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Can a National Financial Supervisor Support the Development of the Fintech Sector? Innovation Hubs as a Tool for Supporting Innovation: The Examples of Poland, Estonia, and Italy

Abstract: This article aims to examine one of the primary tools utilized by national financial supervisors to support innovative projects in the fintech sector. The analysis focuses primarily on the Innovation Hub established by the Polish Financial Supervision Authority (KNF), with additional insights provided from similar initiatives in two other European countries, Estonia (Finantsinspektsioon) and Italy (Bank of Italy). The article is further enriched by examples from other European Economic Area supervisors. The study seeks to address the question of whether national financial supervisors can effectively support innovative projects through instruments such as innovation hubs.

Keywords: innovation hubs, fintech, innovative projects, facilitators, national financial supervisors, KNF, Finantsinspektsioon, Bank of Italy

Introduction

The events of recent years, such as the COVID-19 pandemic and the aggression of the Russian Federation against Ukraine, have profoundly impacted various aspects of our lives. These events have reshaped societies on multiple levels, prompting critical reflection on their consequences. A pertinent question arises: can such 'black swan' events only generate negative outcomes, or might they also have a positive impact?[1] The

1 The term 'black swan' was introduced by Nassim Nicholas Taleb in his book *The black swan: The impact of the highly improbable*, and refers to a rare, unpredictable event that has a profound impact on reality.

answer to this question, as can be expected, depends on the perspective from which the issue is analysed.

In recent years, the concept of the 'global village', introduced by Marshall McLuhan in his 1962 work *The Gutenberg galaxy: The making of typographic man*, has become increasingly relevant. Its principles are materializing in real time, highlighting how interconnected the world has become; it could even be argued that, as an information society, we have transcended this concept. The fast and worldwide spread of new technologies is a clear example of this trend (Jutt, 2023). For example, the COVID-19 pandemic compelled many individuals who had previously relied on traditional payment methods to adopt cashless alternatives (Korzeniowska et al., 2023, p. 76). Clear changes in consumer preferences for cashless payment methods had already become apparent by 2019 (Meler & Polasik, 2022).[2] This acceleration is also evident in the wide array of technological advancements within the banking and financial sectors. Highly efficient mobile applications, customer identification and verification methods utilizing behavioural analytics, intelligent chatbots, and numerous other innovations are gradually becoming integral components of contemporary banking practices (Nowakowski, 2020, p. 23). In recent years, the fintech sector has experienced a growing adoption of disruptive technologies such as Artificial Intelligence (AI), data analytics, the Internet of Things (IoT), and distributed ledger technology (DLT), including blockchain. These innovative advancements have profoundly reshaped the execution of business processes and transactions within the financial services industry (Nguyen Thanh, 2024, p. 2). A significant step in the European Union was the passing of Directive 2015/2366 on Payment Services in the Internal Market by the European Parliament and the Council of the European Union (PSD2), which formally introduced the concept of open banking.[3] This initiative enabled third-party entities to develop applications utilizing data and services made available by financial institutions.[4]

These events have played a crucial role in driving the expansion of fintech initiatives in recent years. According to the 2023 report *How to do fintech in Poland?*, the number of fintech start-ups in Poland grew from 167 in 2018 to 299 in 2022 (Future Finance Poland / FinTech Poland, 2023). Fintech projects operate within the domain of

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2 It is worth noting that the initial phase of the pandemic in particular caused a significant surge in demand for cash. In Poland, for instance, the amount of cash in circulation at the end of 2020 was 35% higher compared to February 2020. However, the increased demand for cash during the pandemic is primarily attributed to hoarding motives – namely, the storage of monetary value as a means of managing risk and liquidity (Kaźmierczak et al., 2021, pp. 60–61).

3 Under Polish law, the Directive was implemented through the Act of 10 May 2018 Amending the Payment Services Act and Certain Other Acts.

4 The most essential component of the technological layer of open banking is the application programming interface. In the context of open banking, 'open' refers to public access for developers to systems and solutions owned by specific companies (in this case, financial institutions, primarily banks).

sensitive data, making it imperative to ensure that such initiatives do not threaten the stability or security of participants in the financial market. The implementation of innovative fintech projects is also often challenging due to complex legal frameworks, a frequently ambiguous regulatory status, and additional layers of emerging compliance requirements, such as those arising from environmental, social, and governance (ESG) policies, which are steadily gaining importance and impose new obligations on both market participants and supervisors (Fedorowicz & Zalcewicz, 2024, p. 52). Additionally, the fintech market is largely dominated by big players with substantial financial resources, making it tough for smaller companies to break through. Fintech innovation is frequently driven by start-ups or young enterprises that lack both the financial resources and the extensive experience required to effectively compete in this environment. To find a balance between supporting innovation and ensuring financial market stability, supervisors in various countries are implementing a range of tools designed to support and facilitate the launch of innovative projects. Among the most significant programmes aimed at fostering innovation are regulatory sandboxes and innovation hubs.[5] There is also an increasing use of new solutions, such as virtual sandboxes, TechSprints, or acceleration programmes (ESA, 2023).[6]

In this article, several research methods have been used, including the presentation of various concepts with elements of comparative analysis, followed by a synthesis of the shared characteristics and observed differences in the approaches to implementing the innovation hub concept. The study also applies the dogmatic and the descriptive legal methods, which facilitate the analysis of binding legal provisions and their practical application. Building on these findings, the article offers conclusions and potential recommendations, while also exploring whether financial market supervisors can truly play an effective role in supporting fintech companies in the implementation of innovative solutions. The initial section of the article provides a general overview of the fintech sector, highlighting the factors shaping its current state and various forms of innovation support. It then examines different approaches to establishing innovation hubs by European supervisors, using Poland, Estonia, and Italy as case studies. The primary focus of the analysis is the Innovation Hub created by the Polish Financial Supervision Authority (KNF); the study explores the objectives and underlying principles of the programme, as well as the conditions for participation. The main sources of information for this analysis include the rules of the Innovation Hub programme issued by the KNF, content from its official website, reports from European supervisory institutions – primarily the 2023 joint report by the European Supervisory Authorities (ESA) on

5 As of October 2023, there were 41 innovation hubs, with at least one in all 30 EEA countries, and 14 regulatory sandboxes in 12 EEA countries.

6 ESA refers to the European Supervisory Authorities. The document is a joint report prepared by the European Banking Authority, the European Insurance and Occupational Pensions Authority, and the European Securities and Markets Authority.

the functioning of innovation facilitators, innovation hubs, and regulatory sandboxes – and supplementary academic literature; due to the contemporary nature of the topic, there is limited academic literature directly addressing the concept of innovation hubs. Subsequently, the article discusses the innovation hubs established by the Estonian supervisor (Finantsinspektsioon) and the Italian supervisor (the Bank of Italy). These two examples are explored using a similar framework, with additional references and comparisons to the solutions implemented by the Polish supervisor. The overarching aim is to investigate how concepts such as the Innovation Hub can be adapted to different jurisdictions and to analyse the varied approaches European supervisors take to achieve the shared goal of supporting innovation.

1. Innovation hubs as a tool for supporting fintech

Before diving into the concept of an innovation hub, it is essential to first explain what fintech means. The concept of fintech originates from the combination of two English words: finance, referring to financial services, and technology, referring to information technology (Gimpel et al., 2017, p. 245). The term fintech has been defined in various ways, depending on the specific aspects being emphasized; essentially, it refers to using new technologies in the financial sector (Nowakowski, 2020, p. 17). The European Commission defines the term as 'technologically driven innovations in financial services that can lead to the creation of new business models, applications, processes, and products, potentially exerting a significant impact on financial markets, institutions, and the way financial services are delivered' (European Commission, 2018).

According to the definition provided in the joint ESA report on innovation facilitators, an innovation hub is understood as 'a dedicated point of contact for firms to raise enquiries with NCAs [National Competent Authorities] on FinTech related issues and to seek non-binding guidance on the conformity of innovative financial products, financial services or business models with licensing or registration requirements or regulatory and supervisory expectations' (ESA, 2023). Innovation hubs provide fintech start-ups with a platform to engage in dialogue with supervisors while benefiting from the expertise of industry specialists, who offer valuable insights into innovation in financial services. These hubs share a core goal: enhancing firms' understanding of regulatory frameworks and supervisory expectations, delivering tailored guidance to align business models with regulatory standards, and identifying areas where the regulatory framework may require adjustments (ESA, 2023). In such a rapidly evolving economy, where regulatory demands are steadily increasing – a good example being the areas of sustainable banking (ESG) or anti-money laundering – concepts such as innovation hubs gain particular relevance, serving as a practical tool for both market participants and regulators (Jurkowska-Zeidler & Schweigl, 2024, p. 210).

As already mentioned, the innovation hubs are, next to the regulatory sandboxes, the facilitators most frequently introduced by supervisors (Butor-Keler & Polasik, 2020, p. 623). Ideally, there is synergy and interdependence between the various innovation-support tools offered. For example, an innovation hub can be treated as the first phase of contact with a supervisor, during which a start-up will be informed about the legal regime and other potential regulatory requirements. After this phase, the start-up, fuelled by new knowledge, can more consciously apply to the regulatory sandbox. The following sections of this article will provide more detailed insights into innovation facilitators in Italy, which serve as a perfect example of the synergy mentioned earlier (ESA, 2023).

2. The Innovation Hub of the Polish Financial Supervision Authority

The Polish Innovation Hub was launched on 5 January 2018, as a response by the Polish financial supervisor (KNF) to the growing need for support and dialogue with entities in the fintech sector.[7] The Polish Financial Supervision Authority (UKNF) introduced the Innovation Hub at a time when several similar programmes were already operating within the EEA, with the first such facilitators emerging as early as 2016.[8] The UKNF has made information more accessible by creating a dedicated section on its website for the fintech sector, along with a comprehensive standalone platform. This platform consolidates all relevant information and updates pertaining to the fintech industry, including details about the Innovation Hub (FinTech Komisja Nadzoru Finansowego, n.d.).

According to §2 of the rules of the Innovation Hub programme, the programme is intended to promote the development of innovation within the financial market by enabling the UKNF to conduct outreach activities targeted at entities qualifying for participation. These initiatives are directed toward entities participating in the programme whose activities involve the design, development, or implementation of innovative technological solutions, products, or services in the areas of the financial market (fintech), financial market supervision (suptech), and regulatory processes (regtech) (Urząd Komisji Nadzoru Finansowego, 2018).[9] Entities qualifying for par-

7 The KNF serves as the public administration body supervising the financial market in Poland. In carrying out its responsibilities, it operates through the Office of the Financial Supervision Authority (UKNF). For the purposes of this article, both terms can be understood collectively as the Polish financial market supervisor, as the distinction between them is not significant to the subject matter touched on here.

8 In 2016, eight innovation hubs were established. In the following years, the numbers were as follows: 2017: 3, 2018: 10, 2019: 11, 2020: 1, 2021: 4, 2022: 2.

9 The term regtech should be understood as 'Regulatory Technology […] a sub-set of FinTech that focuses on technologies that may facilitate the delivery of regulatory requirements more efficiently and effectively than existing capabilities', whereas suptech is defined as the use 'of innova-

ticipation in the programme include both those intending to commence operations within segments of the financial market regulated by the KNF, and those already under KNF supervision that aim to implement innovative financial products or services utilizing advanced information technology.

Within the framework of the programme, participating entities may receive support from the UKNF in identifying the applicable legal provisions, regulatory requirements, and supervisory positions relevant to their business model, financial products, or services. Additionally, the programme offers guidance on supervisory principles, the procedures for obtaining authorization to carry out specific activities, and access to relevant documents and guidelines available on the official KNF website.

Examining the rules of the Innovation Hub programme further, we discover that eligibility for participation in the programme requires the applicant to demonstrate that the proposed project possesses an innovative character. Furthermore, the applicant must provide a preliminary analysis of the regulatory and legal framework applicable to the project and substantiate a real need for support due to uncertainties regarding the legal classification of the planned initiative (Urząd Komisji Nadzoru Finansowego, 2018). According to the supervisor's official guidelines, an innovative project is defined as one that differs from existing solutions, products, or services available on the Polish market, can be considered innovative, and is expected to positively impact the development of the financial innovation sector (fintech) or regulatory and supervisory technologies (regtech/suptech) (FinTech Komisja Nadzoru Finansowego, n.d.). However, these guidelines remain open to considerable interpretation due to the use of vague terminology. For instance, the requirement to 'differ from existing solutions' does not specify the degree of differentiation required. Similarly, the criterion that the project 'can be considered innovative' lacks clarity regarding the evaluating group – whether it refers to domain specialists or the general public. Lastly, the notion of 'positive impact' is inherently subjective, as its assessment is likely to vary based on the perspective of the evaluator. The lack of clear guidelines on how this term is understood by the supervisor poses an interpretative challenge.

It is worth mentioning that the aforementioned lack of an official position by the UKNF regarding the interpretation of the innovation criterion outlined in Article 11b(2) of the Financial Market Supervision Act has been identified as a significant barrier to the development of fintech innovation in Poland. To date, the KNF has not issued an official clarification of this concept (FinTech Komisja Nadzoru Finansowego, 2021). It is important to highlight that Article 11b establishes the framework for the institution of an 'interpretation of the KNF in an individual case', which operates under a distinct legal basis compared to the Innovation Hub. This concept of an 'interpretation of the KNF in an individual case' was introduced during the process of implement-

tive technology to support supervision' and to enable supervisory authorities 'to digitise reporting and regulatory processes' (European Commission, 2020, p. 13).

ing the PSD2 Directive into the national legal framework (Schulz, 2024). Within the scope of the Innovation Hub, participants have the option to apply for an individual interpretation issued by the KNF. To initiate this process, applicants must pay a fee of PLN 1,000, submit the necessary identification details, and provide specific questions regarding the interpretation of applicable legal provisions or the procedure for obtaining authorization to engage in a given activity (Sejm of Poland, 2006). In summary, participation in the Innovation Hub programme is free of charge; however, submitting a request for an individual interpretation requires the payment of a fee.

The primary distinction between enquiries made under the Innovation Hub and those submitted as applications for an individual interpretation lies in their legal effect. Responses and guidance provided through the Innovation Hub are advisory in nature and non-binding (Nowakowski, 2020, pp. 21–22). The primary benefit of obtaining an individual interpretation from the UKNF lies in its legal enforceability. Compliance with such an interpretation ensures that the UKNF cannot undertake supervisory actions against the entity, including the imposition of administrative sanctions. However, it should be emphasized that these interpretations are not binding on third parties or applicable to analogous cases (Synowiec, 2021). It is noteworthy that the scope of enquiries directed to the Innovation Hub typically differs from those posed in requests for an individual interpretation. Questions under the Innovation Hub are often broader and less specific, reflecting the exploratory nature of the programme's advisory role. By contrast, individual binding interpretations address more precise legal ambiguities.

3. The Innovation Hub of the Estonian Finantsinspektsioon

Estonia is widely recognized for its advanced digital infrastructure and commitment to innovation in public administration, which also extends to the financial sector. Its proactive regulatory approach has been highlighted as a model for how early-stage supervisory engagement can facilitate innovation while preserving financial stability and legal certainty (The Fintech Times, 2023). The Innovation Hub was established by the Estonian financial supervisor (Finantsinspektsioon) on 17 June 2021, making it a relatively recent initiative. According to a report on its operation, the creation of the Estonian Innovation Hub was directly linked to amendments in the Financial Supervision Authority Act, which assigned the Finantsinspektsioon the responsibility to foster the development of financial technology within the scope of its mandate and strategic objectives (Finantsinspektsioon, 2022b).

The Estonian financial supervisor has allocated a dedicated sub-section on its official website to fintech-related topics, a practice that aligns with the standard approach adopted by other European regulators. However, the Polish supervisor's approach, comparatively, appears more comprehensive, as it has not only created dedicated subpages but has also developed a separate website specifically devoted to the fintech sector. According to information provided by the Finantsinspektsioon on its website, the following entities are eligible to apply for participation in the Innovation Hub: financial technology (fintech) companies; current or prospective supervised entities planning to integrate innovative solutions into their operations; companies offering support solutions for financial sector services, even if they do not directly provide financial services; and companies developing innovative supervisory technologies (Finantsinspektsioon, 2022a).

The approach adopted by the Estonian financial supervisor demonstrates a notably broad scope, encompassing entities that neither currently provide nor intend to provide financial services directly but instead focus on delivering solutions to support the financial sector. This inclusive framework contrasts with the practices of many European supervisors, who typically allocate such entities to alternative communication channels rather than granting access to an Innovation Hub programme. Similarly, the guidelines of the KNF do not explicitly address the eligibility of entities that exclusively offer tools and support solutions for the financial sector without engaging in the direct provision of financial services. This distinction underscores a more restrictive interpretation of eligibility criteria within the KNF framework, compared to the Finantsinspektsioon's expansive approach.

To participate in the Innovation Hub operated by the Finantsinspektsioon, applicants must satisfy several conditions. First, the proposed product, service, or risk-control solution must possess an innovative character; this may involve the use of innovative technologies or the novel application of existing technologies. Second, the solution must demonstrate added value by showing a potential to benefit customers or society, or by improving the efficiency of financial intermediaries' operational processes, while maintaining or exceeding the existing standards of risk control. Furthermore, the proposed solution must have sector relevance, meaning it should be classified within the financial sector or have significant applicability to companies operating in that sector. An additional requirement is a clear geographical connection, as the initiative must have a direct link to Estonia. Finally, the applicants and their management teams must be trustworthy, maintaining a clean record and upholding the integrity of the financial sector (Finantsinspektsioon, 2022a).

The Estonian model adopts a holistic approach to fostering innovation, involving not only current or prospective providers of financial services but also entities that develop solutions supporting the financial market without directly offering or intending to offer financial services. However, the Estonian approach stipulates that solutions must demonstrate added value for customers or society or enhance the efficiency of operational processes in the financial sector, all while maintaining existing levels of risk control. Furthermore, the requirement for a direct connection to Estonia may restrict the potential pool of participants in the Innovation Hub programme.

Further analysing the provisions, the Estonian criteria, unlike the Polish framework, do not mandate the submission of a legal analysis or justification for support due to regulatory uncertainties. However, the Estonian supervisor's view of innovation includes the idea that a project might not align with the current legal framework, suggesting that a regulatory analysis may be advisable and helpful. In terms of the entity's credibility, while the KNF does not explicitly include this aspect as a core requirement, its regulations (§ 2(3)) exclude entities listed on the Financial Supervision Authority's List of Public Warnings or equivalent foreign supervisory databases (e.g. BOZON) (Urząd Komisji Nadzoru Finansowego, 2018). Such exclusions align with common supervisory practices to safeguard the integrity of innovation initiatives.

What is still worth noting is the broader description of the concept of innovation used by the Estonian supervisor. A product is considered innovative if it meets one or more specific criteria. One possibility is that few or no similar products, services, or risk-control solutions exist, based on publicly available information. Another criterion is that the product is substantially more innovative, or employs a higher degree of innovation compared to existing solutions. Finally, a product can also be considered innovative if the current legal framework does not clearly define the regulations applicable to the given product, service, or solution. Although in this case the concept of innovation is defined somewhat more broadly than by the Polish supervisor, it seems reasonable to assert that this definition remains insufficiently developed. A set of examples would be desirable to provide clearer guidance on how the supervisor interprets this term. Similar to the Polish supervisor, the Finantsinspektsioon emphasizes that interpretations provided under the Innovation Hub programme are not legally binding.

4. The Innovation Hub of the Bank of Italy

The Italian approach to innovation hubs presents a distinctive model. The Bank of Italy, one of the primary supervisors of the Italian financial market, has established two innovation hubs: the Fintech Channel in 2017 and the Milano Hub in 2021.[10] This institutional commitment is part of a broader national effort to accelerate the digital transformation of the banking sector, to which the Bank of Italy has contributed by encouraging innovation and supporting the fintech ecosystem (Arnaudo et al., 2022, p. 5).

The Fintech Channel, one of the earliest innovation hubs in the EEA, serves as a direct and informal communication point with the Bank of Italy. Its primary function is to address queries related to the legal qualification of specific projects or licensing procedures. Four years later, the Milano Hub was introduced to further enhance the dialogue between the supervisor and market participants. Unlike the Fintech Chan-

10 The ESA lists a total of three innovation hubs in Italy; however, the third one pertains exclusively to insurtech. Moreover, it exhibits characteristics that are more similar to a regulatory sandbox, and it is therefore excluded from this study.

nel, the Milano Hub operates through calls for proposals, inviting market participants to submit innovative project ideas on specific topics within banking, finance, or insurance innovation.[11] This layered approach reflects a wider trend in the Italian regulatory environment, which increasingly recognizes the strategic importance of structured innovation support in ensuring financial stability and regulatory responsiveness (Gugliotta, 2021, pp. 23–24).

Both the innovation hubs established by the Bank of Italy are featured on the official website of the institution, each with a dedicated section. The Fintech Channel offers a straightforward and accessible platform for submitting enquiries via an official form. This tool is open to a broad range of stakeholders, including start-ups, companies, and banking or financial intermediaries proposing innovative solutions in financial and payment services. The availability is not restricted to entities currently offering or intending to offer financial services, thereby embracing a diverse audience. In this case the Bank of Italy's approach aligns closely with that of the Estonian supervisory authority. In alignment with practices seen in Poland and Estonia, the Bank of Italy explicitly states that the information provided through the Fintech Channel is non-binding. However, the Italian supervisor extends this principle further, disclaiming responsibility for unanswered enquiries and clarifying that a lack of response should not be interpreted as tacit approval or agreement with the applicant's interpretation or proposal (Bank of Italy, n.d.a).

The Milano Hub operates on a more structured framework, issuing the aforementioned periodic calls for proposals as open invitations to market participants. Applicants must meet both the general requirements outlined in the rules of the Innovation Hub programme and the specific conditions of each call. While the calls are broadly accessible, their thematic focus inherently narrows the pool of eligible participants by targeting specific areas of innovation (Bank of Italy, n.d.b)[12]. For instance, in the third call for proposals, eligibility extends to individuals and organizations across several categories; in the fintech area, it includes individuals and non-bank or non-financial entities proposing innovative projects. In the innovation area, it encompasses banking, financial, and insurance intermediaries. Finally, in the research and development area, the call is open to universities, research institutes, industry associations, and other relevant entities.

The sole requirement for participation is registration in the relevant registry – either the Italian Register of Companies or its equivalent in the applicant's home

11 To better understand how a call for proposals works, it is helpful to refer to the definition of a 'request for proposal': a business document that announces a project, describes it, and solicits bids from qualified contractors to complete it.

12 This was developed based on the official brochure issued by the Bank of Italy, *The innovation facilitators of the Bank of Italy*, which outlines various forms of innovation support provided by the Italian supervisor, including the Milano Hub.

country for foreign entities (Bank of Italy, 2024a). In addition to the general conditions outlined earlier, the thematic focus of each call plays a pivotal role. For example, the third call for proposals centres on the topic of digital payments, aiming to support projects and ideas that advance the most innovative aspects of instant and digital payment systems (Bank of Italy, 2024b). In this case, the Italian supervisor uses several vague expressions, such as 'innovative' or 'the most efficient', which, as observed with the Polish and Estonian supervisors, often lead to interpretative challenges. Generally, the excessive use of imprecise terms (including general clauses) in the formulation of concepts and definitions within legal language can significantly hinder the practical applicability of such regulations (Gizbert-Studnicki, 2020, pp. 27–28). Despite the use of these vague terms, it is noteworthy that the thematic scope of each call for proposals is described in detail, including a list of potential technologies. Additionally, each call for proposals includes a dedicated section within its provisions that outlines the specific evaluation criteria for submitted projects. This regulatory approach appears to be a best practice that other supervisory authorities should consider adopting. Such a framework fosters a sense of fair competition among participants and provides clear guidelines for the evaluation committee, potentially resulting in fewer complaints related to project rejections.[13] Similar to the Estonian supervisor, the Bank of Italy explicitly excludes from the programme projects involving individuals who have been convicted of crimes or who are under investigation.

A remarkable feature of the Milano Hub is the dedicated support provided to qualified projects. Each selected initiative is assigned an overseer responsible for setting meeting schedules and defining the objectives to be achieved. Additionally, the entity benefits from the expertise of a team of Bank of Italy professionals, offering technical guidance in banking, finance, and other specialized sectors. Participants may also request detailed analyses of the regulatory framework and its underlying sources, as interpreted by the Bank of Italy. As can be read in the FAQs of the Milano Hub, such support typically lasts around six months (Bank of Italy, n.d.b). Moreover, representatives of selected projects are invited to participate in seminars and networking events, fostering collaboration with other participants and stakeholders from the banking and financial sectors. Italy's approach to supporting innovation is both thoughtful and comprehensive. Together with the Fintech Channel and the regulatory sandbox, the Milano Hub contributes to a cohesive framework designed to effectively support innovation in the financial sector.

13 For each call for proposals, instructional videos are also prepared, reflecting the Italian supervisor's inclusive approach to the concept of an innovation hub.

Conclusions

Innovation hubs, alongside regulatory sandboxes, are among the most frequently utilized tools for fostering innovation employed by European supervisory authorities. An analysis of various European innovation hubs reveals several common features, or at least a noticeable trend toward implementing the concept of the innovation hub in a particular form. One such feature is the establishment of dedicated contact points for fintech projects or broadly defined innovation-related initiatives. Some regulators set up a single contact point solely for enquiries related to specific projects, while others provide a general contact for all matters concerning innovation. Another common element is the development of FAQs, which are often updated based on the supervisory authority's accumulated experience. In addition to static resources, some authorities introduce chatbots, which serve as simplified and more user-friendly interfaces for accessing FAQ content. Supervisory authorities are also increasingly organizing meetings and sessions, thereby going beyond formal interactions via written forms and offering opportunities for direct engagement. In some programmes, entities approved for support are assigned dedicated project mentors from the supervisory authority to guide them through the entire process. Finally, innovation hubs often provide regulatory and market-entry support. This includes assistance in analysing the regulatory environment and understanding the conditions necessary for entering the market, particularly in highly regulated sectors such as financial services. Such support typically extends to the licensing process and fulfilling the requirements needed to obtain necessary authorizations.

The concept of the innovation hub is relatively new but has reached a certain level of maturity. A classic example of a well-structured and widely emulated model is the Innovation Hub established in 2014 by the Financial Conduct Authority, the financial supervisor in the UK. However, this article does not aim to focus on this well-documented benchmark, but rather to shed light on other European approaches to creating innovation hubs, including those in smaller economies such as Estonia, or culturally and geopolitically distinct economies such as Poland or Italy.

A comparative analysis of the three innovation hubs, supplemented by observations of others, highlights a significant challenge: the ambiguity of the criteria for qualifying entities for innovation hub programmes. This lack of clarity manifests in the use of vague terminology or overly general and concise guidelines. However, such ambiguities only become a problem when the programme itself is sufficiently developed. Unfortunately, many innovation hubs remain limited to a simple form for posing questions to supervisors, or worse, merely an email address for enquiries.

In today's dynamic world, neither regulators nor legislators can fully keep pace with the rapidly evolving landscape, whether in adapting legal frameworks or supervisory practices. Therefore concepts like the innovation hub are invaluable for businesses and regulatory bodies – and perhaps even for legislators in the longer term. Instruments such as innovation hubs serve a dual purpose: they provide crucial support to young entities that require the guidance of more experienced partners and advisors, while simultaneously enabling regulators to familiarize themselves with novel solutions, potentially preparing them to oversee these innovations in the near future. This two-way learning process becomes even more critical in the face of rapidly expanding regulatory frameworks, such as those related to ESG, which impose increasingly complex and far-reaching obligations not only on market participants but also on supervisory authorities. The implementation of such requirements demands not only formal compliance mechanisms but also systemic adaptation within both financial institutions and supervisory structures (Fedorowicz & Zalcewicz, 2024, pp. 54–55). In this regard, innovation hubs can serve as a strategic platform for preparing both sides of the market for such emerging challenges, ensuring that supervision evolves in parallel with innovation.

One could hypothesize that in an ideal world, regulators would stay at least one step ahead of the business sector; this broader perspective would enable them to ensure market stability – in this case, financial market stability. However, practice and observation suggest otherwise, underscoring the critical importance of dialogue between regulators (and legislators) and businesses. Effective regulation in the digital age cannot be achieved in isolation: it requires structured, continuous, and meaningful collaboration between public authorities and the private sector. Such cooperation should go beyond formal procedures and include genuine consultation mechanisms, working groups, and pilot projects that allow for the joint development of pragmatic and innovation-friendly solutions. In this context, it is important to emphasize the significant role of open application programming interfaces (APIs), which can greatly facilitate the work of both supervised entities and supervisors. APIs enable standardized, secure, and efficient data exchange, which is crucial in the increasingly complex financial ecosystem. By automating the flow of information, they reduce reporting burdens, enhance transparency, and allow for real-time oversight, making supervisory activities more dynamic and responsive. Moreover, APIs foster interoperability between various systems and institutions, enabling better integration of new technologies into existing regulatory frameworks. The trend toward an expanded adoption of APIs seems inexorable, especially when considering the escalating volume of data and the increasing complexity of reporting requirements (Nowakowski, 2020, p. 280). In addition, it is worth noting that innovative tools often aim to enhance supervisory tasks, particularly in the realm of suptech projects. These initiatives leverage technology to strengthen the capabilities of supervisory authorities, increasing their efficiency, precision, and ability to identify emerging risks immediately.

Ultimately, society as a whole stands to benefit from supporting innovative projects. While it is acknowledged that technology and innovation are sometimes used against societal interests, their positive impact on contemporary life remains undeniable. Therefore supporting a cooperative ecosystem – where businesses, regulators, and lawmakers work together to create conditions conducive to responsible innovation – should be a shared priority.

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