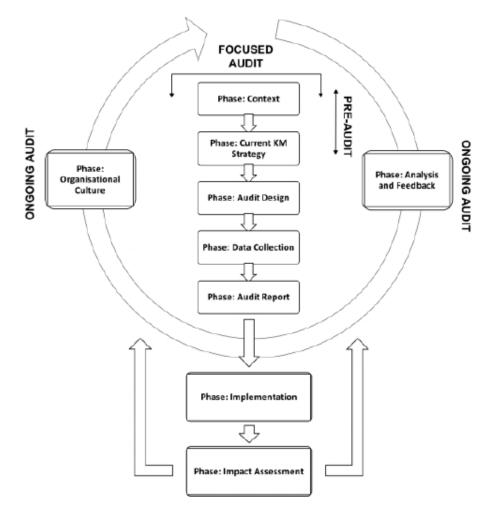


Figure 2: KM audit methodology (Sohal et al., 2017)

# 6. Implementation of the methodology

Following the principles of IAR, the audit was implemented in three action research cycles, each consisting of planning actions, taking actions, reflecting on the outcomes and the LA's learning (see Figure 1; Coghlan and Brannick, 2014). In each cycle, ongoing reflections and collaborative conversations with the Knowledge Manager were conducted for iterative analysis of the findings and timely feedback (Ongoing Audit, Figure 2).

# 6.1 Action research cycle 1: Pre-Audit

The study began with the LA's preunderstanding (Coghlan and Brannick, 2014) of the high-performance sport system, gathered through participant observations and document content analysis. This cycle corresponded with the Pre-Audit of the proposed methodology (Figure 2) and was instrumental in highlighting the complexity of the system and clarifying the scope of the audit. Through reflecting on these insights, the LA questioned the limited remit of the existing KM focus within one department in the organisation and proceeded to include

multiple perspectives to explore systemic integration of KM. Key learning during this cycle was the significance of the LA's embeddedness in the context. Specifically, through participating in the context, and highlighting and challenging the underlying system dynamics, the LA could identify contextual nuances and nonlinear interaction between elements that are likely to have been missed in a more systematic and snapshot inquiry. For example, practitioners from the case study organisation deliver support to various sport governing bodies. Funding decisions in the wider high-performance system influence a culture of knowledge sharing in these sports, potentially hindering exchange and transfer of ideas between sports. Consequently, any KM initiatives designed to improve sharing and collaboration between practitioners from such sports will need to consider the wider cultural challenges operating outside the case study organisation.

# 6.2 Action research cycle 2: Focused Audit – Phase Context

Upon defining the scope of the audit, the next phase of inquiry was conducted, representing the Focused Audit phase (Figure 2). Data was collected from 22 interviews from across the organisation, document content analysis and ongoing participatory observations to explore multiple perspectives on the strategic value of KM, challenges operating in the internal and external contexts and opportunities for embedding KM in practice. The interviews were unstructured and conducted in an emergent manner (Burns, 2014). For example, the interviews highlighted that the strategic value of KM would be in improving knowledge sharing across the wider high-performance network rather than limiting to one department. Throughout the interviews, dialectic questioning was used ('wh?' questions), empowering participants to critically reflect on their own practice and challenge their assumptions regarding KM (Kemmis, McTaggart and Nixon, 2015). The interviews were positioned as a collaborative discussion enabling the participants and the LA to collectively conceive the practice of KM for the organisation.

The key learning for the LA from this cycle was that the collaborative approach to inquiry expanded the scope of the audit from data collection to critical self-reflections for both the LA and the participants. Mirroring the participatory and emancipatory features of action research, the participants had an opportunity to clarify theoretical concepts of KM and reflect on how they can embed these principles in their own practice. Consequently, actions that emerged were designed and implemented by the organisational members, thereby maximising engagement and embeddedness in practice. Further, through asking higher-order questions (e.g., What do you understand by KM? Why is there a need to improve knowledge sharing?), the LA challenged the underlying assumptions of practice in the context (Burns, 2014). The purpose of the audit consequently evolved from delivering practical solutions, tools and processes to facilitating the emergence of systemic solutions leading to embeddedness of KM in ongoing practice.

# 6.3 Action research cycle 3: Focused Audit – Phase Current KM Strategy

Knowledge audits have been defined as a gap analysis between the current and ideal knowledge health of an organisation to deliver competitive advantage (Burnett et al., 2013). Cycle 3 was conducted as a gap analysis of the existing KM strategy and practices of the organisation against the findings from Cycle 2. Specifically, multiple collaborative discussions were conducted with the Knowledge Manager on the historical evolution, present focus and future direction of the KM strategy. These were critical in highlighting opportunities for developing the strategy further, embracing the nonlinear interaction between multiple elements.

The LA's reflections in this cycle revealed that the collaborative relationship with the Knowledge Manager helped develop shared understanding of practice. Specifically, the systemic solutions that emerged were being implemented by the Knowledge Manager and had become embedded in his practice, evidenced by shared language and similar views on the purpose and strategic value of KM. For example, the Knowledge Manager discussed being more critical about decision making, aligning to strategic needs of the organisation and incorporating an integrated perspective on implementation, including people, processes and structure.

#### 6.4 Design and implementation of actions

The audit facilitated the emergence of three strategic actions in the organisation that were owned by different people in the system. First, the Knowledge Manager continued the audit inquiry within smaller teams across the organisation to benchmark and improve practice by delivering tailored support. Second, the organisation commissioned a further project to conduct an organisational network analysis to optimise the network of expertise across the high-performance sport system, thereby adopting systems view of KM in the context. Finally, the remit and scope of KM evolved strategically to facilitate individual and organisational learning, thereby embedding KM with the organisation's learning and development function. Thus, the actions that emerged were systemic in nature, challenging the underlying assumptions of practice rather than standalone tools and programmes. The actions emerged out of the multiple lines of inquiry conducted across the context and subsequently owned by different teams, becoming embedded in the organisational structure. This enhances the sustainability of practices, as they should continue beyond the departure of the researchers as well as individuals in the relevant teams, and their resilience against emergent changes in the context.

#### 7. Meta-cycle of learning

This section discusses the LA's reflections and learning from the research, mirroring Coghlan and Brannick's (2014) meta-cycle of learning. First, the implementation of the audit was analysed along key themes, discussing the implications for sustainability of KM practice. Thereafter, the LA's reflections and critique of the KM audit methodology (Sohal et al., 2017) are outlined.

#### 7.1 Key themes

The KM audit methodology was proposed to enhance the success and sustainability of KM, operating in complex organisational contexts (Sohal et al., 2017). Set against a complex and dynamic context that is constantly changing, sustainability of KM is critical to ensure continuous competitive advantage for the organisation. Sustainability in this research was defined as:

Feature 1: KM delivers continuous competitive advantage

Feature 2: KM is systemic and embedded into organisational practice

Feature 3: KM can evolve in emerging contexts

The LA's learning highlighted three key themes critical to facilitate sustainability – they are now discussed.

# 7.1.1 Iterative inquiry

A specific critique of the existing literature was that traditional knowledge audits appear to follow a structured plan, culminating in individual solutions to be implemented in the organisation. There is little known about the implementation and long-term success of these solutions. Subsequently, the methodology was designed as an iterative process; reflexive iteration was stressed to continuously revisit data and analysis to develop meaning in an emergent manner (Srivastava and Hopwood, 2009; Sohal et al., 2017). In practice, this was accomplished through the multiple iterations of the action research cycle (Coghlan and Brannick, 2014). The iterative approach was also embodied in the Ongoing Audit whereby the LA continuously collected and analysed data from focused inquiry as well as participation observations from the wider context. These were regularly fed back to the Knowledge Manager to translate into actions in a timely manner. For example, the remit of KM was previously limited to one department in the organisation. As a result, the audit was similarly limited to informing practice in this department. However, considering the complex networks of knowledge and relationships across the highperformance system, the scope of the audit expanded. Subsequently, the Knowledge Manager gradually extended the remit of KM to include sports and other organisations in the system. Thus, the iterative approach helped evolve the audit in line with the emerging opportunities in the organisation to progressively include multiple lines of inquiry and develop a rich understanding of the context. The subsequent actions simultaneously translated the insights into practice to improve organisational engagement with KM in an emergent manner. Embodiment of this iterative approach will be critical to continuously review and evolve KM practice (Feature 3) and deliver continuous competitive advantage (Feature 1) in dynamic contexts.

#### 7.1.2 Systemic inquiry

The high-performance sport context was identified as complex and dynamic, constantly changing and evolving. Burns (2014) highlighted that change in complex systems cannot have a simple linear trajectory. Instead, it is emergent, interrelated and unpredictable. Further, sustainable change in such contexts requires a systemic understanding of how issues are interrelated and evolve, emphasising change in underlying system dynamics rather than just factors that have direct impact on the problem. A whole systems view was thus emphasised in the implementation of the audit, deliberately including multiple lines of inquiry to identify factors and trends in the wider context that may have otherwise been missed in traditional, linear forms of inquiry. For example, observations from the wider context revealed that various funding and political constraints operating in the wider high-performance system have a nonlinear impact on how organisational members share knowledge. Consequently, designing solutions that focus on knowledge sharing within one department in isolation will appear superficial rather than leading to sustainable change. Embracing the complexity, organisational members were instead empowered to view the organisation as interacting and dependent on other organisations in the high-performance, collectively developing sports and performance in the country. This perspective on performance will facilitate collaborative ways of working, making it easier to share knowledge across departmental and organisational boundaries. The strategic purpose of the audit thus expanded beyond independent KM solutions and programmes seen in the traditional audit studies, to facilitate systemic solutions that challenge the underlying system dynamics operating in the context (Feature 2).

#### 7.1.3 Participatory inquiry

Another critique Sohal et al. (2017) made was regarding the snapshot inquiry conducted by an external consultant seen in the traditional audit methodologies. Such inquiries tend to follow well-defined structures and lines of inquiry. However, this research argues that predetermined structures of inquiry would fail to identify unique characteristics and factors in the context that could have significant impact on KM practice. Following the participatory approach of action research, the LA participated in the context as an employee, iteratively observing, collecting and analysing data. Further, the interviews were designed as collaborative discussions where the organisational members were empowered to critically reflect on their own engagement with KM. This helped embed principles of KM as individuals reflected and adapted their own practice. For example, one interview with a senior employee led to reimagining the purpose of KM to facilitate individual and organisational learning. This enabled the emergence of the learning and development function of the organisation, with KM as a key element. Thus, KM became embedded into practice to facilitate a core strategic purpose of the organisation, that of people development. Overall, participatory inquiry led to shared understanding of practice, wherein the emergent actions were collectively informed and owned (Feature 2). Further, as the actions became embedded into organisational purpose and practice, they should be resilient to contextual changes and staff turnover (Feature 1).

# 7.2 Critique of methodology

The meta-cycle of learning facilitated critical reflections on the KM audit methodology. Primarily, the principles of the proposed methodology emphasised iterative inquiry that emerged aligned to the needs and opportunities in the context. Further, multiple lines of inquiry were incorporated, facilitating systemic understanding of multiple factors in the wider context. Yet, the model depicted in Figure 2 appears linear and rigid, adhering to a fixed plan for implementation. Drawing from the recommendations of knowledge audit authors, the methodology originally adopted key phases from the existing audit methodologies. For example, Phase: Audit Design (Figure 2) was proposed to design and adopt specific audit tools based on the needs of the context identified in Phase: Context. However, reflecting iteratively on the research question and the proposed methodology, there are inconsistencies between the model depicted in Figure 2 and its implementation in practice, which was more emergent in reality. Specifically, the LA was fully attuned to the emerging changes in the context, evaluating and reflecting on the needs and opportunities and subsequently adapting inquiry. This allowed for a richer and more systemic understanding of the wider high-performance context. Consequently,

the LA discarded the model as a plan for implementation, emphasising instead the principles of practice, namely an iterative, systemic and participatory approach to inquiry.

Further, interviews were initially proposed to collect data on the needs and opportunities in the context. However, the collaborative discussion perspective on interviews emerged from practice when organisational members and the LA engaged in a dialogue on KM. Specifically, instead of asking questions with the purpose of collecting data, the LA asked higher-order questions (e.g., Why do we need KM? How might you engage with KM?) to facilitate reflections and challenge assumptions. The participants responded positively to this approach, being able to understand the principles of KM and how they engage with them currently or henceforth. Informed by this learning, collaborative and participatory inquiry became a key feature of the inquiry.

Reflecting retrospectively on the initial proposal, the methodology was designed to inform specific solutions albeit informed by systemic understanding of the context, evident in Phase: Implementation and Phase: Impact Assessment (Figure 2). In practice, specific actions were informed in an emergent manner. Further, through highlighting and challenging underlying assumptions, key systemic solutions emerged to bring about change at all levels. These were strategically significant and became integrated into core purpose of the organisation, thereby enhancing their sustainability in emerging contexts. Thus, although the three action research cycles presented in this paper appear to reflect the preliminary phases of a knowledge audit (Figure 2), the iterative, systemic and participatory inquiry facilitated the implementation of all the phases depicted in the model in a more cyclical and holistic manner, simultaneously studying the context and facilitating change in practice.

A key learning was regarding the overall purpose of knowledge audits. Valmohamaddi and Ghassemi (2016) discussed the need to remove any barriers before and during KM implementation to maximise success. Knowledge audits are regarded as the first step in designing the KM strategy (Latif et al., 2016). However, this study showed that through adopting systemic and participatory inquiry, practice can simultaneously emerge from an audit inquiry becoming embedded in the organisation. As such, knowledge audits can play a critical role in design of a KM strategy as well as its simultaneous implementation, reviewing and evolving practice in live contexts. Thus, this study directly challenged the 'critical first step' identity of knowledge audits, demonstrating instead their role in assessing and improving KM practice in a continuous, emergent manner.

These reflections highlighted that considerable revisions are needed to the methodology proposed by Sohal et al. (2017) specifically underlining the philosophy and principles of practice demonstrated in this study.

#### 8. Conclusion

This paper is based in a complex organisational context of high-performance sport that informed the audit methodology and practice. It presented LA's key learning from the implementation of Sohal et al.'s (2017) proposed KM audit methodology, discussing the implications of iterative, systemic and participatory approach to inquiry for the sustainability of KM. Further research is recommended to assess the methodology and implications for other contexts. Furthermore, although organisational network analysis emerged as a further line of inquiry from the audit, future research on knowledge audits will benefit from using this methodology to study complex interplay of social, human and organisational capital in organisations (Swart, Bowman and Howard, 2018; Ujwary-Gil, 2019). Finally, embracing the features of action research, writing this paper itself contributed to ongoing learning and further insights. Subsequent papers will present the evolved KM audit methodology, positioning it in future directions in the field as well as implications for practice.

#### 9. References

Al-Hakim, L.A. and Hassan, S., 2016. Core requirements of knowledge management implementation, innovation and organizational performance. *Journal of Business Economics and Management*, 17(1), pp.109-124. Becerra-Fernandez, I. and Sabherwal, R. (2014). *Knowledge management: Systems and processes*. New York: Routledge.

Bergold, J. and Thomas, S., 2012. Participatory research methods: A methodological approach in motion. *Historical Social Research*, 37(4), pp.191-222.

Burns, D. (2014). Systemic action research: Changing system dynamics to support sustainable change. Action Research, 12(1), pp.3-18.

Burnett, S., Williams, D., and Illingworth, L. (2013). Reconsidering the knowledge audit process: Methodological revisions in practice. *Knowledge and Process Management*, 20(3), pp.141-153.

- Coch, L. and French Jr, J.R., 1948. Overcoming resistance to change. *Human Relations*, 1(4), pp.512-532.
- Coghlan, D. and Brannick, T. (2014). Doing action research in your own organization. London: Sage.
- Craig, D.V., 2009. Action research essentials. San Francisco: John Wiley and Sons.
- Dalkir, K., 2013. Knowledge management in theory and practice. New York: Routledge.

Earl, M., 2001. Knowledge management strategies: Toward a taxonomy. *Journal of Management Information Systems*, 18(1), pp.215-233.

Glaser, B.G. and Strauss, A.L., 1967. The discovery of grounded theory. Chicago: Aldine.

- Hansen, M.T., Nohria, N., and Tierney, T. (1999). What's your strategy for managing knowledge? *The Knowledge Management Yearbook 2000–2001*, 77(2), pp.106-116.
- Kemmis, S., McTaggart, R., and Nixon, R. (2015). Critical theory and critical participatory action research. In: H. Bradbury, ed. *The Sage handbook of action research*. Los Angeles: Sage, pp. 454-464.
- Ladyman, J., Lambert, J., and Wiesner, K. (2013). What is a complex system? *European Journal for Philosophy* of Science, 3(1), pp.33-67.
- Latif, A.S.A., Drus, S.M., and Shariff, S.S.M. (2016). A review of knowledge audit process and tools. *Information*, 19(7B), p.2773.
- Liebowitz, J. (1999). Key ingredients to the success of an organization's knowledge management strategy. *Knowledge and Process Management*, 6(1), pp.37-40.
- Liebowitz, J., Rubenstein-Montano, B., McCaw, D., Buchwalter, J., Browning, C., Newman, B., and Rebeck, K., 2000. The knowledge audit. *Knowledge and Process Management*, 7(1), pp.3-10.
- McNiff, J. and Whitehead, J. (2010). You and your action research project. London: Routledge.
- Pasmore, W., 2006. Action research in the workplace: The socio-technical perspective. In: P. Reason and H. Bradbury, eds. *The Sage handbook of action research*. London: Sage, pp.38-48.
- Reason, P. and Bradbury, H. (2008). *The Sage handbook of action research participative inquiry and practice*. London: Sage.
- Serrat, O., 2017. Knowledge Solutions. Singapore: Springer.

Snowden, D. (2002). Complex acts of knowing: Paradox and descriptive self-awareness. *Journal of Knowledge Management*, 1(2), pp.100-111.

- Sohal, D., Ragsdell, G. and Hislop, D. (2017). Towards sustainable KM in high-performance sport. In: Marimon, F.... et al.,(eds.) *Proceedings of the 18th European Conference on Knowledge Management (ECKM), International University of Catalonia, Barcelona, Spain* (pp. 1212-1219). Academic Conferences and Publishing International Limited.
- Srivastava, P. and Hopwood, N. (2009). A practical iterative framework for qualitative data analysis. International Journal of Qualitative Methods, 8(1), pp.76-84.
- Swart, J., Bowman, C., and Howard, K., 2018. Knowledge assets: Identification and integration. In: J. Syed, P. Murray, D. Hislop and Y, Mouzughi, eds. *The Palgrave Handbook of Knowledge Management*. Cham: Palgrave Macmillan, pp. 273-303.
- Ujwary-Gil, A., 2019. Organizational Network Analysis: Auditing Intangible Resources. Routledge.
- Valmohammadi, C. and Ghassemi, A. (2016). Identification and prioritization of the barriers of knowledge management implementation using fuzzy analytical network process: A case study of the Iranian context. VINE Journal of Information and Knowledge Management Systems, 46(3), pp.319-337.
- Wang, Y.M. and Wang, Y.C., 2016. Determinants of firms' knowledge management system implementation: An empirical study. *Computers in Human Behavior*, 64, pp.829-842.