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International Telecommunication Union
Development Sector

Digital innovation profile: Albania

Digital innovation ecosystem: Strategies and recommendations for accelerating digital transformation

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Process Summary

Digital Innovation Capacity

15+ development and tech indicators reviewed

Desktop Research

250+ country-specific documents reviewed

Stakeholder Identification

74 ecosystem stakeholders' roles analysed

Stakeholder Engagement

37 stakeholders directly engaged in activities

Co-Creation Workshops

2,000+ ideas captured through 2 workshops

National Stakeholders' Event

33 strategies and recommendations presented

Execution of Recommendations

$25.43 billion present-day GDP boosted

Foreword

Innovation and entrepreneurship fuel economic growth, stimulate market dynamics and pave the way for creating competitive industries that improve our lives and connect us to new opportunities. Albania recognizes the pivotal role that these concepts play in building a sustainable, forward-thinking, and digitally connected society; it has taken significant steps with various ICT investments and continues to address opportunities toward creating a fully digitalized economy driven by research and development.

This digital innovation profile, developed in collaboration with the Ministry of Infrastructure and Energy of the Republic of Albania and in the context of the ITU Regional Initiative for Europe on Digital Innovation Ecosystems, aims to accurately assess the country's digital ecosystem capacity and maturity to help Albania and its stakeholders navigate the digital innovation landscape. The objective is to help Albania to continue building new capabilities for a competitive, sustainable, and ICT-enabled economy that accelerates the development of the digital economy toward achieving Albania's vision.

The creation of this profile entailed an exhaustive process, involving comprehensive research, one-on-one interviews with experts, and collaborative workshops with stakeholders from the public sector, private sector, finance, academia, entrepreneurs, and support networks. I extend my heartfelt appreciation to all the national stakeholders who actively participated in this endeavour. Their contributions and insights have been instrumental in shaping the profile and ensuring its relevance and applicability.

This digital innovation profile will serve as a valuable resource for policymakers, innovators, the private sector, and other stakeholders in Albania. It offers critical insights into Albania's digital innovation landscape, identifies areas for improvement, and presents strategic recommendations for collective decision-making processes towards advancing the country's digital transformation. I am confident that this profile will guide Albania's efforts and investments, driving growth and development in areas crucial to the nation's future.

I look forward to seeing the positive impact of this digital innovation profile on Albania's digital transformation journey. The International Telecommunication Union (ITU) is ready to continue to support Albania in the next phase of this relationship to see the results of these recommendations.

Dr Cosmas Luckyson Zavazava
Director of the Telecommunication Development Bureau
International Telecommunication Union

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1 Introduction

The Republic of Albania has embarked on comprehensive development vision guided by a number of key strategic frameworks outlined in the National Strategy for Development and European Integration (NSDEI) 2022-2030, the Digital Agenda 2022-2026, and the Smart Specialization Strategy (S3), currently under development. The NSDEI provides a global roadmap for national development, emphasising alignment with the sustainable development goals (SDGs) and the European integration process. The vision for 2030 is for Albania to become "a dynamic economy, part of the European Union and the region, that offers equal conditions for increasing the well-being of all its citizens based on a functional democracy that guarantees fundamental rights and human freedoms." The Digital Agenda 2022-2026 serves as a guide and in intended to stimulate investments in advanced computing and data processing, artificial intelligence, and cybersecurity. It also focuses on developing the digital skills capacity needed to sustain these technologies, connecting businesses, public administration and citizens with the latest technologies and resources strengthen global competitiveness and enable digital transformation. In parallel, Albania is formulating the long-term Smart Specialization Strategy (S3) for the period 2024-2030 with a view to the creation of a modern, resilient economy. The S3 strategy is intended to integrate industrial, educational, research, and innovation policies, and foster sustainable economic growth by leveraging the country's innovative competitive advantages while addressing key socio-economic challenges. The vision behind this S3 strategy is to drive innovation and sustainable economic growth by capitalizing on the country's unique competitive advantages, and by placing strong emphasis on digital transformation across priority sectors. By fostering technological development, enhancing research and innovation capabilities, and ensuring the competitiveness of these sectors, the Smart Specialization Strategy aims to enable Albania to compete successfully in international markets. Recognizing that the performance of the ICT sector plays a pivotal role in driving innovation, the Ministry of Infrastructure and Energy, in collaboration with ITU, commissioned this study to assess and better understand the digital innovativeness of the sector.

Digital innovation profiles (DIPs) are an important component in the ITU series of snapshots on ICT-centric innovation ecosystems. Each digital innovation profile provides an assessment and summary of the opportunities and challenges within a country's ICT ecosystem. The at-a-glance format of the digital innovation profile reports enable international comparisons and provide a measurement overview of an ecosystem capacity to accelerate digital transformation as well as its capability to integrate digital innovation into the national development agenda. Serving as a diagnostic tool, the digital innovation profile provides an accurate evaluation of the capacity of the national digital innovation ecosystem to inform and develop strategies for accelerating digital transformation.

Digital innovation profiles offer a rapid and effective means of analysing and optimizing a country's ICT ecosystem. Using this analysis the target country can navigate through the fast-evolving ICT and telecommunication landscape with a view to enhancing the competitiveness of the ICT sector, unlocking the potential for a sustainable digital transformation and supporting the transition of the country toward a knowledge-based economy. Continued collaboration with ITU can lead to targeted specific collaborations, including the implementation of appropriate, co-developed, bankable projects of high value in the national context.

All digital innovation profiles are developed by experts specially trained in applying the ITU Digital Innovation Framework, a structured approach that emphasizes stakeholder engagement across various stages of the DIP development process. The ITU Digital Innovation Framework incorporates highly structured workshops and facilitated assessments, designed to build national capacity, enhance on-the-ground skills and accelerate digital transformation. The framework process equips ITU Member States with the tools to assess and monitor their existing ICT innovation ecosystems and produce evidence-based assessments and concrete actionable recommendations to propel the country towards digital transformation.

The analysis and the positions expressed in this report reflect the research of the national expert, operating within the ITU Digital Innovation Framework, and with guidance from the ITU-D Digital Innovation Ecosystems cluster. The research and findings are shaped by a defined methodology that emphasizes secondary data analysis and an ecosystem-driven, collaborative approach. This methodology involved extensive secondary research and in-depth one-on-one interviews with over 30 local stakeholders from the public sector, private sector, financial institutions, academia, entrepreneurs, and entrepreneurial support networks. These stakeholders were carefully selected in collaboration with the host organization to ensure a broad and relevant range of perspectives. Additionally, the report integrates insights from group sessions and interactive activities conducted throughout the process. These included a co-creation workshop aimed at assessing the current state of the ecosystem, envisioning its future, identifying gaps and areas for improvement, and developing recommendations. A stakeholders' forum was also held, where key findings were presented for review, allowing stakeholders to provide feedback and validation before finalization of the DIP report.

For further details on the methodology employed, please refer to Appendix C.

2 Background and context

Table 1: Key indicators of connectivity

Key indicators	
Population: 2 745 972	ITU Digital Development Index [2024]: • Individuals using the Internet: 82.6% • Households with Internet access at home: 96.5% • Mobile broadband subscriptions per 100 inhabitants: 75.3% • Population coverage by at least 4G mobile networks: 99% • Fixed broadband basket as a % of GNI p.c: 1.3% • Individuals owning a mobile phone: 88.2%
Population density: 103 per km^2	ITU Development Index score [2024]: 84.7
Gross National Income per capita: USD 14 400	Global Innovation Index rank [2024]: 84/132
Region: south-eastern Europe	Global Gender Gap Index rank [2024]: 23/146

Located in south-eastern Europe, Albania lies on the Balkan Peninsula and is renowned for its rich history, stunning landscapes, and diverse culture. Classified as an upper-middle income country by the United Nations[1], with a current gross domestic product (GDP) of USD 25.43 billion[2], Albania achieved a 79.1 Universal Score and a high 90.3 Meaningful Score on the ICT Development Index 2024 released by ITU[3].

Although Albania boasts a very high adult literacy rate[4] of 99 per cent, the average unemployment rate in Albania was reported at 11.6 per cent in 2023[5], while the unemployment rate among youth is significantly higher at 22 per cent[6]. Having said that, the plan for National Education in Albania is laid out in the Strategy on Education 2021-2026. This strategy encompasses all education levels, from preschool to higher education, and envisions delivering high-quality inclusive education based on principles of lifelong learning, with particular emphasis on curricula that strengthen digital competencies and computer programming skills. Over the last decade, the quality of public education in Albania has been improving steadily, supported by substantial government investment in improving educational facilities, increasing teacher salaries, and updating of curricula.

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1 United Nations, 2024. *World Economic Situation and Prospects 2024*. [online] Available at: https://www.un.org/development/desa/dpad/publication/world-economic-situation-and-prospects-2024/ [Accessed 31 July 2024].

2 International Monetary Fund (IMF), 2024. *Albania Data Profile*. [online] Available at: https://www.imf.org/external/datamapper/profile/ALB

3 International Telecommunication Union (2024) *Measuring digital development: Facts and figures 2024*. Available at: https://www.itu.int/hub/publication/d-ind-ict_mdd-2024-3/

4 World Bank, 2024. *Literacy rate, adult total (% of people ages 15 and above) in Albania*. [online] Available at: https://data.worldbank.org/indicator/SE.ADT.LITR.ZS?locations=AL

5 World Bank, 2024. *Unemployment, total (% of total labour force) in Albania*. [online] Available at: https://data.worldbank.org/indicator/SL.UEM.TOTL.ZS?locations=AL

6 Trading Economics, 2024. *Albania Youth Unemployment Rate*. [online] Available at: https://tradingeconomics.com/albania/youth-unemployment-rate

According to the International Monetary Fund[7] (IMF), Albania has emerged as one of the region's stronger economic performers. Tourism has demonstrated its significance, registering a substantial growth of nearly 5 per cent during 2023. According to latest data from the Institute of Statistics (INSTAT), an independent public legal entity tasked with producing official statistics in Albania, the country welcomed more than 10 million tourists in 2023, marking a 34.6 per cent increase compared to 2022[8]. While many economies in south-eastern Europe experienced a significant slowdown in 2023, Albania's robust tourism sector helped sustain domestic demand (WESPA, 2024[9]). The World Bank notes that, in 2023, trade, tourism and real estate were the main drivers of economic growth while the annual inflation rate dropped to 3.9 per cent in December 2023[10]. Consequently, expectations point towards increased income levels and improved employment opportunities. The overarching political, social, and economic priorities of Albania remain focussed on European Union integration, comprehensive economic reforms, and the pursuit of anti-corruption measures.

In recent years, Albania has cultivated a growing and dynamic private sector, spanning various industries including manufacturing, construction, tourism, services, and trade. Since the early 2000s, the country has undertaken significant economic reforms and liberalization measures, encouraging private sector development and foreign investments. According to the INSTAT[11] (2022), agriculture remains the most important contributor to the economy, accounting for almost 20 per cent of the total GDP. Other major contributors include trade, transport, accommodation, and food services activities (16.17 per cent), followed by public administration, education, and healthcare (12.29 per cent). The Government of Albania has recognized the particular importance of small and medium-sized enterprises (SMEs) to economic development and has implemented several initiatives to strengthen their development. Such initiatives have included facilitating access to financing and credit, simplifying business registration and licensing procedures, and promoting entrepreneurship. An increased access to finance and infrastructure, and improvements in bureaucracy, skills and training would significantly reinforce these government initiatives. Albania has developed a liberal and reform-orientated investment climate, making it an increasingly attractive destination for foreign investors. Through the Strategic Investment Law and participation in free trade agreements, Albania offers a range of significant incentives and safeguards for foreign investment, particularly in high-potential sectors such as energy, mining, tourism, and information and communication technologies (ICT).

The country's strategic geographic location and expanding infrastructure, including improvements in air transport through Tirana International Airport and the planned new Vlora Airport and new ports such as Porto Romano, position it as a key hub for trade in the Western Balkans region. This infrastructure development supports Albania's goal of becoming a year-round destination for high-end tourism and a regional centre for logistics and transport. The energy sector, historically reliant on hydropower, is diversifying through significant solar and wind energy investments. Projects such as the Karavasta photovoltaic park and Albania's

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7 International Monetary Fund (IMF), 2023. *Albania: Staff Concluding Statement of the 2023 Article IV Mission*. [online] Available at: https://www.imf.org/en/News/Articles/2023/10/27/mcs102723-albania-staff-concluding-statement-of-the-2023-article-iv-mission

8 Institute of Statistics (INSTAT), 2024. *Tourism Statistics*. [online] Available at: https://www.instat.gov.al/en/themes/industry-trade-and-services/tourism-statistics/#tab2

9 United Nations, 2024. *World Economic Situation and Prospects 2024*. [online] Available at: https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/WESP_2024_Web.pdf

10 World Bank, 2024. *Albania Overview*. [online] Available at: https://www.worldbank.org/en/country/albania/overview#3

11 Institute of Statistics (INSTAT), 2024. *Gross Domestic Product*. [online] Available at: https://www.instat.gov.al/en/statistical-literacy/gross-domestic-product/

participation in European energy corridors underscore the country's commitment to renewable energy and sustainability, positioning it as a key energy supplier in the Balkans region.

On the telecommunications front, Albania has a competitive telecommunication market with multiple service providers offering fixed-line, mobile, and Internet services. In June 2000, the introduction of the Law for Telecommunications led to the liberalization of the market, supporting increased competition and innovation. Major players in the sector include One Albania and Vodafone Albania. In January 2023, former incumbent Albtelecom and One Albania merged to form One Albania. Significant investment and modernization efforts have been made gradually but steadily to improve infrastructure and expand services and as a result 96.5 per cent per cent of households in Albania now have Internet access and while 82 per cent of individuals are counted as Internet users (IDI 2024[12]).

In recent years, Albania has demonstrated a clear commitment to accelerating innovation. The country ranked 84 on the Global Innovation Index by the World Intellectual Property Organization (2024), improving its rank from 104 in 2019. This substantial improvement reflects a growing focus on innovation investment. While there is room to further enhance the translation of these investments into innovation outputs, which are still relatively low, the progress of Albania highlights a strong national commitment to building a more dynamic and innovative economy, and so preparing for even greater advancements in the near future. Although high-tech exports accounted for only 0.1 per cent of total trade in 2023[13] and 0.0 per cent of total trade in 2024,[14] efforts are underway to stimulate growth in this area. The ICT business process outsourcing (ICT-BPO) sector, in particular, has emerged as a significant driver of economic activity, increasing employment and reaching industry values that exceed USD 130 Million[15] (AIDA, 2023). ICT exports have gradually improved to 2 per cent of total exports in recent years[16] and the ICT-BPO sector appears to be a major area for foreign direct investment (FDI) in Albania.

The digital transformation of public services in Albania has changed the perception of citizens regarding electronic communication with state institutions. The Government, as a key driver of this digital transformation has successfully transitioned numerous offline public services into digital online services. The e-Albania platform, launched in 2013 with just 14 digital public services, has since become a flagship success story, enhancing the credibility of public administration and restoring citizens' trust in state institutions. The e-Albania platform, managed by the National Agency of Information Society (AKSHI), acts as a central point for access to public services, operates 24/7 and currently offers over 1 247 digital online services. The e-Albania platform is connected to the Government Interaction Platform the core digital infrastructure that enables interoperability between 63 electronic systems across public institutions, supporting over 200 million transactions annually[17]. Albania's ICT sector is a driving force behind the modernization

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12 International Telecommunication Union (2024) *Measuring digital development: Facts and figures 2024*. Available at: https://www.itu.int/hub/publication/d-ind-ict_mdd-2024-3/

13 World Intellectual Property Organization (WIPO), 2023. *Global Innovation Index 2023*. [online] Available at: https://www.wipo.int/global_innovation_index/en/2023/

14 World Intellectual Property Organization (WIPO), 2024. *World Intellectual Property Indicators 2024*. [online] Available at: https://www.wipo.int/web-publications/global-innovation-index-2024/assets/67729/2000%20Global%20Innovation%20Index%202024_WEB3lite.pdf

15 Albanian Investment Development Agency (AIDA), 2024. *ICT and BPO Sectors in Albania*. [online] Available at: https://aida.gov.al/en/business-in-albania/sectors/ict-and-bpo

16 World Intellectual Property Organization (WIPO), 2024. *World Intellectual Property Indicators 2024*. [online] Available at: https://www.wipo.int/web-publications/global-innovation-index-2024/assets/67729/2000%20Global%20Innovation%20Index%202024_WEB3lite.pdf

17 Western Balkans Investment Framework (WBIF), 2024. *WB26-ALB-DII-01 Technical Assistance Grant*. [online] Available at: https://www.wbif.eu/technicalassistancegrants//WB26-ALB-DII-01

of the national economy. Government digital transformation initiatives, particularly through the e-Albania platform, have significantly improved public services delivery and administration. With over 1 200 digital services including 95 per cent of central government services now accessible online, Albania is well-positioned to leverage ICT for sustainable economic growth and to attract foreign investment.

The National Strategy for Development and European Integration (NSDEI) reflects the commitment of Albania to sustainable development and its path toward European Union membership. The first NSDEI (2015-2020) set the foundations for a stable economy, democratic governance, and the protection of human rights. It prioritized economic growth, environmental sustainability, and European Union integration through key reforms in public administration, judicial independence, and the fight against corruption and organized crime. Building on these achievements, NSDEI II (2022-2030) continues to advance Albania's development, focusing on macroeconomic stability, enhanced well-being for citizens, and alignment with European Union standards. The strategy promotes policies that strengthen national competitiveness, foster sustainable economic growth, and ensure the successful integration of Albania into the European Union, while closely aligning with the sustainable development goals (SDGs) for 2030.

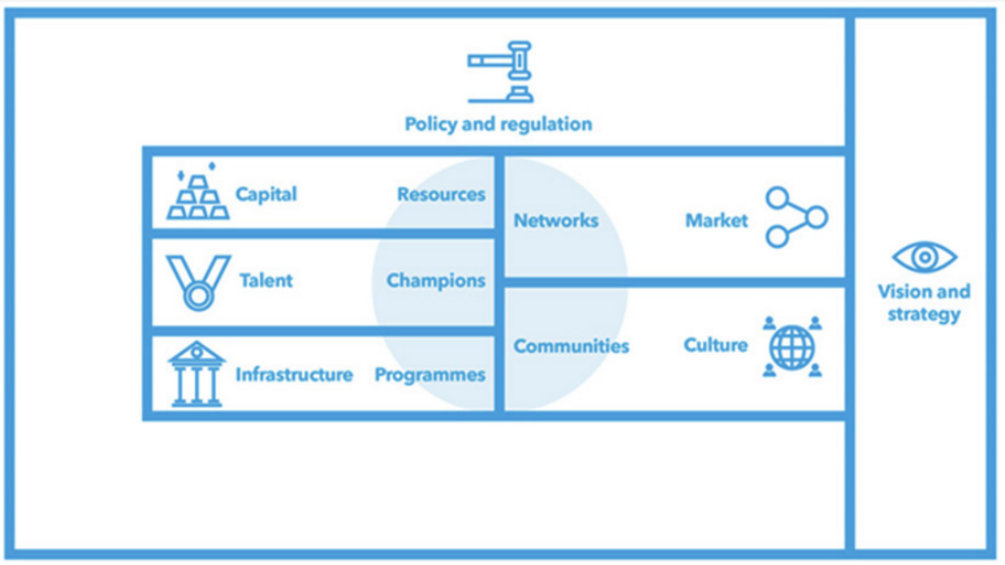
Recent advances across multiple sectors clearly demonstrate that Albania is actively advancing its digital government agenda, leveraging electronic systems and digital services to align with European Union digital integration and uphold digital principles and rights. Economically, digital technologies are increasingly driving transformation and competitiveness in key sectors such as agriculture, manufacturing, and financial services, with a focus on achieving universal, high-quality digital connectivity for balanced regional development. Albania's digital transition emphasises environmental sustainability, contributing to the achievement of climate targets and a reduction in carbon emissions.

Many of Albania's recent ICT investments, initiatives and early successes stem from the Digital Agenda 2022-2026, and the anticipated Smart Specialization Strategy (S3) is also likely to have a significant positive impact. In recent years, the European Union has adopted Smart Specialization Strategies (S3) to enhance innovation and regional development. This S3 approach, increasingly recognized globally, is tailored to each region's unique context, identifying key areas where public investments in research, development, and innovation can have the greatest impact. The S3 approach promotes diversification through cross-sectoral linkages and comprises a participatory process, known as the Entrepreneurial Discovery Process, that actively engages policy-makers, the private sector, academia, research institutes, and civil society. Albania is currently developing the S3 strategy at the national level while maintaining a regional perspective, that focuses on the potential of Albania's 12 regions. Preliminary mapping of the economic and productive areas under this strategy indicates six priority sectors: (i) Agriculture, forestry and fishing; (ii) Manufacturing; (iii) Energy; (iv) Tourism; (v) Information communication technologies; and (vi) Business process outsourcing (BPO).

3 Current landscape

Understanding the ecosystem assessment canvas

Figure 1: Ecosystem assessment canvas



Source: ITU

The ecosystem assessment canvas provides an overview of the seven component pillars that make up the innovation ecosystem. The ecosystem assessment canvas helps assess both the challenges and opportunities for the components essential to building a vibrant and innovative digital ecosystem.

Figure 2: Ecosystem assessment canvas component pillars and related issues

Source: ITU

Building on the ecosystem assessment canvas, Figure 2 presents the main issues of an enabling environment that, if successfully resolved, can accelerate digital transformation in the economy.

Innovation and entrepreneurship ecosystems are shaped by a number of interdependent components that influence how effectively a country can pursue its digital transformation goals and accelerate innovation. The seven pillars, and their related ingredients, reflect key dimensions – ranging from infrastructure and talent to policy and culture – that collectively determine how innovation and entrepreneurship are nurtured, supported, and sustained. They provide a structured view of the ecosystem, helping to identify both enablers and gaps that affect its overall maturity and performance. By understanding and assessing the ecosystem, the enablers needed to achieve the vision can be identified. Since each component pillar is one part of a whole, and the function of each component pillar is needed for successful innovation activities, the combined efficiency of the pillars can be taken together to indicate a sense of the overall ecosystem efficiency.

The following section provides insights into the current landscape of the ecosystem across the seven component pillars, based on expert interviews and group discussions during the co-creation workshops with local stakeholders, and further validated by secondary research and literature reviews.

3.1 Vision and strategy

- Numerous national strategy documents exist and are supportive of innovation. However, enhancing coordination among these strategies would foster a more cohesive ecosystem vision, enabling stakeholders to align efforts and maximize impact.
- Various stakeholders prioritize different challenges within the ecosystem. However, there is a widespread acknowledgement of the need for more inter-stakeholder connectivity and collaboration.
- Stakeholders demonstrate a thorough understanding of their organizational missions and objectives though strengthening the alignment of their roles and contributions to an overarching national mission and vision would further enhance collaboration and drive collective success.
- Many stakeholders are actively engaged within the ecosystem and fostering of a shared vision with a clearly defined and communicated direction would further empower all participant stakeholders to contribute more effectively and collaboratively.

Need for one vision

Albania has developed numerous strategic documents for the digital innovation ecosystem, such as the National Strategy for Development and European Integration 2022-2030 (NSDEI 2022-2030) and the Digital Agenda 2022-2026, while work is also ongoing on the drafting of the national Smart Specialization Strategy (S3). Multiple government bodies are also responsible for consulting, proposing and implementing these strategies. The process of drafting NSDEI 2022-2030 was carried out through the engagement of a significant number of state institutions, including all ministries, independent institutions, sectoral policy agencies, local government representatives and other key actors in the process[18]. The Digital Agenda is overseen by the

[18] Albanian Government NSDEI2022-2030 (2022) available at: https://s3albania.org/wp-content/uploads/2023/07/1b.-NSDEI-2022-2030-Final-English-Version-23-Jan-1.docx

Deputy Prime Minister and implemented by the National Agency of Information Society in cooperation with relevant institutions. Finally, an inter-ministerial committee chaired by the Deputy Prime Minister in collaboration with the Ministry of Economy, Culture and Innovation is responsible for drafting and implementing the S3 strategy. These efforts are expected to accelerate innovation in Albania and contribute to its socio-economic development. However, to fully realize their potential, there is a need for stronger alignment and integration among these visions and strategies. By fostering a more cohesive and complementary approach, stakeholders will be better positioned to unite around a common vision, driving collective progress toward shared goals.

The ongoing efforts to draft the Smart Specialization Strategy (S3) clearly indicate that the vision for European Union integration is a central pillar of Albania's digital agenda. The alignment of the country with European Union standards, legislative frameworks, and digital regulations reflects a commitment to democracy, the rule of law, and fundamental rights. The S3 focuses on the integration of digital strategies to support key economic sectors, including agriculture, energy, and tourism.

In 2022, a significant milestone for the Digital Agenda initiative was the transition of 95 per cent of public administration services to online-only delivery through the e-Albania platform. Stakeholders recognized this as a significant shift towards enhancing service quality and transparency, and the transition has encouraged and motivated citizens and businesses about the potential for national ICT development. Increasingly stakeholders advocating for more effective implementation existing strategies to accelerate innovation with enhanced coordination and synchronization. There is now a broad consensus is that improving these aspects could significantly advance ICT development in the country and foster optimism concerning the future digital capabilities of Albania. For the country to fully realize the potential of its strategic initiatives, it is imperative to streamline and synchronize these efforts, ensuring that policies are comprehensive in design but also effective in practice. The establishment of the Agency of Innovation and Excellence, under the Ministry of Economy, Culture and Innovation represents a positive step forward and the primary goal of the Agency is to act as an internal driving force within government ministries and central departments, ensuring that innovation is integrated into national strategies and development processes. This initiative aims to support the broader agenda of Albania concerning economic modernization and digital transformation. If effectively implemented, this initiative will support Albania’s overarching goals of European Union integration, enhanced governance transparency, and improved public services delivery to citizens.

Agreement on issues

Various stakeholders across the digital innovation ecosystem of Albania prioritize different challenges and issues, underscoring the complexity of fostering innovation, particularly within the ICT sector. The skills gap is universally recognized as a critical challenge across all stakeholder groups. Another common issue within the ecosystem is the lack of shared awareness and trust among stakeholders, often due to limited understanding of respective roles and responsibilities. This misalignment underscores the need for improved communication and clearly defined roles to enhance collaboration. There is a consensus that the education system could significantly amplify its impact on bridging the digital skills gap by expanding digital, technical, and entrepreneurial curricula. There is a clear motivation and sense of shared purpose within the ecosystem to solve these problems collectively. Strengthening collaboration, trust, and skills

development would benefit all stakeholder groups substantially, contributing to a more skilled workforce and a more innovative entrepreneurial community.

Ecosystem working together

Stakeholders across Albania's digital innovation ecosystem clearly understand their organizational missions and objectives, with several actors already collaborating effectively. For example, the Ministry of Infrastructure and Energy actively supports various industrial sectors, including telecommunications, energy, mining, and transport, and plays a leading role in advancing European Union digital integration. In parallel, academic institutions are concentrating on identifying best practices and are addressing challenges to improve understanding on how digitalization can transform organizations. In the financial sector, several banks are investing in innovation and digitizing services for citizens and businesses. Numerous chambers and associations, such as the Albanian Investment Council, represent private sector concerns, while non-governmental organizations such as Protik stand out for their strong networks and commitment to fostering innovation and entrepreneurship. Protik facilitates entrepreneurial programmes, networking, hosting events and training sessions to increase ICT sector collaboration. Through its initiatives, Protik has enhanced connections with academic institutions and the labour market, bringing together private companies, public institutions, ICT experts, and academics to facilitate synergies, partnerships, and business opportunities. The ongoing development of the S3 strategy, involving collaboration with stakeholders according to the "Quadruple Helix" approach, has been acknowledged as a significant positive effort, encompassing views from all stakeholders in the consultation process. A notable collaborative success within the ecosystem is the development of the TUMO Centre for Educational Technologies. Launched by the Albanian-American Development Foundation in partnership with TUMO Ventures and supported by the Municipality of Tirana, this innovation and educational centre at the intersection of technology and design, offers young people aged 12 to 18 opportunities combine self-learning activities, workshops and learning labs, according to their own specific interests. While these collaborations have positively impacted the ecosystem, some stakeholders continue to operate independently, and there remains a pressing need for increased partnerships between the public and private sectors. A number of entrepreneurs and private sector organizations work internationally and have limited access to local partnerships. Nevertheless, stakeholders recognize the importance of collaboration in addressing ecosystem challenges effectively. The need for improved connectivity and collaboration among stakeholders is a widely acknowledged concern. This recognition underscores the critical importance of collective efforts in advancing national ICT development. In an encouraging development, the Government has recently established a new ministry dedicated to the Economy, Culture, and Innovation. This ministry aims to strengthen coordination among these sectors, positioning them to more effectively harness the opportunities of the digital age, thus facilitating a more integrated approach to innovation and cultural advancement. This is a positive step for the digital innovation ecosystem and closer collaboration between stakeholders will help to accelerate advances to a digital economy.

Support for shared vision

Numerous business support networks view their endeavours as integral to advancing national strategies. A number of these support networks and associations advocate for legislative reforms and the rights of their members, while also promoting the use of digital public services to enhance efficiency and providing capacity-building initiatives to strengthen skills. Despite the

efforts of the support networks, there remains a degree of uncertainty among stakeholders regarding the most effective ways to contribute to the national vision. This uncertainty is largely caused by the absence of a clear, unified direction for national development combined with the proliferation in the number of strategies and the lack of a recognized leader institution responsible for innovation in recent years. To drive innovation and digitalization forward, stakeholders assert the need for a clear leader and owner of this agenda. They also acknowledge that greater clarity regarding their respective roles and contributions to the overarching national mission and vision would be beneficial. Progress has been made through initiatives such as the S3 consultation process that offers a promising platform for stakeholders to come together, identify common goals, and develop strategies for achieving them. Stakeholders in the process stated that it was very effective for identifying regional strengths and involving all actors. By fostering collaboration and consensus-building, these consultation processes have the potential to unite stakeholders around shared objectives and drive meaningful progress towards national development goals.

3.2 Infrastructure and programmes

- Recent initiatives and investments have improved hard infrastructure, yielding positive outcomes for businesses, organizations, and individuals, especially in Tirana, but there is scope for improvement in other areas.
- There are a number of soft infrastructure facilities available in Tirana, with plans to expand beyond the capital, but few of these facilities currently provide a comprehensive and sustainable range of support services.
- Most of the soft and hard infrastructure is concentrated in the national capital. Efforts are being made to expand to other areas, but progress has been slow, compelling many communities to come to Tirana to access high-quality services.
- Although equipment is readily available in the ecosystem, smaller enterprises often struggle to justify the expenses associated with digitalization and ICT investments.
- Stakeholders recognize that there is potential to make Albania a competitive player in the Balkans region, but key elements of the ecosystem remain underdeveloped and insufficiently interconnected.

Hard ICT infrastructure

Significant investments have enhanced hard infrastructure in Albania, yielding positive outcomes for businesses, organizations, and individuals. Currently, 96.5 per cent of homes are Internet connected, with 87.2 per cent enjoying high-speed fixed broadband (ITU, 2022[19]). On the mobile front, Albania achieved mobile Internet adoption score of 66.1 out of 100 in 2022 (Mobile Connectivity Index, 2022[20]). The mobile operator One Albania is the market leader covering 245 000 households, approximately 55 per cent of the addressable market in 2024, and plans to significantly expand its optical fibre network to 450 000 urban households by 2026 (SeeNews, 2024[21]). In March 2024, the Electronic and Postal Communications Authority (AKEP) launched the public consultation procedure for granting rights to use frequencies in the 3.5 GHz band, marking the official start of the procedures for implementing 5G technology in this

[19] International Telecommunication Union (ITU), 2024. *Dashboard: Upper-Middle-Income Countries – Albania*. [online] Available at: https://datahub.itu.int/dashboards/umc/?e=ALB&i=

[20] GSMA, 2022. *Mobile Connectivity Index: Albania*. [online] Available at: https://www.mobileconnectivityindex.com/index.html#year=2022&zonelsocode=ALB

[21] SeeNews. (2024). One Albania to expand fibre network by 2026 – report. Available at: https://seenews.com/news/one-albania-to-expand-fibre-network-by-2026-report-1244199

frequency band. A number of stakeholders have been involved in the public consultation for 5G. Although data centres are scarce, cloud services are accessible to all organizations. Through a strategic focus on cloud technology adoption and IT infrastructure transformation, Raiffeisen Bank successfully transitioned 50 per cent of its workload to the cloud. This initiative improved operational efficiency and demonstrated the commitment of the bank to modernizing its practices. The investments of the banking sector to strengthening electronic payment infrastructure have increased digital currency usage. The banking sector has maintained steady growth, contributing to economic development while ensuring sufficient liquidity and capitalization levels. The quality and accessibility of hard infrastructure in Tirana are generally strong, although there is room for improvement in other regions. In most urban areas, stakeholders benefit from access to high-speed Internet, facilitating effective communication and business operations. In terms of energy, over 99 per cent of electricity in Albania is generated from hydropower (Statistica, 2023[22]). Water management is also improving, with better quality drinking water, sanitation services, customer service, management, and increased transparency. Currently over 80 per cent of urban households, and just half of rural households, are connected to the water supply network (GIZ, 2023[23]). Infrastructure development has also extended to transport and about 100 kilometres of local and regional roads are being reconstructed or extended under a programme supported by the European Bank for Reconstruction and Development (EBRD) and the European Union (EBRD, 2023[24]). This initiative aims to enhance connectivity to local tourism sites and boost the quality of the vital tourism sector. Overall urban centres are well-supported by robust infrastructure, providing a strong foundation for digital innovation. While rural areas face certain challenges, addressing these gaps offers a valuable opportunity to unlock the potential of the entire population. By enhancing connectivity and infrastructure in rural regions, Albania can fully harness resources, ensuring inclusive development and maximising contributions to the innovation ecosystem.

Soft infrastructure and programmes

The innovation ecosystem benefits from a number of soft infrastructure facilities, such as TechSpace, established by the National Agency of Information Society (NAIS). This centre is designed to foster the co-design of innovative products, enable testing, facilitate the sharing of ideas, provide aid in creating prototypes, and offer dedicated spaces for relaxation and exchange, and currently boasts over 100 members, including startups, digital nomads, and private-sector actors. Another key facility, Oficina, was founded in 2015 to assist entrepreneurs and startups in building successful and sustainable businesses, enhancing the entrepreneurial ecosystem, and supporting national policy-making processes. As the first accelerator for digital startups in Albania, Oficina offers a number of startup programmes and has evaluated over 400 startups and accelerated 72. In 2021, Tirana Inc. was established as Albania's first multi-university incubator, supporting student-led entrepreneurship through training, mentoring, and networking within the local and regional ecosystems. The goal of Tirana Inc. is to become the premier destination for ambitious students to launch their companies. To date, 10 student teams have participated in the first cohort of young entrepreneurs. While successful

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22 Statista, 2024. *Electricity Production in Albania by Source*. [online] Available at: https://www.statista.com/statistics/1382561/electricity-production-albania-by-source/

23 Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), 2024. *GIZ Worldwide: Albania*. [online] Available at: https://www.giz.de/en/worldwide/127873.html

24 European Bank for Reconstruction and Development (EBRD), 2023. *100 km of Regional Roads in Albania to be Reconstructed This Year*. [online] Available at: https://www.ebrd.com/news/2023/100-km-of-regional-roads-in-albania-to-be-reconstructed-this-year.html

examples like these exist, there is a feeling expressed by some that the ecosystem is not fully equipped to support innovation due to a lack of experienced mentors and entrepreneurs. Some stakeholders are overwhelmed by the number of startup programmes yet many of these programmes lack a comprehensive suite of services. Furthermore, there is a significant degree of competition among incubators and accelerators for donor funds and startup ideas, due to the limited pool, which often impacts the long-term strategic direction and sustainability of some programmes. Nonetheless Albania is making positive progress in developing its soft infrastructure. A new science and technology park, Durana Tech Park, in the Durrës (Xhafzotaj) region, will initially cover an area of 140 400 m^2. The technology park will be developed by the Albanian Investment Corporation, and the feasibility study was drafted with the support of Risi Albania project, supported by the Swiss Agency for Development and Cooperation (SDC), in collaboration with the Ministry of Finance and Economy (now divided into the Ministry of Finance and the Ministry of Economy, Culture and Innovation). Durana Tech Park is a state-of-the-art development designed to advance innovation and ICT skills in Albania. Strategically located near major transport hubs including Tirana Rinas Airport and the Port of Durres, the technology park will provide a collaborative environment for technology companies, startups, universities, and research centres. The technology park is intended to foster innovation by offering resources such as incubators, funding, and flexible working spaces for digital nomads and tech firms. Through partnerships with educational institutions, Durana will play a key role in aligning academic training with industry needs, ensuring that the workforce is equipped with practical and research-oriented skills. This initiative will contribute significantly to the innovation ecosystem of Albania, supporting the development of high-tech industries and creating qualified job opportunities.

Currently, one of the major ongoing challenges is the lack of a robust pipeline for innovative new ideas from the ecosystem. This may be attributed to the relatively young age of participants and still developing entrepreneurial mindset. To address some of these issues, the Government began launching ten new digital innovation hubs nationwide in 2024. These hubs aim to bolster the soft infrastructure for innovation and support the large-scale digital transformation of SMEs and the public sector, providing a much-needed boost to the overall innovation landscape.

Infrastructure distribution across country

In Albania, both hard and soft infrastructure are primarily concentrated in Tirana, with efforts to expand into other areas progressing slowly. This centralization compels communities to migrate to Tirana in order to access high-quality services. Almost 50 per cent of the total population (about 1 400 000 people) lives in rural areas, of whom 15 per cent live below the national poverty line (Digital Impact Exchange, 2023[25]). Although Internet connectivity has steadily increased in recent years, a disparity between urban and rural areas persists. Efforts are underway to improve coverage along the Albanian Riviera[26] and extend access into the country's mountainous regions. This is crucial as Internet access is increasingly essential for accessing public services, particularly as most government services are now delivered online via e-Albania. Without a well-distributed Internet infrastructure across the entire country, the digital divide is likely to grow, making it difficult for rural, marginalized, or remote areas to fully utilize and benefit from e-government

[25] DIAL Global, 2024. *Sustainable Rural Development in Albania*. [online] Available at: https://exchange.dial.global/projects/sustainable-rural-development-in-albania

[26] Telecompaper, 2024. One Albania expands mobile and fixed network. [online] Available at: https://www.telecompaper.com/news/one-albania-expands-mobile-and-fixed-network-capacity--1509595

services. Despite ongoing efforts, Albania has yet to establish a solid financing scheme to extend networks into areas that lack commercial interest for private operators.

Entrepreneurship and innovation also remain limited outside the capital, although some initiatives aim to address this issue. For example, the Sustainable Rural Development (SRD) project collaborates with businesses and the Government to enhance the competitiveness and income generation potential of rural areas. This initiative seeks to create a supportive policy environment, introduce agriculture and rural tourism innovations, and facilitate their wider adoption across the market. However, the impact of this relatively new initiative is yet to be determined. Overall, hard and soft infrastructure investment in rural areas should be increased to bridge the gap between rural and urban areas and boost the potential market and the capacity of ICT enterprises.

Availability of equipment

Equipment and parts are readily available from European vendors, although cost considerations may pose a deterrent for smaller companies, startups, and SMEs. Stakeholders agree that smaller enterprises often find it challenging to justify the expense of digitalization and ICT investments. Therefore, further education is necessary to highlight the commercial benefits of such investments. Several universities are actively investing in high-tech equipment, making it accessible both to members of the innovation ecosystem and entrepreneurial students. Additionally, providers of soft infrastructure play a crucial role in facilitating access to equipment for prototype testing. Despite these efforts, business uptake of available equipment remains relatively low. To address this issue, more concerted efforts are needed to increase awareness of these facilities and promote collaborative research and development (R&D) within the innovation ecosystem. This includes fostering partnerships between businesses and universities to maximize the utilization of available resources and drive innovation forward.

Competitiveness

Stakeholders acknowledge Albania's potential to emerge as a leader in ICT products and services in the Balkans region. However, they also note that the current ecosystem lacks some essential components, hindering Albania from attaining full competitiveness. Although most smaller companies primarily serve the local market, a few have successfully expanded their software development efforts beyond national borders. Albania has transformed into a major destination for ICT-BPO services, supported by its urban culture, resource availability, infrastructure, and attractive investment incentives. Tirana remains the primary ICT-BPO hub, followed by Durrës, Shkodër, and Vlorë. The ICT-BPO sector in Albania has experienced steady growth since its inception, significantly increasing employment and achieving industry values exceeding USD 130 million (AIDA, 2023[27]). Although this sector benefits the economy, outsourcing companies focus on volume-driven services such as human resources, customer care, technical support, finance and accounting services, and website services rather than innovation, which may ultimately hinder innovation within the ecosystem. Some stakeholders also argue that restricted access to the European market is a limiting factor for Albanian companies. Despite Albania having no significant non-tariff trade barriers, administrative bureaucracy can impede the movement of goods and elevate costs. Furthermore, applying market prices to calculate customs dues and other taxes can pose problems, albeit infrequently. Nonetheless, Albania is dedicated to

[27] Albanian Investment Development Agency (AIDA), 2024. *ICT and BPO Sectors in Albania*. [online] Available at: https://aida.gov.al/en/sectors/ict-and-bpo/

fostering a stable and predictable business climate by continuing to implement comprehensive reforms to meet European Union accession requirements, which will facilitate open access to the European Union market. In addition to market access challenges, local companies encounter talent availability challenges. In 2020, the Albanian Investment Development Agency introduced the "Made in Albania" campaign to enhance local competitiveness. This initiative aims to promote Albanian businesses in international markets and foster connections with foreign counterparts. The campaign has led to increased enquiries and regional visibility for participating companies. Additionally, the upcoming Smart Specialisation Strategy (S3) has identified priority sectors such as agriculture, manufacturing, energy, and tourism to enhance local competitiveness. Integrating ICT solutions within these sectors could offer Albania a competitive edge regionally. This strategic approach aims to improve productivity, efficiency, and innovation within these key areas and so strengthen the position of Albania in the global marketplace.

3.3 Talent and champions

- Stakeholders' opinions vary regarding the availability of soft skills within the ecosystem. While universities report progress, industry experts emphasize that there is a need for more integration of relevant soft skills, particularly critical and systems thinking.
- Technical skills are generally considered stronger than soft skills in Albania, however, they may not be available in the desired quantity due to the emigration of skilled talent and the growing trend of remote working for foreign companies.
- Universities could do more to inspire talent to pursue innovation but would require stronger support from the broader innovation ecosystem to encourage entrepreneurship, innovation, and research.
- Stakeholders recognize a variety of champions in the ecosystem across industry, finance, academia, and development agencies, but note the absence of a single clearly defined leader driving the ecosystem forward.

Soft skills

Differing opinions exist regarding the availability of soft skills within the ecosystem. While some stakeholders note that most entrepreneurs excel in communication and collaboration skills, there is a general consensus on the need to enhance critical thinking, creativity, and analytical skills to help identify and address issues that foster or support innovative solutions and service delivery. The education sector, despite some recent improvements, is frequently cited as a bottleneck by stakeholders, impeding the development of these soft skills. Due to the rapid pace of technological and industrial change, educational curricula often struggle to keep up. Some university programmes offer specific modules and lectures focused on developing soft skills, but the access to and adoption of these modules among technical talent remains limited. A number of universities, however, participate in the Erasmus programme, providing students with opportunities for study, teaching, and training abroad, and thus enhancing soft skills development. Although universities report ongoing improvements, industry experts believe there is a pressing need for greater integration of relevant soft skills matched with practical applications. To address this gap, larger corporations offer employees management and leadership training, yet the challenge of retaining talent persists, as high-quality professionals often emigrate for better opportunities abroad. In 2022, approximately 46 460 Albanians left the country, marking a 10.5 per cent increase from 2021, with the majority, about 36 000,

being young people (INSTAT, 2022[28]). This data also indicates a decline in youth completing their studies and entering the labour force. In the academic year 2021-2022, for example, approximately 30 910 students graduated from higher education, marking a 5.4 per cent decrease from the previous academic year. This brain drain negatively impacts ICT innovation and entrepreneurship, as company growth is hindered by intense competition for the best graduates. Nevertheless, stakeholders are actively trying to tackle these challenges. Skills for Jobs (S4J) is a collaborative initiative between the Swiss Agency for Development Cooperation (SDC) and Swisscontact, operating within the Economic Development and Employment domain of the Swiss Cooperation and Strategy for Albania. This project aims to enhance employability within the workforce by providing high-quality vocational education and training. The overarching goal of S4J is to elevate Albania's economic competitiveness by equipping youth with the skills needed to access lucrative employment opportunities. Through modern teaching methodologies and strategic collaboration with vocational education and training (VET) institutions, industries, and national authorities, S4J aims to ensure that the VET offerings remain aligned with the evolving needs of the labour market. Currently in its third phase, (S4J 3), the project seeks to create training and employment opportunities for approximately 29 400 individuals, contributing to economic growth, social inclusion, and development. Another key player is the Protik Centre, which has implemented a training portfolio targeting students, businesses, and entrepreneurs, significantly enhancing technical and management skills. Similarly, TUMO, an educational centre for Albania's youth, promises further advancements. However, Albania cannot tackle the brain drain and youth migration alone. European Union membership would help alleviate the problem by encouraging more investment while providing the region access to the European Union single market and fostering economic growth and opportunities for investment and social development. It may be useful to leverage the Digital Nomads initiative with European Union membership in the future to attract entrepreneurial talent to Albania, provided a supportive environment can be created.

Technical skills

Technical skills in areas such as coding, analytics, data science, and robotics are relatively well developed within the ecosystem. This proficiency is reflected in the offerings of private universities in the country, which have started introducing advanced technical degrees to cater to rising demand from students. There is a clear enthusiasm among students to develop advanced and emerging technical skills. However, the ecosystem faces a significant challenge, a shortage of technical personnel to meet industry demand. According to INSTAT, only 1 830 ICT graduates entered the labour market in 2021[29], revealing a stark gap between supply and demand. AIDA reports that over 35 000 people are employed in the BPO sector alone (AIDA, 2024[30]). Furthermore, while adopting remote working practices for foreign companies has enabled technical personnel to remain in Albania, it has not necessarily benefited the local ICT ecosystem. This situation, compounded by a small and diminishing talent pool and high emigration rates, poses severe challenges for startups and SMEs in securing skilled coders and programmers. This scarcity limits growth and innovation within companies despite their ability to offer technically high-quality solutions to clients. Larger firms can attract experienced data

[28] Institute of Statistics (INSTAT), 2024. *Migration and Migrant Integration*. [online] Available at: https://www.instat.gov.al/en/themes/demography-and-social-indicators/migration-and-migrant-integration/#tab2

[29] Institute of Statistics (INSTAT), 2021. *Press Release: Graduation Statistics 2020-2021*. [online] Available at: https://www.instat.gov.al/media/9982/press-release-statistika-te-diplomimeve-2020-21_eng.pdf

[30] Albanian Investment Development Agency (AIDA), 2024. *ICT and BPO Sectors in Albania*. [online] Available at: https://aida.gov.al/en/sectors/ict-and-bpo/

scientists and developers with competitive salaries, which often leaves smaller companies at a disadvantage. Additionally, support networks have identified difficulties in recruiting workshop leaders for technical courses, further complicating efforts to educate the future workforce. In response to these challenges, universities and other organizations have launched various initiatives to bridge this gap. One such initiative is ProSEED 2.0, funded by the German Corporation for International Cooperation (GIZ) and EU4Innovation. This programme is crucial in enhancing vocational education and training (VET) by modernizing qualifications and curricula to include digital and green elements across 10 VET courses. The programme also provides VET personnel with essential equipment and training. Through ProSEED 2.0 and similar initiatives, approximately 5 000 individuals are acquiring green and digital skills through non-formal and formal qualification measures, contributing to the enhancement of the ecosystem. These efforts are important in addressing the current technical skill shortage, but all stakeholders, and not just the education sector, need to work together to solve these issues.

Skills moving to innovation

Most stakeholders agree that the education system as well as the current job market do not sufficiently motivate young people to pursue careers in innovation or entrepreneurship in Albania. A significant shortfall lies in the absence of ICT training for teachers at both primary and secondary levels. This lack of training limits the ability of students to effectively transition into tertiary education, ultimately leading to a deficiency in skilled talent for both the industry and the broader ICT market. Moreover, many young graduates choose to emigrate or work remotely for foreign companies. For universities there is a clear opportunity to encourage students to explore avenues of innovation more effectively. However, realising this potential requires substantial backing from across the whole ecosystem. Support should come from comprehensive policies, programmes, initiatives, vocational training, and networks that nurture entrepreneurship, innovation, and research. Such collective endeavours are crucial for addressing talent retention issues and developing a stronger ICT ecosystem within the country. The Law on Higher Education recognizes employability as a critical measure for evaluating educational performance. Since its implementation, there has been a notable increase in collaborations between higher education institutions and the business sector, with internships becoming more widespread. These partnerships are proving beneficial as larger companies, recognizing the value of cultivating their talent pools, increasingly offer placements and internships. The B4Students platform, with the support of the Mane Foundation, runs an internship and employment programme for students and in the last year, students from all Albanian universities had the opportunity to grow professionally through internships in companies of the BALFIN Group. To date, more than 250 students have participated in this programme. In the most recent round, about 100 students completed internships at Tirana Bank, ACREM, Mane TCI, Mane Development, Jumbo, Neptun Albania, Fashion Group Albania, SPAR Albania, Stella Mare, Milsped Albania, Balfin Real Estate & Hospitality, Scan TV, OnSolutions, and Elektro-Servis. These internship placements, intended to help bridge the existing skills gap, covered diverse fields, including sales, marketing, human resources, finance, technology, logistics, engineering, and architecture. Nonetheless, the allure of higher salaries from foreign companies remains a dominant preference among graduates upon completing their studies.

Champions leading and being recognized

Stakeholders acknowledge a variety of champions in the ecosystem across industry, finance, academia, and development agencies. Leading in the financial sector, Raiffeisen Bank has

established an Innovation Department focused on exploring cutting-edge technologies, developing revolutionary ideas, and driving transformative change in banking. In 2024, Raiffeisen Bank launched its first Innovation School in Albania, training participants in "design thinking" and "agile" methodologies and the latest innovations. Other notable private sector champions include Vodafone and the Balfin Group. Banka Kombetare Tregtare (BKT), the largest and longest established commercial bank in Albania, has also received multiple awards, including recognition by EMEA Finance as the "Most Innovative Bank". Vodafone Albania recently organized an "Agro-culture and Artificial Intelligence" event, which brought together key figures from government, NGOs, and the business and agribusiness sectors. The annual Balfin Innovation Summit, an integral part of the BALFIN Group initiative, and driven by its core value of innovation, showcases employee-driven projects culminating in a festival of novel ideas. The University of Tirana is also recognized as a leading academic institution in innovation and entrepreneurship. Appreciation was also expressed by ecosystem stakeholders for support from various donors, including GIZ, USAID, UNDP, and the Swiss Embassy. The annual ICT Awards, organized by the ALBICT Association and ICTSMedia, have celebrated innovation success stories for the past 12 years. This annual event creates a platform for innovation, bringing together over 100 founders, young entrepreneurs, enthusiasts, and technology experts from Albanian-speaking regions. Since its inception, the competition has seen over 300 events, 2 500 competitors, and 200 finalists. However, stakeholders do not recognize a singular champion leading the ecosystem. Furthermore, despite the universities producing quality talent and the diaspora achieving some global successes, the innovation ecosystem lacks homegrown startup champions or unicorns. This absence of successful entrepreneurial role models represents a significant gap that needs to be addressed.

3.4 Capital and resources

- Telecommunications companies and multinational corporations are increasingly investing in innovation but many other companies are slow to perceive the benefits of innovation or allocate necessary budgets towards it.
- While some startup funds are available, many entrepreneurs rely on bootstrapping. SMEs can access bank funding, although obtaining funds it is often challenging.
- Government-backed funds for startups demonstrate a commitment to fostering entrepreneurship, but there is a need for larger, more diverse funding options to fully realize the full potential of the ecosystem. Expanding these funds can nurture startups and attract investment, while reviewing international funders' contributions is essential for ensuring the sustainability of initiatives after grant periods come to an end.
- There has been increased foreign direct investment (FDI) activity in energy, tourism, and real estate sectors, though with limited success in ICT, aside from talent utilization for BPO services.
- Most R&D funding is directed toward basic research, and a lack of coordination and collaboration between industry and academia is affecting the relevance, quality, and commercial potential of research outputs.
- While ecosystem support networks are growing there is a need for more mentors, industry coaches, and university professors with hands-on experience in innovation and entrepreneurship to guide startups in their entrepreneurial journey, beyond the early stages.

Availability of investment for the private sector

The private sector in Albania is experiencing investments across various sectors, predominantly focusing on green technologies, energy efficiency, and business expansion. These investments stem from multiple sources, including international financial institutions and local banks, and highlight an interest in creating a more competitive and sustainable economic environment. Telecommunication companies and multinational corporations are increasingly redirecting funds towards innovation. Many of these entities have established dedicated innovation departments and earmarked a share of internal funds for research. Despite these efforts, private companies do not benefit from cost-based tax incentives for training and research. Although initiatives have been aimed at enhancing public-private collaboration in this field, the relatively low investment in innovation remains a barrier to a much-needed boost in productivity. A fundamental issue for the private sector remains the perceptual gap, where numerous companies fail to recognize the tangible benefits of innovation, which diminishes their inclination to invest in new technologies. Additionally, budget constraints, especially among SMEs, restrict adequate funding allocation towards R&D, thus impeding potential progress in this domain. Government bodies, including the Ministry of Finance, AIDA, the Ministry of State for Entrepreneurship and Business Climate and the newly established agency Startup Albania, periodically provide funds to support the ICT sector. However, investment in R&D within the country remains minimal, and current R&D expenditures have little impact on developing and commercializing new products, services, and business processes. This scenario underscores the critical need for enhanced investment strategies and incentives to foster a more robust innovation ecosystem.

Availability of investment at all stages of the innovation journey for digital startups and SMEs

Investments are increasingly being channelled into startups across Albania through various initiatives, reflecting a dynamic shift towards innovation. The European Union funded Challenge Fund, along with contributions from international donors, is a competitive financing facility that plays a pivotal role at every stage of a company's development, from the idea phase through to validation, growth, and scaling-up phases. The Fund vision is to energize the innovation ecosystem by supporting promising companies to navigate the 'valley of death' – the critical phase where many venture startups falter, allowing them to scale up their innovative solutions. By leveraging Albania's expertise the Fund aims to foster improvement and add value through new ideas, methods, or products. Additionally, the newly established state agency, Startup Albania, is dedicated to nurturing the startup ecosystem's growth and development. Startup Albania will be crucial in promoting collaborations across government bodies, business sectors, academia, and investors, striving to create a supportive regulatory environment for startups. Startup Albania also provides funding to startups and is currently evaluating over 500 applications for its grant call. The programme is expected to support 50-80 projects, with a total fund of EUR 3 million. While seed funding is available for ideas at the initial stage, the ecosystem still lacks substantial angel investment and venture capital. Efforts have been made to establish angel networks, but only a few angel investors are currently active, leading most startups to rely on bootstrapping. SMEs can access bank funding, though securing these funds is not straightforward and only well-established SMEs can obtain low-interest loans for projects, business expansions, or technological enhancements. SMEs can also access some external financial support, which is crucial for technological enhancements. A prime example of such support is aid from the European Bank for Reconstruction and Development (EBRD), which, in partnership with the European Union, provides substantial funding and grants. One notable initiative is the provision from EBRD of a EUR 3 million loan to ProCredit Bank in Albania, further

supported by EUR 450 000 in European Union incentive grants. These funds are specifically aimed at bolstering local enterprises and enhancing their competitiveness, and a considerable portion is dedicated to investments in green technology and energy efficiency. Notably, no startups have yet entered the stock market or gone public. Several challenges hinder local and international investments in startups, including a complex regulatory environment, high investment risks, underdeveloped infrastructure, and skill gaps. The small domestic market also poses limitations for startups aiming for rapid scaling, potentially deterring large-scale international investors. These factors collectively mean that the current levels of funding and investment, though improving, are still insufficient to support the growth and development of the startup ecosystem fully.

Government funding

The Government has outlined a strategic plan to implement 22 ICT projects financed by the State Budget over 2022-2024, with total technology investments projected at around ALL 9.95 billion (Open Data Albania, 2022). The primary goals of these initiatives are to enhance hardware and software infrastructure, develop ICT systems, and optimize security frameworks, representing a significant advancement for the ICT ecosystem and laying down the foundational structure necessary for future growth. However, the tangible impacts of these projects may take time to materialize. Beyond these specific projects, the Government is committed to fostering innovation by allocating funds to support startups and further develop the ICT ecosystem, reflecting Albania's dedication to nurturing entrepreneurship. At a recent meeting with startup representatives, the incumbent State Minister for Entrepreneurship and Business Climate announced a startup support programme for 2024, structured in three phases. The initial "Pioneers" phase is open to any young individual, student, or digital nomad with an innovative idea who requires funding, allowing applicants to receive up to ALL 1.5 million without needing to be registered as a business. The second phase targets registered companies in Albania's commercial registry that demonstrate a working prototype, existing customer base, and ongoing economic activity, with funding of up to ALL 4.5 million available. The final phase focuses on more established enterprises, requiring them to have a functional product or service and proven economic activity, with funding reaching up to ALL 9 million. Despite these efforts, the funding amounts provided remain relatively modest. To truly unlock the potential of the ecosystem and nurture entrepreneurship, there is a need for larger and more diverse funding options across all stages of development. Expanding these funds would help attract and retain top-tier talent, accelerate growth, and create success stories that inspire further innovation and investment. Stakeholders recognize that while international funders have played a significant role, their contributions must be reviewed to ensure the sustainability of initiatives after grant periods expire. More investment in the ICT ecosystem is essential to empower existing projects and foster an environment conducive to entrepreneurship and innovation.

International funding

Stakeholders recognize the significant role that international funders play in supporting Albania's development. Among these international funders, external development banks such as EBRD and the World Bank are key contributors. The World Bank is currently involved in seven projects in Albania, with a combined loan value of USD 490 million (World Bank, 2024[31]). Although not

[31] World Bank, 2024. *Albania Overview*. [online] Available at: https://www.worldbank.org/en/country/albania/overview#2

all of these projects are directly linked to the ICT sector, the Resilience and Green Development programmes are noteworthy. With a budget of USD 80 million, these programmes aim to enhance the resilience of government sectors and households, develop the energy market framework, expand renewable energy and energy efficiency, safeguard the environment, and reduce Albania's carbon footprint, indirectly benefiting the ICT sector. The European Union significantly boosts the local ecosystem through the EU4 Innovation project, one of the largest innovation projects in the country, with a budget of EUR 11.75 million. This initiative, supported by GIZ (Federal Republic of Germany) and the Swedish International Development Cooperation Agency (SIDA), fosters startup creation by providing funding, entrepreneurial mentoring, and international exposure to local founders. Another important international funder is the Albanian-American Enterprise Fund (AAEF), established under the Support for Eastern Europe Democracy Act of 1989 (SEED Act). Since its incorporation in 1995, the AAEF, with an initial grant of USD 30 million from USAID, has considerably expanded its influence. The Fund has invested USD 109 million in 77 investments across 40 companies, creating over 7 000 jobs and contributing more than USD 2 billion to Albania's GDP. Since Albania joined in 1993, the Islamic Development Bank (IsDB) has also played a vital role. IsDB predominantly funds projects in the transportation sector, followed by agriculture, water, sanitation, and urban services. IsDB efforts have resulted in substantial job creation through infrastructure projects and microfinance initiatives. However, utilizing these grant-based funds, primarily available to organizations and the Government, requires periodic review to ensure the sustainability of initiatives beyond the grant period. This strategic approach aims to foster a long-term positive impact on Albania's developmental landscape.

Foreign direct investment

Foreign direct investment (FDI) in the ICT sector in Albania has seen contributions from various countries, including the Confederation of Switzerland, the Kingdom of the Netherlands, Canada, Italy, the Republic of Türkiye , Austria, the Republic of Bulgaria, and France. These investments are part of a broader spectrum of FDI, which focuses on industries including energy, banking, and real estate (United States Department of State, 2023[32]). Bank of Albania data for 2022 shows a flow value of EUR 1 372 million, marking a record figure in the flow of foreign direct investments into the country (AIDA, 2024[33]). Albania has implemented several strategies to attract more FDI into the ICT and digital sectors. These include enhancing its legal and regulatory frameworks to protect and encourage foreign investments. Albania allows 100 per cent foreign ownership in most sectors, and the Law on Strategic Investments aims to attract domestic and foreign investments. In addition, businesses benefit from tax incentives, with just a 5 per cent tax on software production. Moreover, the focus in Albania on digital transformation as a key driver for the economy has led to specific initiatives designed to enhance the digital capabilities of businesses and attract FDI (Risi Albania, 2021[34]). FDI is a catalyst for digital economy development, and with competition increasing as various countries announce FDI-attractive policies, policy-makers must think strategically, rather than tactically. The Government prioritizes energy, tourism, and ICT as areas for FDI, however, apart from talent utilization for

[32] United States Department of State, 2023. *2023 Investment Climate Statements: Albania*. [online] Available at: https://www.state.gov/reports/2023-investment-climate-statements/albania/

[33] Albanian Investment Development Agency (AIDA), 2024. *Foreign Direct Investment (FDI) in Albania*. [online] Available at: https://aida.gov.al/en/investment-in-albania/fdi/

[34] Risi Albania, 2024. *Digital Economy in Albania: Where Do We Stand and What Can the Private Sector Do to Accelerate It?*. [online] Available at: https://www.risialbania.al/digital-economy-in-albania-where-do-we-stand-and-what-can-the-private-sector-do-to-accelerate-it/?lang=en

BPO services, there has been more visibility and success in energy, tourism, and real estate, and ICT has not experienced the level of success desired. Some of the major players in the BPO sector include Teleperformance Albania, Epoka Group, EasyPay Albania and FirstSource Albania. While some stakeholders see FDI as a threat due to increased competition in both output markets and markets for skilled labour, others view it as an opportunity to compete and grow more efficiently. Another initiative launched to encourage investment is the Digital Nomad Visa to attract remote workers. The Digital Nomad Visa is a strategic tool for stimulating economic growth, enhancing the digital infrastructure, and fostering an innovative business environment that can grow the digital economy. Still a relatively new scheme, the benefits are yet to be quantified. The Durana Tech Park is another initiative to attract FDI and international ICT companies by offering a highly competitive incentive package. This includes benefits such as a 15-year exemption from profit tax, tax-free salaries for personnel for a 10-year period, and VAT exemptions on goods and services used within the tech park. Additionally, the tech park provides customs relief and infrastructure tax exemptions, making it an attractive destination for global tech companies seeking to invest in Albania. These incentives, combined with the proximity of the tech park to key transportation hubs and access to a highly skilled labour market, position Durana Tech Park as a key player in Albania's drive to become a regional innovation hub. To further support FDI, Albania should actively direct investments into targeted digital services with a focused approach. Investment policies, incentives, and the investor pitch must resonate with the country's unique strengths that include human capital, a business ecosystem, and technological capabilities.

Availability for investment in research

In 2023, Albania implemented a modest increase in its funding for scientific research to 0.08 per cent of GDP, marking a gradual rise from 0.05 per cent in 2022 to 0.04 per cent in 2021. Despite these increases, the country remains significantly below its ambitious target of 1 per cent of GDP for scientific research by 2030. When considering research funding as a percentage of public expenditure, the figure stood at 0.17 per cent of GDP in 2022 (European Commission, 2023[35]). Although Albania now enjoys better access to European Union research funds due to its association with Horizon Europe, which commenced in 2022, domestic funding for research and development remains minimal. However, in January 2024, the Ministry of Education and Sport allocated approximately EUR 200 000 for organizations collaborating on international R&D projects in the EUREKA Western Balkans call, and the National Agency for Scientific Research and Innovation (NASRI) promoted the participation of Albanian businesses in the programme. NASRI also launched a call for participation in a "matchmaking workshop between business and academia", which was organized in the framework of the "Strengthening the Science and Research Ecosystem in Albania" twinning project of the Instrument for Pre-Accession Assistance (IPA). NASRI selected ten businesses to gain exposure to cutting-edge technologies from academia, helping them to innovate their processes and products, become more sustainable, and access opportunities to join R&D&I funding consortia. The national strategy on technology and innovation for 2023-2030 aims for a substantial increase in public funding for research and development to 1 per cent of GDP. However, comprehensive data on actual research funding are currently unavailable. Funding is distributed across various sectors, including business enterprises, government, higher education, and private non-profit sectors, covering basic,

[35] European Commission, 2023. *Staff Working Document: Albania 2023 Report*. [online] Available at: https://neighbourhood-enlargement.ec.europa.eu/system/files/2023-11/SWD_2023_690%20Albania%20report.pdf

applied, and experimental research. Albania has implemented policies such as the Law on Higher Education to stimulate research and innovation within universities. However, there is a noticeable lack of detailed policies specifically aimed at enabling the distribution of R&D funding, or covering the commercialization of ideas and technology transfer. This indicates a potential area for policy development to ensure more effective use of R&D funds and to foster innovation (World Bank, 2023[36]). Furthermore, the current general R&D funding mainly supports the development and implementation of research projects, with no explicit coverage for commercializing research outputs and technology transfer. This highlights a gap where specific funding mechanisms and policies must be introduced or strengthened. Such measures would support the entire innovation process, from initial research to developing market-ready products and technologies, enhancing the digital innovation ecosystem.

Resources to build ecosystem supports

In Albania, incubators and accelerators predominantly receive funding from international donors and private companies, offering essential support to startups and SMEs through various programmes. For instance, Ofiçina conducts yearly incubation and acceleration programmes in collaboration with international support organizations and the private sector. Their notable Proof-of-Concept programme, targeting the Western Balkans region, benefits from funding under a multi-country IPA initiative, allowing for collaborations with researchers and private enterprises. Elevator Lab, a prominent fintech partnership programme led by Raiffeisen Bank International is designed to foster innovative fintech solutions and shape the future of banking. In academia, universities are increasingly participating in these entrepreneurial initiatives. Tirana Inc. was established through a collaboration among Albanian universities, Preneurz.Amsterdam, and EU for Innovation, was created to position Albania as a prime destination for aspiring entrepreneurs from across Europe. Metropolitan Incubator, the first on-campus incubator in the university district of Albania, aims to drive business development and regional economic growth. METINC provides mentoring, technical support, academic advice, and co-working spaces, alongside access to various funding programmes. This incubator has supported over 20 startups, with 12 currently engaged in its mentoring programmes. However, most programmes predominantly focus on early-stage incubation rather than acceleration, highlighting a gap in targeted support for more developed enterprises. Though some more recent efforts are attempting to bridge this gap, the impact is yet to be ascertained. The dependency on external funding poses challenges for the long-term sustainability of these programmes, and there is a recognized need for better coordination among the various support networks to ensure that startups receive comprehensive support throughout their development stages. The EBRD Star Venture programme targets promising startups and accelerators, providing tools to enhance business performance and benefit the broader entrepreneurial ecosystem. This programme includes mentoring for accelerators, training for local investors, crowdfunding opportunities, and policy advisory services to foster a supportive startup environment. Albania joined the EU Digital Programme in 2023 as an associated country. In the framework of the EU Digital Programme, the first call for European digital innovation hubs for associated countries was launched in December 2023, and currently, two Albanian consortiums are in the process of grant agreement with the European Union. These are positive steps for the ecosystem as there remains a need for more mentors, coaches, and university professors with practical experience in innovation and entrepreneurship to provide holistic support services and guide potential entrepreneurs on

[36] World Bank, 2024. *Research and Development Expenditure (% of GDP) in Albania*. [online] Available at: https://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS?view=chart

their journeys to success. These efforts are crucial for nurturing the entrepreneurial ecosystem and enhancing the capacity for innovation in Albania.

3.5 Market and networks

- There are a number of well-recognized and prominent national, regional, and global associations, pushing for innovation, but some of these are primarily known for providing networking opportunities rather than contributing to constructive action-oriented roadmaps.
- Efforts have been made to map the digital innovation ecosystem; however, a holistic and comprehensive ecosystem mapping is lacking.
- The e-Albania system has bolstered the public procurement system, but it could still benefit from increased transparency and accountability.
- Although trade flows are supported by the Government, apart from BPO services there has not been significant success in exporting ICT products and services.

Formal associations

There are a number of well-recognized and prominent national, regional, and global associations that support the ICT ecosystem in Albania. Among these, the Albanian ICT Association, established in 2007, stands out as an initiative by local enterprises to address the needs of the ICT sector. The Albanian ICT Association strives to be the primary voice and representative of the IT sector in government interactions. Additionally, the Albanian e-Commerce Association (AECA), founded in 2022 as a private initiative, aims to enhance the capacities of companies and expand their online competitive presence, thereby supporting economic growth. As a relatively new association, it is perceived as active and energetic by stakeholders. The Chamber of Commerce and Industry in Tirana is another significant player, managing over 25 projects in collaboration with partners from European Union countries, IPA, and cross-border programmes. These projects focus on entrepreneurship support, competitiveness, capacity building, monitoring, and the assimilation of best practices. The American Chamber of Commerce in Albania is a private, not-for-profit organization that promotes business development. It works to create a more favourable business environment and aims to be the foremost representative for United States and international businesses in Albania, while the International Chamber of Commerce seeks to promote international trade and investment to foster inclusive growth and prosperity. Another significant player is the Women's Economic Chamber of Albania, which advocates for the rights and interests of women entrepreneurs, professionals, and self-employed individuals across diverse economic sectors. Beyond advocacy, the Chamber is actively involved in implementing practical measures to support its members. These measures include promoting the use of digital public services to enhance efficiency, providing capacity-building initiatives to strengthen skills, and advocating for legislative reforms that create a more conducive environment for women in business. Their multifaceted approach aims to foster an inclusive and supportive ecosystem for women in the business community, ultimately contributing to broader economic development goals. The Albanian Manufacturers Union, representing over 50 active members and more than 500 associates across four main market macro-sectors, focuses on enhancing the competitiveness of "Made in Albania" products nationally and internationally, adhering to the principles of sustainable development. These organizations significantly impact the ICT innovation ecosystem through advocacy, awareness-raising, capacity building, and participation in government reform processes. Their efforts are crucial for fostering a civil society-friendly environment that stimulates democratic and

innovative processes within the ICT sector. Informally, there are very few associations known to stakeholders. Some actors mentioned that small niche communities are being formed but have yet to have a significant impact. Although formal associations strive to represent private sector views, some face funding and long-term sustainability challenges. Moreover, among the actors in the ecosystem, some formal networks are primarily known for providing networking opportunities rather than contributing to actionable, constructive roadmaps.

Ecosystem mapping and collaborations

Generally, stakeholders in the digital innovation ecosystem are familiar with each other, but often lack a detailed understanding of each other's roles and activities. As part of the Smart Specialisation Strategy (S3) initiative, a mapping process began with a quantitative analysis in late 2020 and concluded in 2021. Conducted by group of independent experts, the study assessed Albania's capacities, resources, and competitive advantages. The development of the S3 initiative has facilitated effective collaboration among stakeholders from government, business, academia, and civil society, enabling exploration and identification of priority sectors for innovation in the country. The Albania Tech online platform provides a comprehensive overview of ecosystem actors, listing key communities and innovation hubs. To map it out and empower startup creation, Albania Tech, through the support of the EU for Innovation programme implemented by GIZ in Albania, created an online startup ecosystem database, that also offers information about various events and initiatives that unite different stakeholders within the ecosystem. These structured strategies and platforms for mapping and engagement have enhanced collaboration within the ecosystem. As demonstrated in the Entrepreneurial Discovery Process and S3 initiatives, the alignment of stakeholders around common goals promotes a more integrated and strategic approach to innovation. The Ministry of State for Entrepreneurship and Business Climate has also mapped the ecosystem. However, many stakeholders are unaware of this mapping, resulting in limited collaboration, particularly between academia and industry. This underscores the need for improved communication and transparency to enhance collaborative efforts across all sectors of the innovation ecosystem.

Domestic markets: Public procurement and domestic ICT markets

The ICT sector offers numerous opportunities across various markets, fostering local development and enabling regional and global trade. The finance sector is highly digitized, with substantial investments being made by banks in digital transformation. This sector is recognized as a leader in adopting digital solutions, which opens further opportunities for innovation and service enhancement. Similarly, the BPO sector engages in digital transformation, indicating a market for ICT services to enhance operational efficiencies. In the tourism and hospitality sector, there is ongoing investment in digital initiatives to improve customer experiences and operational efficiencies. The agribusiness sector also displays significant growth potential by adopting ICT to enhance accounting, communication, and marketing processes. As the country's integration with global and European markets strengthens, the ICT sector, including telecommunications, is emerging as a vital area for exports and investment and this can be used leverage the strategic location of Albania and its existing trade relationships. There is a gradual shift in the local consumer market towards digital services, notably marked by the introduction of the e-Albania platform, and stakeholders report local demand and appetite for digital services. However, the market is relatively small and faces challenges such as skill gaps in digital usage. In addition, the market remains untapped by entrepreneurs, who could potentially use it as a testbed, although this opportunity has not yet been fully exploited. This may indicate insufficient market research

by entrepreneurs to address local challenges and a perceived reluctance among customers to adopt local products and services. While Albania presents a growing market for ICT innovations, further development is needed to support innovators adequately. This needed development includes enhancing the technical skills of the workforce, providing more substantial support for startups, and improving strategic digital transformation planning across various sectors. Public procurement, governed by the Law on Public Procurement, could present opportunities for local firms. According to the European Union Commission, Albania has made some progress in public procurement by increasingly adopting the most economically advantageous tender award criteria. However, according to local stakeholders transparency remains a concern and more support is necessary for smaller companies to be able to participate in tender processes and compete with larger more established firms. There is a widespread perception that large established companies dominate most tender awards. Improving access to public procurement opportunities for startups and SMEs could significantly enhance the local ICT innovation ecosystem. The ICT sector strategic development is crucial for economic growth and ensuring that the country competes globally. This involves tapping into underutilized sectors and enhancing the capacity of existing industries through digital transformation.

Trade flows

Although Albania's imports of high-tech and ICT have fluctuated substantially in recent years, such imports increased to 4.2 per cent and 1.1 per cent, respectively, of total trade in 2023[37] (GII, 2023), and then reduced to 0.2 per cent and 0.9 per cent, respectively, of total trade in 2024[38] (GII, 2023). Despite local companies being able to import the essential IT and tech components necessary for creating IT products, the low level of investment could hinder innovation and product development, particularly in sectors such as telecommunications, software development, and digital services. Importing more ICT products and services could significantly benefit the country, especially in areas with limited local capabilities. Such imports, including advanced software, hardware components, and specialized IT services, support ICT product creation and enable local companies to integrate cutting-edge technologies into their offerings. Albania faces challenges related to foreign exchange rates, which can affect the cost-effectiveness of imports and exports. Additionally, payment standards vary, and aligning with international payment gateways can pose challenges. Adhering to international standards such as ISO standards for quality and security is also a hurdle, particularly for smaller companies, impacting their ability to compete globally. The integration of Albania into international trade frameworks has been extensive, joining WTO and applying WTO rules on import licensing in 2000. In 2006, Albania signed the Stabilization and Association Agreement (SAA) with the European Union, ratified in 2009, liberalizing trade relations regarding tariff barriers for agricultural and industrial goods. Albania is a member of the Central European Free Trade Agreement (CEFTA) and has also signed free trade agreements (FTAs) with Türkiye and the European Free Trade Association (EFTA). These agreements enhance the export possibilities for Albanian ICT products and services, particularly to regional markets in the Balkans and wider European regions. Albania is also working hard on European Union accession, which will eliminate trade barriers with the European Union. Key export areas are mainly comprised in software development, data processing services, and digital solutions tailored to specific

[37] World Intellectual Property Organization (WIPO), 2023. *World Intellectual Property Indicators 2023*. [online] Available at: https://www.wipo.int/edocs/pubdocs/en/wipo-pub-2000-2023/al.pdf

[38] World Intellectual Property Organization (WIPO), 2024. *World Intellectual Property Indicators 2024*. [online] Available at: https://www.wipo.int/web-publications/global-innovation-index-2024/assets/67729/2000%20Global%20Innovation%20Index%202024_WEB3lite.pdf

industries such as tourism and agriculture. AIDA supports local enterprises by promoting their presence in international markets, creating connections and cooperation opportunities with foreign businesses, and organizing conferences and trade fairs. Despite these efforts, and apart from BPO services, significant success in exporting ICT products and services has been limited. This can be attributed to limited manufacturing of ICT products and services in Albania. Overall, the importation of ICT products and technologies plays a significant role in enhancing the local ICT infrastructure and capabilities, thereby stimulating the overall digital ecosystem. This provides local businesses with the tools needed to innovate and improve their domestic and international competitiveness. Albania needs to invest more in this area to accelerate ecosystem growth.

3.6 Culture and communities

- Numerous events, training opportunities, and engagements occur within the ecosystem throughout the year. However, stakeholders believe some efforts appear disjointed, often lacking the follow-up or long-term sustainable support and measurable impact needed to truly make a difference.
- Entrepreneurial interest has surged recently, especially among younger demographics seeking independence and self-employment. However, this interest diminishes with increasing age, as most aspiring entrepreneurs lack the support services and relevant skills to create, grow, and sustain a business.
- Attitudes toward risk and entrepreneurship are mixed, with some individuals showing greater entrepreneurial spirit than others. However, there been an increasing acceptance of failure on the path to success in recent years, motivating many entrepreneurs to persevere and try again.
- Gender diversity appears equitable within the ecosystem. However, there may be limited representation of other marginalized communities. Rural representation is beginning to increase, driven by ongoing developments in digital infrastructure within these areas.

Communities and events

Technology and entrepreneurship communities have been growing, characterized by several initiatives and projects that foster innovation and business development. For instance, the Protik Innovation Centre and Oficina support startup communities through training and networking initiatives. Oficina has played a significant role in developing the digital ecosystem, with thousands of hours invested in hundreds of entrepreneurial activities. Since 2016, Oficina have evaluated more than 400 startups and accelerated 72. Additionally, the ecosystem runs events and engagements throughout the year. Startup Grind has been active in Tirana since 2014, hosting monthly startup events to teach, inspire, and connect entrepreneurs. The Albania Tech platform is a dynamic force in promoting ecosystem events, while Expocity Albania, an international exhibition and conference organization, hosts various trade fairs, exhibitions, business-to-business (B2B) occasions, and special events in both local and international markets, showcasing the potential of the tech ecosystem. Innovation FEST is another platform that fosters connections and knowledge exchanges and encourages collaborations to achieve innovation. The Albanian ICT Awards is the largest nationwide event on technology and innovation, which brings together the tech community with business angels, donors, and entrepreneurs. This plays a vital role in sharing success and inspiring future leaders. Moreover, awards offer companies visibility, which can be crucial for attracting funding and customers. These events are helping to foster startup growth through access to resources and mentorship, enhancing ICT sector skills and knowledge, and facilitating partnerships between local startups and international

companies, and all while helping local businesses expand their reach. However, stakeholders believe many other efforts often seem disjointed, lacking follow-up and measurable impact. Events could be better connected so that there is a common thread and action plan. Stakeholders agree that opportunities for all stakeholders to meet and discuss shared needs and ecosystem challenges are too infrequent and that information about such events is sometimes difficult to obtain. Moreover, these gatherings tend to feature the same participants repeatedly, and so limit broader engagement. Improved coordination among organizers could prevent duplication of efforts and ensure that innovators receive the comprehensive and sustained support they need to thrive.

Spread of entrepreneurial culture

In Albania, interest in entrepreneurship, particularly among the youth, is growing, driven by global trends and local developments. Increasingly talented individuals are considering returning home to launch businesses after completing their education abroad. This interest is evidenced by the increasing number of startup events, hackathons, and business incubators nationwide, which attract young participants eager to explore and develop new business ideas. Support from the government and the private sector, including funding opportunities, mentorship programmes, and networking events, is crucial in encouraging young people to consider entrepreneurship as a viable career path. Additionally, some universities and private organizations now offer educational programmes focusing on entrepreneurship to equip young people with the skills and knowledge required to launch their ventures. The Internet has facilitated young entrepreneurs' access to global markets and trends, broadening their opportunities and deepening their understanding of potential business ventures. This connectivity fosters a growing desire among young people to become independent and chart their own paths in the business world. However, stakeholders believe a notable proportion of aspiring entrepreneurs still lack the relevant skills to create, grow, and sustain a business. In addition, traditional attitudes about employment continue to pose challenges. Many citizens continue to regard traditional employment as offering more stability and security than entrepreneurial ventures, a mindset that remains particularly prevalent among older generations. Moreover, high startup costs and limited access to capital can be significant barriers, discouraging young entrepreneurs from pursuing their business ideas. The innovation ecosystem needs inspirational role models and success stories to enhance entrepreneurial interest and foster an entrepreneurial mindset. Encouraging conversations around entrepreneurship from an early age, even in primary schools, could also help shift cultural perceptions and inspire more individuals to embrace the risks and rewards of entrepreneurship.

Attitudes towards risk and entrepreneurship

Attitudes towards risk and entrepreneurship in Albania vary, but a discernible entrepreneurial spirit has been growing, especially in recent years. Many startups supported by incubators receive the necessary training in market research, which is crucial for understanding the risks and shaping effective business strategies. However, stakeholders are concerned that many startups lack a fundamental understanding of business models before entering the market, which can lead to failure. There is a prevailing culture of risk aversion, with many preferring the security of steady employment over the uncertainties associated with entrepreneurship. Nonetheless, stakeholders confirm there has been a growing acceptance in recent years of business failure on the road to success, which has motivated many entrepreneurs to persevere and try again. If an entrepreneurial venture fails initially, some entrepreneurs opt to pivot their

business model or tweak their product based on feedback and lessons learned from the market. Others may return to traditional employment to rebuild their finances or gain more experience before venturing out again. However, with increasing exposure to global business practices, there has been a gradual cultural shift toward viewing entrepreneurship and associated risks more favourably. Government support for entrepreneurs is also making an impact, giving startups more confidence to launch their ideas. This support is helping to cultivate a more robust entrepreneurial ecosystem and encouraging a more positive outlook on risk-taking and innovation.

Diversity and equality

Gender diversity appears reasonably equitable within the ecosystem. Albania ranks an impressive 23rd out of 146 countries in the Global Gender Gap Index 2024 rankings (World Economic Forum, 2024)[39]. A [40]significant development in the entrepreneurial landscape is women's growing presence and influence. Women have capitalized on the opportunities arising from these transformations, contributing substantially[41]. These are positive steps, yet stakeholders are keen to see even greater female representation within the ecosystem. There is an increasing number of women in positions of leadership in ICT startups and SMEs. In fact, as at the end of 2021,[42] data shows that women entrepreneurs directed about 31 per cent or 36 917 out of a total of 118 627 companies of all sizes across Albania. However, other marginalized communities are less represented. For example, citizens from rural areas face barriers such as reduced access to technology, fewer educational opportunities, and limited connectivity, which hinder their ability to lead ICT startups and SMEs. Efforts to decentralize innovation through digital infrastructure, such as technology hubs or incubators in rural areas, are still in the early stages. People with disabilities are also underrepresented in the ecosystem, and face challenges such as physical accessibility and a lack of tailored educational or training resources. Older individuals frequently encounter difficulties entering the startup ecosystem, primarily due to the fast-paced nature of technology and a preference for younger, more digitally native entrepreneurs. Marginalized youths from lower socioeconomic backgrounds also struggle with limited access to the educational resources and networks necessary to launch startups. To address these challenges various programmes are being implemented to promote inclusivity in entrepreneurship. Notably, initiatives to support women in technology and entrepreneurship are expanding, such as the activities led by the Women's Chamber of Commerce, which offers networking events, mentorship programmes, and dedicated funding opportunities to encourage more female-led enterprises. Additionally, under the National Plan for Sustainable Development of Digital Infrastructure, Broadband 2020-2025, the Government has set a target of 100 per cent of households in rural and remote areas to have broadband access with at least 100 Mbp/s by the end of 2025. The Albanian Disability Rights Foundation and the National Agency for Employment and Skills (NAES), in collaboration with the Municipality of Tirana, implemented the "Advance Social and Labour Inclusion of Persons with Disabilities"

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39 World Economic Forum, 2024. *Global Gender Gap Report 2024*. [online] Available at: https://www3.weforum.org/docs/WEF_GGGR_2024.pdf

40 World Bank, 2020. *Toward Gender Equality in Albania: Shifting Mindsets Through Institutional Reform*. [online] Available at: https://www.worldbank.org/en/results/2020/06/19/toward-gender-equality-in-albania-shifting-mindsets-through-institutional-reform

41 Sheatwork, 2024. *Albanian Women Entrepreneurs: Pioneers of Economic Transformation*. [online] Available at: https://sheatwork.com/albanian-women-entrepreneurs-pioneers-of-economic-transformation/

42 Regional Cooperation Council (RCC), 2022. *Albania: Country Report December 2022*. [online] Available at: https://www.rcc.int/download/docs/Albania%2520FINAL_DEC2022.pdf/c2e839cd543dbfc21d822a10588e59ae.pdf

project for the period 2022-2024, with financial support from the European Union. The project aims to strengthen national, regional, and municipal capacity to effectively support access for citizens with disabilities to inclusive social and labour programmes and services. While Albania is progressing towards inclusivity in the entrepreneurial and ICT sectors, challenges persist. Continued efforts, through targeted programmes and policies, are essential to ensure that all population segments can participate in and benefit from the growing digital economy.

3.7 Policy and regulation

- The public sector acknowledges its important role and is actively engaged in promoting innovation, but the innovation ecosystem could benefit from an accelerated pace of execution, stronger coordination among stakeholders, and increased sharing of outcomes.
- There has been increasing public sector engagement with innovation ecosystem stakeholders, generating positive feedback about the engagement and outcome. However, some stakeholders still believe more could be done to engage academia and support public-private partnerships.
- Albania has an intellectual property (IP) policy that is aligned with European Union standards and general awareness about it is reasonably strong. However, the number of IP and patent registrations remains relatively low.
- Albania's R&D budget remains low, but progress is being made in accessing European Union programmes to support research and innovation. The newly launched R&D strategy aims to enhance applied research and technology transfer, and although it is still in early implementation stages, increased participation in European Union initiatives such as Horizon Europe is anticipated to yield positive outcomes in the near future.
- The Government has significantly invested in improving educational facilities, increasing teacher salaries, and revising the curriculum. However, stakeholders indicate that there is still room for improvement in modern curricula to meet industry needs, and in training educators to teach 21st-century skills.
- There are tax benefits already in place for ICT companies, but more incentives are needed to foster entrepreneurship and investments.
- The Business Development and Investment Strategy (2021-2027), offers supportive frameworks to SMEs. However, only a small percentage of SMEs are involved in offering ICT-related products and services, presenting an area of opportunity for Albania.
- Policies and strategies supporting industrial development are in place. However, further efforts are needed to encourage the adoption of ICT across traditional economic sectors to enhance operations and service delivery.
- While Albania benefits from several regional and global trade agreements, there is currently no dedicated agreement that specifically supports the trade of ICT products or services.

Public sector engagement with innovation

The public sector recognizes its pivotal role and is actively engaged in advancing innovation. Many stakeholders view it as the driving force behind digitalization in Albania, with most public services are now available via the e-Albania platform, a clear demonstration of the government commitment to accelerating the development of the digital economy. The public sector recently established two new agencies to further support the innovation ecosystem. The first new agency, the Agency for Innovation and Excellence, aims to contribute, encourage, and promote innovation by engaging local and international experts. This agency supports the implementation of advanced technologies through the design and execution of policies in

cooperation with the relevant ministries and sectors. The agency also develops and implements new, innovative, and advanced ideas to improve efficiency, effectiveness, and quality within specific sectors. The second new agency, Startup Albania was established to foster the growth and development of the startup ecosystem. Startup Albania plays a key role in promoting collaborations among stakeholders from government, business sectors, academia, investors, and beyond, aiming to establish a conducive regulatory environment for startups. Additionally, Startup Albania aims to assist local startups in reaching global markets, leveraging international partnerships to enhance their competitiveness and visibility. Their main focus areas include the startup environment, investment, talent, and regional development. Both agencies have the potential to positively impact the innovation ecosystem, but they are relatively new and have yet to demonstrate a significant impact. Additionally, various initiatives at the policy and funding levels have been launched, presenting opportunities for stakeholders to contribute and collaborate. While the public sector has taken commendable steps in advancing innovation and entrepreneurship, there remains room for improvement. The ecosystem could benefit from a more accelerated pace of execution and coordination. As the innovation ecosystem matures, the role of the Government could gradually evolve toward enabling and empowering other stakeholders to take the lead in driving innovation and growth.

Public sector connections to ecosystem

The public sector has been engaging with ecosystem stakeholders more frequently, and this engagement has received positive feedback regarding its outcomes. Stakeholders recognize that the Ministry of Infrastructure and Energy has demonstrated a strong commitment to innovation and is engaging with National Agency of Information Society in particular in relation to developing the European Digital Innovation Hub in the framework of the EU Digital Europe Programme. In addition, the S3 process implemented according to the "Quadruple Helix" approach led by the public sector has successfully rallied actors around a common goal. However, some stakeholders still believe more could be done to engage academia and support public-private partnerships. Albania, particularly in recent years, has increasingly adopted public consultation practices. This effort is evident in the engagement of various stakeholders in the policy-making process, ensuring that the interests and insights of different groups are considered. Public consultations are conducted through forums, public hearings, and online platforms, allowing citizens and stakeholders to provide feedback on proposed policies and initiatives. Despite these efforts, not all stakeholders are actively involved in consultations. More awareness-raising and promotion could encourage more actors to take part. Although public sector administration is interconnected, policy priorities and objectives differences can lead to disjointed efforts and sometimes a lack of cohesive strategies. However, the establishment of the two new agencies should help improve coordination.

Intellectual property policies

Stakeholders acknowledge that Albania has made significant progress in legislation concerning industrial property rights. The country joined the World Intellectual Property Organization (WIPO) in 1992 and has been a Contracting Party to the Paris Convention for the Protection of Industrial Property and the Patent Cooperation Treaty (PCT) since 1995. Albania is also a member of the European Patent Organization. The General Directorate of Industrial Property (GDIP) is legally responsible for registering, managing, and promoting intellectual property (IP) objects. The National Strategy of Intellectual Property states that the IP system aims to protect IP objects effectively, encourage creativity and innovation, and stimulate economic growth and cultural

and scientific development in Albania. Stakeholders are aware of this strategy and recognize that the GDIP is active in the innovation ecosystem, promoting IP and coordinating industry events. As a result of the work carried out on promotion, DPPI closed 2022 with an increase (948 patent applications, 19 national applications for industrial designs, 1 165 applications for marks) which translates into an increased number of quality services to citizens and higher levels of performance (DPPI, 2022)[43]. According to WIPO, Albania registered 35 patents in 2022 and ranked 120th globally (WIPO, 2022)[44]. Although significant progress has been made, some challenges remain. These challenges include the need to further develop and implement the National Strategy of Intellectual Property, increase awareness of IP, and strengthen and build the capacities of specialized IP entities. Addressing these issues will promote understanding of IP in the private sector and increase patent registrations, leading to more innovation and ecosystem development.

Research and development policies

The National Strategy for Science, Technology and Innovation 2023-2030, has been approved for implementation, with three main policy objectives. Firstly, the strategy aims to increase the efficiency and sustainability of the system supporting scientific research across various fields, including natural sciences, engineering, technology, medicine, agriculture, social sciences, and humanities, with a focus on international integration. Secondly, the strategy seeks to create an environment that facilitates interaction and technology transfer between the research community, the economy, innovation stakeholders, and public institutions. The third objective of the strategy is to promote a culture of science and innovation in education, emphasizing research practices and projects. While these ambitious goals could enable significant scientific progress, it is still too early to measure their impact. Some stakeholders have been consulted and are aware of the policy documentation, but concerns remain regarding funding. Reports indicate that the new strategy requires at least EUR 274 million to achieve all of its objectives (CNA, 2023)[45].

Despite the challenges posed by a low current R&D budget and allocation, as well as difficulties in producing sufficient quality research, which have historically limited opportunities for technology transfer and commercialisation, Albania has made significant strides in accessing European Union programmes and funding to support research and innovation. This includes increased participation in initiatives such as Horizon Europe. The newly launched R&D strategy aims to foster applied research and enhance technology transfer and commercialization opportunities. Although still in the early stages of implementation, these efforts are expected to yield positive outcomes in the near future.

ICT policies

The National Strategy for Development and Integration 2022-2030, is the primary strategic document at the national level with digitalization identified is one of the main pillars of the document. Complementing this, the National Broadband Plan is a sectoral policy paper that

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43 Department of Public Policy and Innovation (DPPI), 2024. *Annual Report*. [online] Available at: https://dppi.gov.al/en/raportivjetor/

44 World Intellectual Property Organization (WIPO), 2023. *Country Profile: Albania*. [online] Available at: https://www.wipo.int/edocs/statistics-country-profile/en/al.pdf

45 CNA, 2024. *Scientific Research and Innovation: The New Strategy Requires 274 Million Euros*. [online] Available at: https://www.cna.al/english/ekonomi/kerkimi-shkencor-dhe-inovacioni-strategjia-e-re-kerkon-274-milione-euro--i375491

considers digital infrastructure. Albania has a legal framework that directly and indirectly regulates ICT and e-commerce law, electronic identification (eID) and trust services law, right of access to information, reuse of public documents, and data protection law. The Digital Agenda and Action Plan 2022-2026 was adopted in 2022, and Albania also introduced Cyber Security Strategy for 2020-2025. This strategy is based on key principles such as applying the same basic values in both the physical and digital worlds, protecting fundamental rights, freedom of expression, personal data, and privacy, ensuring access for all, promoting democratic and efficient governance, and fostering joint responsibility in guaranteeing cybersecurity. Although a breach of citizens' data in 2021 raised concerns about Albania's cybersecurity infrastructure, these concerns have since been addressed. Most stakeholders are aware of these policies and view them as enablers of national progress. The Digital Agenda recognizes the pivotal role of ICT in the social and economic development of Albania, and if effectively leveraged, has the potential to strengthen the country's innovation capacity.

Education policies

The National Strategy for Skills and Employment 2023-2030, approved in 2021, is the first comprehensive framework that encompasses all levels of education in Albania. The national strategy focuses on qualitative employment and lifelong learning for everyone. It addresses 16 challenges and proposes 16 solutions, grouped around five main goals: reducing the skills mismatch across all professions, increasing the skill levels of both men and women of working age, improving the overall functioning of the labour market, delivering support programmes for effective and inclusive employment, and ensuring decent work for everyone. Regarding pre-university education, the strategy advocates reforms in teacher development, inclusiveness, and ICT development. The section dedicated to higher education includes objectives related to the internationalization of higher education, quality improvements in assessment frameworks for higher education programmes, enhancements in research infrastructure, and upgrades in ICT infrastructure and services for public higher education institutions. In 2023, the National Agency for Employment and Skills (NAES) launched a new Active Labour Market Programme (ALMP) implemented through specialized private vocational education and training (VET) providers. The programme provides advanced ICT training, mainly in programming and coding. Through the provision of financial support for training, this programme is intended to qualify and reskill job seekers and unemployed persons and prepare them for rapid integration into the labour market. The programme offers financial support covering of 50 per cent of the training course costs for job seekers and 100 per cent for unemployed persons. In 2023, the programme benefited 1 291 people (1 135 job seekers and 156 unemployed persons) and continued to be implemented in 2024. To diversify its programmes and better address the needs of job seekers, NAES and the Ministry of Economy, Culture and Innovation (MECI) have drafted the reintegration programme for job seekers who have been unemployed for over six months. In October 2023, the Pilot Phase of the Youth Guarantee was launched with the involvement of high-level representatives of the European Delegation in Albania, the Ministry of Economy Culture and Innovation (MECI), the Ministry of Health and Social Protection (MoHSP), the Ministry of Education and Sports (MES), the Ministry of State for Children and Youth (MsCHY), as well as other partners such as ILO, EU4SI, and UNICEF. By March 2024, 78 young people participating in the scheme have successfully transitioned through employment offers, incentive programmes and professional training provided by the National Employment and Skills Agency.

Since 2017, Albania has implemented a Vocational Education and Training (VET) law. This law aims to create and develop a unified VET system that can respond to socioeconomic

and technological changes in compliance with the overall educational system and local and global labour market needs. The law is intended to create sustainable mechanisms for quality assurance in vocational education institutions. Due largely to these efforts, the quality of public education has been improving over the last decade. The Government has significantly invested in improving educational facilities, increasing teacher salaries, and revising the curriculum. However, despite these efforts, some issues still need to be addressed. Stakeholders indicate there is room for improvement in modern curricula to meet industry needs and in training educators to teach 21st-century skills. Stakeholders would also like to see further integration of technology into the teaching and learning process. Recent improvements in education policy and strategies are intended to support academia at various levels in updating curricula and offering students more relevant and emerging skill sets. One of the core pillars of the Digital Agenda strategy focuses on enabling and developing basic and advanced digital skills and calls for weekly information technology (IT) classes in all secondary education classes and for the integration of digital skills subjects in all curricula of higher education institutions. ICT will continue to play a crucial role in transforming education. Although the current strategies to support the growth of the innovation ecosystem are viewed as positive enablers, their impact may take a few years to materialize in the talent pool.

Finance policies

New and supportive regulations and strategies, including a number of tax benefits for ICT companies, have recently helped reshape the financial landscape in Albania. The new Income Tax Law was introduced in 2023 and enacted on 1 January 2024. This law introduces significant changes to both corporate and individual income taxation. Key corporate income tax amendments include a broader definition of tax residence, more stringent requirements for the application of the dividend participation exemption, extended limitations on interest deductibility, simpler depreciation methods on non-current assets, rules for bad debt recognition, specific provisions for long-term contracts, the introduction of an exit tax, and changes to the loss carry forward rules. From an individual income tax perspective, important amendments include a broader definition of tax residence, the categorization of income into three distinct types (employment, business, and investment income), an extension to the scope of employment income, the introduction of controlled foreign company rules, the introduction of taxation of inheritances and gifts, and a revised tax rate system for employment income. The new law repeals the current provisions related to the simplified profit tax on small businesses. Regardless of size, all entities will be subject to corporate income tax (CIT) regardless of their annual income levels. The CIT rate is set at 15 per cent, with a few exceptions, including software production and development, which may benefit from a reduced rate of 5 per cent. The Law on Startups was introduced in 2022. The purpose of this law is to create a favourable regulatory and institutional framework for creating and developing innovative startups in the areas of technology and innovation. The Law on Startups is intended to promote research, implementation, and the use of new ideas, models, products, and processes that bring innovation to the economy. Innovative startups that are certified, registered in the commercial register, and meet the criteria and procedures set out in the law during the 24-month incubation period are exempt from payment of local taxes. Stakeholders recognize these changes in tax legislation as supportive of the innovation ecosystem but note that taxation law has been inconsistent and sometimes confusing for companies in the past. Additionally, stakeholders seek greater clarity and vision on how the new taxation regulations will effectively support and regulate the ICT industry, which forms the core of the digital innovation ecosystem. Stakeholders suggest that certain policies must be revised or relaxed to better support innovation and entrepreneurship. For instance,

the criteria for tax incentives could be broadened to include more types of ICT companies and startups. Additionally, bureaucratic hurdles in accessing financial support should be eased to make it easier for SMEs to benefit from government programmes. While progress has been made, more incentives are needed to foster entrepreneurship and investment.

SME policies

Small and medium-sized enterprises (SMEs) account for 99.8 per cent of active business enterprises in Albania (INSTAT, 2023)[46]. Recognizing their critical role in the economy, the Government has recently established a comprehensive regulatory framework to support SME activities. The country's primary SME policy document is the Business and Investment Development Strategy (BIDS) 2021-2027, overseen by the Ministry of Economy, Culture and Innovation which is responsible for the implementation and review of the strategy. The objectives of the strategy include strengthening cooperation between companies and industries, increasing competitiveness, boosting SME scale-ups and supporting internationalization activities. BIDS also focuses on fostering innovation and innovation ecosystems, promoting entrepreneurship, startups, and spin-offs. Additionally, the strategy is intended to advance social and sustainable economy initiatives, promote employment, upgrade skills and competencies, enhance territorial cohesion, and increase supply chain resilience. The strategy focuses on helping SMEs collaborate with research facilities, promoting their internationalization and export capacities, and developing human capital. The strategy estimates an overall implementation cost for 2020-2027 at ALL 9.61 billion (EUR 78.09 million) (ECCP, 2022)[47]. Further, funding is provided from both the state budget and international programmes. The Albanian Investment Development Agency (AIDA) oversees implementation and is managed by a board of directors with members from the private and public sectors chaired by the Prime Minister of Albania. While stakeholders recognize government efforts in creating this policy, they say a significant impact has yet to be seen given that its recent introduction. They also point out that SMEs continue to require more support to access finance. Consequently, awareness-raising, promoting, and implementing the of existing policy should remain a government priority in order to unlock the full potential of SMEs and strengthen the economic resilience of Albania.

Industrial policies

A range of policies and strategies reflect the strategic efforts of the Government to encourage economic transformation between and within sectors. Notable among these are the Smart Specialisation Strategy (S3) and the Country Programme for Inclusive and Sustainable Industrial Development (ISID) 2020-2024. The S3 draft has identified several priority sectors, with digitalization as a cross-cutting theme. The ISID includes about 20 project proposals in three priority areas: industrial competitiveness and market access, productive employment and entrepreneurship development, and sustainable energy for productive uses and environmental management. The National Strategy for Agriculture and Rural Development also focuses on improving productivity, market access, and sustainable farming practices. This policy outlines actions to develop the agriculture, food, livestock, and fisheries sectors sustainably and effectively, based on innovation and digitalization. The strategy aims to better cope with the pressures of national and international markets and address challenges related to climate

[46] Institute of Statistics (INSTAT), 2021. *Results on SMEs 2021*. [online] Available at: https://www.instat.gov.al/media/11356/results-on-sme-2021.pdf

[47] European Cluster Collaboration Platform (ECCP), 2022. *Cluster Factsheet: Albania 2022*. [online] Available at: https://clustercollaboration.eu/sites/default/files/2023-04/ECCPfactsheet_Albania_2022.pdf

change, biodiversity, and the green economy through the sustainable management of natural resources. It also aims to improve the quality of life for residents and ensure sustainable rural development. The National Strategy for Sustainable Tourism Development 2019-2023 focused on creating new industries, consolidating the tourism offer, increasing the added value and impact of the sector on the economy and employment, developing new products and services in tourism, improving their quality, and enhancing the country's image, and the promotion of local products. A new Strategy for Tourism is currently being drafted and is expected to be finalized and approved soon. Free zones and industrial parks are integral to BIDS and are key elements in attracting foreign investment. Consequently, the Government approved the creation of world-class Technological and Economic Development Areas (TEDA). These areas will have the necessary infrastructure for production, industrial development, trade, and service provision. TEDA are subject to a special tax and customs regime according to the legislation on establishing and performing technological and economic services in development areas. Industrial policies in Albania are designed to interact with other sectors, particularly ICT, so for example, the Digital Agenda complements BIDS by promoting digital transformation across various industries, enhancing productivity and innovation. Stakeholders have mixed views on these policies. While many appreciate the efforts of the Government to create a supportive environment for businesses, there are concerns about their practical implementation and accessibility. Further efforts are also needed to encourage the adoption of ICT across traditional economic sectors to enhance operations and service delivery.

Trade policies

In Albania, trade and trade-related policies are integral to broader economic strategies to attract foreign investment, foster economic growth, and generate employment. In addition to its efforts to join the European Union, Albania implements free trade agreements (FTAs) with the European Union, the Western Balkans (CEFTA), Türkiye, the European Free Trade Association EFTA, and the United Kingdom, among others. The trade policy adopts a liberal approach, focusing more on trade facilitation rather than tariff reductions. Approximately 98 per cent of trade volume is conducted with partners with which Albania has FTAs. Exports of goods increased significantly between 2016 and 2022, with the European Union being the main trade partner. In 2022, 73.4 per cent of total exports were directed to the European Union, and 51.6 per cent of total imports came from the European Union (WTO, 2023)[48]. Stakeholders acknowledge that while there are several trade agreements that benefit the country at regional and global levels, there is as yet no dedicated agreement supporting the trade of ICT products or services. Albania remains committed to an open, non-discriminatory, and rules-based global multilateral trading system. Recent years have seen improvements in trade facilitation, particularly regarding appeals, fees and charges, documents, procedures, and coordination at borders. Since May 2019, customs declarations have been required to be filed online using an electronic signature. Stakeholders also suggest that Albania could benefit from a network of export experts to train both public and private sector actors, thereby further increasing export volumes and improving efficiency in international trade operations.

[48] World Trade Organization (WTO), 2024. *Trade Policy Review: Albania*. [online] Available at: https://www.wto.org/english/tratop_e/tpr_e/g449_e.pdf

4 Ecosystem challenges and opportunities

The three main ecosystems essential to Albania's digital transformation journey are:

I. the innovation ecosystem (universities, research institutes, and the public sector);

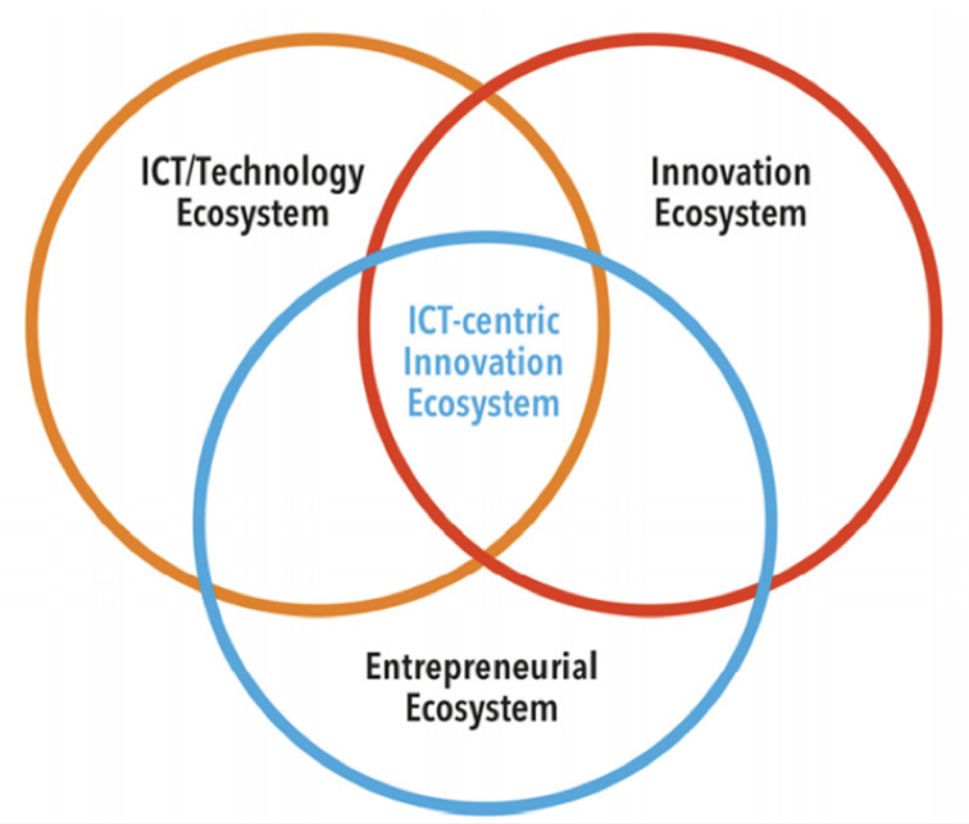
II. the entrepreneurial ecosystem (innovators and support organizations); and

III. the ICT-technology ecosystem (high-tech, ICTs, business-to-business (B2B), and manufacturing companies).

Understanding the ICT-centric digital innovation ecosystem

The innovation, entrepreneurial and technology ecosystems, are interconnected and collectively shape a country's digital transformation landscape. At the intersection of the three ecosystems lies the ICT-centric innovation ecosystem, also referred to as the digital innovation ecosystem.

Figure 3: Engines of growth



Source: ITU

The following sections provide a brief analysis of each of the three ecosystems and conclude with a macro-level overview of the challenges and opportunities identified within them. The insights gathered through interviews and group discussions during co-creation workshops with local stakeholders. A detailed analysis of the current landscape is presented in Chapter 3, while the corresponding recommendations are covered in Chapter 9 of this report.

4.1 Innovation ecosystem

The innovation ecosystem encompasses research institutes, universities, public sector entities such as national innovation agencies and public sector funding agencies, the private sector and other actors engaged in commercialization. It plays an invaluable role in the national journey of innovation, particularly in the early stages of launching recent innovations.

- Despite being at an early stage of development, the national innovation ecosystem is organized, structured and supported by government initiatives.
- While the Government has made substantial investments in initiatives to support and strengthen the innovation ecosystem, there remains a need to raise greater awareness among stakeholders to fully realize the potential for effective collaboration and maximise the capacity of the ecosystem.
- Albania has the potential to achieve both economic and technological growth by fostering a culture of innovation and collaboration.

Overview of actions in the innovation ecosystem

Although still in the early stages of development, the national innovation ecosystem is organized, structured and supported by the Government. The Government has recently established two new agencies, the Innovation and Excellence Agency and Startup Albania, to bolster the ecosystem. These agencies can act as a preliminary platform for innovation until the private sector becomes sufficiently competitive enough to take the lead. Another positive initiative, led by the Ministry of State for Entrepreneurship and Business Climate, is the initiative for supporting the startups, which provides a substantial EUR 10 million grant to foster startup growth. This initiative is managed and implemented by the newly established Startup Albania Agency. Universities also play a key role in supporting innovation and in developing 21st-century skills with programmes such as Tirana Inc., a multi-university incubator supporting student-led entrepreneurship through training, mentoring, and networking within the local and regional ecosystems. Additionally, some universities promote entrepreneurship through events, career services, competitions, and other activities, helping students explore entrepreneurship as a viable and attractive career path.

Overview of challenges in the innovation ecosystem

The Government has launched numerous initiatives and programmes to actively support and drive the development of the national innovation ecosystem. While awareness of these initiatives has been increasing, there is a need for increased promotion of these efforts among stakeholders to foster more effective collaboration and fully explore the potential of the ecosystem. By improving communication, collaboration, and engagement, these initiatives can facilitate more cohesive and dynamic interactions, encouraging stronger growth and innovation across the ecosystem. This focus on raising awareness and collaboration will help maximize the impact of government-led efforts and unlock new possibilities for the development of the ecosystem. The challenge for universities is that technology transfer offices (TTOs) are still a relatively recent concept, though some universities have established specialized offices dedicated to technology and intellectual property transfer, offering various services such as intellectual property management, licensing, and business incubation. While universities have attempted to gain experience in technology transfer processes through collaborations with companies, the number of applied research contracts remains low, and only a few universities have experience supporting spin-offs. Although there are spaces dedicated to this service,

significant issues include the training of office managers, as well as the provision of equipment to support creativity and prototype development (International Journal of Engineering Technology and Scientific Innovation, 2023)[49]. Although the national innovation ecosystem is operational, there is significant potential for improvement. Strengthening trust and collaboration between the private sector and academia, alongside increasing research funding, will unlock greater efficiency. As both the private sector and academia begin to align more closely and access growing support through government programmes and international funding opportunities, the ecosystem is positioned to become more effective in driving innovation and research outcomes.

Overview of opportunities in the innovation ecosystem

The public sector has taken several important steps to support ecosystem development by establishing innovation agencies and initiatives. Various ministries are focused on this mission, and enhanced coordination and collaboration will help amplify their efforts. The public sector needs to identify a leader within the government to create awareness and ensure the efficient implementation of a digital transformation roadmap with a clear vision, strategy, and development of key initiatives. Universities can play a more proactive role by enhancing their networking capacities to foster partnerships with industry. Additionally, they should do more to cultivate an entrepreneurial mindset among students, researchers, and public sector employees to drive innovation and startup creation. By leveraging the strengths of the public sector and fostering a culture of innovation and collaboration, Albania has the potential to advance its national innovation ecosystem and achieve economic and technological growth.

4.2 Entrepreneurial ecosystem

The entrepreneurial ecosystem comprises entrepreneurs, their support systems, and the organizations that nurture business creation helping startups navigate through the "valley of death" phase and supporting their subsequent evolution into sustainable small and medium-sized enterprises (SMEs).

- The entrepreneurial ecosystem is slowly but steadily growing, with public and private incubators partnering with international development organizations.
- Startups demonstrate significant potential but face challenges in securing growth finance, accessing international markets and attracting skilled talent. As the innovation ecosystem matures and resources become more readily accessible, startups are beginning to navigate the "valley of death" and position themselves for sustainable growth, however, additional ecosystem support is still needed.
- With the right support, improved access to capital, and strengthened innovation capabilities, Albania has the potential to foster its first unicorn startups.

Overview of actions in the entrepreneurial ecosystem

The entrepreneurial ecosystem in Albania is growing but remains in the early stages. Both public and private sector incubators are actively supporting local talent by working in partnership with international development organizations to boost startup development and entrepreneurship. Though mainly based in Tirana, a number of entrepreneurial support networks, including TechSpace, Protik, and Oficina, provide training, mentoring, and networking opportunities to

[49] International Journal of Emerging Trends in Science and Technology (IJETSI), 2023. *More 2023*. [online] Available at: https://www.ijetsi.org/more2023.php?id=6

nurture business ideas into viable startups. Agencies such as Startup Albania and programmes such as 'STARTUP-et' offer grants and financial resources to startups. Through these efforts, support organizations have helped to build a more connected startup ecosystem in Albania when compared to just three years previously. A digital nomad visa has also recently been introduced, which is encouraging foreign talent to become part of this growing ecosystem, reflecting the intent to support and nurture local and foreign talent to contribute to the entrepreneurial ecosystem in Albania.

Overview of challenges in the entrepreneurial ecosystem

Despite some positive initiatives, Albania continues to experience a significantly high brain drain, which constrains startup growth by shrinking the available talent pool. Additionally, intense competition for skilled individuals raises salary expectations that startups are often unable to meet. Limited funding opportunities from angel investors and venture capitalists at the scale-up stage also pose a serious challenge, restricting investment in technology and slowing ecosystem development. As a result, promising technology startups often find it difficult to successfully navigate the "valley of death" phase. Startups also face difficulties accessing international markets due to limited networks and expertise, leading to diminished growth and innovation. Though support networks exist to address these issues, they are sometimes fragmented and lacking in coordination. Consequently, entrepreneurs do not receive comprehensive support, resulting in gaps in essential areas including funding, training, and networking. Moreover, some entrepreneurs and support organizations lack a long-term strategic vision for sustainable growth and innovation. Limited donor funding further constrains support network activities which tend to be short-term and reactive rather than proactive, limiting potential breakthroughs and large-scale impacts.

Overview of opportunities in the entrepreneur ecosystem

Entrepreneurs in Albania often demonstrate high resilience and adaptability, traits that are essential to thriving in a challenging environment. Entrepreneurs are known for maximizing limited resources and exhibiting creativity in problem-solving and business innovation. The growing support ecosystem could play a more proactive role in developing these entrepreneurs. Closer collaboration with successful entrepreneurs and talented diaspora would stimulate innovation by building firms that deliver novel solutions. Dedicated digital accelerators could also engage with international investors and provide specialist support during the startup growth stages. For example, scale-ups need to build skills in effective pitching, financial management, and investor relations. Additionally, to create a thriving startup ecosystem, founders often need to foster a more collaborative mindset, support each other and develop a stronger focus on understanding customer needs. Although Albania has not yet produced a unicorn, with the right support, improved access to capital, and enhanced innovation Albania has the potential to foster its first unicorn startups.

4.3 Technology ecosystem

The technology ecosystem includes high-growth technology companies, equipment manufacturers, systems integrators, companies in the ICT sector and B2B technology platforms supporting SMEs, among others. The development of the technology ecosystem is essential

to the ability of a country to benefit from technological innovation and create high-growth industries and jobs.

- Albania has emerged as a major destination for ICT-BPO services, which has helped to grow the country's technology ecosystem.
- Brain drain remains a major challenge leading to a loss of skilled professionals, compounded by misalignment between education system outputs and industry needs.
- To support a vibrant and expanding tech community, companies must actively invest in their existing workforce through reskilling and capacity-building initiatives to keep pace with new technologies and business models.

Overview of actions in the technology ecosystem

The technology ecosystem comprises a mix of early-stage startups and established tech companies operating across various sectors, such as fintech, software development, e-commerce, and digital services. Software development is a significant sector with a projected revenue of USD 51.83 million in 2024 (Statistic, 2024)[50]. Within this sector, Enterprise Software dominates the market with a projected market volume of USD 21.71 million in 2024[51]. Albania has emerged as a major destination for ICT-BPO services, which has helped to grow the country's technology ecosystem. The country is steadily gaining popularity as an attractive location for foreign direct investment due to its urban culture, availability of resources and infrastructure, and attractive investment Incentives.

Overview of challenges in the technology ecosystem

Although Albania has successfully developed its ICT-BPO sector, some challenges remain. Brain drain leads to a loss of skilled professionals in other countries, exacerbated by an insufficient alignment between education system outputs and industry needs. Consequently, a skills gap exists, particularly in advanced tech areas like AI, cybersecurity, and data science. This increases competition for limited talent, driving up hiring and retention costs. In addition, low levels of investment in research and development result in a slower pace of innovation and technological advancement, making it difficult to stay competitive and attract top talent. Additionally, there are few small local companies that are part of the B2B value chain.

Overview of opportunities in the technology ecosystem

Albania boasts a vibrant and expanding community of tech enthusiasts, startups, and professionals, supported by strong technical education programmes and universities producing skilled computer science, engineering, and IT graduates. Proactive government, business, and citizen involvement is critical to efficiently adapting to the ever-changing labour market. Companies must actively and continually support their existing workforce through training and upskilling to keep pace with new technologies and business models. Cultivating a commitment to lifelong learning and maintaining awareness of global trends and best practices is essential. The technology ecosystem must address funding, talent development, regulation, infrastructure, and market access challenges to achieve a significant impact. Enhancing coordination among support networks, fostering a strategic long-term vision, and participation in public-private

[50] Statista, 2024. *Software Market Outlook in Albania*. [online] Available at: https://www.statista.com/outlook/tmo/software/albania

[51] Statista, 2024. *Software Market Outlook in Albania*. [online] Available at: https://www.statista.com/outlook/tmo/software/albania

collaboration are essential steps. By tackling these areas the ecosystem can better support tech entrepreneurs, drive innovation, and achieve sustainable growth. Ultimately, this will contribute to a more dynamic and competitive technological landscape, potentially leading to the emergence of Albania's first unicorn startups.

4.4 Macro challenges

At a macro level, the three ecosystems share some common challenges:

1. The absence of a shared and common long-term strategic vision impacts on the overall development and progress of the ecosystem.
2. Access to talent with advanced technical skills is challenging for all ecosystems, as they compete to recruit the best candidates from a limited pool of qualified professionals.
3. Limited funding and insufficient investment in research and development (R&D) constrain innovation and slow the desired pace of ecosystem growth.
4. Coordination and collaboration among various stakeholders are often insufficient, undermining the effective functioning of ecosystems.

5 Stakeholders

Understanding the stakeholders

Collaboration between key actors within the innovation ecosystem forms the foundation of the assessment process and drives the actions taken to strengthen it.

The stakeholders are mapped across six key stakeholder groups: academia, entrepreneurs, entrepreneurial support networks, finance, private sector, and public sector. These stakeholders are identified through close consultation with the partner agency in the country to ensure quality engagement at different stages of the project.

An important part of the country review involves finding ways of identifying and engaging with a broad network of stakeholders across diverse sectors and interests.

Table 2 lists the various stakeholders who contributed to this analysis, categorized into entrepreneurs, the financial sector, entrepreneurial support networks, the private sector, academia and the public sector. Stakeholders who were interviewed and participated in co-creation workshops and/or one-on-one qualitative interviews are indicated as 'engaged'.

Table 2: Stakeholders

	Stakeholders (in alphabetical order)
Academia	• Alekasander Moisiu University (Durres) • Barleti University "engaged" • Barleti University, Research Unit • European University of Tirana • University Metropolitan Tirana "engaged" • University of New York, Tirana "engaged" • University of Tirana, Faculty of Economic • University of Tirana, Faculty of Economic (Department of Informatics) • University of Tirana, Faculty of Economy (Department of Statistics and Applied Informatics) "engaged" • University of Tirana, Faculty of Natural Science • University of Tirana, Faculty of Natural Sciences (Informatics Department) "engaged" • Polytechnic University of Tirana • Polytechnic University of Tirana, Faculty of Geology "engaged" • Polytechnic University of Tirana, Department of Electronics and Telecommunications "engaged" • Polytechnic University of Tirana, Department of Informatics, Research

Table 2: Stakeholders (continued)

	Stakeholders (in alphabetical order)
Entrepreneurs	• Assist Digital • Baboon • Digit Sapiens "engaged" • EUROELEKTRA "engaged" • Skaitech "engaged" • S-systems "engaged" • Vigan Group "engaged"
Entrepreneurial Support Networks	• Albanian Academic Network "engaged" • Albanian Association of Business Process (ABSL) • Albanian Energy Association • Albanian E-Commerce Association (AECA) "engaged" • Albanian ICT Association (AITA) • Albanian manufacturers union "engaged" • Albania Tech • HELVETAS Swiss Intercooperation, Risi Albania • Foreign Investors Association of Albania • National Association for Skills Competitions • Oficina "engaged" • Protik Innovation Center "engaged" • TechSpace "engaged" • Tirana Chamber of Commerce and Industry • TUMO Tirana "engaged" • Uplift • Women Economic Chamber of Albania "engaged"
Finance	• Albanian Association of Banks • Abi Bank • BKT Bank • National Investment Council "engaged" • Procredit Bank "engaged" • OTP Bank • Raiffeisen Bank "engaged" • Union Bank "engaged"
Private Sector	• Albadrone Academy "engaged" • ASC/Tring "engaged" • BALFIN • Devoll Hydropower • EVEREST • Easy Pay • Fasttech • IKONS "engaged" • Lufthansa Solutions "engaged" • One Albania "engaged" • Shell Albania "engaged" • Vodafone Albania • Voltalia Albanie • Yura Corporation Albania

Table 2: Stakeholders (continued)

	Stakeholders (in alphabetical order)
Public Sector	• Authority for Electronic Communications (AKEP) "engaged" • Albanian Investment Development Agency (AIDA) "engaged" • Albanian Media Authority (AMA) • Deputy Prime Minister Office "engaged" • Innovation and Excellence Agency "engaged" • Ministry of Education and Sports • Ministry of Finance and Economy • Ministry of Infrastructure and Energy (MIE) "engaged" • Municipality of Tirana • Ministry of State for the Protection of Entrepreneurship • National Authority for Cyber Security and Electronic Certification • National Agency of Information Society (AKSHI) "engaged" • National Agency for Scientific Research and Innovation "engaged" • National Institute of Statistics "engaged" • Startup Albania Agency "engaged" • State Agency for Strategic Programming and Assistance Coordination (SASPAC)

6 Ecosystem maturity map

Understanding the ecosystem maturity map

The ecosystem maturity map, also referred to as the innovation journey map, highlights the work that needs to be done in the ecosystem to harness innovation on a transformative journey from pre-ideation to high growth. The ecosystem maturity map describes stakeholder roles and actions in support of entrepreneurs and innovators at each stage of the startup lifecycle. The colour coding identifies areas that are well-supported (green), inadequate (yellow) and missing or weak (red). In some cases, to arrive at a consensus within the group, orange has been used to indicate maturity between a red and a yellow; and light green has been used to indicate maturity between a yellow and a green.

The heatmap of stakeholders in the ecosystem and the current status of their jobs-to-be-done is based on interviews and group discussions in co-creation workshops with local stakeholders and validated by secondary research and literature reviews.

It is important to realize that the innovation lifecycle, or entrepreneurial journey, is not linear. Instead, it is comprised of a series of jobs-to-be-done across different stages of the cycles. In the pre-ideation stage, key actors plant the seeds of support in the innovation ecosystem. In the ideation stage, innovations are developed but have not yet been formalized into businesses. In the startup stage, innovations evolve from concepts into businesses. The "valley of death" is a challenging stage of development where entrepreneurs need strong support to survive. In the SME stage, the velocity of startup growth increases as they expand rapidly into established businesses, reach steady-state, or exit through buyouts or initial public offerings (IPOs).

A comprehensive understanding of how ecosystem actors can work together to implement national development priorities within the digital innovation maturity ecosystem is essential. Initiatives that are constructed in silos might lead to duplication of efforts and wasted resources.

In Albania, the ecosystem maturity map shows an ecosystem in an early development stage. Profiling of key stakeholders and their roles and actions is vital to accelerating digital transformation.

Actors	Cycle Stage				
	PRE-IDEA	IDEATION	STARTUP	THE "VALLEY OF DEATH"	SME
Entrepreneurs	Entrepreneurial Interest	Engage with Problems	Develop Business Models	Build Collaboration	Expand
Finance	Research Funding	Seed Funding	Angel Investment	Venture Capital	Business Finance and Loans
Entrepreneurial Support Networks	Entrepreneurial Events	Hackathons and Competitions	Co-Working and Support	Incubators and Accelerators	Business Association
Private Sector	Success Stories	Research Programmes	Lab programmes	B2B Services	Skill Training Programmes
Academia	Community of Entrepreneurs	Basic Research	Spin Offs	Soft Skill Trainings	Human Capital
Public Sector	Vision and Strategy	IP & R&D Support	Tax Support	Public Procurement	Trade Policy

6.1 Entrepreneurs

- Interest in entrepreneurship is steadily increasing among talented individuals in the pre-ideation stage, however, most continue to prioritize securing stable employment with international companies.
- Innovators generally find local problems to solve. However, excepting a few industries, most ideas tend to replicate existing successful business models rather than introduce unique concepts.
- Entrepreneurial education at all levels is underdeveloped, leading to weaker business models and potentially higher startup failure rates although recent initiatives have begun to address this gap.
- While entrepreneurs are generally open and willing to support each other, the scarcity of role models and mentors limits the capacity of the ecosystem to nurture and sustain new ventures.
- Startups struggle transitioning into high-growth SMEs through acquisition buyouts and initial public offerings (IPOs), which limits the overall economic impact, maturity and success of the entrepreneurial landscape in Albania.

6.2 Finance

- Innovation is constrained by limited funding for basic and applied research, which results in lower levels of patenting and intellectual property development.
- Early-stage entrepreneurs are motivated by the initial support, particularly via government funds and grants.
- The lack of high-risk investment from angel networks restricts the ability of startups to scale effectively, resulting in slower growth and development within the entrepreneurial ecosystem.

- The scarcity of venture capital investment creates a bottleneck, making it hard for startups to navigate the "valley of death," reducing the overall success rate of new ventures.
- Established SMEs and large companies possess the motivation, resources and collateral necessary to access and secure commercial bank loans for expansion.

6.3 Entrepreneurial support networks

- Young talent is motivated by opportunities to network and gain support at events, particularly at the pre-ideation stage.
- Innovators are being inspired and driven by opportunities to validate and develop their ideas through a growing number of hackathons and challenges throughout the year.
- Several co-working spaces offering support services to entrepreneurs have emerged recently, especially in urban areas.
- There are a number of incubator and accelerator programmes to support, guide and scale startups, however, due to the lack of comprehensive support services over a sustained period of time, startups find it hard to transition into high-growth stages.
- While business associations and chambers are motivated to support local enterprises and actively engage with their stakeholders, their focus on larger organizations sometimes leaves smaller startups without adequate representation and advocacy.

6.4 Private sector

- Although there are some success stories from the private sector that inspire young innovators, limited communication and visibility of these achievements reduce their potential to motivate others.
- While some large blue-chip firms are actively engaging in and funding research to support innovation, many local SMEs are constrained by resources and do not reinvest in innovation, limiting overall innovation capacity.
- Some large companies have established corporate innovation teams to support and foster internal and open innovation projects, but their limited support for external startups via internal incubators restricts broader collaboration.
- The private sector has limited engagement with smaller B2B firms, making it difficult for startups to overcome early-stage challenges and grow effectively.
- The growing focus on upskilling in large firms is enhancing workforce quality in Albania, but the inability of SMEs to offer similar programmes creates a skills gap and limits the overall talent development within the ecosystem.

6.5 Academia

- Some universities foster talent through their supportive environments that encourage early-stage entrepreneurial activities, benefiting the ecosystem, however, the curricula still primarily prepare students to be job seekers rather than entrepreneurs.
- The shortage of basic research restricts the generation of innovative ideas that can be commercialized, thereby limiting the development of new, practical innovations within the ecosystem.
- Entrepreneurs are motivated to commercialise their findings but face significant challenges due to inadequate support frameworks, limiting the potential of the ecosystem to generate high-impact innovations.

- Some university training programmes enhance the entrepreneurial capabilities of innovators, contributing positively to the ecosystem by enabling the creation of more startups, but their overall reach is limited.
- The gap in industry-ready skills among graduates places a burden on employers to invest in training, which can slow down the integration of new talent into the workforce and impact overall productivity and innovation within the ecosystem.

6.6 Public sector

- The Government has developed several forward-looking strategy documents aimed at driving future growth and development in Albania. As awareness and understanding of these strategies continues to improve among stakeholders, there is great potential for enhanced coordination and alignment. However, for stakeholders to work more efficiently and seize opportunities to strengthen the ecosystem greater clarity in roles and responsibilities is needed.
- Although government research funding is limited, Albania is increasingly leveraging international programmes, such as European Union initiatives, to boost innovation, patenting, and intellectual property development, enhancing the capacity of the ecosystem for technological advancement and economic growth.
- Tax incentives for software development have significantly strengthened the ICT-BPO sector compared to earlier benchmarks. With the additional introduction of broader investor incentives, the startup ecosystem has the potential to achieve even greater growth and diversification.
- Reforms in public procurement processes have enhanced access for smaller enterprises, however limited training restricts their ability to fully leverage these opportunities, reducing the potential impact on innovation and business growth within the ecosystem.
- Policies supporting investment and trade by innovative businesses are in place and have contributed to the ecosystem but increased awareness and enhanced support mechanisms are needed to maximize their effectiveness, and drive greater overall growth and dynamism.

7 Relevant practices

During the assessment process, through desktop research and stakeholder engagements, the following practices were identified as noteworthy and potentially positive for the ecosystem, recognised for their relevance and potential contribution to strengthening the country's innovation ecosystem.

STARTUP-et

In May 2022, led by the incumbent Minister of State for the Protection of Entrepreneurship and Business Climate, the Government launched the 'STARTUP-et' programme to support and empower young entrepreneurs. The programme offers innovative business opportunities, providing a substantial grant of EUR 10 million for startups led by young individuals. This grant programme supports startups and facilitators engaged in innovative projects across priority sectors such as environmental impact, youth empowerment, female entrepreneurship, social inclusion, diversity, and other areas. The first call held from May to December 2022, received 628 applications (498 startup applications; 130 facilitators applications). In total 58 beneficiaries were awarded grants, totalling EUR 2.5 million, with 29 startups and 29 facilitators receiving support. The grant facilitates the establishment, market-entry, and operation of startups, aiming to create a conducive environment for attracting, involving, and retaining talent. It also aims to enhance access to financial resources, promote social inclusion, and foster diversity while upholding democratic values. The programme encourages innovation across economic sectors, contributing to the overall development of the country. The primary goal is to establish favourable conditions for talent retention, financial resource access, social inclusion, diversity promotion, and innovation integration, aligning with democratic values and advancing economic sectors. Plans are underway to make this grant programme a recurring initiative.

EU for Innovation Programme – Challenge Fund

The EU for Innovation programme financed by the European Union and implanted in Albania through GIZ and the Swiss Government Development Office, was designed in partnership with the Government of Albania in 2017, to develop and strengthen the startup and innovation ecosystem in the country. A key instrument of the programme is the Challenge Fund, which aims to improve and diversify financing opportunities for: (i) startups and micro, small, and medium enterprises (MSMEs), offering strong innovative solutions including products, services, business models, and processes; (ii) startups with a prominent technological content. Grantees are selected in a competitive and transparent manner, based on specific criteria, involving an evaluation committee with national and international expertise. Successful grantees are required to match the grant with their own financial resources. During the first call in December 2023, 247 startups applied, and following the evaluation process the jury selected 20 winners. The Challenge Fund also comprises the design and delivery of a Capacity Building Programme which is designed to increase capacities of awarded Albanian MSMEs and startups and to initiate and/or strengthen their business initiatives that foster inclusive development through a combination of training, mentoring, coaching, and study visits to enterprises.

Digital Europe Programme

The Digital Europe Programme (2021-2027) established and financed by the European Union aims to enable digital transformation and increase the use of digital technologies by businesses,

citizens, and public administrations. The programme has five specific objectives focused on high performance computing, artificial intelligence, data and the cloud, cybersecurity, and advanced digital skills and accelerating the best possible use of emerging technologies. Albania joined the Digital Europe Programme (2021-2027) by signing and ratifying the agreement for the country's participation. With its entry into force, all legal entities of Albania, including those in the public, private, and academic sectors, are eligible to participate in the European Union calls within the framework of the Digital Europe Programme. The Ministry of Infrastructure and Energy, together with the National Agency of Information Society, serve as lead national institutions overseeing the programme in Albania.

Startup Albania

Following the enactment of the Startup Law, the Albanian Council of Ministers approved the establishment of the 'Startup Albania' agency. The creation of the agency is seen as positive step for the startup ecosystem, supporting aspiring entrepreneurs with innovative ideas. The development follows recent governmental reforms, including amendments to support and develop startups, and measures to attract digital nomads including eased entry and one-year tax exemption. The new organizational structure introduces two key changes. First, Government support, evaluation, and financial assistance will be channelled through the Startup Albania agency, which will also oversee fund monitoring from both the Government and potential donors. Second, and crucially, real-time assistance will be provided to startups, including a one-stop-shop for information on other institutions, addressing queries on industrial property, tax, and customs facilitation.

Oficina incubator

Oficina serves as a private startup incubator in Albania, catering to early-stage startups with significant aspirations. The programme is inclusive, welcoming founders who have diligently worked on their projects, possess a minimum viable product (MVP), and are committed to advancing their startup towards full commercialization, with the ambition to extend their reach beyond national borders. The incubation programme is agnostic regarding technology preferences and accepts applications throughout the year. Oficina provides personalized development support to each startup, considering factors such as industry, development stage, and future plans. This programme is suitable for any team aiming to create a prototype in either software or hardware, evaluating outcomes against the current state-of-the-art in the market. Oficina provides participating startups with valuable resources, access to experts, and a dedicated staff committed to supporting their entrepreneurial journey. Since its inception, Oficina has evaluated over 400 startups and accelerated 72 of them.

Albanian ICT Awards

Established in 2012, the Albanian ICT Awards has, for over a decade, been a pioneering initiative with a clear mission: to identify, promote, and reward Albanian trailblazers in technology, innovation, and entrepreneurship, including both distinguished individuals and successful business leaders within the ecosystem. Across 10 editions, the awards have involved over 10 000 hours of jury work, welcomed 2 500 participants, celebrated and engaged 200 finalists in gala evenings, and hosted over 300 events. Each year the awards recognize 70 successful startup founders through 13 diverse categories, and celebrate contributions to innovation, entrepreneurship, and technology in various sectors, be it organizations, institutions, agencies,

or individual enterprises in the private or public sector. Positioned as a significant platform for Albanian achievements in technology, innovation, and entrepreneurship, the ICT Awards not only serves as a unique event but also acts as a vital catalyst for the ecosystem, promoting, encouraging, and inspiring transformative ideas throughout the Albanian community.

Global Digital City platform

Global Digital City, is an initiative by the Albanian Association of Business Process (ABSL) and operates as a platform dedicated to increasing awareness and disseminating information regarding the myriad opportunities presented by the digital era worldwide. The initiative strives to explore and embrace innovative ideas, supporting initial steps by providing opportunities and a foundational platform for aspiring young entrepreneurs. The focus is on equipping young entrepreneurs with the skills necessary for independent work, facilitating the startup of their businesses, and ensuring alignment with evolving market requirements, whether at the local or global level. A key part of the mission of the Global Digital City platform is aiding companies in Albania to proactively prepare for the future of work. The initiative has multiple objectives: to raise awareness regarding the imperative need for digital skills that enhance the productivity and performance of companies; to promote accessibility to diverse technologies, with a particular emphasis on startups and small businesses; and to broaden the availability of digital skills through the implementation of events, workshops, and comprehensive training systems. In essence, this initiative seeks to empower individuals and businesses by fostering a dynamic ecosystem that is adept at navigating the challenges and opportunities of the digital landscape, both locally and globally. Almost 200 young entrepreneurs participated in the recent Korca Digital City event organized by Global Digital City.

Raiffeisen Bank

Raiffeisen Bank is the market leader in Albania, with the largest branch network in the country, counting 74 branches, eight of which are digital branches, distributed across most of Albania's major cities and towns. The Raiffeisen digital banking channel, designed for retail and business customers, offers fast and secure banking services through advanced technology. the Raiffeisen ON app, an innovative digital banking platform, serves over 260 000 users in both retail and business. The aim is to transform continuous innovation into a superior customer experience, with the vision of becoming the most recommended bank in Albanian. In 2022, Raiffeisen Bank took significant steps towards digital transformation by pioneering the provision of fully digital loan products. This achievement was made possible by implementing identification and digital signature technologies. Collaborating with third-party entities and fintech firms, the bank aimed to enhance its digital lending capabilities and embrace digital banking processes. Raiffeisen Bank also maintains an established Innovation Department focused on exploring cutting-edge technologies, developing revolutionary ideas, and driving transformative change in banking. This Innovation Department is engaged in a number of activities, including organizing the Cloud Connect 2024 Conference, Innovation School, the Key Academy, Cloudification event, AI hackathons and workshops, and innovation-focused events throughout the year.

Tirana Inc.

Tirana Inc. is the first multi-university incubator in Albania, supporting student-led entrepreneurship through training, mentoring, and networking within the local and regional ecosystem. Its mission is become the number one destination for ambitious Albanian students

aiming to kickstart their companies. In 2021, Tirana Inc. opened its doors to ambitious student teams with a promising business idea. The initiative was founded by Polis University and University Metropolitan Tirana with additional participation from Polytechnic University of Tirana, University of Tirana, and Epoka University. Supported by 'EU4 Innovation,' the programme is implemented by Tirana Inc. in collaboration with Preneurz.Amsterdam. In 2022, ten student startup teams, incubated for 12 weeks during the first Tirana Inc. pilot programme, pitched their business ideas at the final DEMO DAY in front of an audience composed of European Union and Member State Ambassadors, the Minister of State for the Protection of Entrepreneurship, the Mayor of Tirana, university and private sector representatives, innovation ecosystem actors, and friends and family. From the ten presenting student startup teams, the expert jury awarded the top three startups, RentNow, Bite in Bytes, and ClickHome, with prizes of respectively EUR 2 500 (sponsored by Albtelecom), EUR 1 500 (provided by Credins Bank), and EUR 1 000, (including a workspace, offered by Tirana Business Park). In 2024, the Tirana Inc. Bootcamp hosted a three-day event that took place at the Metropolitan Innovation Centre, further supporting student entrepreneurs in developing their ideas and skills.

8 Perspectives on national priorities

Understanding the national vision and key strategies

A clear vision for digital transformation, shared at a community or national level, can result in a synergizing of resources and efforts towards one shared goal. It is important to understand that a digital economy is a product or outcome of digital transformation in a country. When stakeholder visions and strategies are aligned with this digital economy goal, traditional silos are dismantled, enabling a shared understanding of gaps and opportunities. Such alignment ultimately leads to the creation of a cohesive common agenda.

Most countries have established their national vision for a digital economy, based on national or international narratives such as the sustainable development goals (SDGs), smart cities, smart societies, and the creative economy. The establishment of a national vision is essential to the creation of a common language among stakeholders and to avoid miscommunication or misleading information. Most countries are also enacting various strategies, including digital economy strategies, to achieve the national vision. However, in many cases the required enablers are not present to a sufficient degree, especially with regard to how ICT can be leveraged to drive accelerated digital transformation.

Albania has already embarked on an overarching development vision and key strategies, as outlined in the National Strategy for Development and European Integration (NSDEI) 2022-2030, the Digital Agenda 2022-2026, and the Smart Specialization Strategy (currently under drafting process).

The NSDEI, in particular, provides a comprehensive roadmap, emphasizing the alignment with sustainable development goals (SDGs) and the European integration process. Under this strategy, the national vision for 2030 envisions a dynamic economy, integrated into the European Union and the region, ensuring the well-being of its citizens and a functional democracy. The pillars of the strategy, focusing on democracy, sustainable economic development, and social cohesion, are essential drivers for the digital transformation.

Meanwhile, the Digital Agenda 2022-2026 serves as a strategic guide for digitization efforts, emphasizing the need to maximize economic and societal potential through information and telecommunication technologies. It underscores the importance of increasing access to digital technologies, enhancing digital skills, ensuring data protection, and prioritizing cybersecurity. Consistently aligning with European Union regulations, such as the Digital Markets Act and Digital Services Act, the agenda reflects the commitment of Albania to international standards.

The under development Smart Specialization Strategy (S3) for Albania, embedded within the European Union Innovation Agenda, outlines priorities for economic development. Sectors including energy, agriculture, tourism, and digitization are identified as key areas for growth. Notably, the emphasis on digitization recognizes its role in fostering innovation, improving public services, and enhancing overall economic development.

Taken together these strategic frameworks demonstrate Albania's interconnected and shared approach to national development. The goals for European Union integration underpin the country's digital agenda, reflecting a commitment to democracy, rule of law, and fundamental rights. Anti-corruption efforts are bolstered by digital governance, enhancing efficiency and transparency in public services. Emphasis on renewable energy and digital technologies aligns with environmental sustainability and the goal of becoming a net energy exporter. Digital

innovation in agriculture addresses climate and labour challenges, contributing to economic growth and the Smart Specialization Strategy. There is also a commitment to tourism, with a focus on improving infrastructure, including digital connectivity, to support tourism growth and economic development. Additionally, there is a push to realize the importance of access to digital technologies, data protection, and cybersecurity, fostering a digitally empowered society.

As Albania moves forward, aligning digital strategies with the country's broader development vision and key strategies will be instrumental in achieving a cohesive and transformative digital profile. This integration ensures that digital initiatives contribute effectively to economic development, social cohesion, and the realisation of the national vision outlined in strategic frameworks.

Table 3: Digital transformation strategies to achieve the national vision

<table>
<tr><th colspan="4">National vision</th></tr>
<tr><td colspan="4">A dynamic economy, part of the European Union and the region, that offers equal conditions for increasing the well-being of all its citizens based on a functional democracy that guarantees fundamental rights and human freedoms. (NSDI 2022-2030).</td></tr>
<tr><th colspan="4">Digital transformation strategies</th></tr>
<tr><td colspan="4">The development of digital strategies to accelerate digital transformation and benefit populations is based on digital innovation strategies to:
Drive digital transformation in the public sector or to enable access to efficient public services for citizens and the private sector (such as transparency, e-governance, laws and regulations, one-stop services and e-citizens).
Achieve social goals that promote inclusion and diversity, such as education and healthcare, while enhancing digital skills across the workforce to support the integration of new technologies.
Benefit key economic sectors vital to employment and inclusion, such as agriculture, tourism, and energy, by transforming traditional industries, improving productivity, and promoting sustainable development to ensure Albania’s successful participation in the global digital economy.
Promote environmental sustainability through consideration of areas such as green energy and smart grids.</td></tr>
<tr><th>Political</th><th>Social</th><th>Economic</th><th>Environmental</th></tr>
<tr><td>Advancing digital government through electronic systems and enhanced services.</td><td>Aspiring to be a digital leader, focusing on inclusion and bridging the digital divide.</td><td>Strategic digital transformation in priority sectors of the economy such as agriculture, energy, and tourism.</td><td>Emphasisingenvironmental sustainability through the digital transition</td></tr>
</table>

Chapter 9 presents recommendations to support Albania and its strategic vision. These recommendations are targeted towards strengthening the country’s executive programmes and related strategies to achieve the digital economy vision and mission. These recommendations include specific new measures, policies and initiatives to fulfil the national ambition.

9 Recommendations

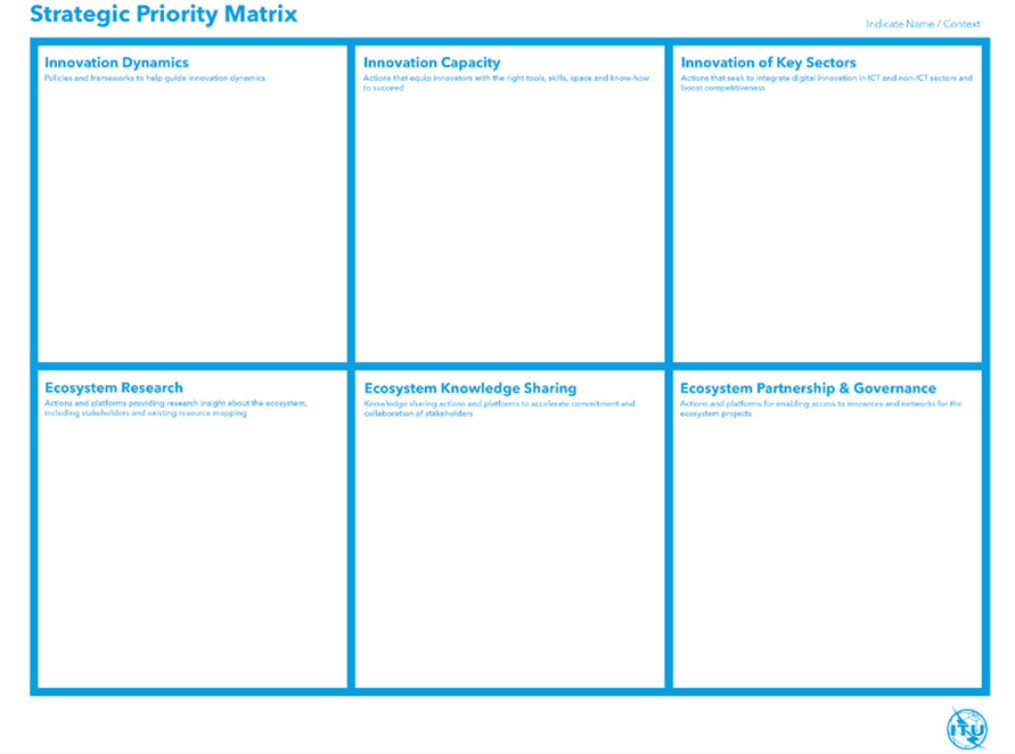
Understanding the strategic priority matrix

Identifying the most critical needs within an ecosystem and addressing them based on available resources is essential for achieving meaningful progress. Without prioritization and effective planning, success can be limited. Developing the capabilities of an ecosystem requires alignment and agreement from stakeholders on key recommendations and key performance indicators to monitor progress.

The strategic priority matrix identifies actions, programmes, policies and initiatives that must be in place to unlock the key enablers necessary for digital transformation.

The strategic priority matrix tool helps to develop a high-priority roadmap that amplifies the ecosystem good practices and fills in the gaps identified. This tool allows stakeholders to identify actions that need to be taken to support the ecosystem and propose missing elements as new complementary actions for the organic development of the ecosystem. The actions proposed need to be aligned with national strategies and should facilitate the upgrading of ICT policies and programmes. All stakeholders should agree on the priorities.

Figure 4: Strategic priority matrix



Source: ITU

The opportunities presented for ecosystem development in this chapter were identified through group discussions with local stakeholders in co-creation workshops and are further supported by detailed complementary information in Appendix A.

There are three main strategies for ecosystem development. These strategies focus on actions that develop and nurture environment and concentrate efforts on the key sectors of the ecosystem:

- innovation dynamics;
- innovation capacity;
- innovation in key sectors.

Three additional cross-cutting strategies help mature the ecosystem through actions that strengthen knowledge and linkages within the ecosystem:

- ecosystem research;
- ecosystem knowledge sharing;
- ecosystem partnership.

Table 4 presents key recommendations, using the six strategic priorities, that will help develop and mature the ecosystem to achieve the national ambition for digital transformation.

Table 4: Key recommendations

Strategic priorities	Ecosystem strategies and recommendations Timeframe		
	Short-term (Year I)	**Medium-term (Year II)**	**Long-term (Year III onwards)**
Innovation dynamics (ID)	ID1: Establish a clearly communicated vision to align existing and future strategies towards a common goal.	ID4: Revise finance policies, and regulations to nurture new investment funds focused on ICT innovation for startups and SMEs.	ID7: Revise employment law and benefits to retain talent in ICT innovation work.
	ID2: Synergize overlapping strategies and vision documents for improving cohesiveness and reduce duplication of efforts among public sector and external stakeholders.	ID5: Establish an operational framework to foster the use of ICT and strengthen cybersecurity in innovation.	
	ID3: Revise education policy to develop local human resources to support ICT capacity development in the private sector.	ID6: Support local research through a stronger policy and increase in budget allocated for research and innovation.	

Table 4: Key recommendations (continued)

Strategic priorities	Ecosystem strategies and recommendations Timeframe Short-term (Year I)	Medium-term (Year II)	Long-term (Year III onwards)
Innovation Capacity (IC)	IC1: Identify ICT and relevant entrepreneurship skills needed for Albania's emerging future.	IC4: Develop a platform to establish an angel investment network.	IC7: Develop a programme to promote digital innovation and intrapreneurship in the public sector.
	IC2: Develop a holistic support programme that provides innovators and talents with sustainable guidance and mentors.	IC5: Develop a roadmap of joint projects for talent education, upskilling and development.	IC8: Expand and expedite the benefits of connectivity infrastructure across the country to cover rural areas in a timely manner.
	IC3: Develop a programme for digital innovators to unlock opportunities in disadvantaged communities.	IC6: Establish prototyping labs for innovators to test solutions and encourage tech transfer and commercialization.	
Innovation of Key Sectors (IS)	IS1: Develop a programme to support Business to Business platforms for digital innovation in key sectors.	IS4: Strengthen existing strategies and programmes that provide support to startups and SMEs to gain access to the regional and global market.	IS7: Strengthen and promote value chain for green energy.
	IS2: Develop a programme to support local talents to unlock domestic market opportunities across sectors.	IS5: Introduce more agility into a procurement programme for startups/SMEs to have the ability to test their ideas, validate their market opportunities, and grow into viable businesses.	
	IS3: Identify and promote thematic areas based on key sectors identified in S3 to incentivise startups to solve local problems.	IS6: Create clusters of companies for strengthening the value chain ecosystem of thematic sectors such as agriculture, tourism and energy.	

Table 4: Key recommendations (continued)

Strategic priorities	Ecosystem strategies and recommendations Timeframe Short-term (Year I)	Medium-term (Year II)	Long-term (Year III onwards)
Ecosystem Research (ER)	ER1: Strengthen a platform with products and services that map stakeholders, resources, opportunities, and activities of the digital innovation ecosystem.	ER2: Develop a platform with products and services that connect academia, private sector and government.	ER4: Develop a one-stop-shop platform with products and services to accelerate the commercialization of ideas to market.
		ER3: Develop a programme to identify and pilot existing research or innovations in key sectors.	
Ecosystem Knowledge Sharing (EK)	EK1: Establish and run an Innovation Acceleration Centre to strengthen the ecosystem capacity to develop, monitor and implement flagship projects with strategic partnerships.	EK2: Develop a platform to share success stories and knowledge about the digital economy opportunities and challenges.	
		EK3: Develop a roadmap of holistic events and a suite of services for developing digital communities.	
Ecosystem Partnership and Governance (EPG)	EP1: Create a governing body for the Acceleration Centre that drives digital innovation in the country as a clear owner.	EP2: Strengthen the mechanism to integrate and interconnect ministries and departments to strengthen e-governance.	EP4: Build human and institutional capacities within the ecosystem to strengthen the foundation for innovation and entrepreneurship in the country.
		EP3: Track and report the progress of ecosystem development through regular dissemination of results linked to clear milestones and KPIs in a periodic manner.	

10 Next steps

Decisive and proactive interventions can help transform an ICT ecosystem, making it more innovative and positioning it as a key driver of accelerated digital expansion across all aspects of society, delivering real gains in public, professional and personal lives.

Based on co-creation and ecosystem priorities, stakeholders shared recommendations that have helped conceptualize priority projects.

The value of this assessment, which identifies the main obstacles and catalysts that already exist in the ecosystem, is to provide the ideal platform for the launch and development of high-impact flagship projects. Each of these projects, tailored to the country's specific context, would help to significantly accelerate digital transformation.

This digital innovation profile (DIP) provides a valuable initial overview of both the ecosystem and existing practices. The DIP is designed to raise awareness about local challenges and opportunities and engage all stakeholders in implementing flagship projects, which can foster an enabling environment for the ICT-centric innovation ecosystem, unlocking the full potential of Albania, and ultimately helping to bridge the innovation gap.

A co-created roadmap developed in collaboration with a wide pool of domestic stakeholders, outlines recommendations based on country-level evidence. These recommendations are intended to integrate stakeholder efforts into a collaborative and knowledge-driven ecosystem that advances shared goals and catalyses digital transformation in the country.

As a next step, further engagement is needed to design, implement, monitor and evaluate each item in the roadmap. ITU can also provide Albania with a focused view of the top priorities, representing an overview of the most immediate and essential actions required to drive ecosystem change. One such priority recommendation with cascading impact concerns establishing and running an Acceleration Centre to cater to community and national needs through targeted service delivery. To support this initiative, ITU can further collaborate with Albania in designing the Acceleration Centre, strengthening institutional and human capacities, and developing effective governance systems to take the roadmap forward and guide its execution in a continued effort to accelerate and improve the digital innovation ecosystem in Albania.

Appendices

Appendix A: Detailed roadmap for ecosystem strategies and recommendations

These recommendations are inspired by the co-creation workshops in which all stakeholders participated. ITU can help convert each of these recommendations into concrete projects with clear strategies and key performance indicators (KPIs) to accelerate the digital innovation ecosystem in Albania.

The table below provides an overview of the recommendations previously presented in Chapter 9. It outlines the rationale for each recommendation, the proposed solution, its expected benefits for the innovation ecosystem, and its alignment with the pillars of the national vision. A non-exhaustive list of potential champion stakeholders is also proposed for each of these recommendations. These stakeholder nominations are indicative and subject to further discussion, alignment, and validation as part of the implementation process. Relevant good practices – both direct and indirect – are included to inspire and inform potential implementation pathways, and detailed in Annex 2.

Table A1: Detailed roadmap for ecosystem strategies and recommendations

Ecosystem strategies and recommendations roadmap							
Strategic priorities	**Opportunity** **Opportunities to address a particular ecosystem challenge**	**Opportunity brief** **Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using a product or service**	**Product or service to be developed** **Proposed solutions to the ecosystem challenge that meet the needs of users**	**Ecosystem outcomes** **How to know if the ecosystem challenge is solved; what will be measured**	**National outcomes** **Key performance indicators (KPIs) as established by the country**	**Champions** **Core stakeholders with high power and interests to be involved in this opportunity**	**Good practice** **Good practices from around the world to inform the course of action**
Innovation Dynamics 1	Establish a clearly communicated vision to align existing and future strategies towards a common goal.	Stakeholders are not working together towards a common goal or direction. The ecosystem needs closer collaboration and clear direction.	A clearly communicated vision from the government to unite stakeholders.	Percentage increase in stakeholder awareness and knowledge of the common vision.	Strategic Thrust 3: Economic Empowerment through Digital Innovation	Government of Albania Ministry in charge of innovation	National Vision: Smart Nation Initiative (Republic of Singapore)
Innovation Dynamics 2	Synergize overlapping strategies and vision documents for improved cohesiveness and reduce duplication of efforts among public sector and external stakeholders.	There is some duplication of effort, time and resources due to lack of clarity concerning clear roles, responsibilities and ownership.	An integrated strategy and vision document that outlines clear roles, responsibilities, and ownership for each stakeholder. A set of clear, smart and measurable milestones, KPIs and goals towards the vision.	Number of KPIs and milestones achieved.	Strategic Thrust 3: Economic Empowerment through Digital Innovation	Government of Albania Ministry in charge of Innovation	Smart Specialization Strategy (European Union)

Table A1: Detailed roadmap for ecosystem strategies and recommendations (continued)

Ecosystem strategies and recommendations roadmap							
Strategic priorities	**Opportunity** **Opportunities to address a particular ecosystem challenge**	**Opportunity brief** **Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using a product or service**	**Product or service to be developed** **Proposed solutions to the ecosystem challenge that meet the needs of users**	**Ecosystem outcomes** **How to know if the ecosystem challenge is solved; what will be measured**	**National outcomes** **Key performance indicators (KPIs) as established by the country**	**Champions** **Core stakeholders with high power and interests to be involved in this opportunity**	**Good practice** **Good practices from around the world to inform the course of action**
Innovation Dynamics 3	Revise education policy to develop local human resources to support ICT capacity development in the ecosystem.	Albania needs a project roadmap to build ICT skills of the future, to include ICT in formal and non-formal education, and to develop digital education content.	A set of revisions to regulations and processes to enable alignment of the education curriculum to industry and future needs with agility.	Number of new ICT-related programmes and graduates in the ecosystem	Strategic Thrust 3: Economic Empowerment through Digital Innovation Strategic Thrust 2: Social Inclusion and Diversity: Leverage digital innovation to achieve social goals that promote inclusivity and diversity	Government of Albania Ministry in charge of Innovation Ministry in charge of Education and Sports Consortium of universities	Educational Reforms for ICT Integration (Finland)
Innovation Dynamics 4	Review finance policies, and regulations to nurture new investment funds focused on ICT innovation for startups and SMEs.	There is a need to create new investment funds at all stages of the innovation journey, particularly among angel investment groups and venture capital.	A revision of strategies to incentivise operators, banks and other international private actors to support digital SMEs and startups.	Number of new investment funds accessible to digital innovation startups and SMEs. Number of new funds distributed to digital innovation startups and SMEs.	Strategic Thrust 3: Economic Empowerment through Digital Innovation	Ministry in charge of Finance and Economy Ministry in charge of Innovation Albania Association of Banks National Investment Council	Small Business Investment Company Programme (United States)

Table A1: Detailed roadmap for ecosystem strategies and recommendations (continued)

Ecosystem strategies and recommendations roadmap							
Strategic priorities	**Opportunity** **Opportunities to address a particular ecosystem challenge**	**Opportunity brief** **Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using a product or service**	**Product or service to be developed** **Proposed solutions to the ecosystem challenge that meet the needs of users**	**Ecosystem outcomes** **How to know if the ecosystem challenge is solved; what will be measured**	**National outcomes** **Key performance indicators (KPIs) as established by the country**	**Champions** **Core stakeholders with high power and interests to be involved in this opportunity**	**Good practice** **Good practices from around the world to inform the course of action**
Innovation Dynamics 5	Establish an operational framework to foster the use of ICT and strengthen cybersecurity in innovation.	Cybersecurity represents a growing risk in digital innovation. The breach of data can negatively impact society.	An operational framework with new and enhanced cyber security measures for the public and private sectors. A sandbox for cybersecurity innovation to safely develop and test new security technologies and strategies in a controlled environment.	Score from a third-party assessment of government departments to increase standardization. Percentage decrease in reduction of data breaches in Albania. Number of cybersecurity ideas tested in the sandbox.	Strategic Thrust 1: Public Sector Digital Innovation Strategic Thrust 3: Economic Empowerment through Digital Innovation	Ministry in charge of Infrastructure and Energy Agency responsible for Cyber Security and Electronic Certification	ICT and Cybersecurity Policies (Republic of Korea)

Table A1: Detailed roadmap for ecosystem strategies and recommendations (continued)

Ecosystem strategies and recommendations roadmap							
Strategic priorities	**Opportunity** **Opportunities to address a particular ecosystem challenge**	**Opportunity brief** **Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using a product or service**	**Product or service to be developed** **Proposed solutions to the ecosystem challenge that meet the needs of users**	**Ecosystem outcomes** **How to know if the ecosystem challenge is solved; what will be measured**	**National outcomes** **Key performance indicators (KPIs) as established by the country**	**Champions** **Core stakeholders with high power and interests to be involved in this opportunity**	**Good practice** **Good practices from around the world to inform the course of action**
Innovation Dynamics 6	Support local research through a stronger policy, and increase in budget allocated for research and innovation.	Lack of collaborative research and funding are hampering commercialization of innovation.	A revised policy and strategy to support the needs of academia and industry. Greater budget allocation for collaborative research and development.	Number of key sectors identified in policy to promote through research and innovation. Percentage increase of research spending. Number of collaborative R&D projects initiated. Number of IPs registered in Albania.	Strategic Thrust 3: Economic Empowerment through Digital Innovation	Government of Albania Ministry in charge of Innovation Agency responsible for Scientific Research and Innovation Consortium of Universities Tirana Chamber of Commerce	High-Tech Strategy (Germany)
Innovation Dynamics 7	Revise employment law and benefits to retain talent in ICT innovation work.	ICT talent is emigrating to more established ecosystems, leading to a brain drain.	A revised law and employee benefits system to retain national talent.	Percentage decrease in emigration.	Strategic Thrust 3: Economic Empowerment through Digital Innovation Strategic Thrust 2: Social Inclusion and Diversity: Leverage digital innovation to achieve social goals that promote inclusivity and diversity	Government of Albania Ministry in charge of innovation	Labour Market Policies (Sweden)

Table A1: Detailed roadmap for ecosystem strategies and recommendations (continued)

Ecosystem strategies and recommendations roadmap							
Strategic priorities	**Opportunity** **Opportunities to address a particular ecosystem challenge**	**Opportunity brief** **Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using a product or service**	**Product or service to be developed** **Proposed solutions to the ecosystem challenge that meet the needs of users**	**Ecosystem outcomes** **How to know if the ecosystem challenge is solved; what will be measured**	**National outcomes** **Key performance indicators (KPIs) as established by the country**	**Champions** **Core stakeholders with high power and interests to be involved in this opportunity**	**Good practice** **Good practices from around the world to inform the course of action**
Innovation Capacity 1	Identify ICT and relevant entrepreneurship skills needed for Albania's emerging future.	There is a need to identify specific gaps in ICT and entrepreneurial skills to focus policy and programmes in these priority areas.	Conduct a strategic foresight exercise to identify ICT skills needed to accelerate innovation and for the future of Albania.	A set of ICT skills identified through stakeholder engagement to promote across education and employment levels.	Strategic Thrust 3: Economic Empowerment through Digital Innovation	Government of Albania Ministry in charge of innovation Ministry in charge of Education and Sports Industry Consortium of universities Protik ICT Resource Centre Albanian ICT Association	Strategic Foresight for ICT and Entrepreneurship Skills (The Netherlands)
Innovation Capacity 2	Develop a holistic programme that provides innovators and talents with sustainable support services and coaches throughout their lifecycle.	Incubators and accelerators need to be available and accessible to encourage innovators to start and scale new ventures.	A holistic and sustainable programme that supports startups from ideation to exit.	Number of new startups onboarded under the programme. Number of training opportunities and support services provided. Number of successful IPOs launched.	Strategic Thrust 3: Economic Empowerment through Digital Innovation	Government of Albania Ministry in charge of innovation	De-Hub Digital Hub Initiative (Germany)

Table A1: Detailed roadmap for ecosystem strategies and recommendations (continued)

Ecosystem strategies and recommendations roadmap							
Strategic priorities	**Opportunity** **Opportunities to address a particular ecosystem challenge**	**Opportunity brief** **Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using a product or service**	**Product or service to be developed** **Proposed solutions to the ecosystem challenge that meet the needs of users**	**Ecosystem outcomes** **How to know if the ecosystem challenge is solved; what will be measured**	**National outcomes** **Key performance indicators (KPIs) as established by the country**	**Champions** **Core stakeholders with high power and interests to be involved in this opportunity**	**Good practice** **Good practices from around the world to inform the course of action**
Innovation Capacity 3	Develop a programme for digital innovators to unlock opportunities in disadvantaged communities.	The ecosystem needs to harness the talent in disadvantaged communities such as people with disabilities, older people, and rural communities.	A programme for digital innovators to unlock opportunities in disadvantaged communities.	Number of individuals included and active in digital innovations from disadvantaged communities.	Strategic Thrust 3: Economic Empowerment through Digital Innovation Strategic Thrust 2: Social Inclusion and Diversity: Leverage digital innovation to achieve social goals that promote inclusivity and diversity	Government of Albania Ministry in charge of innovation	Digital Inclusion Programme (United Kingdom)
Innovation Capacity 4	Develop a platform to establish an angel investment network.	Angel investments are rare and not specifically focused on digital innovation. This funding is essential to enable innovators to grow their businesses and contribute to the local innovation ecosystem.	A platform to support angel investors, including training and introductions to local entrepreneurs.	Number of business angels on the programme. Number of angel investments made in startups.	Strategic Thrust 3: Economic Empowerment through Digital Innovation	Ministry in charge of finance and the economy Albanian Investment Development Agency	Startup Estonia Platform (Republic of Estonia)

Table A1: Detailed roadmap for ecosystem strategies and recommendations (continued)

Ecosystem strategies and recommendations roadmap							
Strategic priorities	**Opportunity** **Opportunities to address a particular ecosystem challenge**	**Opportunity brief** **Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using a product or service**	**Product or service to be developed** **Proposed solutions to the ecosystem challenge that meet the needs of users**	**Ecosystem outcomes** **How to know if the ecosystem challenge is solved; what will be measured**	**National outcomes** **Key performance indicators (KPIs) as established by the country**	**Champions** **Core stakeholders with high power and interests to be involved in this opportunity**	**Good practice** **Good practices from around the world to inform the course of action**
Innovation Capacity 5	Develop a roadmap of joint projects for talent education, upskilling and development.	Albania needs a roadmap of joint projects to increase collaboration and maximize impact for talent education, upskilling and development.	A roadmap of joint projects, talent education, upskilling and development.	Number of joint projects launched. Number of partners onboarded for the joint project(s). Number of project learners.	Strategic Thrust 3: Economic Empowerment through Digital Innovation Strategic Thrust 2: Social Inclusion and Diversity: Leverage digital innovation to achieve social goals that promote inclusivity and diversity	Ministry in charge of education and sports TUMO University Consortium Industry	SkillsFuture Initiative (Singapore)
Innovation Capacity 6	Establish prototyping labs for innovators to test solutions and encourage tech transfer and commercialization.	The country needs more well-equipped labs and research centres to inspire talent, solve local problems, assist in times of experimentation and learning, and keep the momentum for development going.	Prototyping labs to support innovators across the country.	Number of prototyping labs across the country. Number of participants for each of these labs. Number of university prototype labs made available for public use on rental basis.	Strategic Thrust 3: Economic Empowerment through Digital Innovation	Government of Albania Ministry in charge of innovation Ministry in charge of education and sports SportsFlat6Labs University Consortium	MIT Media Lab (United States)

Table A1: Detailed roadmap for ecosystem strategies and recommendations (continued)

Ecosystem strategies and recommendations roadmap							
Strategic priorities	**Opportunity** **Opportunities to address a particular ecosystem challenge**	**Opportunity brief** **Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using a product or service**	**Product or service to be developed** **Proposed solutions to the ecosystem challenge that meet the needs of users**	**Ecosystem outcomes** **How to know if the ecosystem challenge is solved; what will be measured**	**National outcomes** **Key performance indicators (KPIs) as established by the country**	**Champions** **Core stakeholders with high power and interests to be involved in this opportunity**	**Good practice** **Good practices from around the world to inform the course of action**
Innovation Capacity 7	Develop a programme to promote digital innovation and intrapreneurship in the public sector	Intrapreneurship can help to drive innovation and create champions within the public sector.	A programme to promote digital innovation and intrapreneurship.	Number of internal innovation projects. Number or programme participants.	Strategic Thrust 1: Public Sector Digital Innovation	Government of Albania Ministry in charge of innovation	GovTech Centre (Republic of Poland)
Innovation Capacity 8	Expand and expedite the benefits of connectivity infrastructure across the country to cover rural areas in a timely manner.	Rural areas are not represented in the ecosystem due to limited access to high-speed Internet and connectivity.	Expand high-speed connectivity across rural areas.	Percentage increase in coverage of Internet connectivity in rural areas. Increase in Internet usage in rural areas.	Strategic Thrust 2: Social Inclusion and Diversity: Leverage digital innovation to achieve social goals that promote inclusivity and diversity	Ministry in charge of infrastructure and energy Authority responsible for Electronic Communications.	National Broadband Network (Australia)
Innovation of Key Sectors 1	Develop a programme to support Business to Business (B2B) platforms for digital innovation in key sectors.	The ecosystem needs a Business to Business platform for digital innovation in key sectors	A programme to support a Business to Business platform for digital innovation in key sectors.	Number of companies using the platform. Number of solutions offered on the platform.	Strategic Thrust 3: Economic Empowerment through Digital Innovation	Albania Tech Albanian Government Ministry in charge of innovation	HGC Marketplace (People's Republic of China)

Table A1: Detailed roadmap for ecosystem strategies and recommendations (continued)

Ecosystem strategies and recommendations roadmap							
Strategic priorities	**Opportunity** **Opportunities to address a particular ecosystem challenge**	**Opportunity brief** **Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using a product or service**	**Product or service to be developed** **Proposed solutions to the ecosystem challenge that meet the needs of users**	**Ecosystem outcomes** **How to know if the ecosystem challenge is solved; what will be measured**	**National outcomes** **Key performance indicators (KPIs) as established by the country**	**Champions** **Core stakeholders with high power and interests to be involved in this opportunity**	**Good practice** **Good practices from around the world to inform the course of action**
Innovation of Key Sectors 2	Develop a programme to support local talents to unlock domestic market opportunities across sectors.	The ecosystem needs to support local talent to address	A supportive programme for local talents to unlock domestic market opportunities.	Number of programme participants. Number of ideas or products/ services launched. Number of public tenders offered to local SMEs and startups.	Strategic Thrust 3: Economic Empowerment through Digital Innovation	Government of Albania Ministry in charge of innovation Protik Innovation Centre TechSpace Oficina Ministry in charge of finance and the economy	Startup India (Republic of India)

Table A1: Detailed roadmap for ecosystem strategies and recommendations (continued)

Ecosystem strategies and recommendations roadmap							
Strategic priorities	**Opportunity** **Opportunities to address a particular ecosystem challenge**	**Opportunity brief** **Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using a product or service**	**Product or service to be developed** **Proposed solutions to the ecosystem challenge that meet the needs of users**	**Ecosystem outcomes** **How to know if the ecosystem challenge is solved; what will be measured**	**National outcomes** **Key performance indicators (KPIs) as established by the country**	**Champions** **Core stakeholders with high power and interests to be involved in this opportunity**	**Good practice** **Good practices from around the world to inform the course of action**
Innovation of Key Sectors 3	Identify and promote thematic areas based on key sectors identified in S3 to incentivise startups to solve local problems.	The ecosystem lacks a structured environment for exploring and experimenting in thematic areas based on key sectors.	An awareness programme to encourage innovation in thematic priorities through careful and unique problem identification. Develop digital innovation flagship projects in the key sectors.	Number of awareness sessions hosted to encourage thematic priorities. Number of projects launched in priority areas. Number of startups and digital SMEs launched with focus on thematic priorities. Number of unique problems identified.	Strategic Thrust 3: Economic Empowerment through Digital Innovation Strategic Thrust 2: Social Inclusion and Diversity: Leverage digital innovation to achieve social goals that promote inclusivity and diversity	Government of Albania Ministry in charge of innovation Ministry in charge of finance and the economy	MIT Regional Entrepreneurship Acceleration Programme (United States)
Innovation of Key Sectors 4	Strengthen existing strategies and programmes that provide support to startups and SMEs to gain access to the regional and global market and attract investment.	Companies need support to access regional and global markets and attract investment to scale and grow.	An enhanced programme of support, mentorship and networks for export and investment raising.	Number of participants on the programme. Number of companies that have successfully exported.	Strategic Thrust 3: Economic Empowerment through Digital Innovation	AIDA Albanian Government Ministry in charge of innovation	European Enterprise Network (European Union)

Table A1: Detailed roadmap for ecosystem strategies and recommendations (continued)

Ecosystem strategies and recommendations roadmap							
Strategic priorities	**Opportunity** **Opportunities to address a particular ecosystem challenge**	**Opportunity brief** **Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using a product or service**	**Product or service to be developed** **Proposed solutions to the ecosystem challenge that meet the needs of users**	**Ecosystem outcomes** **How to know if the ecosystem challenge is solved; what will be measured**	**National outcomes** **Key performance indicators (KPIs) as established by the country**	**Champions** **Core stakeholders with high power and interests to be involved in this opportunity**	**Good practice** **Good practices from around the world to inform the course of action**
Innovation of Key Sectors 5	Introduce a more agile procurement programme for startups and SMEs so that they can test their ideas, validate their market opportunities, and grow into viable businesses.	The ecosystem needs more agile procurement processes, and more awareness and education to allow for startups to gain greater access to public procurement contract opportunities.	An agile procurement programme to enable startups/SMEs to test their ideas, validate their market opportunities and grow into viable businesses.	Number of revisions made to ease the public procurement process. Number of awareness and education sessions for start-ups and SMEs. Number of startups and SMEs applying for public procurement contracts. Number of startups and SMEs gaining public procurement contracts.	Strategic Thrust 3: Economic Empowerment through Digital Innovation	Government of Albania Ministry in charge of innovation Ministry of Finance and Economy	Innovation Procurement Programme (Kingdom of the Netherlands)
Innovation of Key Sectors 6	Create clusters of companies for strengthening the value chain ecosystem of thematic sectors, such as agriculture, tourism and energy.	To develop thematic sectors, the ecosystem needs to strengthen existing value chains through clusters.	Thematic sector clusters of companies.	Number of companies created in the value chain. Number of thematic clusters promoted. Percentage increase in GDP contribution of sector.	Strategic Thrust 3: Economic Empowerment through Digital Innovation	Government of Albania Ministry in charge of innovation	Silicon Valley (United States)

Table A1: Detailed roadmap for ecosystem strategies and recommendations (continued)

Ecosystem strategies and recommendations roadmap							
Strategic priorities	**Opportunity** **Opportunities to address a particular ecosystem challenge**	**Opportunity brief** **Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using a product or service**	**Product or service to be developed** **Proposed solutions to the ecosystem challenge that meet the needs of users**	**Ecosystem outcomes** **How to know if the ecosystem challenge is solved; what will be measured**	**National outcomes** **Key performance indicators (KPIs) as established by the country**	**Champions** **Core stakeholders with high power and interests to be involved in this opportunity**	**Good practice** **Good practices from around the world to inform the course of action**
Innovation of Key Sectors 7	Strengthen and promote the value chain for green energy.	To develop a competitive green energy sector, the ecosystem needs to strengthen and promote its value chain.	Enhanced and strengthened the value chain for the green energy sector.	Number of companies in the value chain. Percentage increase in the GDP contribution of green energy. Percentage increase in adoption of green energy.	Strategic Thrust 3: Economic Empowerment through Digital Innovation	Government of Albania Ministry in charge of innovation	Masdar City (United Arab Emirates)
Ecosystem Research 1	Strengthen a platform that maps stakeholders, resources, opportunities, and activities of the digital innovation ecosystem.	Platforms and partial mapping of the ecosystem exists but more information is needed to understand its current strengths and gaps to maximize the use of scarce resources, improve efficiencies and build on its strengths.	A digital innovation ecosystem map with reliable and up-to-date information to foster awareness, connections and collaborations between stakeholders.	Number of stakeholder groups mapped. Number of sectors mapped. Number of stakeholders mapped.	Strategic Thrust 3: Economic Empowerment through Digital Innovation	Government of Albania Ministry in charge of innovation	StartupJo Mapping (Jordan)

Table A1: Detailed roadmap for ecosystem strategies and recommendations (continued)

Ecosystem strategies and recommendations roadmap							
Strategic priorities	**Opportunity** **Opportunities to address a particular ecosystem challenge**	**Opportunity brief** **Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using a product or service**	**Product or service to be developed** **Proposed solutions to the ecosystem challenge that meet the needs of users**	**Ecosystem outcomes** **How to know if the ecosystem challenge is solved; what will be measured**	**National outcomes** **Key performance indicators (KPIs) as established by the country**	**Champions** **Core stakeholders with high power and interests to be involved in this opportunity**	**Good practice** **Good practices from around the world to inform the course of action**
Ecosystem Research 2	Develop a platform with products and services that connect academia, private sector and government.	The ecosystem would benefit from a shared platform that connects all stakeholders via common products and services, supports tech transfer to commercial research, and that addresses real industry issues.	A platform that connects academia, private sector and government to promote the activation of the Triple Helix model.	Number of stakeholders onboarded on the platform from public sector, private sector and academia. Number of knowledge exchange, training, and capacity building sessions hosted for the stakeholders. Number of collaborative projects and initiatives between the member stakeholders. Number of commercialized projects	Strategic Thrust 3: Economic Empowerment through Digital Innovation	Government of Albania Ministry in charge of innovation Consortium of universities Albanian ICT Association Chamber of Commerce	EUREKA Network (European Union)

Table A1: Detailed roadmap for ecosystem strategies and recommendations (continued)

Ecosystem strategies and recommendations roadmap							
Strategic priorities	**Opportunity** **Opportunities to address a particular ecosystem challenge**	**Opportunity brief** **Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using a product or service**	**Product or service to be developed** **Proposed solutions to the ecosystem challenge that meet the needs of users**	**Ecosystem outcomes** **How to know if the ecosystem challenge is solved; what will be measured**	**National outcomes** **Key performance indicators (KPIs) as established by the country**	**Champions** **Core stakeholders with high power and interests to be involved in this opportunity**	**Good practice** **Good practices from around the world to inform the course of action**
Ecosystem Research 3	Develop a programme to identify and pilot existing research or innovations in key sectors.	The ecosystem needs to identify and capitalise on existing research and innovation from around the world to maximise impact and reduce time to market in the local context.	A programme that identifies and pilots existing research and innovation in key sectors in the local context.	Number of research identified to pilot. Number of pilots successfully launched. Number of pilots commercialized.	Strategic Thrust 3: Economic Empowerment through Digital Innovation	Government of Albania Ministry in charge of innovation University Consortium Industry	Innovate UK Innovation Funding (United Kingdom)
Ecosystem Research 4	Develop a one-stop-shop platform with products and services to accelerate the commercialization of ideas to market.	The ecosystem needs to democratise access to resources, information regarding stakeholders, transformative impact, activities, and opportunities to commercialize ideas in high-growth markets.	A comprehensive platform offering products and services designed to accelerate the commercialization of ideas to market through a Triple Helix collaboration approach.	Number of products and services listed on the platform. Number of collaborations and connections formed. Number of research projects completed. Number of ideas commercialized.	Strategic Thrust 3: Economic Empowerment through Digital Innovation	Government of Albania Ministry in charge of innovation University Consortium Industry	Innovation Hub (France)

Table A1: Detailed roadmap for ecosystem strategies and recommendations (continued)

Ecosystem strategies and recommendations roadmap							
Strategic priorities	**Opportunity** **Opportunities to address a particular ecosystem challenge**	**Opportunity brief** **Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using a product or service**	**Product or service to be developed** **Proposed solutions to the ecosystem challenge that meet the needs of users**	**Ecosystem outcomes** **How to know if the ecosystem challenge is solved; what will be measured**	**National outcomes** **Key performance indicators (KPIs) as established by the country**	**Champions** **Core stakeholders with high power and interests to be involved in this opportunity**	**Good practice** **Good practices from around the world to inform the course of action**
Ecosystem Knowledge Sharing 1	Establish and run an Innovation Acceleration Centre to strengthen the ecosystem capacity to develop, monitor and implement flagship projects with strategic partnerships.	The country needs a platform for knowledge generation, knowledge exchange, capacity building towards critical problem solving using an ecosystem-thinking approach for accelerating innovation.	An Innovation Acceleration Centre that engages with the ecosystem to launch flagship programmes, projects and initiatives towards the goal of accelerating innovation in the country. A set of KPIs to measure success and impact.	Number of problems onboarded to address through the Centre. Number of strategic objectives mapped towards problem solving. Number of programmes, projects and initiatives launched towards problem solving. Number of KPIs met. Number of partnerships formed.	Strategic Thrust 3: Economic Empowerment through Digital Innovation Strategic Thrust 2: Social Inclusion and Diversity: Leverage digital innovation to achieve social goals that promote inclusivity and diversity	Government of Albania Ministry in charge of innovation ITU	MaRS Discovery District (Canada)

Table A1: Detailed roadmap for ecosystem strategies and recommendations (continued)

Ecosystem strategies and recommendations roadmap							
Strategic priorities	**Opportunity** **Opportunities to address a particular ecosystem challenge**	**Opportunity brief** **Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using a product or service**	**Product or service to be developed** **Proposed solutions to the ecosystem challenge that meet the needs of users**	**Ecosystem outcomes** **How to know if the ecosystem challenge is solved; what will be measured**	**National outcomes** **Key performance indicators (KPIs) as established by the country**	**Champions** **Core stakeholders with high power and interests to be involved in this opportunity**	**Good practice** **Good practices from around the world to inform the course of action**
Ecosystem Knowledge Sharing 2	Develop a platform to share success stories and knowledge about the digital economy opportunities and challenges.	The ecosystem needs awareness of role models to reduce the fear of failure and inspire the next generation of entrepreneurs. This will increase early-stage entrepreneurship and help the ecosystem grow.	An enhanced platform to raise awareness of role models, challenges and opportunities in the ecosystem.	Number of success stories shared and promoted. Percentage increase in engagement with the platform. Number of knowledge or capacity building sessions hotels. Number of mentors brought on board. Number of mentees brought on board.	Strategic Thrust 3: Economic Empowerment through Digital Innovation	Government of Albania Ministry in charge of innovation Albania Tech	TechCrunch (United States)

Table A1: Detailed roadmap for ecosystem strategies and recommendations (continued)

Ecosystem strategies and recommendations roadmap							
Strategic priorities	**Opportunity** **Opportunities to address a particular ecosystem challenge**	**Opportunity brief** **Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using a product or service**	**Product or service to be developed** **Proposed solutions to the ecosystem challenge that meet the needs of users**	**Ecosystem outcomes** **How to know if the ecosystem challenge is solved; what will be measured**	**National outcomes** **Key performance indicators (KPIs) as established by the country**	**Champions** **Core stakeholders with high power and interests to be involved in this opportunity**	**Good practice** **Good practices from around the world to inform the course of action**
Ecosystem Knowledge Sharing 3	Develop a roadmap of holistic events and a suite of services for developing digital communities.	The ecosystem must work together to ensure innovation events are joined up, addressing fundamental challenges, and results and actions are disseminated to eliminate duplication of efforts and redundancies of opportunities offered.	A digital platform which presents a roadmap of holistic events and a suite of services for developing digital communities.	Number of events listed. Number of event hosts listed. Number of impact reports published. Number of participants engaged. Percentage increase in platform engagement.	Strategic Thrust 3: Economic Empowerment through Digital Innovation Strategic Thrust 2: Social Inclusion and Diversity: Leverage digital innovation to achieve social goals that promote inclusivity and diversity	Government of Albania Ministry in charge of innovation	TechFest (United Kingdom)
Ecosystem Partnership and Governance 1	Create a governing body for the Acceleration Centre that drives digital innovation in the country as a clear owner.	The ecosystem needs effective, accountable leadership to align common understanding and concerted digital innovation efforts around a clear plan of implemented strategies	An effective governing body with the capacity to develop, monitor, and implement flagship projects through strategic partnerships.	Number of Board members. Number of meetings held between the Board. Number of initiatives approved by the Board. Number of funding raised by Board members.	Strategic Thrust 3: Economic Empowerment through Digital Innovation Strategic Thrust 2: Social Inclusion and Diversity: Leverage digital innovation to achieve social goals that promote inclusivity and diversity	Government of Albania Ministry in charge of innovation	

Table A1: Detailed roadmap for ecosystem strategies and recommendations (continued)

Ecosystem strategies and recommendations roadmap							
Strategic priorities	**Opportunity** **Opportunities to address a particular ecosystem challenge**	**Opportunity brief** **Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using a product or service**	**Product or service to be developed** **Proposed solutions to the ecosystem challenge that meet the needs of users**	**Ecosystem outcomes** **How to know if the ecosystem challenge is solved; what will be measured**	**National outcomes** **Key performance indicators (KPIs) as established by the country**	**Champions** **Core stakeholders with high power and interests to be involved in this opportunity**	**Good practice** **Good practices from around the world to inform the course of action**
Ecosystem Partnership and Governance 2	Strengthen the mechanism to integrate and interconnect ministries and departments to strengthen e-governance.	Effective ICT usage by the government would enhance and facilitate government services, exchange of information, communication transactions and integration of various standalone systems and services.	An operational mechanism to enhance ICT usage across all government administration services for knowledge exchange, data sharing, capacity building and strengthening of operations and service delivery.	Increase in the number of eGovernment services available on e-Albania platform across ministries and departments. Percentage increase in engagement between ministries and departments. Percentage increase in collaborative projects between ministries and departments.	Strategic Thrust 1: Public Sector Digital Innovation Strategic Thrust 3: Economic Empowerment through Digital Innovation	Government of Albania Ministry in charge of innovation Agency responsible for Information Society Authority responsible for cybersecurity and electronic certification	eGovernance System (Estonia)

Table A1: Detailed roadmap for ecosystem strategies and recommendations (continued)

Ecosystem strategies and recommendations roadmap							
Strategic priorities	**Opportunity** **Opportunities to address a particular ecosystem challenge**	**Opportunity brief** **Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using a product or service**	**Product or service to be developed** **Proposed solutions to the ecosystem challenge that meet the needs of users**	**Ecosystem outcomes** **How to know if the ecosystem challenge is solved; what will be measured**	**National outcomes** **Key performance indicators (KPIs) as established by the country**	**Champions** **Core stakeholders with high power and interests to be involved in this opportunity**	**Good practice** **Good practices from around the world to inform the course of action**
Ecosystem Partnership and Governance 3	Track and report the progress of ecosystem development through regular dissemination of results linked to clear milestones and KPIs in a periodic manner.	The ecosystem needs greater visibility of results linked to clear milestones and KPIs. This will motivate stakeholders to act toward a common vision.	A communication and dissemination plan for all ecosystem stakeholders to share progress against milestones and KPIs.	Number of KPIs mapped towards the vision. Number of KPIs achieved. Number of reports and case studies published. Number of events hosted to disseminate status of progress made. Number of unique ecosystem stakeholders engaged. Ranking in Global Entrepreneurship Monitor	Strategic Thrust 3: Economic Empowerment through Digital Innovation	The Acceleration Centre Government of Albania Ministry in charge of innovation	eEstonia Dashboard (Estonia)

Table A1: Detailed roadmap for ecosystem strategies and recommendations (continued)

Ecosystem strategies and recommendations roadmap							
Strategic priorities	**Opportunity** **Opportunities to address a particular ecosystem challenge**	**Opportunity brief** **Challenge explanation, analysis of the opportunity risk, as well as benefits users gain from using a product or service**	**Product or service to be developed** **Proposed solutions to the ecosystem challenge that meet the needs of users**	**Ecosystem outcomes** **How to know if the ecosystem challenge is solved; what will be measured**	**National outcomes** **Key performance indicators (KPIs) as established by the country**	**Champions** **Core stakeholders with high power and interests to be involved in this opportunity**	**Good practice** **Good practices from around the world to inform the course of action**
Ecosystem Partnership and Governance 4	Build human and institutional capacities within the ecosystem to strengthen the foundation for innovation and entrepreneurship in the country.	The ecosystem needs to build human and institutional capacity to lay the foundation to accelerate innovation and entrepreneurship across the country.	A strategy and plan, supported by initiatives, to build human and institutional capacity to navigate the fast-paced technological world.	Number of initiatives organised to build institutional and human capacity. Number of stakeholders engaged. Number of organizations or institutions engaged.	Strategic Thrust 1: Public Sector Digital Innovation Strategic Thrust 3: Economic Empowerment through Digital Innovation	Government of Albania Ministry in charge of innovation Ministry in charge of education and science	European Institute of Innovation and Technology (European Union)

Appendix B: Good practices

Good practices

When developing recommendations, it is important to draw inspiration from good practices used in other ecosystems without necessarily replicating them.

A good practice is a practice that has been tested and based on evidence and positive results, proven to produce an impact, and which can be scaled up and replicated. Good practices are valuable for developing flagship projects, for benchmarking the strengths and weaknesses of a practice, and for initiating and informing evidence-based policy or programme development. Good practice allows actors to add value to initiatives in their ecosystems more efficiently. However, good practice should not be replicated "as is", as every ecosystem and project has its own unique context.

ITU has developed a database of good practices, a framework to help countries better develop their own ecosystem-specific recommendations. Stakeholders can choose to use these examples of good practice as inspiration to strengthen their existing initiatives or to design and develop new practices. For more information, see: innovation.itu.int or contact: innovation@itu.int.

1 National Vision – Smart Nation Initiative (Singapore): In Singapore, the "Smart Nation" initiative is a comprehensive vision that aims to achieve national transformation through technology. This vision is clearly communicated across various sectors, ensuring alignment of strategies and efforts towards achieving a tech-driven, efficient, and sustainable nation. The initiative is led by the Prime Minister's Office, demonstrating high-level commitment, and uses multiple platforms, including websites, public campaigns, and educational programmes, to disseminate the vision widely. Regular forums, workshops, and feedback sessions with citizens, businesses, and public sector entities further ensure alignment and collective buy-in to the vision.

2 Smart Specialisation Strategy (European Union): The Smart Specialization Strategy (S3) is an innovative approach adopted by European Union countries to boost regional innovation and economic development. It focuses on identifying and leveraging unique assets and strengths of each region to drive sustainable growth and competitiveness. The S3 adopts a bottom-up approach where stakeholders collaboratively identify niche areas with potential for competitive advantage and innovation. Data-driven insights inform decision-making, ensuring that strategies are firmly grounded in specific regional capabilities and opportunities.

3 Educational Reforms for ICT Integration (Finland): Finland's forward-thinking education system includes significant efforts to integrate ICT skills development from an early age. ICT skills are integrated across subjects rather than taught as a standalone subject. This ensures that students develop digital literacy in a holistic manner. There is an emphasis on project-based and problem-solving approaches that encourage students to use ICT tools creatively and collaboratively; and continuous professional development for teachers to ensure they are well-equipped to deliver lessons effectively. Additionally, collaborations with tech companies provide up-to-date resources, tools, and real-world industry insights into the classroom.

4 Small Business Investment Company Programme (United States): The Small Business Investment Company (SBIC) Programme, administered by the United States Small Business Administration, facilitates the flow of long-term capital to small businesses in the United States, especially those that focus on high-growth sectors, including ICT. SBIC raises capital from a variety of sources, including banks, institutional investors, and high-net-worth individuals. The Government also partners with private investors by matching funds to increase the capital available for investment and to ensure that innovative startups and SMEs receive necessary funding. Streamlined regulatory frameworks encourage private investment with oversight to ensure proper fund management.

5 ICT and Cybersecurity Policies (Republic of Korea): The Republic of Korea has developed an advanced ICT infrastructure and robust cybersecurity policies to support innovation and protect the nation's digital ecosystem. The Ministry of Science and ICT, along with the Korea Internet and Security Agency, plays a central role in coordinating ICT development and cybersecurity efforts across various sectors. This includes implementation of smart city projects and significant investment in research and development for both ICT and cybersecurity technologies, fostering innovation and the development of cutting-edge solutions. In addition, the development and enforcement of national cybersecurity standards and guidelines for both public and private sectors ensures a high level of security across the board. Comprehensive training and education programmes are regularly organized to build a workforce skilled in ICT and cybersecurity.

6 High-Tech Strategy (Germany): The High-Tech Strategy aims to position Germany as a global leader in innovation by promoting R&D across high-tech sectors. The identification of key areas of focus is intended to channel resources effectively and so create high-impact innovations. There has been a substantial increase in budget allocation for research and innovation, including direct funding for institutions, universities, and private sector R&D. The encouragement of collaboration between public research institutions and private companies drives innovation and commercialization of outcomes. Overall, the combination of a strong policy framework, including tax incentives for R&D, streamlined regulatory processes, and strong intellectual property (IP) protection encourages innovation.

7 Labour Market Policies (Sweden): Sweden has developed a robust system of employment laws and benefits designed to support a dynamic labour market and retain skilled talent. Implementation of flexible working hours and remote work options to enhance work-life balance has proven to be particularly appealing to tech professionals. Comprehensive social benefits, including healthcare, parental leave, pensions, and unemployment insurance, provide a stable and secure environment for employees. Encouragement and support for continuous professional development allows employees to stay current with rapidly evolving technologies. Provision of stock options and profit-sharing schemes, where possible, aligns employees' interests with company success.

8 Strategic Foresight for ICT and Entrepreneurship Skills (Kingdom of the Netherlands): The Kingdom of the Netherlands employs strategic foresight to anticipate future skills needs, particularly in ICT and entrepreneurship. Stakeholders collaborate to gather insights, analyse labour market trends, map existing skills in the environment, validate future scenarios, and identify future skills gaps. Consequently, educational curricula and training programmes are designed to address these gaps, ensuring that graduates and professionals acquire the skills necessary for future ICT and entrepreneurial challenges. Mechanisms are established for regular monitoring and adjustment of skills development strategies while industry collaboration ensures training and education programmes remain aligned with market needs.

9 The Digital Hub (De-Hub) Initiative (Germany): Launched by the Federal Ministry for Economic Affairs and Energy, De-Hub fosters innovation and digital transformation through a network of regional digital hubs. These digital hubs offer tailored support services, including funding, mentorship, technical assistance, and business development resources. They facilitate networking and collaboration among startups, established companies, research institutions, and government bodies. Training programmes cover essential skills such as business planning and technology development. The initiative provides access to co-working spaces, laboratories, and testing environments. Continuous evaluation and feedback ensure that services evolve to support both early-stage startups and scalable ventures.

10 Digital Inclusion Programme (United Kingdom): The United Kingdom Digital Inclusion Programme is designed to harness the potential talent of individuals from disadvantaged communities, including people with disabilities, older people, and those from rural areas. These programme promotes empowerment through digital skills development and enhanced access to opportunities with accessible learning materials, adaptive technologies, and inclusive participation. Experienced mentors provide guidance, support, and skills development tailored to the participants' goals and needs. Collaboration with local civil society organizations, that have established connections with disadvantaged groups, helps to identify specific needs, facilitate engagement, and provide meaningful targeted support.

11 Startup Estonia Platform (Estonia): The Startup Estonia platform exemplifies a successful model for creating an angel investment network that connects investors with high-potential startups and fosters entrepreneurial growth. The Startup Estonia platform features a centralized online platform with detailed startup profiles, advanced matching algorithms, and a comprehensive resource centre offering educational materials and investment guides. The platform organizes networking events, pitch session days, and webinars to facilitate connections, and provides due diligence support, mentorship, and advisory services. It includes investment tracking and reporting features, incentive schemes, and community-building initiatives. Additionally, the platform offers legal and regulatory support to help investors navigate compliance and intellectual property considerations.

12 Skills Future (Singapore): In Singapore the Skills Future initiative is a comprehensive programme promoting lifelong learning and skills development across sectors through collaboration among government, industry, and educational institutions. The initiative features an integrated national roadmap outlining joint projects and partnerships to set clear talent development goals. Sector-specific skills frameworks detail required competencies, guiding targeted training programmes. The initiative also provides funding and incentives, including grants for collaborative research, training, and industry-academia partnerships, to support workforce upskilling.

13 MIT Media Lab (United States): The MIT Media Lab is a leading research hub in the United States, renowned for advancing innovation through state-of-the-art prototyping and technology transfer. It offers cutting-edge facilities, such as 3D printers and advanced fabrication tools, enabling rapid development and testing of ideas. The lab fosters interdisciplinary collaboration among researchers, industry professionals, and entrepreneurs, which accelerates the transition from prototypes to commercial products. Additionally, its technology transfer programmes assist innovators with patenting, licensing, and industry partnerships, facilitating the commercialization of new technologies.

14 GovTech (Poland): The GovTech Centre in Poland drives digital innovation in the public sector by fostering collaboration between government entities and technology experts. It features innovation labs for developing and testing digital solutions, and facilitates collaborative projects between government agencies, startups, and tech companies. The Centre offers training in digital skills and innovation management for public servants and organizes open innovation challenges to source ideas from external innovators. Additionally, the Centre supports digital startups with funding, mentorship, and pilot opportunities, and creates platforms for knowledge sharing and networking among public sector professionals, tech experts, and entrepreneurs.

15 National Broadband Network (Australia): The National Broadband Network (NBN) is a significant infrastructure project in Australia, aiming to deliver high-speed Internet nationwide, including in remote and rural areas. It features a nationwide rollout to extend connectivity across all regions, leveraging public-private partnerships (PPPs) to fund, build, and manage the network. The network deployment is phased, prioritizing areas based on demand and need to ensure timely expansion. Additionally, the NBN provides subsidies and support for infrastructure development and adoption of broadband services for digital literacy initiatives, particularly in underserved rural and remote areas.

16 HGC Marketplace (China): HGC Marketplace, developed by HGC Global Communications in Hong Kong, is an online business to business (B2B) platform designed to facilitate transactions and digital innovation. It provides a comprehensive platform for businesses to connect and transact, offering digital solutions such as cloud services, data management, and communication tools. The marketplace integrates various services, fostering ecosystem collaboration among technology providers and businesses. It also offers support services, including technical assistance and training, to help businesses adopt and use digital technologies effectively. Additionally, the platform provides data-driven insights for informed decision-making and operational optimization, enhancing B2B digital innovation.

17 Startup India (India): The Startup India initiative is a comprehensive programme designed to support and foster entrepreneurship within India. It offers financial support through grants, subsidies, and tax incentives to help startups access necessary capital and resources. The initiative includes incubation and acceleration programmes that provide mentorship, training, and resources to early-stage startups, aiding their market entry and scaling efforts. It facilitates networking and partnerships between startups, industry experts, and established businesses to connect with potential partners and investors. Additionally, the initiative includes market access programmes, offering support through trade fairs, exhibitions, and guidance on regulatory and market entry challenges.

18 MIT Regional Entrepreneurship Acceleration Program (United States): The Regional Entrepreneurship Acceleration Programme (REAP) at the Massachusetts Institute of Technology (MIT) aids regions in crafting strategies to foster innovation by focusing on local strengths and sectoral priorities. It organizes thematic workshops and seminars to engage stakeholders in pinpointing key innovation opportunities, and encourages collaboration among entrepreneurs, experts, and leaders. Employing data-driven insights and benchmarking, it validates and aligns thematic areas with both local needs and global trends. REAP also offers tailored support for startups, including funding, mentorship, and market access, to promote the development of solutions addressing local challenges.

19 European Enterprise Network (European Union): The European Enterprise Network supports SMEs in accessing both regional and global markets by providing resources and guidance for internationalization and investment. The network offers market access support through trade missions, matchmaking events, and market intelligence to help businesses identify opportunities and connect with potential partners. The network facilitates investment by linking startups and SMEs with investors and venture capitalists, organizing investment forums and pitching events. Additionally, it provides tailored advisory services to assist businesses in navigating regulatory requirements, developing international strategies, and optimizing market entry approaches, ensuring they are prepared for expansion and investment opportunities.

20 Innovation Procurement Programme (Kingdom of the Netherlands): The procurement programme for innovation in the Netherlands supports startups and SMEs by integrating their innovative solutions into public sector procurement. The programme leverages pre-commercial procurement to acquire R&D services and solutions still in development, allowing startups to test and refine their innovations. The programme uses a competitive dialogue approach to involve startups and SMEs early in the procurement process, facilitating iterative development and feedback. Additionally, it fosters innovation partnerships between startups, SMEs, and public sector entities, co-developing and testing new solutions to ensure they align with market and regulatory requirements.

21 Silicon Valley (United States): The Silicon Valley in California is a renowned hub for technology companies and startups, exemplifying how clusters can enhance the value chain in technology and innovation sectors. A collaborative environment is fostered that encourages cooperation among companies, research institutions, and investors, creating a dynamic ecosystem for innovation and growth. The region offers specialized services, including access to talent, venture capital, and technical expertise, which address critical challenges and strengthen the value chain. Networking opportunities, such as events, meetups, and conferences, facilitate knowledge sharing and partnerships, driving further innovation within the cluster.

22 Masdar City (United Arab Emirates): Masdar City is a sustainable urban development in Abu Dhabi designed to be a hub for clean technology and renewable energy. It serves as a model for strengthening the green energy value chain. It develops and implements integrated green energy solutions, including solar power, wind energy, and sustainable urban planning, to demonstrate practical applications and scalability. The city features a R&D hub, promoting collaboration among research institutions and industry leaders. The public-private partnerships (PPP) model is central to its approach, fostering collaboration between public, private and academic institutions to advance green energy projects and technologies, driving investment and cutting-edge solutions.

23 StartupJo (Jordan): Startup Jordan is an interactive and evolving platform that comprehensively maps the startup ecosystem, including stakeholders, resources, and opportunities. It features a dynamic directory of key stakeholders including entrepreneurs, investors, accelerators, and service providers facilitating connections and partnerships. Regularly updated by ecosystem stakeholders themselves, the platform also lists resources such as funding options and mentorship programmes, and provides details on events, networking opportunities, and innovation challenges. Interactive visualization tools and data insights enhance understanding of ecosystem dynamics and trends, aiding informed decision-making and identifying emerging opportunities.

24 EUREKA Network (European Union): The EUREKA Network promotes regional and international collaboration in research and development by bridging academia, industry, and government. It supports collaborative R&D projects that bring together academia, private companies, and public organizations, enabling the pooling of resources and expertise to tackle complex industry challenges. EUREKA offers innovation support services such as project management, funding access, and technology transfer to facilitate the progression of projects from research to commercialization. Additionally, it fosters strategic partnerships across sectors and countries, enhancing cross-border collaborations and maximising the impact of research outputs.

25 Innovation Funding (United Kingdom): Innovation Funding from the Innovate UK initiative provides funding programmes that support the identification, piloting, and commercialization of research and innovations across key sectors. A key practice of the programme is challenge-led innovation, focusing on projects that address specific industry challenges and align with market needs. The programme promotes collaborative pilots by encouraging partnerships between researchers, businesses, and public sector organizations, enhancing the credibility and impact of innovations. Additionally, Innovate UK offers support for scaling successful pilots with further funding, market intelligence, and business development resources, facilitating the transition from pilot to commercial success.

26 Innovation Hub (France): In France the Innovation Hub aims to accelerate the commercialization of new ideas by fostering collaboration among academia, industry, and government. It employs a Triple Helix Collaboration model, integrating universities, businesses, and government agencies into a unified platform to enhance the development, testing, and market entry of new technologies. The hub provides comprehensive services, including research support, incubation, funding opportunities, and business development resources, ensuring ideas are nurtured from conception to market. The Innovation Hub also focuses on key sectors such as technology, healthcare, and energy, addressing specific industry needs and expediting the commercialization process for relevant innovations.

27 MaRS Discovery District (Canada): MaRS in Toronto is an innovation hub dedicated to supporting entrepreneurs and startups through acceleration and strategic partnerships. It offers a variety of support services, including mentoring, office space, and access to a network of partners to accelerate startup growth. The hub focuses on flagship projects in key sectors such as healthcare, cleantech, and fintech, collaborating closely with strategic partners. It also facilitates strategic partnerships between startups, corporations, and academic institutions, driving innovation and the successful implementation of high-impact projects.

28 TechCrunch (United States): TechCrunch is a prominent technology media platform that delivers news, success stories, and analysis about the digital economy and startups. It features articles and interviews with successful entrepreneurs and startups, showcasing their journeys and providing inspiration and practical insights. TechCrunch also publishes detailed industry reports and analyses on trends and opportunities within the digital economy, offering valuable information on market dynamics and emerging prospects. Additionally, it organizes events and conferences where industry leaders and innovators share their experiences and knowledge, providing opportunities for networking and learning.

29 TechFest (United Kingdom): TechFest is a platform that organizes events centred on technology and innovation, connecting entrepreneurs, tech professionals, and innovators. It provides comprehensive event listings for upcoming tech conferences, workshops, and meetups. TechFest facilitates networking opportunities by bringing together industry leaders and innovators to share insights and build connections. The platform covers a range of technology sectors, including AI, blockchain, and digital transformation, ensuring diverse and relevant content for attendees.

30 eGovernance (Estonia): Estonia offers a leading example of e-governance, featuring a comprehensive digital infrastructure that integrates government ministries and departments. It employs the X-Road platform to connect various government databases and systems, facilitating seamless data exchange and interoperability. The country provides a secure digital identity system that allows citizens and officials to access services and interact with government online. Additionally, Estonia has implemented a robust interoperability framework for data sharing and integration across government entities, enhancing efficiency and collaboration.

31 eEstonia Dashboard (Estonia): The e-Estonia Dashboard is a centralized platform that monitors the progress and development of the country's digital ecosystem. It tracks various digital initiatives and milestones, including e-governance, digital services, and IT infrastructure. The dashboard offers real-time reporting on key performance indicators (KPIs), providing up-to-date data and analytics on digital ecosystem development. Public access to the dashboard ensures transparency and fosters stakeholder engagement by allowing the general public to stay informed and involved in the digital transformation efforts.

32 European Institute of Innovation and Technology (European Union): The European Institute of Innovation and Technology (EIT) is dedicated to enhancing innovation and entrepreneurship across Europe by building human and institutional capacities. It supports Knowledge and Innovation Communities (KICs) that target various sectors, including climate, health, and digital technologies, fostering robust innovation ecosystems. The EIT offers educational programmes, training, and workshops to develop entrepreneurial skills among students and professionals. Additionally, it collaborates with universities, research institutions, and businesses to create integrated innovation ecosystems and support institutional development.

Appendix C: Methodology

https://bit.ly/DIPpolicykithttps://bit.ly/DIPtoolkitThis study was carried out using a framework developed by the Digital Ecosystem Cluster of the Telecommunication Development Bureau (BDT) of the International Telecommunication Union (ITU) for the diagnosis and development of ecosystems centred on information and communication technologies (ICTs). The framework provides a structured approach to conducting rapid ecosystem diagnostics, identifying key strengths and gaps, and formulating evidence-based recommendations to support ICT-centric innovation.

Designed for policy-makers, decision-makers, innovators, and ecosystem builders, the methodology combines analytical tools with participatory processes to ensure that findings are grounded in both data and stakeholder perspectives. Through a step-by-step process, the framework supports co-creation with ecosystem actors, enabling the development of tailored ecosystem blueprints and flagship initiatives that build on existing good practices while addressing identified challenges.

By equipping stakeholders with practical tools and shared analytical language, the methodology aims to support more coordinated, inclusive, and sustainable digital innovation ecosystems, helping communities translate strategic ambitions into actionable and impactful initiatives.

You can access the toolkit here: bit.ly/DIPtoolkit

Appendix D: Key words and definitions

Key word	Definition
Vision	The vision defines an ideal to be achieved after a given time. Its objective is to mobilize the stakeholders for its realization while giving the necessary direction to obtain the desired situation.
Strategies	A strategy defines the main axes to be developed to achieve the objectives and results aligned with the vision. The transformation of value chains for each sector with the contribution of digital technology is one of the major research objectives. Strategies should also define the roles and responsibilities of non-digital stakeholders and how their contributions reinforce the defined objectives or sub-objectives. Four pillars of strategies are proposed for sustainable development: political, social, economic, and environmental. For each strategy to be developed, it is recommended to develop a theory of change that connects and measures the contributions of stakeholders.
Dynamics of innovation (ID) with digital technology	Measures that enable innovation and that support the general environment for innovation. A dynamic innovation environment needs a coherent regulatory and organizational framework that guides, encourages and fosters a culture of innovation encouraging innovative mindsets, projects and programmes.
Capacity for innovation (IC) with digital technology	Measures that enable sufficiently developed infrastructures and talents within the ecosystem, and which will be conducive to digital transformation. They provide innovators with the tools, skills, spaces and expertise they need to be successful.
Innovation in key sectors (IS) with digital technology	Measures that integrate innovation in key sectors, so that startups and SMEs can unleash their full potential and expand beyond their niche, making transformation in other sectors possible.
Research in the digital ecosystem (ER)	Measures and mechanisms to search for information on the ecosystem, in particular the mapping of actors and existing resources.
Knowledge sharing in the digital ecosystem (EK)	Mechanisms and measures to share knowledge and accelerate the mobilization and collaboration of stakeholders.
Partnership and Governance in the digital ecosystem (EP)	Measures and mechanisms that facilitate access to resources and networks, promote the development of public-private partnership models, and align stakeholders around ecosystem-driven projects.
Digital economy	Digital economy refers to a broad range of economic activities that use digitized information and knowledge as key factors of production.
Digital transformation	Digital transformation is the integration of digital technologies into all areas of operations, fundamentally reshaping how services and value are delivered to citizens and customers.
Theory of change and indicator development	Measures and mechanisms that enable access to resources and networks, support the creation of public-private partnership models, and align stakeholders around ecosystem-focused projects.
Unicorn	A unicorn is a privately held startup company whose valuation is over USD 1 billion.
Valley of death	The "valley of death" refers to the post-ideation period when innovators need significant investments and support, and the risk of business failure is particularly high.

Appendix E: Acronyms and abbreviations

Key Word	Definition
AAEF	Albanian-American Enterprise Fund
AECA	Albanian E-Commerce Association
AIDA	Albanian Investment Development Agency
AKEP	Electronic and Postal Communications Agency
AKSHI	National Agency of Information Society
ALL	Albanian Lek
BIDS	Business and Investment Development Strategy
BPO	Business Process Outsourcing
CEFTA	Central European Free Trade Agreement
CIT	Corporate Income Tax
DIP	Digital Innovation Profile
EBDR	European Bank for Reconstruction & Development
EFTA	European Free Trade Agreement
EU	European Union
EUR	Euro
FDI	Foreign Direct Investment
FTA	Free Trade Agreement
GDIP	General Directive of Industrial Property
GDP	Gross Domestic Product
GII	Global Innovation Index
GIZ	German Cooperation for International Development
ICT	Information and Communication Technologies
IMF	International Monetary Fund
INSTAT	National Institute of Statistics
IP	Intellectual Property
IsDB	Islamic Development Bank
ISID	Inclusive and Sustainable Industrial Development
ITU	International Telecommunication Union
NAIS	National Agency of Information Society
NGO	Non-Governmental Organization

(continued)

Key Word	Definition
NSDEI	National Strategy for Development and European Integration
PCT	Patent Cooperation Treaty
R&D	Research and Development
SDC	Swiss Agency for Development and Cooperation
SDG	Sustainable Development Goal
SEED	Support for Eastern Europe Democracy
SME	Small and Medium Enterprise
SRD	Sustainable Rural Development
S3	Smart Specialization Strategy
S4J	Skills for Jobs
TEDA	Technological and Economic Development Areas
UNDP	United Nations Development Programme
USD	United States Dollars
VET	Vocational Education and Training
WIPO	World Intellectual Property Organization

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