

Financing the digitalisation of small and medium-sized enterprises

The enabling role
of digital innovation hubs

Executive summary

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Prepared for:
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Executive summary

Context and study approach

Recognising the importance of small and medium-sized enterprise (SME) digitalisation, the EIB Innovation Finance Advisory division, in collaboration with the European Investment Advisory Hub, and in close cooperation with DG Connect of the European Commission (EC), has prepared this study to review access-to-finance conditions for the digitalisation of SMEs and the role of digital innovation hubs (DIHs) as key enablers in the wider ecosystem.

Digital innovation hubs serve as important, regional multi-partner coordinators. They reside at the heart of the innovation and digitalisation ecosystem and comprise a wide variety of organisations, including research and technology organisations (RTOs), universities, industry associations, chambers of commerce, incubators and accelerators, regional development agencies, and even governments. As a first-line, local access point, they play a critical role in facilitating the digitalisation of European companies across industries and regions.

The European economy is dominated by small and medium-sized enterprises, which account for 99% of the enterprises. The speed at which SMEs are able to digitalise along with the level of digitalisation they can achieve will have far-reaching effects on European competitiveness in global markets. Digital technologies are disrupting market dynamics at increasing speeds and will create unprecedented opportunities for European SMEs as well as for economic growth in Europe. The technology industry is growing five times faster than the rest of the European economy in terms of gross value added, and this growth has accelerated in recent years.¹ The rapid pace of technological growth enables small and medium-sized enterprises to scale, compete, and disrupt in ways that were unheard of in previous generations.

Glossary

Digital innovation hubs²: As multi-partner coordinators, they act as one-stop shops that help companies expand their use of digital technologies to improve business and production processes, products, and services and to increase overall competitiveness. Digital innovation hubs share advanced knowledge and expertise with their customers and provide them with access to the latest technologies. They also guide customers in exploring and piloting digital innovations, and when required, they offer business and financing support to customers to allow them to implement these innovations across the value chain.

¹ Eurostat

² Report from DG CONNECT: DIHs - October 2018

Digitalisation is not just the act of acquiring IT systems and equipment. It involves changes across fundamental business dimensions:

- **Processes:** Digitalisation involves increasing automation in production and integrating simulation and data analytics into processes and supply chains. As a result, substantial and continuous gains in productivity and resource efficiency can be realised over full product lifecycles from product design to lifecycle management.
- **Products:** With the emergence of the Internet of Things, digitalisation has entered the realm of products, with information and communications technology (ICT) increasingly embedded in all types of products. Examples are self-driving cars, wearables, and smart home appliances.
- **Business models:** Digitalisation re-shuffles value chains and blurs the boundaries between products and services. Smart and connected products both drive and adapt to changes in customers' behaviour, resulting in co-created, highly personalised products and services.

The key challenge is that less than 20% of European small and medium-sized enterprises are highly digitalised³ compared to nearly 50% of large corporations. Digitalisation levels are particularly low (below the EU average) among companies in Eastern and Southern Europe and in traditional sectors such as construction and basic goods manufacturing. There is the risk that the digital gap will increase over time as the companies driving digital change continue to digitalise at a faster rate while others fall even further behind, losing their overall competitiveness. If Europe does not address this issue, it will hamper economic convergence and growth prospects in many sectors of the economy.

Study approach

The study framework is based on key dimensions of a small and medium-sized enterprise's digitalisation journey: 1) the demand for digitalisation; 2) the supply of financing from financial intermediaries; and 3) ecosystem development. At the heart of the ecosystem, we find the digital innovation hubs.

Primary data was collected via surveys of 102 SMEs and through a series of 'in depth' interviews with SMEs and financial intermediaries. Six digital innovation hub (global and EU) case studies were conducted, and six national small and medium-sized enterprise digitalisation funding programmes were analysed. The sampling was balanced as much as possible in terms of geography, industry verticals, digital profiles of SMEs, and financing products (debt, equity, and grants) offered by financial intermediaries. Secondary data⁴ were analysed for insight into the market demand for digitalisation and the technologies involved in SME digitalisation. Despite the wealth of data collected and analysed, the results cannot be considered statistically representative.

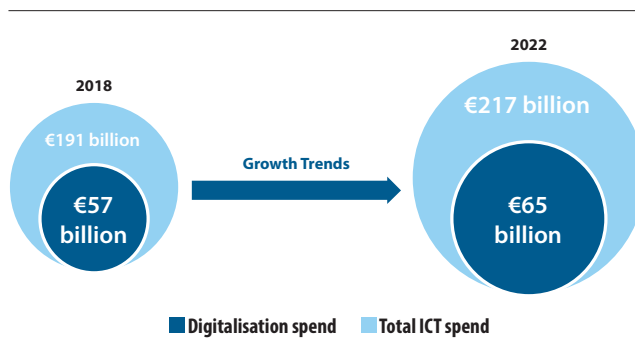
³ *Digital Economy and Society Index Report - 2018*
http://ec.europa.eu/information_society/newsroom/image/document/2018-20/4_desi_report_integration_of_digital_technology_B61BEB6B-F21D-9DD7-72F1FAA836E36515_52243.pdf

⁴ Gartner in-house research and desk research

Snapshot of the status of digitalisation in Europe

In Europe, SME spending on digitalisation (part of the total spending for ICT) was estimated to be €57 billion in 2018 and is expected to reach €65 billion by 2022.⁵

Figure 1. European SMEs' estimated digitalisation spending



However, the growth is uneven among industries and countries. The study shows that SMEs' spending on ICT and digitalisation depends on two external variables:

1. the geographical location of the small and medium-sized enterprise;
2. the industry vertical in which the SME is active.

Regional digitalisation gap

Geographically speaking, Northern European countries such as Denmark and Sweden are leading the global rankings for digital transformation, while new member states are experiencing significant delays. In 2018, about 95% of the total SME spending on digitalisation and ICT was concentrated in Western Europe (the High Enabling Region for digitalisation⁶: NL, FI, SE, BE, LU, IE, DK, UK, FR; and the Mid Enabling Region for digitalisation: DE, AT, MT, ES, CZ, EE, PT, CY, LT, IT). Meanwhile, only 5% of spending was in Eastern and South-Eastern Europe (the Modest Enabling Region for digitalisation: SL, HU, EL, SK, BG, PL, HR, LT, RO).

⁵ Based on Gartner's research data on SME ICT spending in 2018, 2020 and 2022 forecasts, and feedback collected in executive surveys on digitalisation strategies across the European Union.

⁶ The regions are defined based on the Digital Transformation Enablers Index (DTEI). This is one of the indexes used by the European Commission in the *Digital Transformation Scoreboard Report*.

The average SME spending on ICT and digitalisation within the High Enabling Region is approximately 2.5 times higher than spending in the Mid Enabling Region (mainly Southern and Central European countries). The gap is even larger when the High Enabling Region is compared to the Modest Enabling Region (mainly Eastern and South-Eastern European countries). In the latter region, spending on ICT and digitalisation is 10 times less than in the region at the forefront of digitalisation. The forecast for ICT and digitalisation spending anticipates improvements in the Mid and Modest Enabling Regions. However, the regional gap is not expected to narrow. By 2022, spending in the High Enabling Region is likely to be 12 times larger than in the Modest Enabling Region.

These findings were confirmed by the EIB Economics Department's study⁷ on the performance of innovation and digitalisation in Central, Eastern, and South-Eastern Europe (CESEE). Most CESEE countries are viewed as modest and moderate innovators, with digital readiness levels below the EU average (some remarkable exceptions to this are Estonia and Lithuania). The reasons for this are as follows: 1) low levels of investment in intangible assets, such as R&D, especially in the private sector; 2) insufficient numbers of highly skilled workers; and 3) the overall low quality of scientific and technological infrastructure.

Industrial digitalisation gap

At the industry level, the study shows clear sectoral gaps in small and medium-sized enterprises' estimated demand for digitalisation. Nearly 60% of the total ICT spending (and digitalisation demand) comes from the financial services, ICT, and advanced manufacturing sectors (such as automotive, electronics, life sciences, drug manufacturers, and mechatronics). Meanwhile, traditional sectors, such as education, healthcare, construction, and transportation account for less than 12%. Multiple factors contribute to this variance, and the main drivers differ depending on the industry. For example, construction has a high concentration of very small SMEs, which tend to be less digitalised.

⁷ *Innovation Investment in Central, Eastern and South-Eastern Europe*, European Investment Bank
https://www.eib.org/attachments/efs/innovation_investment_in_cesee_en.pdf

European SMEs are underinvesting in disruptive and high-potential digital technologies compared to global leaders in this area. A striking example is in investments in artificial intelligence (AI).⁸ Since 2011, two-thirds of AI investments' total global value was located in the US. In comparison, in 2017 the European Union's share of global AI equity investments was only 8%, while China's share was 36%, putting it in second place after the United States. The OECD report explains this disparity, highlighting the fact that the United States are responsible for 70–80% of global Venture Capital (VC) investments across all technologies, including AI. Europe's strength, on the other hand, is in core AI systems, i.e., fundamental research in AI that does not target a specific sector or activity, currently underrepresented (in light of their potential) in industrial applications (e.g. in IoT, autonomous vehicles, and robotics).⁹ Thus, Europe is expected to reap the business value from its AI investments later than both China and the US.¹⁰

Skew towards certain technologies

The data suggest that European SMEs mainly invest in technologies for business optimisation (see figure below). Approximately one third of this study's surveyed SMEs have adopted technologies to support the digitalisation of operations, such as Customer Relationship Management (CRM) technology or Enterprise Resource Planning (ERP). These are well-established technologies that can help companies remain competitive through improvements in operational efficiencies. In this sense, European SMEs have focused on optimising existing models and processes rather than on implementing transformative digital projects.

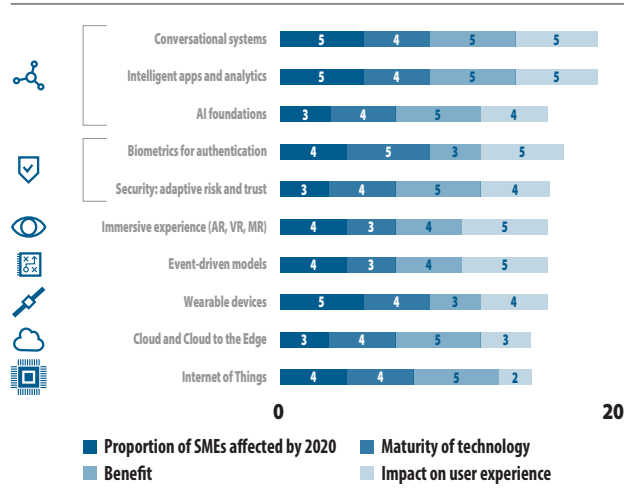
Gartner Research has identified the 10 most promising and transformative technologies for SME digitalisation based on the proportion of SMEs that the technologies are expected to impact as of 2020 as well as on the following characteristics of the technology: its maturity in terms of availability and usage across markets; the benefits it provides for an SME, for example, in terms of cost reduction or new revenue generation; and its impact on user experience (a strong driver for adopting a technology).

⁸ *Private Equity Investment in Artificial Intelligence* – OECD report
<https://www.oecd.org/sti/ieconomy/private-equity-investment-in-artificial-intelligence.pdf>

⁹ *European Artificial Intelligence (AI) leadership, the path for an integrated vision*.
[http://www.europarl.europa.eu/RegData/etudes/STUD/2018/626074/IPOL_STU\(2018\)626074_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2018/626074/IPOL_STU(2018)626074_EN.pdf)

¹⁰ Gartner research. Business Value from AI Investments is calculated as potential impact on businesses in terms of cost reductions and additional revenues.

Figure 2. The top 10 ‘enabling’ technologies for SME digitalisation¹¹



The SME survey suggested that European SMEs are underinvesting in these promising technologies and potentially missing out on the benefits of deeper transformations. According to the survey, currently around one third of European SMEs use AI and cloud computing, and some SMEs use several of the other technologies. Some technologies are not being used by any of the surveyed small and medium-sized enterprises.

Even AI – viewed as the most ‘enabling’ technology and as a key technology in SME digitalisation – appears to be underrepresented. By 2020, it is expected that over 70% of SMEs in Europe will be impacted by AI in conversational systems, intelligent apps, and analytics, but only 33% of the SMEs in this study currently have projects in this area.

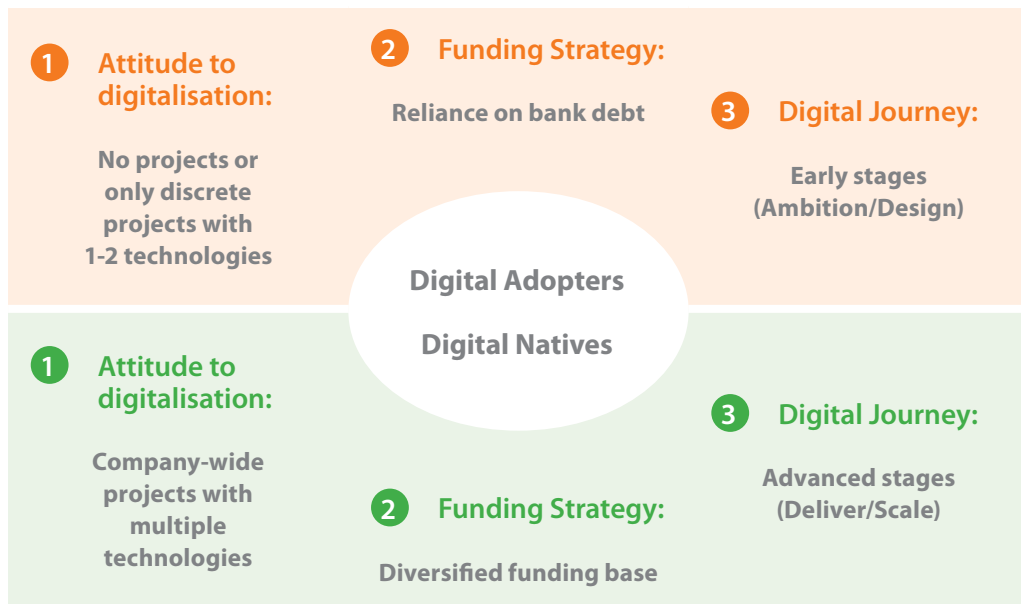
¹¹ Gartner research

Two broad segments of digital small and medium-sized enterprises

This study recognises that small and medium-sized enterprises typically fall into one of two categories. They can be Digital Adopters or Digital Natives. An SME's digital profile comprises all of the following: its attitude towards digitalisation; its drivers for digital projects; its digital journey (according to five typical stages for the SME digitalisation journey: desire/ambition, design, delivery, scale, and harvesting/refining); and its funding strategy for digital projects.

The following summary highlights the key characteristics of Digital Natives compared to Adopters in their approaches to digitalisation.

Figure 3. Overview of Digital Adopters versus Digital Natives



Digital Adopters are usually older companies (i.e. they were established well before the digital age) that do not leverage strong technology platforms to conduct business. Many Adopters are in the early phases of their digital journeys, still contemplating their desire and ambition for digital projects. Digital Adopters may focus on 1–2 technologies, or they may not have any digital projects at all. They display a more 'conservative' approach to digitalisation: deploying discrete technologies in a targeted way; engaging in incremental improvements; and favouring projects that increase existing revenue streams or optimise operations (digital optimisation). They tend to rely on existing relationships with banks to finance their digital projects, using the same funding channels as for any other project.

Digital Natives, on the other hand, are companies that emerged in the digital economy. They were established on strong technology platforms, and they exhibit digital maturity across a broad array of processes and functions. They can be start-ups and/or young firms and may revolve around a single digital initiative, but they tend to use multiple technologies to conduct business. This is because they exhibit a more 'experimental' approach towards digitalisation, recognising the value of combining different technologies.

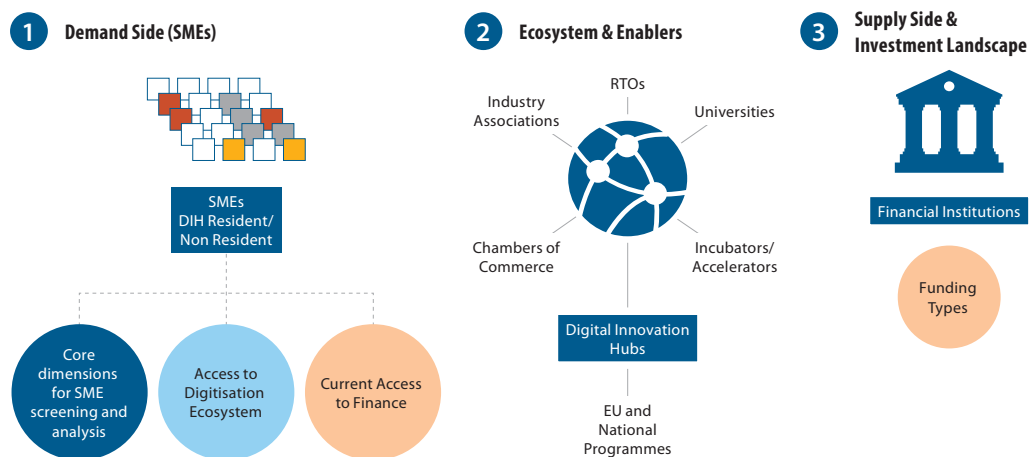
Natives may already be in the 'deliver' or 'scale' stages of their digital journeys. In other words, their projects tend to be more advanced than those of their Adopter counterparts. Natives typically seek financing to scale up operations (digital transformation) rather than to fund a specific digital project. Digital Natives are generally 'younger' companies; unlike Adopters, they may not have established track records or long-term relationships with banks. Thus, they tend to have a more diversified capital base and use more innovative and alternative funding instruments, such as hybrid financing and crowdfunding.

The enabling role of digital innovation hubs

Digital innovation hubs already play an important role in the ecosystem and its development. They are key enablers fostering the digitalisation of small and medium-sized enterprises. In broad terms, the services available through digital innovation hubs may be categorised under three pillars: 1) Innovation activities: concerned with identifying opportunities for digitalisation, and developing and validating innovative solutions based on cutting-edge technologies; 2) Business development: concerned with helping companies apply their solutions, assess the business implications/impact, and manage changes to the business models; and 3) Skills creation: concerned with building innovation capacity through enriching human capital.

Currently there are 386 digital innovation hubs included in the DIH online catalogue (at the time of this study) in the 28 EU Member States. Of these, 128 digital innovation hubs are within the High Enabling Region, 164 are within the Mid Enabling Region, and 50 are within the Modest Enabling Region. There is a regional disparity in the number of DIHs per SME across Europe, with the Modest Enabling Region being underserved (approximately 10 000 SMEs per DIH) compared to the other two regional clusters (approximately 3 500 SMEs per DIH).

Figure 4. Digital innovation hubs as key enablers



The key findings are presented on the next page.

Key findings

Table 1. Summary of key findings

Dimension	Finding	Description
Findings focused on ecosystem development	1 Crucial role for DIHs but there is room to strengthen their offerings	<ul style="list-style-type: none"> • DIHs are at the core of the innovation and digitalisation ecosystem for businesses. • They play a critical role in supporting European SMEs during their digital journeys. • However, the analysis suggests that there are opportunities to further strengthen the contribution of DIHs to digitalisation in industries across Europe.
	2 Public funding is dominant for DIHs, but new financing models are emerging	<ul style="list-style-type: none"> • Most DIHs have a mixed-funding model, but there is high dependency on public funding from European, national, or regional programmes. • However, there is a growing (but limited) number of DIHs focused on developing more commercial services and activities. This expanded offering by DIHs into revenue-generating activities is an important step towards developing sustainable and more commercially oriented business models, paving the way for a more diversified and reliable funding base, and mobilising additional financial resources to improve and expand SME services.
	3 Perceived complexity and low visibility of public funding programmes	<ul style="list-style-type: none"> • National and regional programmes that support digitalisation are an important source of financing for digital projects. However, the use of these programmes is limited because of lack of awareness, the perceived complexity of the funding applications, and the length of the application process. DIHs may help SMEs to navigate this complexity.
Findings focused on barriers to digitalisation for European SMEs	4 Knowledge gaps in SMEs are a key barrier to digitalisation	<ul style="list-style-type: none"> • The majority of SMEs in Europe are facing issues and difficulties around digitalisation. • A key barrier to SME digitalisation is failing to distinguish between projects with only partially embedded digitalisation features and those involving full digitalisation. • Digital Adopters are at the early stages of their digital journeys, and their knowledge gaps are often at the ambition, design, and delivery phases of digital projects. • Digital Natives are usually further along in their digital journeys, but they are not immune to knowledge gaps.
	5 Financing of digital projects is limited by knowledge gaps in banks	<ul style="list-style-type: none"> • The intrinsic nature of digital projects exacerbates the issue of access to finance that many SMEs are already facing across Europe. • Banks often have insufficient expertise to assess digital projects. • Credit departments in banks are often unable to assess the potential values and risks of a digital project. • This lack of knowledge and expertise within banks puts digital projects at a disadvantage compared to other kinds of projects. • This is particularly true for Digital Natives, who often have digital-only projects but are without collateral or a track record.

Finding 1: Digital innovation hubs are critical enablers with a strong potential to strengthen their offerings

The data collected during our market consultation and survey shows that digital innovation hubs play a critical role in supporting European SMEs during their digital journeys. According to the survey data, about 70% of SMEs with a digital project have used a DIH in their region, and this finding is independent of the digital profile of the SME. Regardless of whether they are Digital Natives or Adopters, small and medium-sized enterprises consider the contribution from DIHs as overwhelmingly positive. Over 70% of SMEs using DIHs believe that the support from DIHs has improved their digital journey.

However, despite this positive impact, the analysis suggests that there are opportunities for digital innovation hubs to further strengthen their contribution to digitalisation in industries throughout Europe. The main issues are as follows:

- *Unbalanced geographical distribution.* There are clear geographical variances across Europe, resulting in an insufficient number of digital innovation hubs in the Modest Enabling Region (mainly Eastern and South-Eastern Europe).
- *Partial mismatch between SME demand and the DIH offerings.* Both Digital Natives and Adopters expressed a material demand for services related to 'access to finance'. However, this demand is not fully met by the digital innovation hubs.
- *Insufficient awareness of DIHs among SMEs.* The companies that have not used DIHs lack information about DIHs and their offerings.

Finding 2: Public funding is dominant in DIHs, but new financing models are emerging

The DIH landscape in Europe is diversified and heterogeneous, with significant differences among digital innovation hubs in levels of maturity and sophistication. Some are fairly advanced, with well-defined business models and clear links to the digital ecosystem, while many others are still evolving, having been established in the last few years. Most digital innovation hubs employ mixed-funding models but are mainly biased towards public funding from European, national, or regional programmes. Private funding for digital innovation hubs is limited and is generally in the form of membership fees and contributions (often in kind) from partners. Repayable capital is very rare and limited.

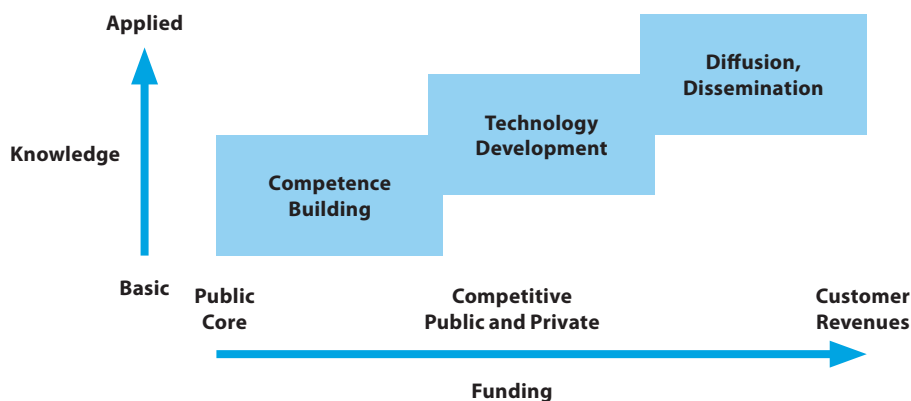
However, a growing number of digital innovation hubs are recognising that the public funding landscape is rapidly changing and that the availability of grants will become increasingly uncertain down the road. This points to a need for the funding paradigm to shift to become more diversified and reliable and to expand the role of private funding. This transition is needed not only to secure the future of digital innovation hubs and reduce their dependence on public grants, but also to mobilise additional financial resources to improve and expand SME services. However, such a shift is often constrained by the digital innovation hubs' business models, which (in the vast majority of cases) are not focused on commercial and market-driven activities.

Some DIH activities always have been and will remain non-commercial – a fact that justifies the continuation of some degree of public funding. Nonetheless, this analysis shows that a limited but growing number of digital innovation hubs are increasing their commercial activities. As they expand their offerings by incorporating more revenue-generating activities, they are taking a step towards more sustainable, commercially-oriented business models, paving the way for a more diversified funding base that would include repayable capital.

The research has identified two emerging business models among digital innovation hubs focused on developing more commercially-oriented approaches:

- **Private-public partnership model.** These digital innovation hubs are pooling together resources from both the private and public sectors. Private partners bring commercially centred approaches to the digital innovation hub's *modus operandi*. Meanwhile, public sector partners provide access to research centres, scientific infrastructure, and basic funding, which are essential for supporting innovation and developing advanced digital solutions.
- **Research and technology organisations model.** These digital innovation hubs are leveraging the financing models used by research and technology organisations across Europe. Some research and technology organisations have broadened their financing mix, combining grants with repayable sources of financing. While basic research is largely publicly funded, RTOs are now leveraging their expertise to take on more project-oriented research, which is often funded by private and public counterparties. They are also monetising their discoveries via tech-transfer funds, IP management, and spin-offs. In terms of their financial profile, RTOs are generally non-profit organisations, and their revenues from dissemination and deployment are re-employed to fund new innovation cycles. They generally operate according to a three-stage innovation dynamic, which broadly correlates with a three-part funding model (see figure below):
 - Public core funding to support exploration of needs and competence-building;
 - Competitive public and private income for technology development;
 - Customer revenues from dissemination and deployment.

Figure 5. Research and technology organisations' three-stage innovation dynamic and funding model¹²



Advanced digital innovation hubs are adopting similar approaches, expanding beyond basic capacity-building programmes to offer specialised, fee-based services such as advanced training courses, memberships, and tailor-made solutions.

Case study: Two Irish examples

1. Private-public partnership (PPP) model

An example of this approach is a digital innovation hub in Ireland, a not-for-profit partnership between a private enterprise, a public research institute, and the local public authority. The digital innovation hub aims to support Irish and international talent by fostering a design-led, living-lab ecosystem. It helps businesses digitise and scale through training courses, accelerator programmes for start-ups, and innovation services for established companies. The PPP structure leverages public and private assets via the following: 1) a private sector donation of a 20 000 sq. ft. building, provided under a 15-year nominal lease; 2) a research institute sharing its third-level sector expertise in education to develop skilled talent to meet industry needs and to stimulate innovation, RDI, and IP; and 3) local governments' knowledge and networks to drive economic development. The digital innovation hub generates revenues through rental income, monthly and annual memberships, utilisation fees for testing and research facilities, coaching and other investment-readiness support, milestone success fees, etc. It aims to be self-sustainable within five years.

¹² Source: *Access-to-finance conditions for Research and Technology Organisations (RTOs) and their academic and industrial partners* <https://www.eib.org/en/publications/access-to-finance-conditions-for-rto>

2. Research and technology organisation model

An example of this approach is another digital innovation hub, also based in Ireland. It was founded in 2003 by the Irish government to support companies involved in the ICT sector. It was originally fully supported by public funding, but today, over 2/3 of its income is from private sources. The main source of income is the fees paid by more than 70 small and large companies being hosted on the campus of the digital innovation hub. In addition to office space, it offers its residents business support (regular seminars, workshops, and business clinics) and networking opportunities.

Finding 3: Perceived complexity and low visibility limit funding through public digitalisation programmes

National and regional programmes for digitalisation are an important source of financing for companies' digital projects. However, the use of these programmes is limited because of companies' lack of awareness of these funding sources and because of the perceived complexity and length of the application process.

According to the survey, only 43% of SMEs are aware of national and European digitalisation programmes, and less than one in five SMEs have received support from these programmes during digitalisation. Digital innovation hubs and small and medium-sized enterprises gave similar feedback during the market consultation, confirming that this is a widespread issue among companies.

Finding 4: A key barrier to the digitalisation of SMEs (different manifestations for Natives versus Adopters) is a lack of knowledge

In spite of various initiatives that exist at national and regional levels, European SMEs still face significant hurdles as they try to digitalise, with the lack of knowledge and expertise acting as a persistent, pervasive barrier. Digital Adopters are generally at the early stages of their digital journeys, and their lack of knowledge is usually related to the ambition, design, and deliver phases of projects.

Based on the survey and the market consultations, we can infer that for Digital Adopters, the knowledge gap manifests itself in the following ways:

- **Ambition:** Digital Adopters often lack awareness of the true potential of digital technologies. Therefore, they tend not to prioritise these investments, leading to insufficient budgets for digitalisation.

- Design and deliver: Digital Adopters lack the internal knowledge and technical expertise to design and implement digital projects. The survey shows that over 40% of Digital Adopters are struggling because they lack this expertise.

While Digital Natives are usually further along in their digital journeys, often working to deliver or scale up their digital initiatives, they are not immune to a lack of knowledge. For these companies, the digital initiatives are at the core of their businesses. They recognise the full potential of digital technologies, and they usually have the in-house technical knowledge and expertise to design, develop, and implement new technologies. However, Digital Natives often lack the expertise to develop sound business plans for projects, execute well-supported valuations, and plan and carry out fundraising events. They also lack market intelligence, management experience, and contacts with relevant investors, making it harder for them to scale up.

Finding 5: Financing of digital projects is limited by knowledge gaps in banks

The intrinsic nature of digital projects exacerbates the access to finance issue that many small and medium-sized enterprises across Europe are already facing. The analysis suggests there is a funding gap, with insufficient financing available for the digital projects of both Digital Natives and Adopters.

The survey data show that the number of small and medium-sized enterprises capable of raising external financing for their digital projects is significantly lower than that of SMEs raising financing for general corporate purposes. Even though banks may act as a primary source of funding for digitalisation, they often lack the expertise to properly assess digital projects. Further, their lending products are not always suitable for these projects, especially given the high-risk and complex business models of Digital Natives. Considering the limited capacities of banks, there is an opportunity for FinTech and alternative funding providers to step in and demonstrate that they can effectively support digitalisation.

Banks' credit departments are often unable to assess the potential values and risks of a digital project. Therefore, they tend to rely on a company's past performance, collateral, and capital strength.

The lack of knowledge and expertise within banks means that digital projects are disadvantaged compared to other kinds of projects. Banks tend to perceive digitalisation projects as 'riskier' propositions, given some of the unique characteristics of digital projects:

- Digital projects often lack any tangible collateral;
- IP and intangible assets are not widely recognised as collateral;

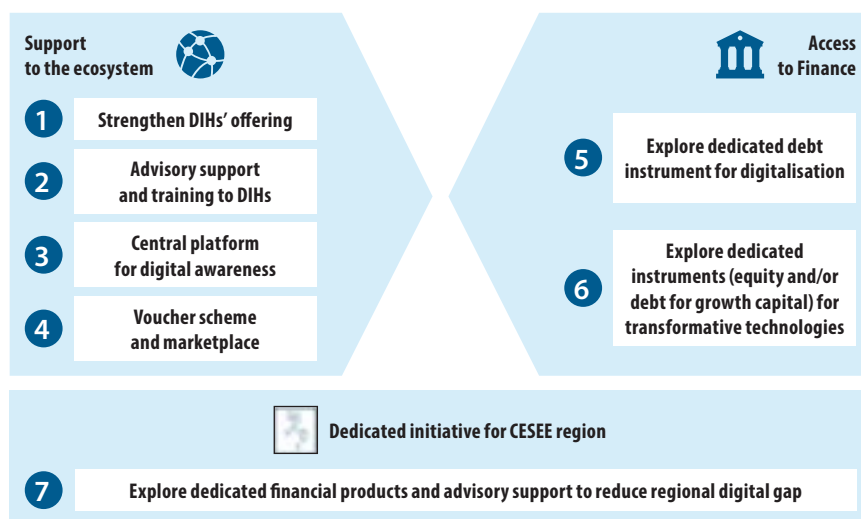
- The novelty of digital projects often means that historical evidence to support the business case for the project is lacking, which may sow doubts about a company's capacity for debt repayment and future cash-flow generation;
- The loan ticket size and funding requirements for digital projects are relatively small, resulting in higher transaction costs and administrative burdens. In other words, these projects may be less attractive and less profitable for banks than larger loan tickets. Data from the survey show that SMEs often require a small loan ticket size to initiate a digital project. Over half the SMEs in the survey described external funding needs in the range of €25 000 to €50 000 to initiate digitalisation.

For Digital Adopters, banks are able to bundle digital projects with other investments, such as hardware and machinery. This strategy provides collateral and mitigates the risk of the digital or intangible project. However, this option is generally not available for Digital Natives, as they often only have digital projects. Therefore, banks struggle to provide funding for this category of SME. The current bank offerings (particularly traditional bank loans) are often not suitable for Digital Natives, especially those younger than 10 years old with high-risk profiles (e.g. insufficient credit history, a lack of collateral, high dependency on key individuals) and complex business models (unproven, complicated digital products and services).

Small and medium-sized enterprises, especially Digital Natives, have begun using alternative finance and FinTech as sources of funding for digitalisation projects. These non-traditional entities are leveraging new technologies and creating novel opportunities to improve SME access to finance. FinTech has been transforming many aspects of the SME funding process, developing innovative credit scoring systems, digital account services, and online lending platforms.

Recommendations

The framework below encompasses recommendations in the following areas: 1) furthering the development of the innovation and digitalisation ecosystem and leveraging the digital innovation hubs' central coordinating role in the proposed initiatives; 2) improving small and medium-sized enterprises' access to financing for digital projects by expanding dedicated financial instruments and providing training and support for banks; 3) reducing the digital gap in the CESEE region by exploring possibilities for dedicated instruments and advisory support.

Figure 6. Recommendation structure

The proposed set of recommendations is based on key findings and on this study's market consultation. The recommendations also draw from lessons learnt through direct digitalisation project advisory experience of the Innovation Finance Advisory team including two previous assignments related to the digitalisation of small and medium-sized enterprises in specific countries: one with the Department of Business, Enterprise, and Innovation in Ireland¹³ and one with COTEC in Portugal.¹⁴

The key learnings from these assignments are captured below and inform this report's overall recommendations.

- Address the financing gap for traditional small and medium-sized enterprises (i.e. the Digital Adopters). It is important to **develop a set of dedicated financial instruments for digital projects**;
- Address the knowledge gap for traditional small and medium-sized enterprises. **Financial instruments should be accompanied by dedicated soft measures**;

¹³ *The digitalisation of small and medium-sized enterprises in Ireland*. The specific recommendations of this study are currently under consideration and do not necessarily reflect the final actions of the Irish government. https://www.eib.org/attachments/thematic/digitalisation_of_smes_in_ireland_summary_en.pdf

¹⁴ *The digitalisation of small and medium-sized enterprises in Portugal*. https://www.eib.org/attachments/thematic/digitalisation_of_smes_in_portugal_summary_en.pdf

- **Leverage the supply side** (i.e. tech companies selling digital solutions) **to accelerate demand for digitalisation** from traditional small and medium-sized enterprises. This ‘push and pull’ strategy is based on creating a tech marketplace for traditional small and medium-sized enterprises;
- **Develop a well-coordinated strategy to ensure a holistic and coherent approach to digitalisation**, incorporating all the socio-economic dimensions (from education, to technology, to business and regulation) in the digital strategy; highly digitalised countries (such as Denmark and Finland) demonstrate that their success has been contingent upon doing this.

Building on the experience of the Digitising European Industry initiative (DEI), the InnovFin Programme, and the European Fund for Strategic Investment (EFSI), the recommendations below could be considered pertinent also for the upcoming Digital Europe Programme and InvestEU Programme (where applicable and relevant).

Recommendations focused on supporting the ecosystem

The recommendations below should be implemented in close cooperation with the DIH network, and they should leverage DIHs’ critical role as coordinators of different players and organisations in the ecosystem.

Recommendation 1: Strengthen DIHs’ reach and role in helping SMEs access financing support

It is recommended to increase the number of digital innovation hubs across underserved regions of Europe, including the Modest Enabling Region (mainly South-Eastern Europe), and to further strengthen key services, such as providing small and medium-sized enterprises with access to financial support.

1.1 Increase the number of DIHs in underserved regions

Main objective: Address the knowledge gap in regions and sectors with low levels of digitalisation.

Target companies: Small and medium-sized enterprises in regional clusters and industries with low levels of digitalisation.

Brief description: A policy-level initiative to promote the creation of additional digital innovation hubs operating in the Modest Enabling Region, which is underserved compared to other clusters, and in low digitalised industries.

Key design principle: A combination of dedicated funds and incentives. This initiative could be considered for the upcoming Digital Europe Programme, and it could build on the experience from the existing DEI, which has supported the creation of new digital innovation hubs in Eastern Europe.

1.2 Strengthen the link between DIHs and banks

Main objective: Address banks' knowledge gaps related to digitalisation.

Target companies: Both Digital Natives and Digital Adopters.

Brief description: Promote stronger cooperation between digital innovation hubs and banks or other financial investors. Digital innovation hubs could design and develop an independent 'digital score' for digital projects. This score could be used by banks and investors to improve risk assessments and strengthen the due diligence process.

Key design principle: Develop policy incentives to promote stronger collaboration between DIHs and banks. This initiative could be considered in the upcoming Digital Europe Programme.

Example: This recommendation could leverage the experience of an existing pilot involving a DIH partnership with a national bank (further details in box below).

Case Study: DIH partnership model with a national bank

A national industry association has established a digital project cooperation agreement with a major national bank using its network of digital innovation hubs. The purpose of this agreement is to enable the digital innovation hub to forge a link between the customers (SMEs) and the bank.

At the inception of this cooperation, there is a digital and financial assessment in the form of a 4-hour joint interview with digital experts from the digital innovation hub and financial experts from the bank. The outcome would be a set of recommendations, focused on innovation gaps and on a detailed analysis of the digital projects.

The partnership has key benefits for both sides.

For the bank:

- Expanded portfolio of products for clients, with the addition of digital assessment and technical support services via the digital innovation hub;
- Receive independent quality assessments of digital projects from the DIH, for which the bank does not have the designated expertise. Banks are thus assured on the technical soundness of projects.

For digital innovation hubs:

- Early involvement of the bank in the digital projects of small and medium-sized enterprises so that risks can be addressed as quickly as possible;
- Ability to offer a full package solution to small and medium-sized enterprises (digital assessment and financing).

1.3 Strengthen the links between DIHs, large corporations, and equity investors

Main objective: Address DIHs' limited ability to assess the market potential and business case for highly innovative technologies.

Target companies: Small and medium-sized enterprises developing complex and innovative digital projects, mainly Digital Natives.

Brief description: By involving larger corporations and equity investors in the early stages of a project, a digital innovation hub can benefit from an early assessment and market validation of a new technology's potential. Then, DIHs would be better able to prioritise projects and assist companies who are developing digital technologies to envision a clearer path to market.

Key design principle: Develop policy initiatives to promote stronger collaborations among digital innovation hubs, large corporations, and equity investors. This initiative could be considered for the upcoming Digital Europe Programme.

Example: A concrete example of this kind of partnership appears in the case study below. It shows the potential benefits of a stronger collaboration between digital innovation hubs and equity investors.

Case Study: North American DIH

The North American DIH is one of the largest urban innovation hubs in the world. Founded in 2000, it supports over 1 200 science and tech companies from start-up to scale-up.

The DIH's business model is based on strong partnerships with large corporations. It has over 50 partners across multiple sectors and includes corporations such as Microsoft and Samsung. The partnerships play a key role in selecting the start-ups that the DIH will ultimately support. The selection combines a standard process based on criteria such as technology readiness, management expertise, and the state of the organisation, with a market validation that is completed in cooperation with the large corporate partners.

This screening process allows the DIH to prioritise the best projects. DIH-supported companies are 45% more likely to be successful in their fundraising compared to the overall population of start-ups.

Recommendation 2: Diversify funding sources where possible and support DIHs to develop more commercially-oriented business models

It is recommended to provide advisory services and training to digital innovation hubs to help them develop more commercially-oriented business models, which could lead to a more diversified funding mix, reducing dependencies on public sources.

Main objective: Facilitate and promote the development of more commercially viable activities and services among DIHs. Some DIHs are already expanding their offerings to include more fee-based services and products in order to create more sustainable business models and reduce the dependence on public funding.

Target companies: Digital innovation hubs across Europe.

Brief description: Develop a platform for knowledge exchange and training for digital innovation hubs focused on developing commercially viable business models. European, national, and/or regional policymakers should also support the research and technology organisations by putting the right incentives in place and by creating appropriate framework conditions.

Key design principle: The platform should include workshops, networking events, face-to-face training, and online support (webinars, e-learning portals, etc.).

Example: This initiative could build on the experience from the DIHs' Enhanced-Learning Programme (DIHELP).

Case Study: DIH Enhanced-Learning Programme (DIHELP)

DIHELP aims to develop coherent, coordinated, and sustainable support for European industries in all EU Member States at the regional level using the concept of DIHs.

To achieve this objective, DIHELP helps 30 DIHs to develop and/or scale up their activities through a mentoring and coaching programme that lasts for nine months.

Selected DIHs receive training and coaching on business development, financing, and innovation management delivered both face-to-face and remotely as part of the DIH Academy.

For established DIHs with previously developed business models, there are already appropriate financial instruments, such as the EFSI or InnovFin Science (EU Finance for Innovators, a joint EIB-EC programme), which could be used to diversify funding mixes and increase private funding.

Recommendation 3: Develop a central platform to drive awareness and ambition

It is recommended to establish a central platform with standardised tools that would enable small and medium-sized enterprises to assess their digital maturity and banks to address their knowledge gaps. The online tool would provide small and medium-sized enterprises with access to a central library of training materials and case studies and would make specific recommendations on their digital levers. Similarly, the platform could also provide training material to improve banks' knowledge and skills such as in assessing the risks and value of digital projects. This could be further enhanced with capacity-building activities bringing together the financial community and digital FinTech.

Main objective: Address the knowledge gap in small and medium-sized enterprises (in the early stages of digital journeys) and banks.

Target companies: Small and medium-sized enterprises in the early stages of their digital journeys, mainly Digital Adopters, and banks with limited knowledge of digitalisation.

Brief description: A single online central platform (to reduce fragmentation of the current offering) available to all European SMEs and banks, offering the following:

- A standardised online assessment of small and medium-sized enterprises' digital maturity. The online tool would enable companies to assess their digital maturity and identify their developmental stages, needs, and challenges. The platform would conduct analyses and recommend relevant actions that companies could take to improve selling, production, and administrative processes, and to transform the organisation. The online tool would also provide links to the following: an online library for additional information; potential financial instruments; EU and national digitalisation funding programmes; and information on which DIH to contact for additional support.
- An exhaustive online library with training material, case studies, assessment tools and training on the credit risk of digital projects, and typical digitalisation roadmaps prepared and vetted by digital innovation hubs. With the support of DIHs, this library could also include material specific to countries or industries, as needed.
- A matchmaking tool linking small and medium-sized enterprises with concrete digital projects to banks.

Key design principle: The tool should be simple and user-friendly. It should be designed, developed, and implemented in cooperation with digital innovation hubs. This initiative could be considered for the upcoming Digital Europe Programme.

Example: Digitalometer launched by BPI France

Case Study: BPI France's Digitalometer

BPI France has launched 'Digitalometer': a 15-minute, online, free questionnaire for small and medium-sized enterprises to self-assess their digital maturity and receive customised recommendations to promote digital transformation

Recommendation 4: Develop a voucher scheme to provide technical assistance to small and medium-sized enterprises and a marketplace to facilitate match-making

This study recommends creating a pan-European voucher system that would provide small and medium-sized enterprises with access to technical support and developing a central digital repository to act as a market matching system, bringing together SMEs and tech providers.

4.1 Pan-European voucher scheme

Main objective: Address the knowledge gap in the planning and implementation of a digital project.

Target companies: Small and medium-sized enterprises during the planning and implementation phase of digital projects, mainly Digital Adopters.

Brief description: A pan-European voucher scheme to cover the cost of hiring external consultants to develop business cases and feasibility studies for digital projects.

Key design principle: The application process for the voucher scheme should be simple and straightforward, with a limited amount of paperwork and documentation. It should be designed and developed in cooperation with digital innovation hubs, which can then provide a quality label or accreditation for potential service providers in the ecosystem.

4.2 Central digital repository

Main objective: Support small and medium-sized enterprises as they meander through the labyrinths of digital markets to identify the best tech providers for their projects.

Target companies: Small and medium-sized enterprises during the planning and implementation phase of digital projects, mainly Digital Adopters.

Brief description: A central digital repository (to avoid fragmentation and multiplication of platforms) with information on tech providers and products to assist companies in identifying the best products to support their business models and to optimise their digitalisation strategies.

Key design principle: The platform should be simple and user-friendly. Its search tool should enable users to search by industry, country, digital solution, etc. Digital innovation hubs should properly screen and regularly vet all tech providers for quality before including them in the digital repository. This initiative could be considered for the upcoming Digital Europe Programme.

Example: A similar initiative was implemented in Singapore in the context of their national digital strategy (further details are available in the Recommendation section).

The SMEs Go Digital Programme in Singapore offers a list of pre-approved digital solutions for SMEs that are proven, robust, and meet SME business needs; it facilitates the matchmaking of companies and tech providers.

Recommendations focused on Access to Finance

Recommendation 5: Explore the development of dedicated financial instruments to support digitalisation

The study recommends the development of a dedicated risk sharing financial instrument for digital projects, which could include a First Loss Piece from the European Commission.

Main objective: Address banks' negative bias towards digital projects. Banks often do not have the in-house expertise required to assess digital projects, which have very specific characteristics.

Target companies: Both Digital Natives and Digital Adopters.

Brief description: A European initiative to develop a dedicated guarantee scheme for digital projects.

Key design principle: The dedicated guarantee scheme should include simplified eligibility criteria and could be combined with training and capacity-building programmes for banks offered by the digital innovation hubs. This should improve banks' understanding of the business models of Digital Initiatives and how to assess credit risks associated with digital transformation. It should also familiarise them with different technologies and applications. This initiative could build on the experience of the EIF Digitalisation Pilot. The new COSME¹⁵ Pilot offers a 70% guarantee of coverage (vs. the standard 50%) to intermediaries for financing the digital projects of eligible small and medium-sized enterprises, and it provides a new simplified eligibility mechanism. In this scenario, digitalisation transactions would become eligible upon the provision of a standardised signed declaration by the SME without requiring any further checks by a financial intermediary).

¹⁵ COSME is the EU programme for the Competitiveness of Enterprises and Small and Medium-sized Enterprises running from 2014 - 2020 with a planned budget of €2.3 billion.

Recommendation 6: Consider developing dedicated equity instruments and/or higher risk absorption debt products for growth capital to support disruptive digital technologies

This study recommends further exploration of dedicated equity instruments and/or higher risk absorption debt products for growth capital (which could take the form of an investment platform) to address Europe's underinvestment in transformative and high-potential digital technologies such as AI.

Main objective: Address underinvestment and market gaps in highly strategic and transformative digital technologies such as AI.

Target companies: Small and medium-sized enterprises with projects in transformative technologies, mainly Digital Natives.

Brief description: Further investigate the design of a dedicated investment platform with the aim of supporting key strategic digital technologies and high-tech digital start-ups in Europe through equity and/or higher absorption debt products for growth capital. This potential investment platform could benefit from a First Loss Piece contribution from the European Commission and leverage public and private investments from different sources, including but not limited to the EIB Group and National Promotional Banks.

Key design principle: Co-investment approaches bringing together private and public investors. The dedicated equity instrument could be considered for InvestEU and build on the experience with the upcoming AI/Blockchain Pilot under the InnovFin Equity Window managed by the EIF. The AI/Blockchain Equity Pilot aims to raise €100 million in investment funds by leveraging €45 million contributions under the European Commission's Horizon 2020 programme. The investment fund will be accompanied by an EU investment support programme.

Dedicated initiative for the CESEE region

Recommendation 7: Further investigate opportunities for dedicated financial instruments and dedicated advisory services for the CESEE region

It is recommended to further investigate opportunities for dedicated financial instruments and dedicated advisory services to reduce the digitalisation gap between the CESEE region and the rest of Europe.

Main objective: Address underinvestment and market gaps in digital technologies and transformation in the CESEE region. In the areas of innovation and digital transformation, CESEE countries are significantly lagging behind the rest of the world compared to other countries in the EU. This trend applies to both private and public investments and is thought to arise from a combination of factors: a lack of access to finance, suboptimal investment allocations, low public R&D investment (1.2% compared to 2% of GDP which is the EU average), and a generally small corporate R&D ecosystem.

Target companies: Small and medium-sized enterprises in the CESEE region, mainly early stage innovative start-ups, those that are scaling up, and deep tech small and medium-sized enterprises (Digital Natives).

Brief description: Further investigate the design and development of potential funding structures and support mechanisms (including advisory services) to leverage resources from the EU, international financial institutions, National Promotional Banks, and the private sector. These resources could be used to support highly innovative start-ups and small and medium-sized enterprises with higher risk profiles in the CESEE region.

Key design principle: Co-investment approaches bringing together private and public investors. This could evolve into a series of initiatives to accomplish the following objectives: enhance financing and access to advisory services for the early stages and scale-ups of innovative tech start-ups with high growth potential; provide advisory support to innovators, connect innovators and investors, and enhance the visibility of digital champions; offer technical assistance to public agencies to strengthen their capacity to design, develop, and implement digital innovation programmes; strengthen strategic investments in the enabling environment for digital innovations; connect digital innovation ecosystems across the region.

Financing the digitalisation of small and medium-sized enterprises

The enabling role of digital innovation hubs

Executive summary



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