Knowledge Management and Benchmarking for Health Care System Development Activities

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Abstract: Knowledge management (KM) has a central role in developing health care services both at the organization and at the system level. Benchmarking can be used as a tool in KM especially for knowledge creation and acquisition, but also for knowledge sharing phases of KM process. In the end, the value created by benchmarking is still measured in the knowledge utilization phase. In all of these KM process phases there can be several challenges for successful benchmarking. In this paper, the benefits and challenges of benchmarking as a tool for KM is studied through two empirical, qualitative case studies from the Finnish health care system. Empirical findings suggest that more effective benchmarking can be achieved by strengthening strategy orientation and systematic approach. Strategy-driven benchmark practices ensure that benchmarking is targeted correctly. In turn, systematic approach can be increased through well-planned knowledge acquisition, sharing and documentation, and by harnessing operations in networks as a goal-oriented part of the development of the health care organizations' competencies and operations.

1 INTRODUCTION

Health care systems are one of the most critical systems in societies (Keskimäki et al. 2019) and are a solid foundation for the daily life of citizens. Especially in the midst of crises, such as the COVID-19 pandemics or wars which cause massive effects around the world, resilience is required from healthcare systems. The resilience of the health care system can be seen in how quickly and at what capacity health care can produce and provide health care services to the entire community in the event of a shock. (Lo Sardo et al., 2019) Knowledge management (KM) has been identified as one of the key factors in developing resilience (see e.g. Irfan et al. 2022; Mafabi et al., 2013). The cornestones of KM for development activities according to the work by Sharma et al. (2013) can be listed as knowledge creation; knowledge transfer and diffusion, and knowledge utilisation and exploitation. As Sharma et al. (2013) have stated, in many cases KM for development activities requires benchmarks. Benchmarking enables the process of acquiring and transforming explicit and tacit knowledge (Massa & Testa, 2004), which plays a central role in classic KM models (Nonaka, 1994).

Benchmarking can be defined as the comparison of strategies or processes within different industries; finding best practices or benchmark can enhance learning in the organisation (Grayson, 1992; Watson, 1994). Furthermore, benchmarking can prevent unjustified complacency in an organisation, relying on your own knowledge too much, for example (Zairi, 1994) and it can also enhance problem solving (Andersen and Moen, 1999). Thus it is no surprise that an increasing need for benchmarking has been identified in the public sector too (Raymond, 2008; Hong et al., 2012). To succeed, benchmarking needs management support, as a strategy-based benchmarking process needs to be planned, organised and managed besides requiring, understanding of the organisation´s own processes before benchmarking (Grayson, 1992). However, best practices are not always transferable but may need modifications because of the cultural context or sectoral legislation (Watson, 1994).

Municipalities, including cities, often play a key role in developing healthcare in societies. Thus, they have huge responsibilities and face many challenges in their development activities in the healthcare context. In this paper, we aim to identify the benefits and challenges of benchmarking in two cases from Finland: a city organization involved in organizing

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health care services and a Wellbeing services county of Pirkanmaa.

The remain of the paper is organized as following. Theoretical bases of benchmarking is first introduced. Research method and the case organizations are then briefly introduced and followed by the description of the key results of the empirical study. The paper is finalized by the conclusions and discussion section.

2 BENCHMARKING PROCESS

The benchmark process consists of many sources of information, various actors and step-by-step phases of different tasks. Benchmarking can target the individual or team level, organizational level, urban, regional or national level. (Spendolini, 1992) For example, a single comparison can be made at city level, with the aim of finding out how the city ranks on a specific theme in a global-level comparison. Another identifiable target could be the comparison of the best practices regarding a product or process. (Wolfram Cox et al., 1997) The tools of the benchmarking process that are selected are also influenced by whether the benchmarking is being carried out to compare the organisation's own practices or learning (Braadbaart and Yusnandarshah, 2008), strategy-level planning, strategic choices or implementations (Chase, 1997), or to compare the performance of the organisation against other organisations (Kim and Lee, 2010). This paper considers benchmarking through Anand and Kodali´s benchmarking model (2008). The modified steps of the benchmarking actions are introduced in Figure 1 below.

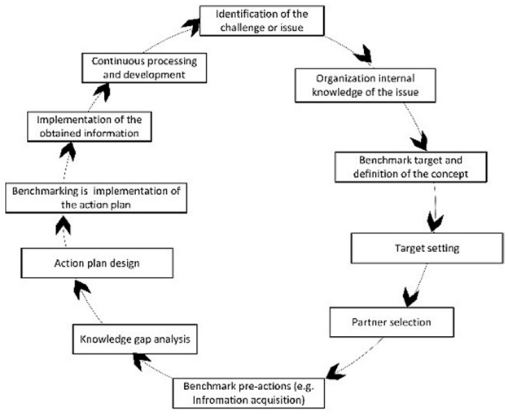

Figure 1: Benchmarking process steps (modified from Anand and Kodali, 2008).

The benchmarking *process* begins by identifying the topic, i.e. what kind of new and comparable information is needed. There will be a lot of internal tacit knowledge in the organisation, and it is worth finding out about the organisation´s own knowledge and expertise in the topic.

A more accurate *definition of the benchmark* is an important step. Framing a topic with a specific concept helps the benchmarkerkers in the data acquisition process (e.g., Francis and Holloway, 2007). The point of comparison in the benchmarking should also be limited, for example, regional delimitation would targets the data acquisition source material more precisely.

The setting of a target is important in order to clarify the idea of the benchmarking objectives and to have a common understanding of what one wants to achieve (Watson, 1994). Target setting is also important for assessing subsequently whether the desired information was obtained and whether the objectives set by the benchmarking were achieved.

Choosing a partner means, selecting a partner to carry out the process itself or other collaborators. Knowledge at the network level is multidimensional;, partners share industry specific knowledge with members of the network, as well as the organisation's internal knowledge (Sammarra and Biggiero, 2008) Therefore, shared resources in implementation guide the benhmarkers to focus on their own use of know-how in the process itself. For example, external organisations or research institutions may offer their services to support the partial implementation (e.g. literature review, interviews, etc.) or the process implementation as a whole.

Before the actual visit the benchmarking terget, to another city or country, benchmarking *pre-work* includes the information acquisition process. There are different search portals or databases for searching for and analysing targeted information about products, services or processes, e.g. case studies, specific themes, cities or organisations that have been made earlier (Castro and Frazzon, 2017). It is worth formulating a few relevant benchmark questions with the team is good to formulate in order to reflect on and find answers to the benchmarking challenge or issue in advance. Based on the benchmarking material already found, a data gap analysis will reveal what has already been studied on a particular topic (and where).

The development of the benchmarking plan will help to focus on the essential in the information search: objectives for the benchmarking and how to implement the benchmarking (e.g. visit, online meeting, consultancy or database-based survey). It is also a good idea to include, for example, the intended contact persons, the scheduling of operations and the

persons responsible for the different stages in the process itself (Watson, 1994).

The benchmarking process also includes the *implementation of the action plan* (Shiem-Shin Then, 1996), which needs to be flexible. For example, the original contact persons may change to another person who uses their own networks to lead the process perhaps in a different direction than planned. Otherwise, in this phase it is essential to keep in mind the objectives of the benchmarking and the benchmark questions, to which answers are being sought. If a large group participates in a visit or network meeting, sharing the research questions among the group members will help to focus on capturing the most relevant information from the discussions. The obtained information can be documented later.

The *obtained benchmark information* needs a *implementation plan* as well (as part of the action plan); what and how the information is to be shared with a wider range of organisations, what information is to be shared publicly, how the results can be documented easily and quickly, and how to implement the obtained experience in the organisation's activities or whether pilots are to be carried out (Feizabadi et al., 2019). After these questions, the organisation will evaluate what was learnt in the benchmarking process, and share the lessons learned more widely with the public. Simultaneously, the final stage of the benchmarking process, continuous processing and the development phase, will lead the organisation to consider how the data on different issues can be utilised and how the experiences gained from the compared objects can be implemented in its own operations, strategic planning or decision-making processes.

3 RESEARCH METHODS AND CASE STUDY DESCRIPTION

The case studies focuses on a medium sized city (referred to later in the text as City) in Finland. The City has a key role in organizing the healthcare services for the citizens in the municipal area in close cooperation with other local and national level authorities. In order to provide empirical insights of the current situation of using benchmarking as a tool for knowledge management and development activities, semi-structured interviews and facilitated workshops were organized in first case. The participants represented the different service units with various positions in the City's organisations. A total of 30 interviews were conducted from December 2020 to January 2021, recorded and transcribed afterwards. The interviewees' positions in the organization's hierarchy varied from coordinators on the operational level to the upper management. The interviews were analysed using content analysis. The workshops were held in spring and autumn 2021. The second case had six facilitated workshops in autumn of 2021. The participants represented different health care and rescue service units with various positions in the organizations of the municipalities in Pirkanmaa area. With total 55 participants of which some of the participants were taking part of several workshops. During the workshop the more detailed explanation of the results was asked from the participants to get deeper understanding of the benchmark activities in Wellbeing services county of Pirkanmaa. In the following section we introduce, how the benchmarking concept was understood, how the information was stored and knowledge shared as well as the challenges and benefits of benchmarking identified in the case studies.

4 CASE STUDY RESULTS

In the current situation, benchmark is understood as learning from others, the exchange of best practices, experiences and exchange of knowledge. The important role of benchmarking was in the utilization, evaluation and comparison of different issues concerning the knowledge obtained. Benchmarking enabled the own positioning of the City with regarding to health care providers with different actors, countries or cities.

Currently, benchmarking activities are carried out in different service units. In some units, benchmarking has become part of the work activities and culture, while on the other hand, benchmarking is not considered to be part of the work tasks at all in some units, although there is pressure for change. Benchmarking activities currently lack planning and systematicity, and the emphasis is more on the random and unstructured nature of benchmarking operating management. The basis and objectives of benchmarking are derived from the City's strategy (especially in development projects, new services or emphasized priorities); however, this needs more active internal presentation and structuring. Benchmarking activities do not appear as part of the units' annual planning, except large for scale projects, in which case the needs for benchmarking are comprehensively written down in the action plan (i.e.

what items need to be benchmarked, goal setting is considered and scheduled and the implementation of the results is planned).

The cases addressed the utilisation of benchmark data and information, storage, sharing and implementation in benchmark activities. Currently, benchmarking information is not collected, stored or shared systematically using any program or tool. The information remains with the individual employee, who thus accumulates large amounts of tacit knowledge. Information storage is often in a private computer or network folder, and access to the data is limited. The means for result sharing are team meetings or management teams. Currently, the benchmark information and results are distributed randomly, and there is no mutually agreed practice for storing or sharing of benchmark information and result. Therefore there was a wish to develop a wide range of services provided by the organisation, such as a handbook or model for making an impact on benchmarking, a means of prior preparation, easy and practical guidance, a way to implement benchmarking, training in benchmarking, and also practical assistance for the benchmarking process and supporting materials for learning and utilization of health care IT systems.

Empirical results highlighted increasing understanding of benchmarking as such, and the fact that benchmarking process enhanced their understanding of the benchmarked issue. In benchmarking, "there is no need to reinvent the wheel", but benchmarking makes it easier to set the scale, identify errors, gain objectivity and phenomenon-based examination" said one of the interviewees. Benchmark activities are often reflected positively in the operating and work culture, creating trust, openness and co-creation between different actors in international cooperation.

The benefits of benchmarking identified in the workshops, especially in the health care context include learning from others and particularly, the need to make tacit knowledge visible and shared. Benchmarking offers a tool for forming the security situational picture of the overall health and welfare sector at the national level, for example (i.e. risk evaluation or administration or leadership needs). Beside learning and the situational picture, benchmarking reveals the opportunities for co-operation between different actors in a certain field. Furthermore, technology is developing rapidly and technological solutions in the health and wellbeing sector require constant learning, and benchmarking was seen as a tool for co-learning.

There are also challenges or obstacles to benchmarking. Our results highlighted time, competence and human resources as the challenges faced in benchmarking. The network challenges identified were different cultures, differences in services and systems (i.e. Finnish social security, education arrangements, etc.) and language issues. However, the City's internal policies and rules (i.e. travel rules) constrain benchmarking operations. The identified challenges in health care become emphasized in the transformation of the operational environment; technology shapes the operational environment and the learning requirements are continuous: increasing customer needs lead to a more and more to customer-oriented approach and different experiences from other actors are needed for service development. The participants emphasized the need for support for evaluation, object definition and vision formulation, and benchmarking is one tool for these. The empirical results highlighted several aspects of the benefits as well as challenges (Table 1).

Table 1: Identified benefits and challenges of benchmarking in the case studies.

BENEFITS	CHALLENGES
LEARN Lessons learned, expanding your own understanding and experiences, new insights **ACT** Trust, cooperation, internationality, set scale for operations, positioning **DEVELOP** New ideas, piloting, co-creation, reflected in the operating culture, enhanced knowledge, attitude change	**RESOURCES** Lack of time for benchmarking, implementing new ideas random **INFORMATION** Person-linked tacit knowledge, employee turnover, documentation, knowledge exchange and sharing **CULTURE** System and cultural differences, language issues, comparability, alignment with context **PROCEDURE** Bureaucracy, policy

5 CONCLUSIONS AND DISCUSSION

At its best, benchmarking information should be of high quality and easily accessible to support decision makers. In order to ensure the functioning of this chain, it is necessary to reconcile both the more technical side (such as functioning information systems to enable data storage) and the softer, more

human side. One practical tool for information processing could be the information management process model developed by Choo (2002), which begins *with defining information needs* and *acquiring information.* The d*ata analysis* phase is when data collected from different sources is analysed. The next step in the process is *information sharing and utilisation*. However, information will only become valuable when it is used in decision-making and operational development, and when real changes in the organisation's operations take place. It is essential to evaluate the changes through *measuring* and what is *learned* from the benchmarking process. In that way, by identifying new development needs, the information management cycle starts again.

As in the benchmarking process, the information process requires the *selection of the theme* and the *definition of the concept* of the issue; what is actually to be examined in benchmarking. The *object setting* for benchmarking guides the benchmarkers and potential data users to consider what is the desired outcome as well as who will benefit from the results and how.

The next step is to define the data *source* for *data acquisition* and to define how the data source will be *analysed.* Data can be retrieved using different databases, and it is essential is to identify the most relevant data for the benchmarking purpose. The benchmark information obtained needs *implementation* steps. The results gained in the benchmark information process can guide knowledge-based decision making.

In summary, more effective benchmarking can be achieved by strengthening the strategy orientation and systematic approach. Strategy-driven benchmark practices ensure that benchmarking is targeted correctly. In turn, a systematic approach can be increased through systematic data collection, sharing and documentation, and by harnessing operations in networks as a goal-oriented part of the development of the organisation's competence and operations. Finally, the results obtained should mirror the objectives set for the benchmarking (how the targets were achieved or why they were not met).

This study has several limitations that affect especially the generalizability of the research results. The empirical data is gathered only from two cases, both representing Finnish health care system, which in turn is a representative of the so-called Nordic health care system. Furthermore, empirical data was gathered only by qualitative means, thus the study is lacking quantitative evidence. However, this study was able to provide initial empirical insights of the benefits and challenges that health care service organizations face in development activities. Further empirical studies are needed, as well as more solid analysis of the overall KM process and its relation to benchmarking phases.

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