



Establishing an AI Competence Center in a Public Healthcare Organization: A Multidisciplinary Learning Pathway

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Abstract. The rapid evolution of Artificial Intelligence (AI) requires public healthcare organizations to balance innovation with strict regulatory compliance. This paper describes the establishment of an AI competence center at the Wellbeing Services County of North Ostrobothnia (Pohde) and at Oulu University Hospital (OYS). The AI competence center was designed to bridge the gap between well-being services county organization's needs and technological capabilities through a multidisciplinary structure involving the University of Oulu and industry partners. In addition to establishment activities, we present the AI competence center's "learning pathway," a four-phase methodology consisting of service delivery domain level scouting, market alignment, feasibility ranking, and hackathon-based validation. The results indicate that a centralized, cross-functional competence center accelerates the identification and operationalization of high-value AI solutions.

Keywords: AI competence center · healthcare · public-private innovation

1 Introduction

The integration of Artificial Intelligence (AI) into public healthcare offers significant potential for improving operational efficiency and patient workflows [1]. However, the implementation of AI in public healthcare sector is often fragmented and hindered by limited resources and complex regulatory frameworks, such as the Medical Device Regulation (MDR) and data privacy laws (GDPR) [2]. In the Wellbeing Services County of North Ostrobothnia (Pohde), which operates Oulu University Hospital (OYS) alongside other health, social and rescue services, the need to coordinate diverse AI development initiatives has led to the establishment of a centralized AI competence center. While Pohde has previously gained experience in AI development [1, 3–5] and orchestrating public-private innovation collaboration [6], these efforts have been operated as isolated projects without organization level coordination.

The objective of our AI competence center was not only to implement technology, but to create a sustainable structure that aligns diverse stakeholders including service delivery domains representation, legal services, IT administration, and external partners like the University of Oulu and in-house hospital information system provider Esko Systems. The structural formation of the AI competence center notes established digital transformation models in healthcare [7] and addresses field-specific opportunities and challenges identified in the public health sector AI application utilization [8, 9]. This paper outlines the structural formation of the AI competence center and the systematic “learning pathway” adopted to identify and prioritize AI initiatives.

2 Materials and Methods

2.1 Structure of the Competence Center

From the organizational perspective, the AI competence center of Pohde is a virtual organization and a denominator for joint AI development related activities which take place in the form of a regularly meeting working group. Officially established on November 27th 2025, the AI competence center is structured to have representation of each service delivery domain (family and social services, elderly care services, disability services, health and medical services, hospital services and emergency care, fire and rescue services) and support functions across the wellbeing services county organization. In total, the competence center has 35 members.

The governance model consists of two primary layers: I) The core group has representatives from research and development unit, IT management unit, information services, each service delivery domain and Esko Systems; II) Supporting experts are providing critical guidance on legal services, information security, data protection and MDR compliance, alongside external technology providers and academic research support from the University of Oulu. The close collaboration with experienced AI researchers enables knowledge based development.

2.2 The Learning Pathway

The AI competence center has monthly meetings on premise at the development center OYS TestLab, which is the innovation laboratory of Pohde enabling also public-private innovation collaboration [6]. In the first meeting of the AI competence center, the targets and the working model of the group were defined and the participants got familiar with each other. To operationalize the center, a four-phase methodology was developed to scout and validate potential AI application development needs. The learning pathway phases are as follows (see Fig. 1.):

I) Digital leap scouting: In the first meeting, each participant got a task to scout and define the “digital technology leap” within their own service delivery domain, identifying specific clinical or administrative challenges solvable by AI.

II) Market alignment: To ensure that internal ideas matched external capabilities, in the second meeting the topic was market alignment. The group collaborated with one of the leading industry partners (CGI) to gain insight into the current state of AI development in the market and especially in healthcare.

III) Feasibility ranking with prioritization matrix: In the third meeting the findings from the digital leap scouting phase were mapped together onto an “Impact vs. Feasibility” matrix. This allowed the group to rank initiatives based on their potential benefit to the Pohde operations versus the technical and regulatory complexity of implementation.

IV) Validation through initial development (Hackathon): The process culminated in a hackathon event organized in collaboration with an industry partner (Microsoft). The top three ideas/challenges identified in the scouting and ranking phases were presented to development teams to solve. This worked as a rapid validation of technical viability and provided a starting point for actual production-ready solution development.

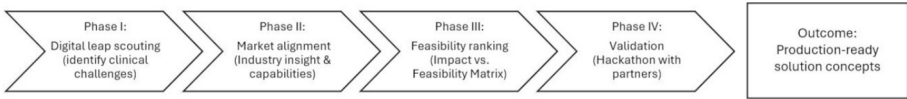


Fig. 1. The four-phase learning pathway for identifying and validating AI solution needs and concepts

3 Results

The establishment of the Pohde AI competence center has thus far successfully transformed isolated development ideas into a managed portfolio of AI initiatives. The “digital leap” scouting process revealed a diverse range of needs across different service delivery domains and support functions. By utilizing the impact vs. feasibility matrix, the competence center group was able to filter these needs, prioritizing those with high clinical, social or productivity impact and realistic implementation pathways. The AI solution development typically requires external funding. With the coordinated working model and prioritized needs, the resources can be focused on high quality and impactful project applications.

The inclusion of diverse professions in the ranking process ensured that regulatory bottlenecks were identified early. The Hackathon provided tangible proof-of-concept for the top three selected challenges, demonstrating that external partnerships (Microsoft, CGI) could be leveraged to accelerate problem-solving when the problem definition has been carried out in a mature way.

4 Discussion

Establishing an AI competence center in a public healthcare setting requires moving beyond a purely technical focus. Our experience at Pohde highlights the importance of a “Triple Helix” collaboration model [10], integrating the public sector (Pohde), academia (University of Oulu), and private industry representatives (Esko Systems, Microsoft, CGI).

The structure of the Pohde AI competence center allows agile operational work while ensuring that regulatory compliance (MDR, legal) is ensured. The organization-wide engagement of personnel is relevant in the need identification and innovative solution

planning phases as well as in the solution implementation. A structured “learning pathway” from scouting to hackathons offers a replicable model for other wellbeing services counties aiming to systematize their AI development. Future work will focus on ensuring the development resources and the full-scale deployment of the solutions validated during the hackathon phase.

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