

16. EDIHs in Poland as intermediaries supporting digital transformation of SMEs¹

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Abstract: Polish European Digital Innovation Hubs are reviewed as new intermediaries in SME digital transformation. The chapter combines a literature review with case evidence and 44 semi-structured interviews conducted with DIH and EDIH managers as well as European Commission representatives. In Poland, EDIHs act as regional orchestrators linking SMEs, public-sector organisations, clusters, research actors, innovation networks and European programmes. Their services include skills development, networking, access to finance and test-before-invest support, although individual hubs differ greatly in resources, maturity and service portfolios. Early activity focused mainly on awareness raising, digital maturity assessments, roadmaps and webinars, with AI services still limited. The chapter indicates that future impact depends on credible use cases, sustainable hub business models and SME readiness in data quality, skills and managerial mindset.

Keywords: digital transformation, SME, European Digital Innovation Hubs.

Introduction

Digital transformation is essential for businesses to remain competitive in today's fast-changing market. It enables companies to improve their operational efficiency, enhance the customer experience, and innovate their products and services. By adopting new technologies, businesses can automate processes, reduce costs, and respond more quickly to market demands. Furthermore, digital transformation opens up opportunities for data-driven decision-making, which helps companies to better understand their customers and optimise strategies. Overall, it is a key factor for long-term growth and sustainability in the modern economy (Fura et al., 2025; Hai et al., 2021; Kraus et al., 2021).

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Given the various challenges faced by companies operating in the EU, including those related to globalisation changes, the green transition, the uncertain geopolitical situation related to the war in Ukraine, and recent trade policy conflicts with the US, initiatives to support, especially SMEs in facing this complex situation are of utmost importance. In this context, it is interesting to discuss the relevance and first results of the European Digital Innovation Hubs (EDIH) network performance. The EDIH Network is the driving force behind Europe's digitalisation. With the support of the European Commission, it brings together EDIHs, small and medium-sized enterprises (SMEs), and public sector organisations (PSOs) to make the EU's Digital Decade 2030 targets a reality. This is the key EU programme devoted to the digital transformation of SMEs in 37 EU and non-EU Member States. EDIHs offer tailor-made services, adapted to the enterprise's identified digitalisation needs in the following areas: *test before invest*, networking, skills and training, access to finance in preferential tariffs. The *test before invest* service is a flagship service of EDIHs, allowing companies to experiment with digital technologies before making significant investments.

The mission of the EDIH Network is the following:

- Boost digital transformation across the EU;
- Achieve the targets of the EU's Digital Decade 2030: 90% of SMEs reach at least a basic level of digital intensity and 75% of EU companies using Cloud, AI or Big Data;
- Enhance competitiveness position and digital capabilities of European companies (European Commission, 2023).

The study highlights the relevance of EDIHs in the Polish entrepreneurial landscape. The chapter uses the term *European Digital Innovation Hub* to refer to both *Digital Innovation Hubs* and *European Digital Innovation Hubs*. Although the two types of hubs differ in terms of organisation and governance, they are analysed together because of their shared objective of driving SME digitalisation. Digital Innovation Hubs encompass a wide and varied range of institutions that act as regional one-stop centres for companies, especially SMEs, looking to implement digital technologies. These hubs generally emerge from national or regional initiatives and are often based within research organisations, universities, or industry clusters under an EU framework launched in 2016. In contrast, European Digital Innovation Hubs (EDIHs) are a formally designated subset of DIHs, selected through a competitive process under the Digital Europe Programme, initiated in 2021. In April 2025, the European Commission launched the EDIH 2.0 call for proposals.

While an extensive literature exists on innovation intermediaries as actors playing an increasingly important role in bridging different innovation stakehold-

ers (Bourdin et al., 2020; Feser, 2023; Howells, 2006, 2024), EDIHs, are not widely studied, due to being a relatively new actor in the intermediation landscape. The chapter therefore aims to fill this research gap. The following research question formulated in the study: *What is the state-of-the-art and perspectives for the future for Polish European Digital Innovation Hubs?* Drawing on the literature review, EDIH case studies and companies use cases, we identify the main characteristics and roles played by EDIHs at the regional level in Poland. We also formulate key digitalisation challenges for SMEs and for EDIHs in Poland.

The rest of the chapter is structured as follows: Section 1 provides a short review of the literature on the digital transformation of enterprises, Section 2 presents the experience of EDIH in Poland in supporting the digital transformation process of enterprises. Last section concludes by offering a list of key challenges in the field of digitisation, divided into challenges for EDIHs and for SMEs

16.1. Digitalisation transforming economies and societies – literature background

During the past two decades, research on digital transformation has received growing attention, with a wide range of topics investigated. Driving this, first of all, is globalisation's effect of intensifying the pressure on businesses to adapt, necessitating efficient integration strategies to not only survive but also operate in increasingly competitive environment (Kraus et al., 2021). Robotics, artificial intelligence, big data, Internet of Things, mobile and blockchain technologies are paving the way for the Fourth Industrial Revolution (Vironen and Kah, 2019).

The growing importance attributed to technologies used in digital transformation, AI in particular, prompts questions about the benefits of using these technologies, yet we must not overlook the risks brought by the use of these technologies or the ethical issues that should be raised in connection with the increasing use of AI. The opportunities of securing higher income levels and better quality of life are therefore weighted against the risks connected with greater inequality, ethical concerns, and labour market threats (Kužnar, 2019; Przegalińska and Oksanowicz, 2020; Vironen and Kah, 2019).

Current digital transformation is expanding opportunities not only in terms of who can participate in innovation or entrepreneurship, but also in terms of what and how they can contribute (Haefner & Sternberg, 2020). Moreover, in the current wave of digitalisation, we witness the widespread digitisation of physical objects with embedded software (Haefner & Sternberg, 2020).

While the potential benefits and opportunities raised by the Fourth Industrial Revolution are largely highlighted in academic discussions, some issues still require further development i.e. the level of digitalisation of the EU SMEs is still below expectations. This is a challenge faced by SMEs in all EU Member States.

Poland must close a substantial gap by 2030 to reach the Digital Decade target in cloud, big data and artificial intelligence (AI). The current uptake of those technologies ranges between 3% and 19%, compared with the EU target of 75% by 2030. It is crucial to promote capacity building among Polish enterprises to digitalise further, as in 2022 only 40% had at least a basic level of digital intensity (EU average: 55%) (Table 16.1). This contrasts with the Digital Decade target of 90% of SMEs having ‘at least a basic level’ of digital intensity by 2030 (European Commission, 2023). Overall, the digital performance of Polish SMEs as depicted in the DESI 2022 compared to the EU average is rather poor.

Table 16.1. DESI 2022 results for Poland

Indicator	DESI 2022 Poland	DESI 2022 EU
At least basic digital skills (% individuals)	43% 2021	54% 2021
At least basic digital content creation skills (% individuals)	57% 2021	66% 2021
ICT specialists (% individuals in employment aged 15-74)	3.5% 2021	4.5% 2021
Enterprises providing ICT training (% enterprises)	18% 2020	20% 2020
Overall fixed broadband take-up (% households)	69% 2021	78% 2021
5G spectrum (Assigned spectrum as a % of total harmonised 5G spectrum)	0% 04/2022	56% 04/2022
SMEs with at least a basic level of digital intensity (% SMEs)	40% 2021	55% 2021
Electronic information sharing (% enterprises)	32% 2021	38% 2021

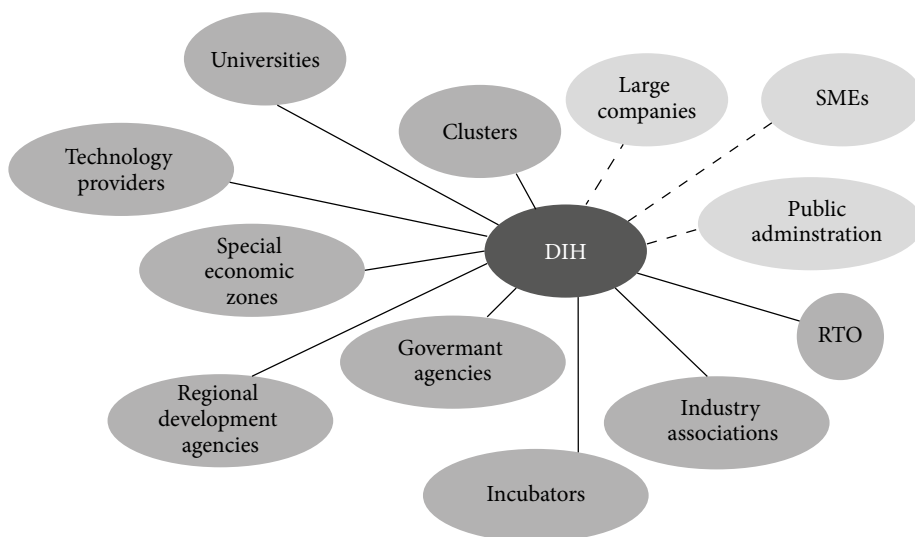
Source: based on (DESI 2022 Poland Country Report).

16.2. Experience of Polish digital innovation hubs

The chapter is based on 44 semi-structured interviews conducted between April and August 2023 with managers of Digital Innovation Hubs, European Digital Innovation Hubs across the EU and European Commission representatives re-

sponsible for implementing the EDIH programme at the EU level. Nonetheless, the attention is focused on DIHs and EDIHs operating in Poland and the results presented in this section refer to the Polish experience with this form of digital transformation support.

As shown in Figure 16.1, a DIH in Poland plays the role of an orchestrator, connecting the numerous actors interacting within the regional innovation ecosystem. On the one hand, these include SMEs, large companies and public sector organisations, which either turn to the DIH to make use of its range of services or themselves offer such services to other enterprises playing the role of members of consortia of individual DIH. Other entities that the DIH connects with its activities, especially in the area of networking, include clusters, incubators or diverse actors in the broader area of regional innovation support. The DIHs also act as a bridge between other actors at European level, such as other EDIHs, thematic DIH networks or the Enterprise Europe Network.



Notes: Entities marked in light grey are those to which the DIH offers its services (SMEs, large companies, public administration). In the diagram, they are connected to the DIH by a dotted line. The remaining entities in grey, connected to the DIH by a solid line, are actors in the regional innovation system with whom the DIH cooperates in various fields. Entities not connected by a line to the DIH are those operating and cooperating with the DIH at European level: other EDIHs, DIH thematic networks, the Enterprise Europe Network, or Testing and Experimentation Facilities (TEFs).

Figure 16.1. DIH as an orchestrator in Polish regions

Source: own elaboration.

As of 2023, almost all Polish DIHs and EDIHs offered AI-related services to SMEs. Figure 16.2 shows all the Polish DIHs or EDIHs which, at the time of the survey, stated that their portfolio included services covering a range of topics and involving the use of artificial intelligence to varying degrees. Their coverage extended across the whole of Poland. The DIHs highlighted in white in the diagram were additionally members of thematic DIH networks dedicated to developing artificial intelligence. Interviews with EDIH managers, however, indicate that interest in AI-based services was nonetheless negligible, based mainly on general training or workshops aimed at building awareness of the possibilities of using AI at the enterprise level.

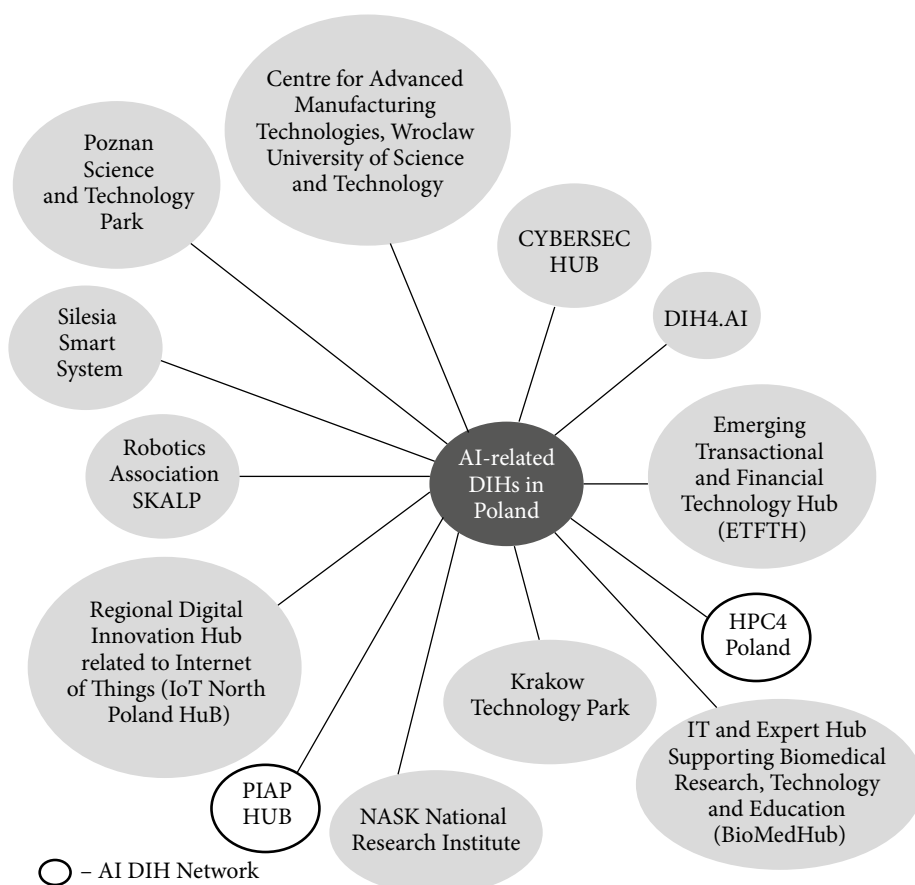


Figure 16.2. AI-related Digital Innovation Hubs in Poland (as of 2023)

Source: based on Digital Innovation Hubs catalogue.

What are the lessons learnt of the interviewed Polish EDIHs in terms of their performance and capability of accelerating digital transformation of companies?

- EDIHs are interdisciplinary instruments, entities playing the role of orchestrators in the regional innovation ecosystems;
- EDIHs differ hugely from one another in terms of their potential, portfolio of services provided to the companies, number of personnel engaged in administrative tasks etc. (for more details, see De Nigris et al., 2023). From this perspective, it seems unfeasible to compare their performance or the challenges they face on a daily basis.
- They are one-stop shops that offer an overall tailor-made support to companies, based on the digital maturity assessment, in the majority of cases with a regional perspective.
- They provide different kinds of services (skills development, networking, access to finance, *test before invest*); among these, the *test before invest* is a flagship initiative, distinguishing them from other programmes or regional innovation intermediaries offering innovation and digitalisation support services.
- The Polish structures are based on existing networks/experience in previous digital programmes. Overall, in 2023 they provided pilot services, rather in terms of awareness raising, “evangelisation” about digital transformation. Such an approach reflected identified company needs in terms of digital transformation in Poland. Digital maturity assessments, a roadmap for digital transformation, networking and webinars were the main types of services provided to companies by Polish EDIHs. AI-related services were rather additional ones, related to awareness-raising.
- It is hard to assess the role of DIHs in boosting digitalisation of Polish companies to date. Interviewed DIHs and EDIHs expect to come up with more tangible results of their activity in this second phase EDIH programme.

The study highlights the place of EDIHs in EU policy documents regarding digital transformation of companies, defines different roles played by EDIHs as intermediaries. It discusses the significance of such actors cooperating with SMEs in their path to digital transformation in Poland.

At the European level, EDIHs are present in 90% of the 251 European regions. As of 2023, in Poland there were 22 entities listed in the EDIH catalogue, 11 being funded under Digital Europe Programme, 3 Seals of Excellence and 8 being funded by other initiatives. They were in the first phase of their operational activity.

Conclusions

This study's findings shed light on the roles played by EDIHs regarding the digital transformation of companies. They indicate challenges and propose some solutions to them for both Poland's SMEs and its EDIHs. However, it is too early to assess the role of EDIHs in boosting the digitalisation of Polish companies. Interviewed EDIHs anticipate delivering more tangible results of their activity in the second wave of the EDIH programme.

DIHs act as orchestrators in the Polish entrepreneurial ecosystem. They differ hugely one from another in terms of potential, portfolio of services provided to the companies, number of personnel engaged in administrative tasks, and other aspects. They also provide different kinds of services (skills development, networking, access to finance, *test before invest*). The current Polish structures build directly on existing networks/experience in previous digital programmes such as the Horizon Europe programme, EEN, and DIHs, which give them an opportunity to build upon previously built networks and facilitates contact with companies.

Key digitalisation challenges for SMEs include securing access to good-quality data (a prerequisite for any digital transformation within a company), building digital skills of the whole businesses, and not fearing digital transformation, entailing the transformation of managerial mindsets (Table 16.2).

Table 16.2. Key digitalisation challenges for EDIHs and Polish SMEs based on this study

For whom?	Key digitalisation challenges
For EDIHs	– find individual ways to attract businesses and to convince them that digital transformation is a must while providing dedicated, tailor-made digital services – reflect on the sustainability of EDIHs business models – show to businesses that digital transformation can give tangible results based on use cases from other SMEs that took part in the EDIH Programme
For Polish SMEs	– have access to good-quality data, gather them and design a good digitalisation strategy with the support of EDIH experts – not to be afraid of starting a digital transformation journey due to observing its opportunities and risks – build digital skills of the whole businesses

Source: based on the empirical study's results.

Key challenges for EDIHs include the necessity to find an individual approach to convincing SMEs that digital transformation is an imperative that

provides concrete results in terms of improving a company's market position, higher adaptability to customer needs, and building sustainable EDIH business models in order to be able to operate once public money becomes unavailable. The best way to persuade SMEs of the need to start their digital journey is to build on use cases from other satisfied companies that had already embarked on the transformation path with the support of EDIH experts.

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