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**REVIEW Report: On The thesis for the degree of Doctor of Philosophy (PhD) in the Specialty 8D04105 "Innovation Management"**

**Candidate: Ms. Seitkan Galiya Gazizkyzy**

**Thesis Title: "Features and Mechanisms of Managing the Formation of Digital Hubs in Kazakhstan"**

The thesis work of Ms. Seitkan Galiya Gazizkyzy on the topic "Features and Mechanisms of Managing the Formation of Digital Hubs in Kazakhstan" addresses an urgent and significant issue that directly pertains to the current state and prospects of the digital economy in Kazakhstan. Given the rapid growth of digitalization and the integration of digital technologies into various sectors, the research topic is extremely important and relevant.

The candidate clearly formulated the goals and objectives of the study, aimed at exploring the theoretical and methodological foundations of managing the formation of digital hubs. The work also includes an analysis of the current state and identification of problems of digital hubs in Kazakhstan, offering mechanisms and recommendations for improving their functioning.

In the first chapter, the candidate reviews and synthesizes the existing theoretical concepts and models related to digital hubs. Ms. Seitkan G. G. provides a comprehensive literature review, highlighting the evolution of digital hubs, their role in the modern economy, and various approaches to managing their formation and development. The methodological framework is well-defined, employing a combination of qualitative and quantitative methods, including case studies, correlation-regression analysis, dispersion analysis, economic efficiency calculation and literature review. This chapter sets a solid foundation for the subsequent empirical analysis.

The second chapter presents a detailed assessment of the current state of digital hubs in Kazakhstan. The candidate conducts a thorough analysis of the digital potential across different regions, evaluating key indicators such as internet penetration, technological infrastructure, and digital literacy. Ms. Seitkan G. G. identifies major challenges and barriers faced by existing digital hubs, such as insufficient funding, regulatory hurdles, and a lack of skilled personnel. The empirical data collected through surveys and interviews with key stakeholders provide valuable insights into the operational realities of digital hubs in Kazakhstan.

The practical significance of the study lies in its direct applicability to Kazakhstan's digital development initiatives. The thesis not only diagnoses issues but also substantiates recommendations for developing the mechanisms and directions needed to establish and grow digital hubs in the country. Key recommendations – such as implementing the D-BEST evaluation model, strengthening institutional support, creating a national hubs portal, and building regional strategies – provide a roadmap for policymakers and practitioners. By following these recommendations, government agencies (e.g., Ministry of Digital Development) and hub management teams can improve decision-making and address the gaps identified (like regional disparities and skill shortages).

The most Important feature of the proposed mechanisms and evaluation methodology have concrete utility. For example, the five-point scale criteria for hub performance can be used by hub administrators to self-assess and improve their operations, and by officials to allocate resources or support where needed. The innovation, investment, and institutional mechanisms recommended can guide the drafting of new policies or programs (such as funding schemes or innovation contests for hubs).

Additionally, the thesis results have educational and capacity-building value. The content and findings can be used in university courses related to innovation management, digital economy, technology transfer, and strategic management. Integrating these findings into curricula will help train the next generation of professionals in Kazakhstan with relevant knowledge about digital hubs and innovation ecosystems.

In practice, if Kazakhstan proceeds to establish new digital hubs (or improve existing ones), this research provides a blueprint for action. For instance, when setting up a hub in a new region, stakeholders can apply the integral index approach to assess regional readiness, use the proposed criteria to design the hub's management structure, and follow the recommendations to ensure the hub is integrated into a national network (via the proposed portal). The practical outcomes also extend to ongoing monitoring – the introduced methods allow continuous evaluation of hub performance, which is crucial for making iterative improvements. In summary, the recommendations and the framework developed in this thesis offer immediate practical benefits for Kazakhstan's push towards digitalization, making the study valuable for both theoretical advancement and real-world implementation.

I recommend Ms. Seitkan Galiya's dissertation on the topic "Features and Mechanisms of Managing the Formation of Digital Hubs in Kazakhstan" for defense to obtain the degree of Doctor of Philosophy (PhD) in the specialty 8D04105 – "Innovation Management".

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