INNOVATION

ICT Centric Innovation Ecosystem
COUNTRY REVIEW
ALBANIA

Report

Telecommunication Development Sector

ICT Centric Innovation Ecosystem Country Review – Albania

June 2016

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Foreword

Preface by BDT Director

Innovation has been given a central place in the work of the International Telecommunication Union (ITU). It was defined as a new priority for the ITU Development Sector (ITU-D) at the World Telecommunication Development Conference in 2014, where ITU-D Membership adopted the Regional Initiatives for Europe, including the one on Entrepreneurship, Innovation and Youth. This initiative aims at fostering the creation of an enabling environment and building capacities at the regional level. The objective is to enhance entrepreneurship and increase innovation in the ICT ecosystem, while encouraging empowerment of young men and women and creating new opportunities for them in the ICT sector. Furthermore, ITU Membership adopted innovation as one of goals at the Plenipotentiary Conference in Busan, the Republic of Korea, in 2014.

Innovation has two important roles to play in the development agenda of ITU. On a broad scale, innovation enables businesses in a country to create and apply new ICT solutions. This is a major component in facilitating a country's efforts towards creating a thriving and knowledge-based economy. This in turn ensures that all countries have the opportunity to enjoy the economic and social benefits of ICTs. More specifically, countries will be able to steer ICTs for development solutions, using innovative ICTs to address social and economic problems faced by the world.

With this in mind, I am proud and pleased to present this study, the first in a new series of country reviews with the aim to strengthen the capacity of ITU Members to integrate ICT innovation in their national development agenda. The ICT Centric Innovation Country Reviews engage key stakeholders fostering innovation systems at the country level in order to ensure that a 360 degree review of the ecosystem with elaborated guidance reflects the national circumstances and fits the real needs of the ecosystems. I would like to highlight that the review process in part is a process of building and strengthening a community of stakeholders in the innovation ecosystem, coming from the public and private sectors, financial and development agencies, academia, and entrepreneurs themselves that support innovators. It is only by creating a strong community of stakeholders and connecting them with the public sector that we can build strong, organic ICT innovation ecosystems.

Albania is an ideal place to begin the series of country reviews. It is a country with great potential. It has undergone a tremendous transformation in the past 20 years, and that transformation is continuing. We hope we can provide new insights to Albania's journey, and that the Telecommunication Development Bureau can become a key partner in cooperating with Albania to bring the benefits of the digital world to all its citizens as well as contribute to achieving the United Nations sustainable development goals (SDGs).

Brahima Sanou
Director, Telecommunication Development Bureau, ITU

Foreword by Minister of Innovation and Public Administration

In Albania, we have seen a rising national awareness and activity about innovation and large information technology spread over the past few years. In 2014, we developed the cross-cutting strategy "Digital Agenda of Albania 2015-2020" to foster the ICT development in Albania. This strategy created a good foundation for the innovation and information society in Albania, but much more can and must be done.

We need to further empower our innovators and entrepreneurs, to make sure that they are competing throughout Europe and around the world. We need to empower them to unlock opportunities in major cities and all rural areas, to ensure that everyone can enjoy the benefits of the growing digital infrastructure in Albania. We need to work with the rising start-up community to further develop this key part of our economy.

We asked to our international partners to assess specific opportunities that can help accelerate the transformation of the Albania economy towards a knowledge-based economy. Our international partners, ITU, UNIDO, and UNCTAD realized a critical assessment of the innovation ecosystem in Albania. They have worked together with Albanian entrepreneurs, investors, academics, institutions to ensure that the recommendations they set forward will meet the needs of an information society adapted for Albania.

We welcome this report, which will help us empower new entrepreneurs, to make sure that they are creating new services and fostering the growth of our economy. With these recommendations, we hope that we will create the brand of innovation "Made in Albania". We hope that the stakeholders in private sector will lead this transformation, while government will pursue its facilitating and promoting role.

I look forward to a future with Albania as a leader in technology in the region and in Europe. I look forward to seeing Albanians become known for their ICT innovation and entrepreneurship.

Allow me to thank everyone who helped the creation of this report: first of all the dynamic and professional staff of my ministry, the public employees from other ministries for their collaboration, the civil society, private companies, universities and all the stakeholders from the innovation ecosystem who offered their time and insights to ensure that the information presented is as accurate as possible and last but not least the teams from the international organizations ITU, UNCTAD, UNIDO who enthusiastically made it possible.

Milena Harito
Minister of State for Innovation and Public Administration

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1. Executive Summary

1.1. Introduction and who is targeted

This report examines the dynamics of the ICT centric innovation ecosystem in Albania, and makes recommendations to strengthen Albania's ability to integrate ICT innovation in its national development agenda, and leverage the economic and social opportunities provided by innovative technologies. The primary goal is to work together with stakeholders in the innovation ecosystem and policy leaders and experts to understand the ecosystem challenges, needs and opportunities, and to develop coherent approaches to move Albania towards an innovation driven economy.

There have been positive changes in the ecosystem over the past several years. Government policies have increased access to ICTs through strategic vision and liberalization of the market. Actors supporting the development of the innovation ecosystem, such as education programmes, communities and support networks have proliferated. ICT entrepreneurs and start-ups have embraced the challenge of the ecosystem in developing innovative solutions to support various global and local needs. Despite these successes, the ICT centric innovation ecosystem has yet to reach the critical mass needed for pervasive digital transformation of the economy. This report will provide an analysis of the current situation, recommendations for programmes and policies, and present a framework and tools to unleash the potential of the Albania ICT innovation ecosystem. It is intended for policy makers, ICT entrepreneurs, academia, research institutions, financial stakeholders, private sector firms, and entrepreneurial support organizations.

1.2. The mandate

The International Telecommunication Union (ITU), especially the Telecommunication Development Bureau (BDT), has been actively fostering ICT led development for numerous years. In 2014, at the ITU World Telecommunication Development Conference in Dubai (United Arab Emirates), its membership approved a strategic and operational plan for the BDT that includes output 2.3 calling for the strengthening of ITU Member State capacity to integrate ICT innovation in national development agenda. ITU membership also approved a set of Regional Initiatives, including the Regional Initiative for Europe on Entrepreneurship, Innovation and Youth with the objective to foster the creation of an enabling environment and build capacity at the regional level, aimed at the growth of entrepreneurship and innovation in ICTs. Similarly, the mandate of the United Nations Industrial Development Organization (UNIDO), as described in the Lima Declaration adopted at the 15th session of the UNIDO General Conference in 2013[1], is to promote and accelerate inclusive and sustainable industrial development (ISID) to achieve shared prosperity and environmental sustainability around the world. The concept of ISID and output 2.3, can also be found in the new Sustainable Development Goals, namely Goal 9: *Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.*

In this context ITU has joined forces with the United Nations Trade Conference on Trade and Development (UNCTAD) and UNIDO, in order to elaborate this country case study on ICT centric innovation ecosystem for sustainable development. This report is the result of a multi-stakeholder collaboration between three leading organization experts in ICT, industrial organizations, and science and technology development policies.

1.3. Addressing challenges in Albania

Albania, as a middle income country, has maintained macroeconomic stability in the past decade despite the global financial crisis and the Eurozone crisis. Prior to 2008, GDP growth was one the highest in Europe at 6 per cent, driven by high foreign direct investment (FDI), and the transformation

[1] www.unido.org/gc15.html

and growth of various sectors, including agriculture, ICTs and telecommunication, and service industries. In 2016, growth is estimated at 3.2 per cent, half of pre-2008 levels. While innovation, and the role of ICT as a core technology driving innovation has been recognized by policy makers, private sector and non-government actors in re-starting the high growth and creating high skills jobs, there are many opportunities that remain unexploited.

According to the ITU World Telecommunication Development Indicators, Albania had 63.25 per cent Internet penetration in 2015 compared to 45 per cent in 2010. Yet, despite progress with bridging the digital divide and providing access to modern ICT, Albania is facing challenges bringing the benefits of digital to a wider population. In the same year, the World Bank estimated that only 38 per cent of adults had a bank account and Albania had 17.3 per cent unemployment overall, and 32.1 per cent among youth unemployment. Thus, there are essential elements of trade and daily economic activities that need to be strengthened as part of promoting economic development. The digital dividends, defined as jobs, growth, new services, have yet to reach many who are already connected in Albania.

1.4. Current state

The current state of the Albania ICT centric innovation ecosystem is that it is nascent and needs support to develop, but there are positive trends to be seen. The following summarizes the views of key stakeholders vis-à-vis their interaction with the essential pillars of an ICT centric innovation ecosystem.

Vision and strategy: Albania has made progress toward enabling an ICT centric innovation ecosystem. Various strategies from both public and private sectors have helped lay some foundations. However, some stakeholders feel that there is insufficient collaboration and cooperation, and certain elements are not sufficiently covered by the strategies.

> Ecosystem stakeholder: “People run in different directions, there is no common strategy to my knowledge”

Infrastructure and programmes: Albania has fairly good hard infrastructure for urban areas, however, there are still significant gaps in terms of access, especially connectivity in rural areas, and access to fixed line connections. There is growing access to soft infrastructure, with both the public and private sectors working to develop training and incubation programmes. However, this is clustered in and around Tirana. Government strategies have shown some successes in strengthening this pillar, but more work is required.

Talent and champions: There is a large pool of potential human capital in Albania with a high interest in ICT careers and innovative entrepreneurship. However, in general, training fails to meet the needs of the ecosystem. Some stakeholders, in both the public and private sectors, have started to create solutions addressing many of the gaps via various nascent initiatives such as certification and training programmes and labs.

> Ecosystem stakeholder: “It is not the failure of talents, it is the failure of champions”

Capital and resources: Funding and investment for entrepreneurship is insufficient across the board; seed funding, angel investment, and venture capital are all weak, disorganized or absent. There are some best practices and new initiatives that show growth and potential, but these are the beginning of what is needed to allow entrepreneurship to succeed.

> Ecosystem stakeholder: "Entrepreneurs cannot just walk to the bank and get a loan without income or collateral"

Markets and networks: Being a small country, Albania faces considerable constraints on the growth of firms inside the country. Rising incomes and technical literacy may alleviate this, but the most significant opportunity for entrepreneurs is the country's strategic position in the European market. There are networks to help capitalize on this, fostering trade and international collaboration, which should be expanded.

> Ecosystem stakeholder: "There are no incentives or skin in the game to make stakeholders effective"

Culture and communities: There is ambition in Albania, especially among young people with an interest in entrepreneurship and technology. There are programmes and networks building communities to support them. However, risk aversion, trust, and lack of synergies are holding back young entrepreneurs, and communities lack the coordination, funding and support to fulfil their potential in building up entrepreneurs.

> Ecosystem stakeholder: "There are a lot of shiny objects and ideas about becoming the next Steve Jobs"

Policy and regulation: The innovation strategies and developments in e-government projects and policies, along with the European Union (EU) accession process have helped to create space for ICT innovation in the Albania and reform a number of policy areas. Procurement has played a key role in supporting some actors, but issues exist in areas such as taxation, ecosystem support, and IP enforcement. Collaboration was seen as an issue, both between stakeholders and the public sector and between different ministries and offices within the government.

> Ecosystem stakeholder: "Sometimes there is a lack of commitment with funds and follow through"

Two of the main challenges for policy recommendation in Albania are the recognition of key roles and the commitment of stakeholders. There needs to be a group of stakeholders not only willing to take and support action, but to follow through to ensure that their support leads to systemic improvement of the situation in the ecosystem.

In Albania, like elsewhere, the culture of entrepreneurship needs to better focus on developing relevant, practical solutions, and willingness to collaborate. Financial support has major deficiencies. Early phase investment is especially difficult, though often due to a lack of coordination, not necessarily due lack of funds. IP enforcement is a critical issue. These is a need for stronger, better supported support networks, and improved training in both technical and soft skills. There are efforts to resolve many of these and a range of other issues, which can form the basis of policies and projects. Many other areas have been noted as more moderate gaps in terms of what is being done in the ecosystem.

1.5. Major implications

One key implication for innovation policies to work better in Albania is that a new implementation framework is needed to enable new approaches to policy experimentation. The previous innovation policies were government led in many aspects, and were helpful in developing the ecosystem. However, there is substantial growth still needed, and the community of ecosystem stakeholders need to be more invested and involved in creating and implementing policies. Thus there is a significant need to increase support from and collaboration within the ecosystem. Effectively, new approaches in growth experimentation where the private sector takes the lead on innovation are needed.

Another key implication is that every stakeholder needs to recognize that they have a critical role to play and investment in the outcomes of policy, the so-called "skin in the game". They will require new tools to be able to identify, diagnose systematically address challenges in the ecosystem. They will also need platforms to gather and share good practices, resources, expertise, and knowledge. With use of the right tools and platform, champions in ecosystem will be empowered to find the right resources, to create the right programmes, and build the right communities to sustain and scale in support of the innovation ecosystem.

Good practices from both within Albania and internationally are available, which address many of the key gaps in the ecosystem. Those which focus on or mirror the recommendations in this report will be included below. A central component of any effort to improve policy will be to amplify, duplicate, learn from and build on these practices as part of a policy experimentation process.

1.6. Priority objectives

To gather support for more comprehensive policy actions, as outlined in "recommendations" and to ensure that the programmes overall have a high profile impact, three priority objectives have been identified: Public service delivery, fostering success stories, and rural development.

Public service delivery: E-governance is an area where innovation in Albania has had significant success, and one where the country can continue to benefit. The potential for innovation to build transparency and improve efficiency and efficacy in public service is significant. By focusing on ICT as a strategic sector and developing a public service cluster which connects with a core ICT innovation cluster, this area can be better explored and strengthened as further explored under recommendations.

Fostering success stories: In discussions on support networks and investment, the concern over a lack of highly visible success stories became a recurring theme. Promotion of Albania innovators who have succeeded in terms of securing later investment rounds, expanding into international markets and achieving exits through buy-outs and IPOs will help to inspire new innovators, develop demand for support networks and generate interest among investors. To achieve this, those kinds of successes need to be fostered, through collaboration among stakeholders, human capital development, improving deal flow and fostering internationalization.

Rural development: The progress which has been made in Albania in building up infrastructure and support networks for entrepreneurs and encouraging interest in innovation, has been distributed unequally. Rural areas are less connected and have less access to resources. More equal and affordable connectivity, especially in rural areas, should be prioritized, as one component of ICT as a strategic sector, informed by a mapping of local ecosystems in rural areas and clusters bringing together ICT, tourism and agriculture to find new and innovative solutions.

1.7. Recommendations

The key areas of the report recommendations are: ICT as a strategic sector, ecosystem mapping and community building, collaborative human capacity development, improving deal flow, internationalization and exists, collaborative clusters, and implementation framework. The ecosystem

mapping and community building, along with improving the deal flow recommendation are short term opportunities, while the other recommendations are medium to long term opportunities.

ICT as a strategic sector recognizes the role of the ICT industry in the economy and seeks to bring in policy frameworks which will strengthen it and make it a central part of a medium and long term vision of Albania's development. The key policy changes that this recognition enable would include: pro-business and especially pro-entrepreneurship tax policies, investment in improved infrastructure, facilitation of technology transfer and licensed production, trade promotion for the ICT sector, removal of tariffs and taxation from hardware and software capital investment, and strengthened IP enforcement. In addition to specific policies, this recognition would make it easier to bring together the various ministries with a role or stake in the cross-cutting work of the ICT sector.

The main aim of **ecosystem mapping and community building** is to strengthen the ability of key stakeholders to connect to resources, engage in collaborative transformation, and create services for needs across the country. It is rooted in our theoretical framework, which is based in large part on a national systems of innovation model. There is a critical need to strengthen linkages and collaboration between all stakeholders, understand priorities from the local ecosystems in various cities, engage in trust building, and map resources in terms of projects and programmes. To ensure good matching and policy coherence, mapping of local needs throughout the country is a key step to take in parallel with this. Having a common understanding of the needs and resources will help direct resources to the good practice grassroots programmes and engage the ecosystem in a process of development and transformation. In order to achieve these goals there would be the need to undertake a comprehensive mapping and measuring of the ICT sectorial system of innovation.

Collaborative human capacity development focuses on reducing the skills mismatch that exists between talent coming out of formal education and the needs of innovative ICT firms. The main objective is to foster ongoing training in line with the changing ecosystem requirements. There are champions in the ecosystem already active in addressing some needs through private training and certification programmes, and private sector-academia collaboration. What is needed is that the relevant ministries, public and private universities and other actors, cooperatively develop these efforts into a framework using new models of partnerships. In addition, experimentation can be encouraged with outside platforms and programmes available globally.

Improving deal flow seeks to foster critical mass of innovators in the ecosystem and develop needed entrepreneurial support. Entrepreneurs entering the ecosystem face challenges getting sufficient support in terms of skill training, inspiration, investment, and soft infrastructure such as accelerators and co-working spaces. These programmes, in turn, need more innovators and entrepreneurs than are currently active in the ecosystem to function properly. Overtime the habits, knowledge, resources and networks of the ecosystem organically become vibrant as success stories inspire and attract more resources and entrepreneurs. To reach this kind of growth, programmes are needed to attract more effective entrepreneurs and in turn to support them, especially early phase entrepreneurs, and those in the later growth phase.

Internationalization and exits has the main aim is to use internationalization as a strategy toward fostering growth, especially in terms of access to international support and exit opportunities for Albanian entrepreneurs and the resources of the network of Albanians living abroad. For Albania, being a small country, global market access is essential to support a large number of innovative start-ups. Moreover, the country has a significant diaspora population, representing knowledge and monetary resources that can be brought to bear in the country. Additionally, many good practices exist within other national ecosystems, and these can be turned into specific programmes to support the ecosystem in Albania.

Collaborative clusters creates communities of relevant stakeholders in several areas of industry, especially private sector actors, but possibly incorporating academics, financial actors and others. By bringing together the key actors in these industries, their effectiveness and innovation can be bolstered. This includes both networking and gatherings. By working together with them, the public

sector can work to develop policies and projects based on stakeholder needs and identify champions and best practices to foster and strengthen. Moreover, in creating linkages between the different clusters, programmes from different relevant ministries can be connected, shared and transformed through collaboration and knowledge sharing. An ICT cluster should be central and serve two major roles, first to strengthen the Albania ICT sector and develop innovations in the industry, and second to work in close collaboration with clusters in other key industries such as agriculture and tourism to develop innovative ICT solutions to strengthen their competitiveness and potentially to set Albania as a regional and global leader in those areas.

Implementation framework recommendation aims to develop public-private bridging institutions that can operate between the various silos on policy, programmes and stakeholders. This framework will help government become a facilitator with private sector and the ecosystem leading the innovation agenda. This institution will need to represent a transparent public private collaboration, empowered to drive the ICT centric innovation agenda forward. Albania can refer to other successful institutions in Chile, Finland, and Israel to cite but a few.

1.8. Structure of the report

The Albania report is divided into five parts.

First, the Introduction and Methodology section discusses the work undertaken, gives an overview of the methodology used, and lays out the basic background information. This section introduces common language on innovation and ICT. The impact of ICT centric innovation on business models, processes, organizational methods, services, and ultimately jobs and growth is discussed. It also introduces the stakeholder groups concerned in this study and their respective roles. Then, a new framework is introduced as the basis of measuring performance of an ecosystem. The framework with its seven pillars will serve as a basis for qualitative assessments done to support the study.

Second, the Current State section reviews the findings of the study for Albania based on the framework articulated above. The current state is primarily derived from inputs gathered during several workshops, and one-on-one interviews with the stakeholders, supported where possible with desk research and available statistics. A qualitative approach has been favoured over a quantitative one in order to understand scope and innovation dynamics at play. Key findings are reported for each pillar inferring key points about strengths and gaps, as well as giving a review of available analyses and documentation for each pillar.

Third, the Holistic Review section provides an overall analysis of the ecosystem stakeholders views based on data inferred from interviews. The section introduces a tool, the Stakeholder Interface Canvas, by which one can analyse the activities of stakeholders in an ICT innovation ecosystem. The entrepreneurial lifecycle is the underpinning for this framework, showing some key supports needed from each stakeholder group during each phase of the lifecycle. This new tool will serve as a basis for identifying best practices of an ecosystem as well as gaps. The section ends with a review of the overall findings from our Current State and Holistic analyses with overarching themes.

Fourth, the Priority Objectives section provides a set of high profile political goals, which will help to promote more specific policy efforts and to provide highly visible successes in the context of the ICT centric innovation ecosystem. The background of each is discussed, in terms of how it relates to the various political goals on the ground. Then ties are explicitly made between that goal and a later recommendation. Finally, benefits for the overall Albanian society and ecosystem are outlined.

Finally the Recommendations section makes recommendations focused on enhancing building blocks fostering the ecosystem. Each recommendation works on the simple principle of removing barriers where they exist, and amplifying the working best practices in Albania. Many good practices exists outside Albania for solutions to gaps found in the ecosystem, these will be explored so that they can leveraged to fill gaps in the ecosystem. Overall, there is a focus on new thinking on growth and policy experimentation, where all stakeholders can be engaged to foster a vibrant innovation ecosystem.

1.9. Limitations

The main approach used for this study was qualitative interviewing with diverse stakeholder groups complemented by background research. The strength of the methodology is the in-depth analysis one can conduct, an especially important criteria when it comes to innovation. The concerns are limitations of statistical relevance, and quality and knowledge of respondents. Although over 50 experts were interviewed in the course of this country study, we recognize that additional quantitative data could be used to further enhance the results. Finally, the timeline for the production of this report is much shorter than a typical report of this kind. While this is a strategic choice in order to provide more current information on the fast changing conditions of the ecosystem, it must be recognized that this limits the depth of research which can be accomplished somewhat.

1.10. Conclusion

This report offers an overall review of the Albania ICT innovation ecosystem, through the critical lenses of stakeholders, and their journey through their environment. The study broadly captures a snapshot of the challenges and opportunities facing stakeholders, and it should serve as a good reference tool to help guide support of innovation, especially in concert with greater quantitative analyses.

Creating a strong ICT centric innovation ecosystem is a journey and this report is part of this journey. The report started with a workshop bringing together key stakeholders and laying out their vision and priorities for the ecosystem in a collaborative document, the Tirana Manifesto. Continuing this journey, the report presents tools, methodologies and frameworks that bring the benefits of digital innovation, and it suggests where the study can be expanded and repeated, especially following the development of the ITU-D Innovation Policy Toolkit, which will detail the process for Member States to replicate.

Many opportunities remain untapped in order to create new services, new jobs and new growth for Albania. Successful policy experimentation in Albania will require that each stakeholder think critically about their role, their opportunities, and their commitment. Much work remains to convert such a report into tangible programmes, but the tools and framework in this report will empower stakeholders to accelerate their journey towards transforming Albania into an innovation driven society.

The implementation and any final decision about what priorities and recommendations are important, remains the right of stakeholders in Albania.

2. Introduction

Recognizing the importance of innovation, the International Telecommunication Union membership, at the World Telecommunication Development Conference (WTDC) in 2014 adopted a new output on innovation and partnership, and as an ITU-wide goal at the Plenipotentiary Conference 2014 in Busan. The WTDC also approved a set of Regional Initiatives, including the Regional Initiative for Europe on Entrepreneurship, Innovation and Youth. The innovation mandate aims to strengthen Member States capacity to integrate ICT innovation in National development agenda. Accordingly, the Telecommunication development Bureau (BDT), has strategic objectives to foster the creation of an enabling environment and build capacities at national, regional, and global level aimed at promoting the growth of ICT entrepreneurship, start-up, and increased innovation in the ICT ecosystem, while encouraging empowerment of young men and women and creating new opportunities for them in the ICT sector.

In this context the International Telecommunication Union (ITU) joined forces with the United Nations Trade Conference on Trade and Development (UNCTAD), and the United Nations Industrial Development Organization (UNIDO) in order to elaborate this country case study on ICT centric innovation ecosystem for sustainable development. This report is the outcome of a multi-stakeholder collaboration facilitated by leading United Nations organizations in their expertise areas.

2.1. Purpose

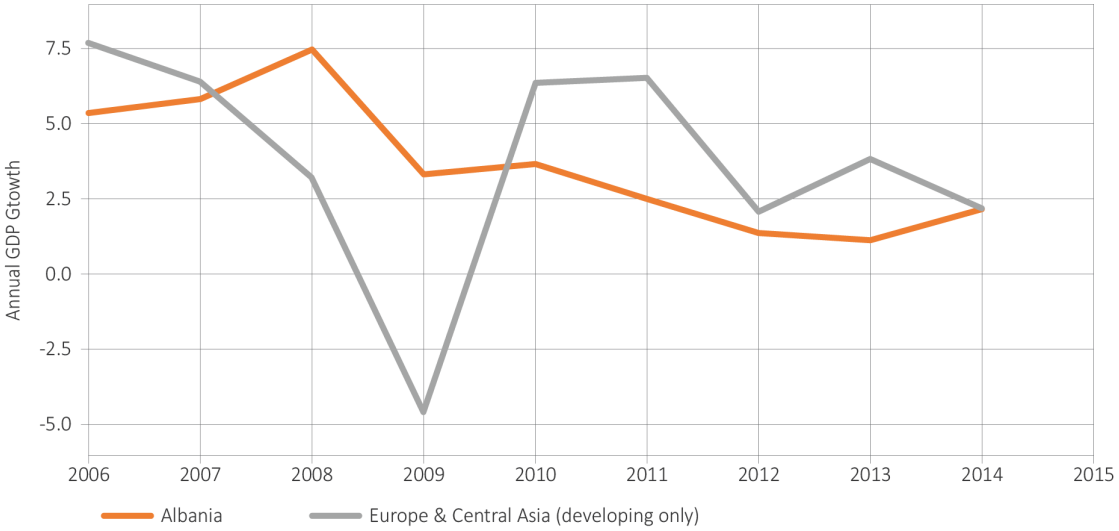
The ICT policies are evolving fast from a focus on infrastructure requirement such as broadband, or spectrum to other enabling conditions such as new pillars based on innovation and entrepreneurship. Traditional innovation policies have not fully transformed or supported the ecosystem and in order to accelerate socio-economic transformation and promote inclusive development. New strategies and tactics are needed to enable ICT policies in-line with the changing telecommunication/ICT environment and the development landscape.

The main objective of this process is to carry out a comprehensive review and strengthen the ICT centric national innovation ecosystem and increase its impact on the broader economy. In close collaboration with the Minister of State for Innovation and Public Administration (MIPA) in Albania, ITU and its partners have developed this report to provide the results of the review, and deepen the understanding of the dynamics of the ICT ecosystem in Albania, its role in fostering socio-economic development, and to promote evidence based recommendations to improve the current direction of the ICT ecosystem. It is hoped that this study will bring new insights to policy makers, private sector actors, innovators, development actors, financial actors, entrepreneurs, and other ICT ecosystem stakeholders.

2.2. Current context in Albania

Albania is a middle income country that has maintained macroeconomic stability in the past decade despite the global financial crisis and the Eurozone crisis.

Figure 1: GDP growth



Source: World Bank 2016

Prior to the crisis of 2008, Albania was one of the fastest growing economies in Europe with 6 per cent growth rate. Rapid progress was made in various sectors, including migrating some of the labour force from agriculture to services industries, telecommunications, and financial services.

In 2015, Albania had low inflation at 1.9 per cent[2] and has been increasing its GDP since 2014 following the Eurozone crisis. Projected 2016 GDP is around 3.4 to 3.5, half of the pre-2008 growth rate. This GDP growth is expected from improved external demand and an improved business environment due to government efforts in structural reform.

The agricultural sector remains the main source of employment with nearly half of the workforce (44%) and contributing to 22.4 per cent of GDP. The service sector in Albania represents over 50 per cent of GDP, with tourism around 5.1 per cent (with an estimated indirect contribution of 16 per cent). Industries such as telecommunication, ICT, financial, construction, garment manufacturing contribute to the diversity of the economy.

Recent economic theory defines three stages each country can have in its economy: factor driven, efficiency driven, and innovation driven. Several key indexes give us an indication of where Albania stands with respect to this competitive analysis[3].

In the 2016 Global Competitiveness Index[4], Albania ranked 93, improving four places from the 2014 ranking. Albania is considered an *efficiency driven economy* based on pillars measuring the three economic stages (as reflected in the ranking sub-indexes). From the current measure of these pillars, Albania has an opportunity to improve its ranking further by addressing issues related to skill-sets (talent), access to capital, technology, market, business sophistication and innovation. Agriculture, for example, is today a sector in the factor driven economy relying mostly on natural endowments (e.g. manpower, land):

- Migrating the workforce from the farming sector to other higher value sectors remains a major challenge.
- Improving efficiency in all sectors by developing high skilled workers, will produce high growth industries that can compete in world class markets.

[2] http://data.worldbank.org/indicator/FP.CPI.TOTL.ZG/countries/AL-7E?display=graph
[3] See *The Competitive Advantage of Nations*; Michael Porter, 1990
[4] http://reports.weforum.org/global-competitiveness-report-2015-2016/economies/#indexId=GCI&economy=ALB

The issue of efficiency can also be seen from looking at the Global Innovation Index[5]. In this index, Albania ranks of 87, improving seven places from the 2014 ranking. Yet, this ranking comes with an efficiency ratio of 49 per cent. The lost potential in the wider innovation system has wider implications for jobs, growth, education, etc. Innovation is a new imperative for countries and special attention should be brought to talent and skills, knowledge creation, diffusion and commercialization, and effective policy fostering growth.

63.25 per cent of the Albanian population had Internet access in 2015 compared, to 45 per cent in 2010. Yet, despite progress with bridging the digital divide in terms of access to modern ICT, Albania is facing challenges bringing the benefits of digital to a wider population. Albania had 17.3 per cent unemployment rate for working population, and 32.1 per cent among young people. In 2014, the World Bank estimated that only 38 per cent of adults had a bank account. Thus, many new services are still needed to meet the basic needs of the population, to engage in trade or daily economic activities.

At the macro level, Albania like many countries today is part of an open economy where goods, services and talent flow easily due to trade agreements, lower tariffs and global value chains. The open economy presents new challenges as well as opportunities for Albania. Firms and institutions that are able to integrate open value chains such as open R&D models, and embrace open technology do not have to invest tremendous resources in developing expensive capabilities. Since R&D is critical to innovation, investing in open R&D models co-creating with business partners, customers, citizens, enable more competitive products and services to reach customers. However, the challenge is that industries have to be strategically networked and connected with the right resources and enabling environment to remain competitive.

Albania is a country with a rich history, and many challenges. Yet, its current state, with the accession process to Europe and its macro-economic stability, various opportunities exist to accelerate growth led by productivity from the use of technology, especially ICTs. Overall, there are many reasons to see ICT innovation as having a positive impact in the country as a whole. Yet, the digital dividends, the positive benefits of an innovation and ICT driven economy, including jobs in a thriving technology sector, broad economic growth and global competition, and access to new products and services are not reaching everyone in the country, including many of those who are already connected.

2.3. Role of technology and innovation

The Organization for Economic Cooperation and Development (OECD), in the 'Oslo Manual' defines innovation as "the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations". Innovation in this context can also be new to the world, new to the market, or new to firm.

In the 2009-2015 National Strategy for Science Technology and Innovation (STI), Albania had clearly recognized the role of STI as fundamental factors in a knowledge-driven economy. Innovation was seen as important for all stages of Albania's development and its competitiveness. The report noted that "the capacities to undertake scientific and applied industrial research, to transfer them, to adapt and assimilate new technologies into economic structures and diffuse them into society, and to creatively develop new products and services using technologies (product and service innovation), as well as through marketing, design and organizational change (non-technological innovation), are fundamental to national competitiveness." The STI actors were re-organized, and new policies and institutional frameworks were developed to coordinate these agents, undertaking programmes to boost innovation capabilities in-line with European Integration Agenda as with other Balkan candidate countries.

While the first strategy focused on the broader STI framework, the second innovation strategy, the cross-cutting strategy "Digital Agenda of Albania 2015-2020", further elaborated with Information

[5] https://www.globalinnovationindex.org/content/page/GII-Home

Communication Technologies (ICT) as a core enabler to Albania's development. ICT has become a core technology driving Science Technology and Innovation in economies worldwide. It is significantly contributing to economic growth in most countries by bringing higher factor productivity, lower cost of goods and services, newer products and services re-inventing traditional industries, new organizational and or business models. ICT is changing both the process of knowledge creation as well as its diffusion, and responsible for increase global competitiveness. ICT is impacting traditional STI R&D in many ways. R&D is becoming more market oriented and global in nature. Albania target spending in 2015 was a meagre 0.6 per cent of GDP, compared to 5 per cent in the Republic of Korea. This internationalization of R&D is welcome news, as alleviate some burden on reaching leading countries R&D spending level.

ICT is also disrupting organization mind-sets and business model faster than any technology in past, affecting the process of innovation itself. In our increasingly connected world, open R&D models, lower trade barriers, and new mechanisms of competitiveness require smart new investment in STI to unlock potential.

2.4. Opportunities in the New Industrial Age

The first and second industrial revolutions, ushered in by new technologies and sources of energy such as mechanized industries, steam engines, coal and electricity, gave dramatic competitive advantage to some countries that had the proper foresight to set STI policies with strategic priorities leveraging these opportunities.

In the past, countries had more policy options to achieve knowledge accumulation with use of multiple policy instruments such as export oriented strategies and R&D investment. The opportunity now is to establish competitive smart industries and markets without all the burden of the past (e.g. heavy R&D), nor its advantages (e.g. trade control). They need to establish vision and strategies aligned to their capabilities and potential, fostering ICT centric innovation as the core enabler for their economies.

Today, with the spread of ICTs, many countries are at the eve of a fourth industrial revolution with the convergence of several technological and scientific progress rooted in the use of ICTs. Hierarchies, borders and organizational structures that were once the cornerstone of competitiveness are now hindering markets and opportunities. Thanks to ICTs, a new sharing economy is taking place changing the rules of innovation. Collaboration, co-creation and trust between networks of resources, people, and needs are the critical behaviour for success. New business models are blurring the distances of physical and virtual.

2.5. ICT centric economic development: The elusive scenarios

Vibrant ICT centric innovation ecosystems, responsible for the creation and diffusion of digital technologies transforming the world, are the dreams of countries, cities and communities worldwide. Creating the next Google or Airbnb, or becoming the next Steve Jobs is the dream of entrepreneurs worldwide, and Albania is no different. Policy makers are actively looking for ways to establish the conditions necessary where ideas, entrepreneurs, and resources come together to unlock unique opportunities for their citizens and country.

Yet, creating the next Silicon Valley has been elusive and difficult. Following the traditional STI recommendation of investment in inputs such as R&D, infrastructure, education does not guarantee the right results. Many cities worldwide with the traditional building blocks comparable to Silicon Valley have failed to become hot beds for ICT centric innovation. In the 2015 IDI Index from ITU, Albania continues to make progress, from an index of 3.65 in 2010, to 4.73 in 2015. Yet more needs to be done to achieve a European average of 7.35. With the new the cross-cutting strategy "Digital Agenda of Albania 2015-2020", Albania will potentially improve both issues as various programmes target building infrastructure, improving access, and transparency initiatives. However, to dramatically

increase the index to European levels, Albania needs a holistic focus on building a vibrant ICT centric innovation ecosystem.

2.6. Innovation made in Albania

To understand the scope and the dynamics playing out in Albania, with the aim to build a vibrant ecosystem that will help Albania unleash its digital potential, this report will take a grassroots approach to diagnosing the issues and come up with recommendations. The methodology is based on the good practices of fostering working elements, to remove barriers of the innovation ecosystem, and to promote organic systems that can reach critical momentum to unleash innovation.

The methodology offers new approaches to policy making in-line with empowering policy makers to undertake policy experimentation. The ultimate goal of this report is to empower the stakeholders concerned to help drive their own destiny in creating a vibrant ecosystem: research institutes, academia, government, ICT entrepreneurs, ICT start-ups, technology hubs, SMEs, support organizations (e.g. associations, accelerators, incubators), financial resource providers (e.g. venture capital, banks, angel networks), and private sectors. After all, innovation is experimentation where success is achieved when the right resources, team and opportunity meet.

3. Methodology

The ITU-D country review methodology focuses on the interaction of two core components. The first is a process of desk research, data analysis and expert driven policy advisory, resembling processes used by many international organizations and consultancies. The second is a consultative process focused on working with the key stakeholders in the innovation ecosystem to gather information based on the views of grassroots actors.

In the interaction of these components, it is possible to develop a stronger understanding of the ecosystem, holistic and narrowly focused, top-down and bottom up, expert driven and user driven. It also leads to a mixture of outcomes and recommendations, some driven top down by the government, and others bottom up by direct actions of stakeholders, leading to more unified plans of action and grassroots engagement.

This working methodology came about from a series of global consultations with the ICT centric innovation ecosystems experts at various workshop, meetings, interviews, research, and seminars. It is practical, with solid theoretical grounding in methodologies such as organizational management, lean thinking, human centered design, competitive strategies and STI.

The process is evolving and with every country review, this methodology will improve and enable new thinking on policy experimentation.

3.1. A systems of innovation primer

The increasing importance of innovation systems particularly within policy cycles is noteworthy and is reflected by discussions as early as 2004 in academic circles on the number of specific Google hits on the concept of innovation "*…policy makers at the national level and experts in international organizations for economic cooperation such as OECD, UNCTAD, the World Bank and the EU-Commission have adopted the concept. This rate of diffusion is quite dramatic taking into account that 15 years ago only a handful of scholars had heard about the concept*"[6].

The typology of innovation is dichotomous- linear or systems-oriented. The linear model of innovation emanates from supply side dynamics and supporting policies, in that "science leads to technology and technology satisfies market needs". This absence of feedback implies that the 'shortcomings and failures' which are an essential part of the learning process are ignored, not reflected upon and are therefore not available to the overall innovative process. The linear model of innovation assumes that more R&D in terms of capacity and capability (effort, expenditure, assets, skills, etc.) would generate discoveries leading to more innovation and that low R&D capacity and capability could explain low innovative output.

[6] Lundvall 2004: www.druid.dk/conferences/Summer2005/Papers/Lundvall.pdf

Lessons from the post Fordist era brought criticisms to the 'orthodox' linear model of innovation and led to the evolution of a more 'heterodox' approach, with empirical evidence indicating firstly that there is no directionality associated with the innovation process; and secondly that innovation may occur independently of scientific interaction. Rather different rates and intensities of feedback exist between upstream (technology related) and downstream (market related) phases of the innovation process.

However, from a systems perspective, concurrently Lundvall, in his description of user producer relationships, presented the concept of systems of innovation. In this seminal body of work Lundvall describes innovation systems as having the following key characteristics:

- Key institutions play a role in differing types of innovative activities and while the vertical division of labor between them is intractable or unclear, certain institution types predominantly undertake certain type of activity.
- Science is not the mainstay of universities. Private firms and public agencies also possess this competence. The research emanating from public and private firms is more applied because it is demand driven.
- Between universities and private bodies there are a multitude of specialized research organizations that are connected to either, and, as such, they react to incentives, to engage in basic research, applied research, or both.
- There are research units that are closely connected to production, which is associated with a level of dependency. Dependent units work within firms and public organizations, whereas independent units function as technological institutes. The main function of both organizational types is the conversion of scientific results into practical solutions rather than the stockpiling of scientific knowledge.
- Innovative activities are distributed and take place in many scientific units. The recognition of 'bottlenecks' in the production process is vital and the removal of blockages is facilitated by learning-by-doing and learning-by-using. Experience gained in production will act to stimulate new aspects of both applied and basic research these may not be accountable by science.

The discourse on innovation has been characterized by the movement away from a linear orthodox perspective to the systemic heterodox approach. This systemic approach views innovation as a 'stock' and 'flow' dynamism constituted by a complex network of feedback and interactive relations involving science, technology, learning, institutions, production, public policy, industrial supply and market demand factors.

The concept of systems of innovation provides extensive utility in the development of policy design as it enables an understanding of "… non-linear development of knowledge based on exchanges of information among interdependent actors"[7]. These interdependent actors are critical in building the framework for an innovation system to work. Key actors needs to understand their roles, their relationships with other actors, and the process of innovation. Thus, an innovation system is driven by the working relationship of these actors, their behaviours and transactions to facilitate opportunities (needs) and resources.

[7] Edquist and Hommen: 1999, page75

3.2. ICT centric innovation ecosystem

The ICT centric innovation ecosystem is a concept that draws and expands on systems of innovation theory. It recognizes that the ICT sector is one of the fastest evolving fields in the modern economy and lies at the centre of much of the innovation that is happening today. That innovation in the field of ICTs, as stated in systems of innovation theory, relies on an interconnected group of stakeholders who support potential innovators through a lifecycle. However, the benefits of innovation in the field of ICTs are not limited to ICT as a sector. The impact of ICTs is cross-cutting touching on almost every sector of the economy and almost every aspect of people's lives. Technology allows people to do things they always wanted to do, but better, faster, easier, and cheaper, for example:

- Farmers want to make better crops, they need to understand where to get the best seeds, know when the weather will change, plant the right seed at the right time, and sell to buyers who are willing to pay fair prices.
- Citizens want to know that their government is working for them, and that their taxes are being used for good causes, which requires transparency on spending, and accountability for public service.
- Businesses want to attract more customers, and to understand which products their customers want, want to use efficiency tools and systems to manage inventory, and to reach customers, etc.

Administrations, including policy makers and civil society, are always looking to be more efficient with public spending, to offer better services for citizens, to create more jobs and economic growth for their communities. The solutions, due to limited resources, need to have an exponential impact. Basic information problems, efficiency and scalability are easily addressed using information and communication technologies, for example, previously un-servable customers or resources (known as the long tail problem), can be easily reached through the mobile networks or the Internet, and businesses can become more efficient through ICTs increasing productivity and reducing costs, bringing higher profits and better return on investment.

Another major challenge is global competition. In the open economy, talent, resources and opportunities can come together to address emerging needs at a velocity unseen before, thanks to ICTs. From crowdfunding platforms like Kickstarter funding entrepreneurs, to massive open online courses (MOOC), providers enabling access to the best educational content, new business models are transforming society and personalized learning is now a reality.

And so, a range of sectors are caught up in an innovation ecosystem that centres on the ICT sector, but has benefits across the whole of the economy and of society, the ICT centric innovation ecosystem. ICT led innovation is significantly contributing to economic growth by bringing higher productivity factors, lower cost of goods and services, offering newer products and services, re-inventing traditional industries, and enabling new organizational and business models.

Systems of innovation reading list

The following resources are useful for readers who wish to continue research in systems of innovation.

Effectiveness and Efficiency of National Systems of Innovation: the importance of ICT, the Cases of Ghana and Kenya, UNIDO, 2014: http://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=6880616

Industrial Development Report 2016, UNIDO, 2016: https://www.unido.org/fileadmin/user_media_upgrade/Resources/Publications/EBOOK_IDR2016_FULLREPORT.pdf

The Innovation Process and Network Activities of Manufacturing Firms, Fischer, 1998: https://www.researchgate.net/profile/Manfred_Fischer/publication/251393792_The_Innovation_Process_and_Network_Activities_of_Manufacturing_Firms/links/02e7e53a7db001abb5000000.pdf

The Theoretical Basis and the Empirical Treatment of National Innovation Systems, Balzat, 2002: www.wiwi.uni-augsburg.de/vwl/institut/paper/232.pdf

An Evolutionary Theory of Economic Change, Nelson & Winter, 1982: http://inctpped.ie.ufrj.br/spiderweb/pdf_2/Dosi_1_An_evolutionary-theory-of_economic_change..pdf

Local Clusters, Innovation Systems and Sustained Competitiveness, Mytelka & Farinelli, 2000: www.intech.unu.edu/publications/discussion-papers/2000-5.pdf

Product Innovation and User-Producer Interaction, Lundvall, 1985: http://vbn.aau.dk/ws/files/7556474/user-producer.pdf

Innovation: The Five Disciplines for Creating What Customers Want, Carlson, 2007: http://onlinelibrary.wiley.com/doi/10.1111/j.1540-5885.2007.00266.x/abstract

3.3. Changing requirement of policy

Innovation policies rely on a range of factors to succeed that go beyond investment into traditional inputs such as R&D, infrastructure, education. Building an innovation framework that only invests in inputs or only fosters a favourable business environment is not sufficient. In the Global Innovation Index (GII) 2015[8], many countries have inefficiencies reflected in their innovation output to input ratios. The GII 2015 reasons that innovation institutions make significant contribution to innovation performance. Policies based on heavy intervention, or those based on a free market approach will only work in certain contexts. To become competitive and grow, countries need to develop new industrial policies based on highly skilled jobs, high-growth industries and global export.

One factor affecting results is the presence or absence of keystone institutions. If keystone institutions do not exist, the chances of success is dramatically reduced despite investment made by a country in innovation inputs. Previous OECD work considers that the failure of traditional top-down innovation policies are due to three critical risks: *the lack of capabilities for successful policy making, the lack of information on the economy, and the power of the rent seekers in influencing policy*.

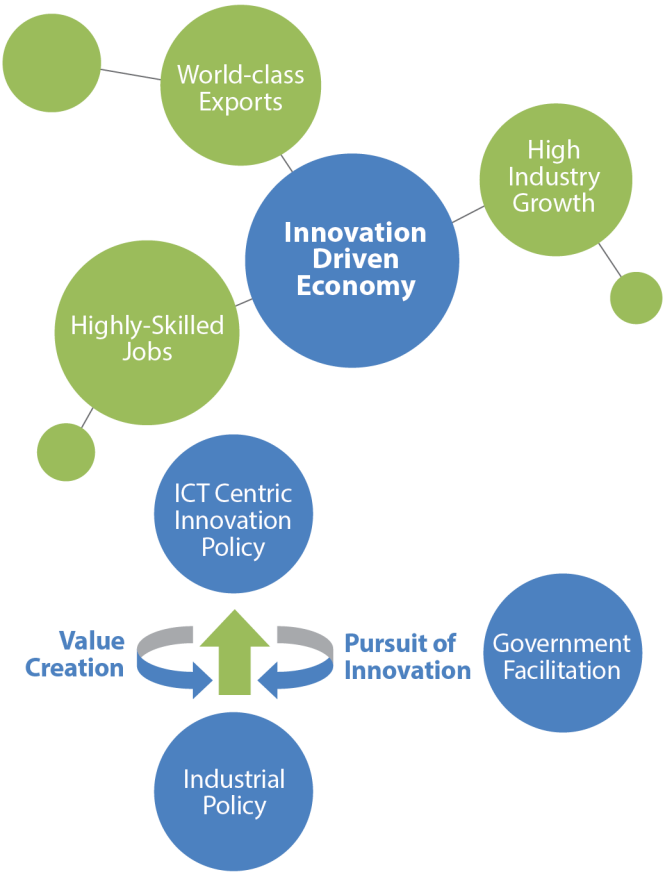
The GII 2015 report also notes that 'novel institutions' are needed to manage this 'search process'. The search process executes three primary tasks: "first linking the better performing segments of private

[8] https://www.globalinnovationindex.org/content/page/GII-Home

and public institutions, alleviate existing institutional constraints and help develop new solutions"; second reducing rent seeking because "the policy start at the periphery of policy making"; and third, "linking better performing segments of an existing institutional framework and searching for out-of-box solutions to familiar problems".

This implies a new model for government facilitation, one where the private sector has the lead, and government intervention is highly effective, timely and evidence based. One way to accelerate the move to innovation driven economies, therefor requires coordinating a traditional industrial policy with an ICT centric innovation policy. Figure 2 shows a modified graphic inspired by Goh's 2005 paper on new industrial policy that highlights this principle. This combination will mobilize existing potential in the ICT centric ecosystem to transform industries with sophisticated business models, to upskill the workforce and to enable access to global markets.

Figure 2: Policy driving innovation



Adapted from Goh. new industrial policy

Source: ITU

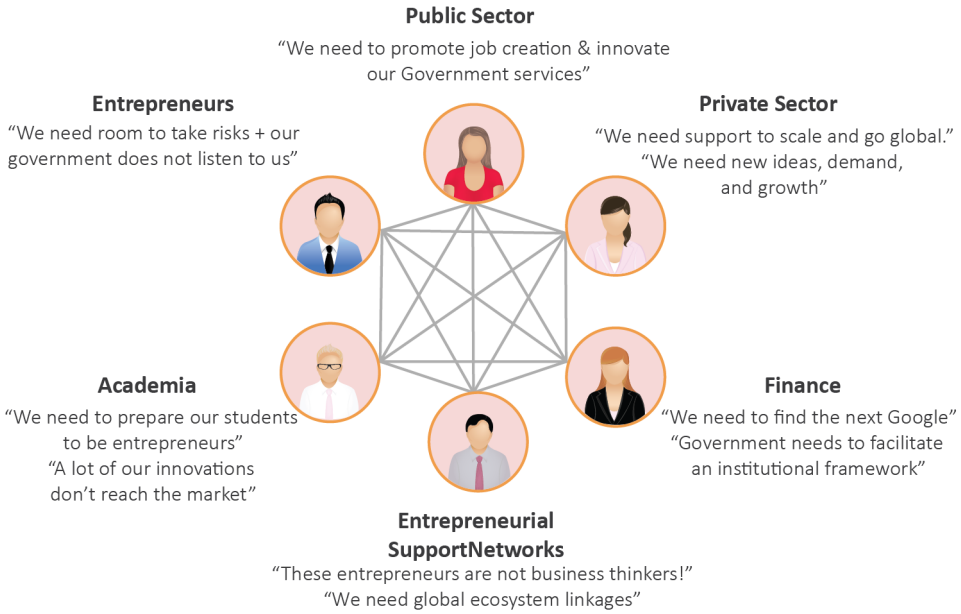
To achieve this aim, an organic ecosystem approach to understanding the problems and drafting evidence-based policies are needed to spark vibrant, efficient, and sustainable ICT centric innovation systems.

3.4. Stakeholder groups

The interdependent actors defined by our methodology consist of six key stakeholder groups, essential to the good functioning of the ecosystem: entrepreneurs, public sector actors, financial actors, academics, private sector actors, and entrepreneurial support networks. These groups interact in many ways throughout the ecosystem, and each group works in many pillars (discussed below) and

throughout the innovation lifecycle. Since much of the analysis and further discussion is based on these stakeholders, a brief introduction to each group is outlined here:

Figure 3: Ecosystem stakeholder groups



Source: ITU

- Public sector: This group consists of public sector policymakers, regulators, programmes, and decision makers in entities connected to the ICT centric innovation ecosystem, directly or indirectly. Since innovation is a cross-cutting issue, this can incorporate a range of governance areas, including finance, trade, technology and communications, education, infrastructure and a range of others, even verticals such as energy or agriculture.
- Entrepreneurs: This group includes stakeholders who have decided to create their own firm with the aim to deliver new innovative solutions. They exist throughout the innovation lifecycle, starting from research and inspiration, through start-ups and SMEs and into more established firms. Much of their contribution to the ecosystem comes from their interactions with fellow entrepreneurs and their work to bring innovations to market.
- Academia: This group includes stakeholders from primary, secondary and tertiary education, research institutions and affiliated education and ICT centric innovation development centres. They contribute to innovation in terms of basic research work and the development of the ecosystem human capital, and to a lesser degree, foster the movement of innovation from research to start-up.
- Support network: This group incorporates stakeholders providing specialized services for entrepreneurship and innovation: incubators, accelerators, business associations, communities, gatherings, events, mentors, accountants, lawyers, etc. Their work facilitates the process of developing new businesses and innovations, and taking them through their lifecycle. There is some overlap between this and other groups as their work is often organized by actors from stakeholder groups.
- Private sector: This group represents established industry players and businesses engaged in internal innovation, business-to-business service provision, infrastructure development and support of outside innovators. They generally seek rent for their services or seek to integrate innovations into their existing organization. There is overlap between this group and entrepreneurs, especially in terms of SMEs. For our purposes, entrepreneurs are working as

small firms and being supported, while private sector actors are working as part of larger firms and supporting the ecosystem.

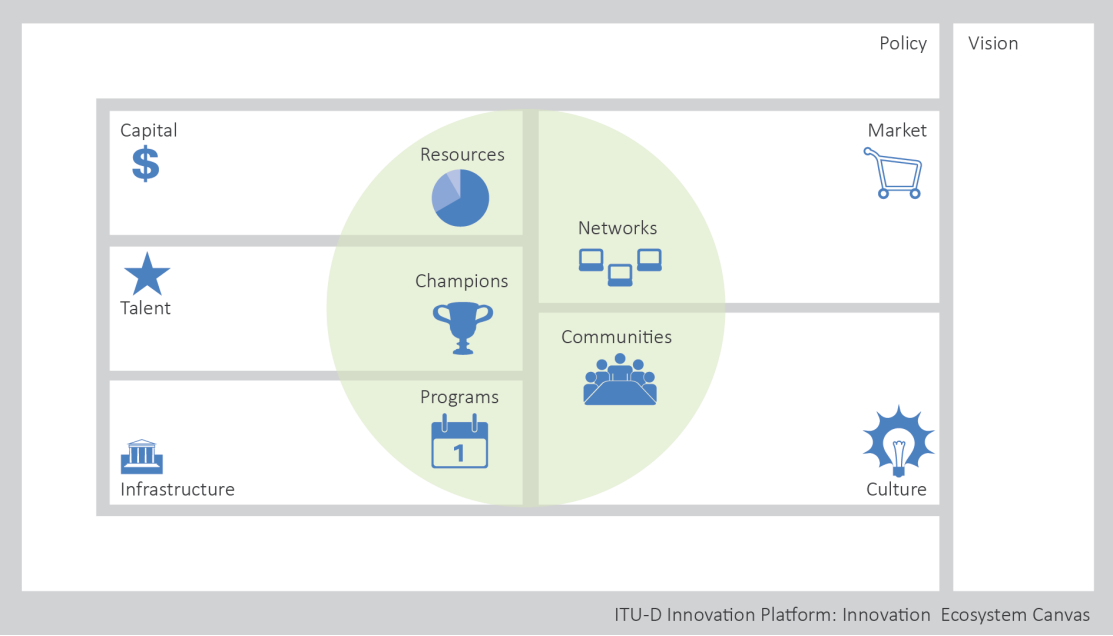
- Financial institutions: This group includes banks, seed funds, investors, peer-to-peer and crowdfunding communities, and others who fund innovation in the ecosystem, from funding research to investment in start-ups and SMEs, to loans and IPOs for established businesses and organizations. This can also incorporate those who facilitate the process and build connections, as well as international actors interested in investing in the ecosystem.

3.5. Ecosystem canvas

A good innovation framework will have a clear understanding of the market needs (demand driven), foster good collaboration and coordination between various actors and create a structure within which innovation can be supported throughout its lifecycle, beginning with the underlying cultural and social factors, through basic research, into the development of innovations and firms, and through to where those become profitable and create the potential for social change.

To achieve these objective, the following ecosystem canvas was developed. It draws on traditional innovation input pillars as well as pillars to support building a sustainable innovation culture. It embraces a holistic view of the problem, and acts as an easy to use guide for diagnosing, changing, and monitoring an ICT centric ecosystem.

Figure 4: Innovation: Ecosystem canvas



Source: ITU

The canvas covers seven pillars: Vision and Strategy, Infrastructure and Programmes, Talents and Champions, Capital and Funds, Markets and Networks, Culture and Institutions, and Policy and Regulation. Policy, being a pillar with particularly important connections to all of the others is shown wrapping around them. Vision is set as the direction the ecosystem moves toward. In the centre, the other pillars show the inputs and outputs of innovation activities.

3.5.1 Vision and strategy pillar

This pillar is the guiding map for the stakeholders of an ICT centric innovation ecosystem. Everyone in the ecosystem needs to have a clear understanding of the aim, the role of various actors, and how the initiative is connected to a common vision. It focuses the ecosystem on market needs.

Vision can be as wide as fostering an entrepreneurial society where citizens are empowering and empowered by innovation. It can be also as narrow as a specific sector. But a comprehensive, inclusive vision is preferred at country level incorporating all major economic sectors and covering all major stakeholders. Different cities or communities can run their own strategies based on narrower visions to empower their local ecosystems.

3.5.2 Infrastructure and context pillar

Infrastructure and context represent the field on which the game of innovation is played. They encompass the core components (typical inputs) of general economic competitiveness; 'hard' infrastructure, such as power supply, connectivity, transportation, and so on; 'soft' or knowledge infrastructure, such as entrepreneurial support networks, co-working spaces, skills training and research institutions; and the accessibility, affordability and distribution of all of these core resources.

The programmes that make up much of the soft infrastructure of the country represent the infrastructure function for the central circle, specifically working to support innovation processes. They provide the spaces and resources needed to develop innovation and entrepreneurship, and share knowledge and skills in order to foster innovative technologies and businesses.

3.5.3 Talents and champions pillar

The notion of talents concerns the input side of people with skills, including technical skills such as IT training and engineering, and soft skills such as management and business planning. It incorporates training programmes and distribution, notably looking at whether appropriate talent is available and whether there are issues stemming from brain-drain or certain industries pulling talent away from areas of innovation.

Champions go a step beyond talent, taking on leadership and mentorship roles within the ecosystem. They serve as mentors and success stories to other stakeholders and create and guide the projects and initiatives that foster the ecosystem.

3.5.4 Capital and resources pillar

Capital represents the access of innovators and entrepreneurs to finance and investment. Various types of capital are required at the various stages of a project lifecycle. Investment in research is needed, followed by seed funding, angel investment, venture capital, investment rounds, and loans, as innovations develop. This pillar incorporates foreign direct investment and other forms of international trade flows, along with programmes such as government procurement and support programmes which provide funding to supplement private sector finance. To support all of these, the pillar also includes financial policy and efforts to facilitate the connection of investors and projects.

Resources are focused financing for programmes and communities that build up the ecosystem, primarily from the national government or international organizations, but also from various private sector actors. This financing is needed in order to run the activities that support the ecosystem.

3.5.5 Networks and markets pillar

Markets are an essential component of the innovation ecosystem, as the goal is ultimately not just to create innovations, but to develop innovations which can be profitably brought to market. The pillar

examines whether the markets are present, whether businesses have access to foreign markets, the interest and purchasing power of local populations, and whether public procurement is providing appropriate demand without distorting markets.

Networks represent the need for different stakeholders to connect and the connections between them. It incorporates the formal and informal networks that foster ecosystem building activities, and the awareness of stakeholders of those networks, especially in the form of formal mapping exercises.

3.5.6 Culture pillar

Innovation and entrepreneurship require a set of cultural values, especially putting a premium on creating rather than seeking jobs, an interest in doing novel research and innovation to create something new, and a comfort with risk and failure as part of entrepreneurship.

Communities foster this innovation culture, providing platforms and groups for knowledge sharing, and inspirational success stories are important building elements of this pillar that help build an entrepreneurial mind-set and bring together a group of passionate actors to create initiatives.

3.5.7 Regulatory and policy pillar

Policy and regulatory frameworks are essential to fostering a favourable innovation ecosystem. A wide range of policy areas are important for innovation, including finance, trade, ICT and education policies. Not only should all of these areas structure their actions in ways that foster innovation, but the regulators, policymakers and programmes should be aware of their roles in the ecosystem. Taxes for start-ups and established firms, regulatory support in established businesses, technology transfer policies, measures promoting high growth SME, funding for research, are all examples.

ICT environments are fast changing and require flexible support. Stakeholders driven policy management (co-created and co-manage with stakeholders), evidence base policy making, and demand drive policies are essential ingredient for success with this pillar.

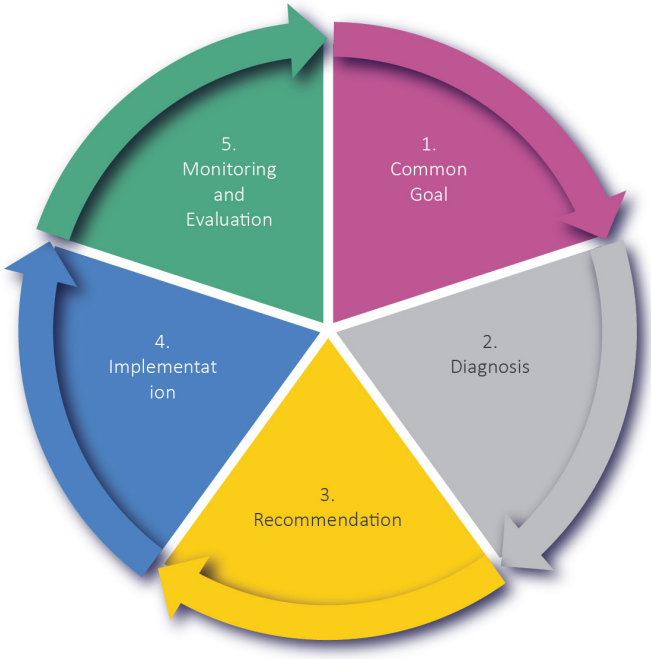
3.5.8 Central pillar

As noted, the central pillar represents a series of key elements that function together to help build up the ecosystem. These elements, detailed above, are interconnected and interdependent, forming a tighter set of activities than the rest of the pillars, which can move forward more or less independently. They also represent activities that are broadly undertaken altruistically with an eye toward building up the ecosystem rather than personal gain, and which specifically benefit innovation, rather than the economy in more general terms. Taken together, these can be seen as the work of the core actors of the ecosystem, and represent active efforts to strengthen innovation, rather than more incidental actions that create beneficial conditions.

3.6. Process outline

A typical country review is carried out in five phases leading to common goals, diagnosis of the ecosystem, evidence based recommendations, an implementation framework, and monitoring and evaluation.

Figure 5: Process flow for country review



Source ITU

1. The common goal: An initial workshop, between stakeholders is conducted to launch the process and ensure alignment with stakeholders. This bottom up process begins with a workshop, bringing together representatives of various stakeholder groups. Using a modified world-café format, the participants collaboratively identify key issues confronting the innovation ecosystem, and work to create an initial draft agenda and set of priorities for the stakeholders as a community. The outcome generates a community manifesto.

2. The diagnosis phase: There is a series of interviews with key stakeholders and a review of current information and available statistics. The interviews are analysed to provide a numeric score reflecting the respondent's perception of the strength of each pillar. Those scores are aggregated to provide data that can be broken out by pillar and by stakeholder group. The key points from the stakeholders are aggregated by pillar to provide overall analysis, identifying strengths, weaknesses and gaps. Using this analysis, a holistic view of the ecosystem is possible, identifying specific gaps regarding the resources available in the ecosystem, and identifying overarching issues and themes, strengths and weaknesses of the ecosystem. These key issues are further developed into collaborative grassroots building blocks to strengthen the ecosystem. Additional interviews are added to support some of the analysis where appropriate.

3. Recommended action: A critical review of all data allows for overarching needs to be identified, along with key areas of action. A workshop is then held to discuss the findings and collect further clarity from key stakeholders. Some proposals and recommendations require intervention and leadership by the public sector, and others can be better accomplished through a collaboration between ecosystem stakeholders. External partners can be brought on board during the recommendation planning to develop concrete projects whenever possible.

4. Implementation: Because innovation happens at the periphery of an ICT ecosystem, an implementation framework discussion is facilitated with key ecosystem leaders (champions). One critical aspect is to engage key champions in taking ownership of the steps forward. An informal working group is a critical enabler toward a formal institution. Institutions play a very important role in unlocking innovation potential for a country. Innovation should be facilitated by the government, but led by the private sector.

5. Monitoring and evaluation: This last phase is an engagement for the stakeholders to move recommendations forward and engage in real policy experimentation. ITU has many activities to continue supporting the country through dialogue, toolkits, and partnerships. Key stakeholders are encouraged to begin activities that require no resources, or follow through the recommendation especially the implementation framework that will determine success factors. Government has a critical role to continue the discussion in trust building, and act on policy recommendations where they fit the national agenda.

3.7. Guiding principles

Throughout this report, there is a tacit focus on the idea of policy experimentation as a core principle. This concept focuses on developing policy in close partnership with the stakeholders it is meant to serve, which is based on best practices and existing activities whenever possible and which can be iterated based on rapid feedback loops. It bears close connection to contemporary design thinking, lean development and user centered design processes, and is an ideal fit for innovation policy because it represents the distributed knowledge bases and evolving nature of the issues. The key principles we focus on are as follows:

- user centered approach (e.g. demand driven);
- private sector led innovation;
- light and efficient resource utilization (e.g. find and invest in working good practices);
- replicable feedback loops to keep up with fast changing contexts;
- common language between all stakeholders (e.g. common understanding);
- everyone should have skin in the game (e.g. engaged);
- sustainable and predictable (including political stability), etc.

4. Current situation

4.1. Vision and strategy

4.1.1 Literature review: Vision and strategy

The vision of the ecosystem in Albania is developing. The Albania start-up environment is fairly recent and fuelled by a push from both public and private sectors[9]. In the past four years, grassroots initiatives have flourished, contributing to an active ecosystem. ICT entrepreneurs are thriving and looking to exploit opportunities with the unique advantages of Albania.

Since 2009, the Government of Albania developed two strategies supporting innovation: the National Strategy for Science, Technology and Innovation 2009-2015[10], and the cross-cutting strategy "Digital Agenda for Albania 2015-2020"[11]. The 2009 strategy focused on supporting centres of excellence, building communities of excellence in research and innovation that attract good scientific actors, increasing public R&D spending, diffusing innovation in 100 businesses and organizations, enabling integration with European counterparts, and officially recognized the importance of innovation in Albania. The 2015 strategy was developed with the vision of: "A society based on knowledge and information, through the consolidation of digital infrastructure in the whole territory of the Republic of Albania; improvement of the quality of online services and increase of governance and transparency". The main aims were investment and policy measures to improve the ICT infrastructures, new digital services for citizens, and improvement of their livelihood. One key difference between this strategy and previous is the focus on ICT as enabler for innovation by providing more efficient and transparent public services, notably in education, as a means of driving growth, a competitive economy and socio-economic inclusion. The education focus will improve human capital and by consolidating the national infrastructure, the expected outcome is more open and competitive infrastructure in-line with European principles.

The National Strategy for Development and Integration[12], the Instrument for Pre-accession Assistance[13] and similar documents connected to the EU accession process broadly lay out visions and strategies for the government and society. These include a number of details related to innovation, ICTs and entrepreneurship, but only briefly, not laying out a specific strategy for these areas, but including them as small features in a larger vision for national development. Critically, all of these strategies note that there is a need for all ministries to contribute to pushing forward the agenda, speaking to the issue, discussed below, that many ministries and sectors are developing independent strategies, and need to be better aligned.

The Ministry of Economic Development, Trade and Entrepreneurship established a working group to draft the Business and Investment Development Strategy[14], which covers a range of issues, including many touched on in this report, such as investment, taxation, and regional integration. It similarly lays out a range of strategic focuses, including the development of business clusters, support of SMEs and entrepreneurship, and the development of innovation as a focus of many industries, which again, mirror findings and recommendations of this report. Although the Business and Investment Development Strategy covers much of the topics discussed in this report, like the EU Accession strategies, it does not include ICTs and innovation as core focus. It embraces the roles of various stakeholders and an ecosystem driven approach. As noted below, this, and the other strategies developed were not necessarily embraced by the stakeholders interviewed, indicating a need for clearer communication of a strategy that embraces all stakeholders.

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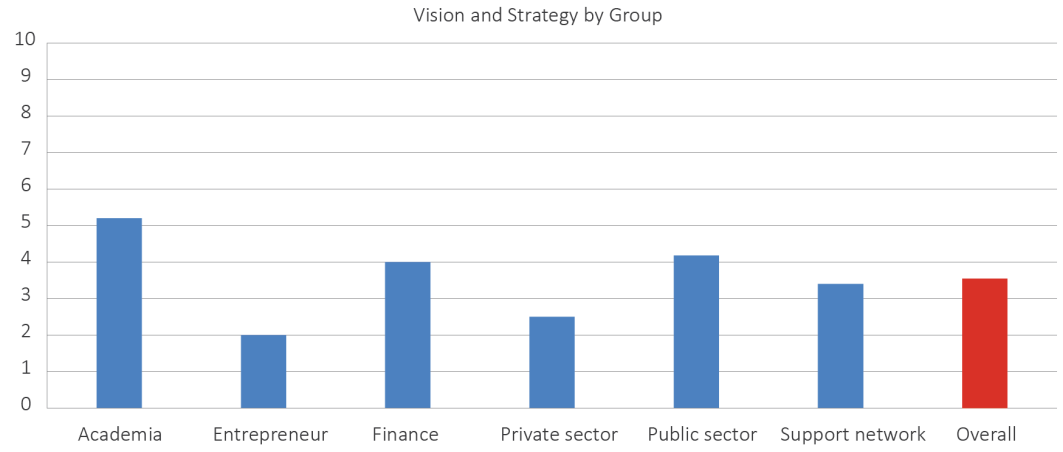
9 http://magazine.startus.cc/tirana-startup-city-guide/
10 http://portal.unesco.org/en/files/47499/12677115709STI_english.pdf/STI%2Benglish.pdf
11 www.inovacioni.gov.al/files/pages_files/Digital_Agenda_Strategy_2015_-_2020.pdf
12 http://shtetiweb.org/wp-content/uploads/2014/06/NSDI_2014-2020_version_JUne-2013.pdf
13 http://ec.europa.eu/enlargement/pdf/key_documents/2014/20140919-csp-albania.pdf
14 www.seecel.hr/UserDocsImages/Documents/Business_and_Investment_Development_Strategy_Albania.pdf

Another strategy that is contributing to laying the foundation for an ICT ecosystem in Albania is the Open Government Partnership, 2016[15]. This partnership is a multilateral initiative that aims to secure concrete commitments from governments to promote transparency, empower citizens, and harness new technologies to strengthen governance. The partnership is a voluntary international initiative which secures commitments from governments worldwide, provides an independent reporting mechanism, and knowledge sharing platform for the participating countries. Since joining this initiative in 2011, Albania has committed to many e-initiatives including the very successful e-Albania project.

4.1.2 Pillar strength: Vision

Based on the interviews, the scores reflected respondent views on the strength of vision and strategy in the ecosystem. The scores (combining scores of 0-2) were based on whether respondents had a good overall view of the ecosystem, whether they felt there was a clear vision, common consensus, and whether they were working in concert with and running activities to support this vision.

Figure 6: Pillar strength by stakeholders: Vision and strategy

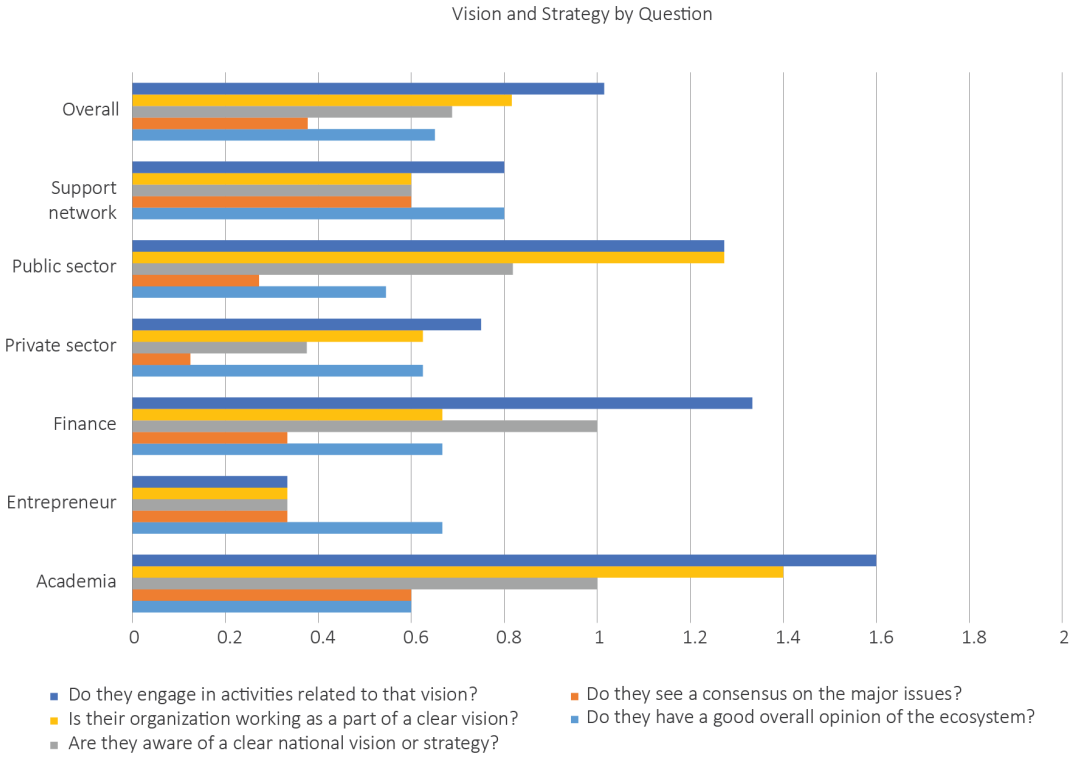


Source: ITU

Overall, it is interesting to note how scattered scores for this pillar were. Many stakeholders felt that their activities supported a vision, but few felt that this vision was cohesive. Stakeholders working in close concert with the government (public sector, finance, and academia) saw a clear national vision, possibly because they are more directly engaged by that vision. Similarly, academia and public sector respondents felt more often than other groups that they were part of a vision. As seen below, those are themes that came out in the interview process, where many felt that there were a number of disconnected strategies, or felt separated from the process of creating strategy.

[15] www.opengovpartnership.org/country/albania

Figure 7: Responses from respondents



4.1.3 Main points and themes - Vision and strategy

Ecosystem early phase

From building a network of mentors and success stories, to access to resources and skilled human capital, many building blocks of a vibrant ecosystem are still developing. Given the high youth unemployment of 39 per cent, entrepreneurship is a priority. Yet, tremendous opportunities remain unexploited. In the open technology community alone, there is an estimated need for over 200 000 developers in Europe.

There is enthusiasm from many champions, and an enthusiastic youth, and this is beginning to grow the ecosystem. However, at this time, the ecosystem is nascent, and because it has not had enough time to grow, it is not driving enough activities, and initiatives to create jobs and produce the positive externalities innovation can have in the economy.

Government strategies

Over the years, several strategies have been developed by various public sector stakeholders. The second Albania innovation strategy, the cross-cutting strategy "Digital Agenda of Albania 2015-2020" was developed by the Ministry of Innovation and Public Administration (MIAP) with the vision of "*A society based in knowledge and information, through the consolidation of digital infrastructure in the whole territory of the Republic of Albania; improvement of the quality of online services and increase of governance and transparency*". The main aims were investment and policy measures to improve ICT infrastructure, new digital services for citizens, and improvement of their livelihood.

The strategy itself has made progress toward this vision, but is not inclusive of all stakeholder needs in the ecosystem. Beyond this, MIAP, and other public sector institutions, are also in the process of

elaborating new policies and strategies to address gaps related to their role in the ecosystem (e.g. the Patent Office, and the agency for research, technology and innovation).

Regional integration as a driver

Albania has adopted many legal and institutional frameworks in its process of integration into the European Union. The initiative for the digital agenda, the research networks such as RASH (Academic Network of Albania), the adoption of EU based intellectual property laws and other regulatory frameworks are giving a solid direction toward harmonizing various institutions with regional neighbours.

There are huge positives associated with the regional integration. Many of the ecosystem stakeholders are looking to tap into the full resources and potential of Europe, EU instruments, its networks and market opportunities.

Programmes

The e-Albania initiative, the transparency initiatives, the Innovation Hub, and other efforts provide opportunities for ecosystem growth and public services transformation. They create much needed demand from the public sector, place innovation on the national agenda, and seed the foundation for a digital Albania.

In the private sector, communities of entrepreneurs, technology enthusiasts, and start-up enthusiasts are also helping transform Albania. Public and private universities and cities are opening incubators and accelerators to provide support mechanisms for the youth and entrepreneurs. Unfortunately, many of these good practices are struggling to grow and achieve impact.

Some strategies seen as insufficient

Though they are having some positive impact, the current public sector strategies are seen as insufficient by many members of the ecosystem. Some of the good regulations are seen as unproductive because some actors feels the government has no 'skin-in-the-game' due to lack of ongoing support and commitment. At times, the policies are perceived as lacking back-up by strong programmes, and that the programmes are not sufficiently funded or funded for sufficient periods. This lack of 'skin-in-the-game' becomes a major concern in that the public sector will not necessarily see projects as investments to be protected, and can allow them to lapse or be replaced without perceiving a loss.

When there is skin-in-the-game, some initiatives taken by the government were perceived as distorting normal market opportunities for private sector players. This occurs when the private sector actors in the field find themselves at a disadvantage against public institutions, since they must operate with viable, sustainable business models, whereas public institutions can always rely on outside funding for support. One of the key challenges leading to the ineffectiveness is a result of the lack of clarity in stakeholder roles.

Lack of understanding and missing verticals

Despite the public sector institutions best efforts to have wider consultative approaches to policy making, current policy making is seen as not fully engaging all stakeholders, in part because of problems in the process, in part because other stakeholders are not engaged and providing sufficient feedback to the public sector. There are missed opportunities in promoting cost effective technology, in fostering SMEs and start-ups who can help bring new innovation to market faster, and this is seen as inhibiting new innovations.

The private sector is also missing opportunities to embrace ICT innovation. The current digitization strategy undertaken by some banks will not be enough to compete in the fast changing financial transaction landscape. The growing fintech community, a critical sectoral ecosystem, seems excluded

by the banking community. There is also little evidence of development of a robust ICT ecosystem supporting digital transformation of the agricultural sector, a key vertical contributing to 21 percent of GDP and representing 43 per cent of the workforce in Albania.

Understanding and developing strategies to include verticals may require solutions beyond the existing mandate of many actors, and efforts which bridge between multiple actors. For example, AKEP (Electronic and Postal Communication Authority) has historically a limited mandate for telecommunication regulation, but ICT is much broader than telecommunications today. Furthermore, with the fast changing ICT and telecommunication environment, new collaborative regulation, with other agencies such as the national bank for example, will be needed. As a result of the current state, ICT entrepreneurs who often come to stakeholders with requests for support on various cross related issues are left with their challenges not addressed.

Uncoordinated strategies, effectiveness and support

Many excellent initiatives from the ecosystem are conducted in silos, and without critical support needed to enable upscaling. In the words of one stakeholder, “everybody runs in a different direction”. The result is that ecosystem activities are small, with reduced impact, and are not sustainable.

Attempts have been made from the private sector to obtain public sector support, but few received support as the instruments they want to access may not exist or are not fully funded. To be effective, efforts must also be made to ensure public sector initiatives are complementary to private sector initiatives and strategic instruments are put in place to provide support.

4.1.4 Gaps and Strengths – Vision and Strategy

Strengths

Albania has made tremendous progress toward a digital agenda, strengthening regulatory and policy frameworks and harmonizing them with Europe. Albania has unique context based on specific needs and one of the issues is a common understanding of these needs and effective solutions to address them.

The government plays an essential role for facilitation, demand creation and fostering a favourable environment within the context of the current understanding of the ICT ecosystem, and has taken steps to address barriers to fulfilling those roles.

Gaps

There is no common understanding between stakeholders of the ecosystem, its potential, their individual roles, and the common needs. In the absence of a common vision, multiple visions exist as everyone is speaking a different language regarding ICT centric innovation, thus aiming for different goals. Government understanding, strategy and vision need to be aligned with private stakeholders to enable accelerated economic transformation. Private sector organizations do not really refer to a national cohesive vision and plan for ecosystem, only to their own strategy and needs. There is limited collaboration between stakeholders in public sector, even less between public sector and private sector. There are many initiatives, but they aren’t necessarily synchronized.

4.2. Infrastructure and programmes

4.2.1 Literature Review – Infrastructure and Programmes

In 2006, the Albania Government undertook a reorganization of the Albania Academy of Sciences to align it with the European model where a community of scientists are linked to universities. Some government institutes were spun-off into research centres focusing on applied research and with the

role of transferring technology and knowledge in specific fields. One key outcome of National Strategy for Science, Technology and Innovation 2009-2015[16], was the creation of the Agency for Research, Technology and Innovation (AKTI). This agency acts like a manager of public funds to support science, technology and innovation, facilitating coordination and collaboration in the field in-line with the priorities of the country. With the recently approved new law for higher education and science, AKTI will be transformed into a new agency AKKSHI with a more focused and strengthened mandate.

The cross-cutting strategy "Digital Agenda of Albania 2015-2020"[17], was focused on policy for development of electronic communications infrastructure in all sectors, policy for development of electronic governance and delivery of interactive public services for citizens and businesses, and policy for the establishment of the National Geo-spatial Data Infrastructure were proposed. It noted the disparity between mobile and fixed connections, and between general connections and broadband. This disparities are part of an urban rural divide, but also indicate that there is significant development needed in infrastructure. It included various objectives supporting infrastructure and policy elements (e.g. broadband spectrum policy and inclusive coverage, ICT infrastructure in public administration, digitization in education-education, trust and cyber security, e-services promoting public transformation, etc.). One objective directly affected ecosystem community engagement (e.g. innovation hub), and another impacted access to market for SMEs. The objective on SMEs specifically calls for:

- strengthening and support to start-ups for digital and online services as well as delivering alternatives in relation to financial support, such as the ICT innovation vouchers;
- establishment of ICT incubators;
- supporting of ICT clusters businesses in accordance to pillar 52 of the European Digital Agenda 2020.

This objective is fully in-line with the strategy of leveraging ICT to drive productivity cross-sectoral and upgrade industries. Much of this objective is not yet operationalized. This study can offer an insight on how to understand and fully operationalize this critical objective focusing on wider innovation driven socio-economic transformation throughout the economy of Albania.

The Measuring the Information Society Report[18] identifies Albania as being near the middle of international ratings, but at the bottom of Europe in terms of communications infrastructure. Notably, a lot of the issues were related to the divide between mobile and fixed line access, and in terms of prices. Many more respondents had access to the Internet than to a computer, and mobile connections were fairly widespread, though expensive and limited in speed, while access to fixed lines was much more limited. Connected to this fixed telephony is a major component of the low ranking, and has relatively little impact on business, but a lack of fixed broadband is a much bigger issue for ICT based firms. However, every factor except fixed line access had improved from 2010 to 2014, showing that, while there is still space to improve, progress is being made.

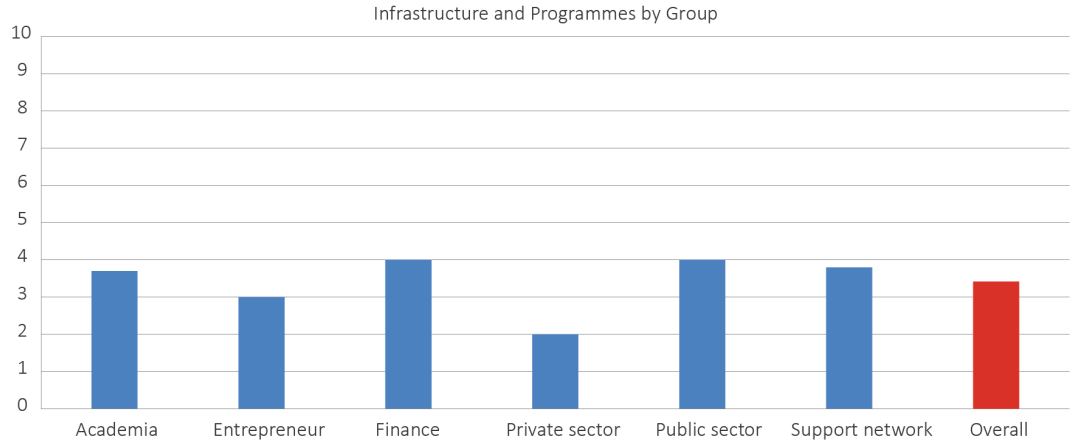
Physical infrastructure was noted as a problem in the Business and Investment Development Strategy, which identified it as a barrier to the growth of business. The Global Innovation Index called out a number of issues with infrastructure as barriers to innovation, including access to ICTs and general infrastructure, however, ICT use and e-participation were both ranked higher. This seems to indicate that while availability is sporadic, usage is strong where available, leading to a point, outlined further below, that distribution is a major issue in terms of infrastructure.

4.2.2 Pillar strength: Infrastructure and programmes

Scores shown in Figure 7 reflect respondent views on the strength of infrastructure in the ecosystem. The scores were based combining scores of 0-2 on whether respondents saw sufficient hard and soft infrastructure and good access to it, and whether the country was economically competitive overall.

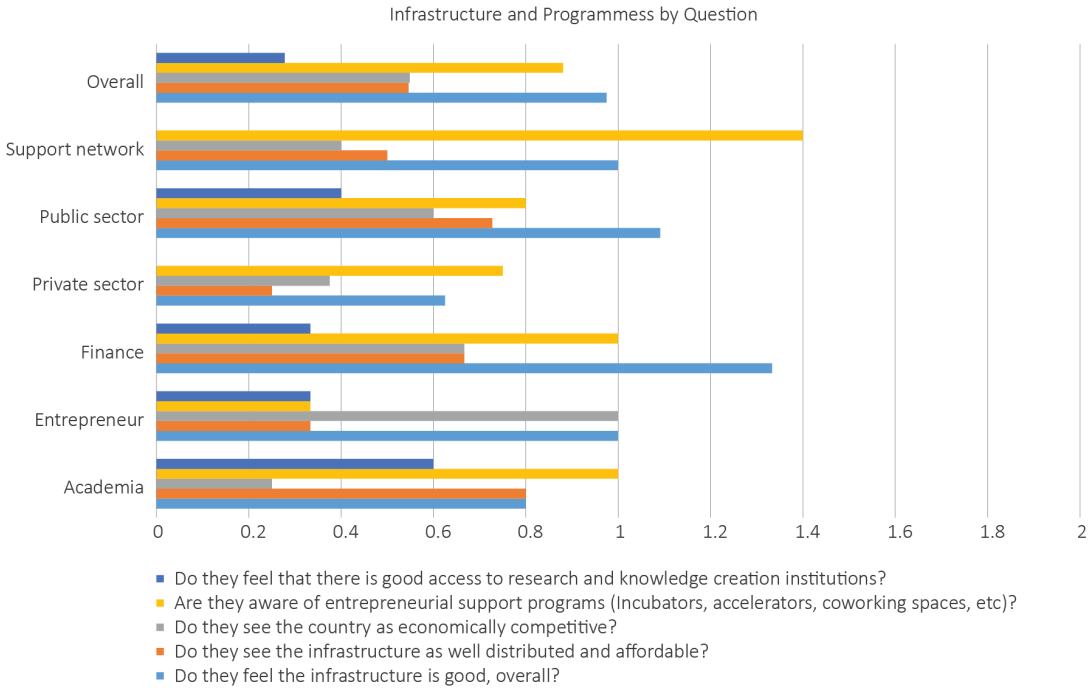
[16] http://portal.unesco.org/en/files/47499/12677115709STI_english.pdf/STI%2Benglish.pdf
[17] www.inovacioni.gov.al/files/pages_files/Digital_Agenda_Strategy_2015_-_2020.pdf
[18] http://www.itu.int/en/ITU-D/Statistics/Documents/publications/misr2015/MISR2015-w5.pdf

Figure 8: Pillar strengths by stakeholder: infrastructure and programmes



Source: ITU

Figure 9: Pillar strength by survey question: infrastructure and programmes



Source: ITU

There was a broad consensus that infrastructure was well established in Albania. Hard infrastructure was seen as being a highpoint by many stakeholders, though there were concerns over distribution. Most stakeholders identified a growing network of soft infrastructure, although knowledge and research institutions were seen as underdeveloped. Support networks and academia had stronger opinions of these areas, as they are the ones responsible for these activities. Entrepreneurs are enthusiastic about the potential of the country, leading to higher scores for them. The private sector has lower opinions of the economy and infrastructure, as many are not strongly connected to issues in these areas.

4.2.3 Main points and themes – Infrastructure and context

Good Hard infrastructure

The hard infrastructure in Albania was broadly reported as being good and improving, notably in terms of communication and connectivity, and especially in and around urban centres. There is wide availability of high speed Internet (60%) and mobile connections (120% sim cards). There are still significant gaps, but progress is certainly being made. Starting with the National ICT Policy Strategy in 2003, the government has recognized the need for ICT for greater economic and social development and has not only focused on measures to enhance a greater supply of ICT services but has also made a concerted effort in the last decade to stimulate demand for ICT services, through government and through the development of access to ICT services. This continued through the Cross-Cutting Strategy on the Information Society 2008-2013 and the Albania National Strategy for Development and Integration 2007-2013 endorsed by the government in March 2008. This is contributing to a rapid process of catch-up in infrastructure, which, while incomplete, as will be seen below, is overall positive and represents an opportunity for Albania.

Entrepreneurial potential

Beyond hard infrastructure, there is also both market potential and interest in innovation, which would serve as demand for soft infrastructure projects, and demonstrate high potential as a regionally competitive technology hub. Albania has a young population, and a decent workforce, which will be discussed in the sections on Talents and Champions, below. A relatively high unemployment rate shows a space for entrepreneurship to expand into, providing jobs using inexpensive labour.

The country's location and access to European markets, coupled with a lower cost of living and less expensive labour market potential; and government projects such as e-billing and geo informatics have generated interest in technology and innovation, and created a demand for expansion by the private technology sector.

Growing Soft Infrastructure

To support these potential entrepreneurs, some soft infrastructure has been generated. The government has made efforts to strengthen IT knowledge through secondary and tertiary education and support to outside actors. Protik offers a range of support to entrepreneurs, both organizing and hosting sessions.

Tirana Business Park provides training networking, infrastructure and co-working spaces. Startup Weekend, Open Labs, and Garazh provide regular events where entrepreneurs can network and develop their skills. A Fintech Society has been developed to support innovation in that field. Private universities and municipal governments have developed independent labs and projects to provide support to entrepreneurs as well, including the Innovation Hub, a co-working space supported by MIAP, the Barleti Institute for Research and Development (BIRD) and Partners Albania (PA).

Gaps in infrastructure

With all of these successes and potential, significant gaps are still present in Albania's hard and soft infrastructure. Notably, there is an issue of distribution. The hard infrastructure is highly concentrated around the urban areas. In some areas, especially rural regions, costs can be high and penetration low. This is reflected as one of the major gaps in many of the international reports on communications infrastructure and innovation in the country. In many cases, especially in rural regions, businesses lack access to key resources, preventing growth.

Gaps in access to technology

Access to servers, manufacturing equipment, and technology for prototyping can hold back the development of both start-ups and SMEs. In many cases, private sector actors noted that the best practice in country would be to turn to outsourcing for certain infrastructure services, such as web hosting and security. This connects to issues with domestic talent pools and markets as well, leading to a need to connect with regional and international ecosystems, as reflected elsewhere in the report.

Ecosystem needs support

Many of the efforts to provide soft infrastructure have yet to produce tangible results as well and many respondents felt that the current soft infrastructure support is insufficient. Much of this is due to the fact that the networks providing soft infrastructure are still nascent and developing. There are few success stories in the ecosystem, many start-ups are either far too early phase or copying concepts from others rather than developing their own. Soft infrastructure projects are still early phase and in many cases support networks have issues providing the kinds of resources needed, such as strong mentorship and investment. The private sector is hesitant to assist in part because they are not focused on developing entrepreneurship in the economy.

Competitiveness lags behind to some degree. In many cases profits are perceived as being too low and taxes are too high for new businesses to move forward. Though these are common issues raised by entrepreneurs, care should be given to ensure that these concerns are addressed, removing taxation and profitability as undue barriers for business. Foreign companies and investors are wary of Albania for a number of reasons: IP protection is seen as being weak, the country is still developing a reputation for skill in the technology industry, and there is a lack of market intelligence about the country overall.

For SMEs and start-ups, there are also issues in navigating regulatory challenges, such as the complex process required to found and dissolve businesses, and barriers to entry for financing coming from foreign investors. There were calls for specialized support to address those barriers.

Disruptive new players need more support

Further, some of the more innovative solutions offered from entrepreneurs are not something that the market is prepared to absorb. This is both on the side of individual consumers and on the side of the government. Ministries are wary of open source solutions favoured by many small businesses, and in some cases are not prepared to support the market entry of new businesses in areas such as fintech.

Lack of collaboration

In many cases, a lack of collaboration is an issue between actors providing soft infrastructure. In particular, there is a gap between public universities and the private sector, in spite of apparent interest in engagement from both sides. There are internships, but in terms of private sector companies providing training in business or technical skills within the public universities, little is possible. Likewise, universities are unwilling or unable to engage in collaborative research projects with private sector actors.

More structured collaboration is also needed from the side of the government. In particular there is a sense that, rather than working together with projects providing soft infrastructure, government initiatives represent competition with them, competition run with greater resources, but often with less expertise that similar projects in the private sector.

Lack of framework

Overall, there is a need for a more structured framework and vision to address infrastructure, especially soft infrastructure. There is a perceived lack of interest in research. The government is seen as not

providing sufficient funds for it, the private sector is not investing in research in the country, and academia sees its role as being focused on teaching, not research. Soft infrastructure projects are uncoordinated, with many projects not focusing on specific areas, duplicating services, and in many cases their frameworks were allowed to lapse.

Finally, the focus of the tech sector in Albania is reliant on hardware (60%), resulting in a sector focused more on integration and assembly than on innovation of new technologies.

4.2.4 Gaps and strengths – Infrastructure and Context

Strengths

Albania has fairly good hard infrastructure, a high entrepreneurial potential, and growing soft infrastructure. The government strategies continue to strengthen these traditional ICT pillars.

Gaps

If you consider a holistic view of an ICT centric innovation ecosystem, more work is needed to improve access throughout the country, to bring soft infrastructure on the national agenda as a priority, and to increase distribution and support services bringing resources outside major cities like Tirana. A holistic framework is needed to increase access to technology, support services, and foster collaborative ecosystem infrastructure development inclusive of all sectors.

4.3. Talent and champions

4.3.1 Literature review: Talents and champions

Albania ranks 85 on UNDP Human Development Index[19], which puts the country in high category with an index of 0.733, ranking similar to Turkey and Ukraine. Albania has been increasing access to all level of education since 1995, owing in part to a decision by the government to open up education to non-public entities. Primary and lower secondary education are nearly universal, with some gaps noted between gross enrolment and net enrolment due to inefficiencies. By 2014, more than half the population of eligible age were enrolled for tertiary education (56 per cent gross enrolment ratio for tertiary education). After the period of liberalization in the 1990s, Albania became a signatory to the Bologna process in 2003. This voluntary process of EU countries seeks to align education systems across Europe with the aim of enabling talent mobility, unify educations system, and build bridges between various actors in higher education. This helped with further reform agenda to strengthen especially the higher education system. The Overview of Higher Education and Research Systems in the Western Balkans[20] also defines two major issues facing Albania in education:

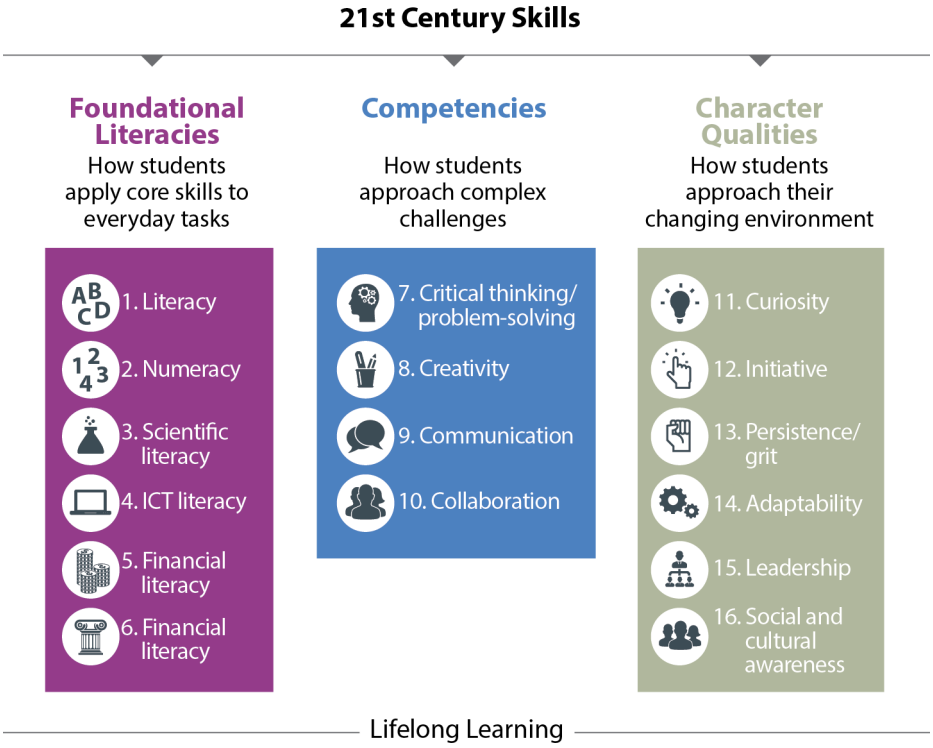
1. improvement needed in the quality and relevance of education and training systems to improve labor conditions for current workers;
2. undertaking reform to make sure that Albania is developing skills for the 21st century.

The World Economic Forum, in its 2015 report - *New vision for education: unlocking the potential for technology*"[21] - elaborated on 16 skills that talent will need to unlock potential of technology in the 21st century. Most countries would need to adjust their educational curriculum to address the skills gap from current teaching. Notably, the Albania ICT centric ecosystem is currently struggling to retool existing talent with these skills, and ensuring that they are covered was a priority laid out in

[19] www.ambasadat.gov.al/united-nations/sites/default/files/ALB_0.pdf
[20] www.herdata.org/public/HE_and_Research_in_Albania_FINAL1.pdf
[21] http://www3.weforum.org/docs/WEFUSA_NewVisionforEducation_Report2015.pdf

the Science Technology and Innovation Report from the government. The focus was particularly on soft skills and business skills, and skills associated with innovation such as creativity.

Figure 10: 21st Century skills



Source: Adapted from World Economic Forum 2015

The Austrian Development Cooperation[22], related to the issue of a skills gap, called for a focus on vocational education and skills training in Albania. This would partially answer the need for specific practical skills in the market and would follow the model of tourism and agriculture, where vocational schools are already active.

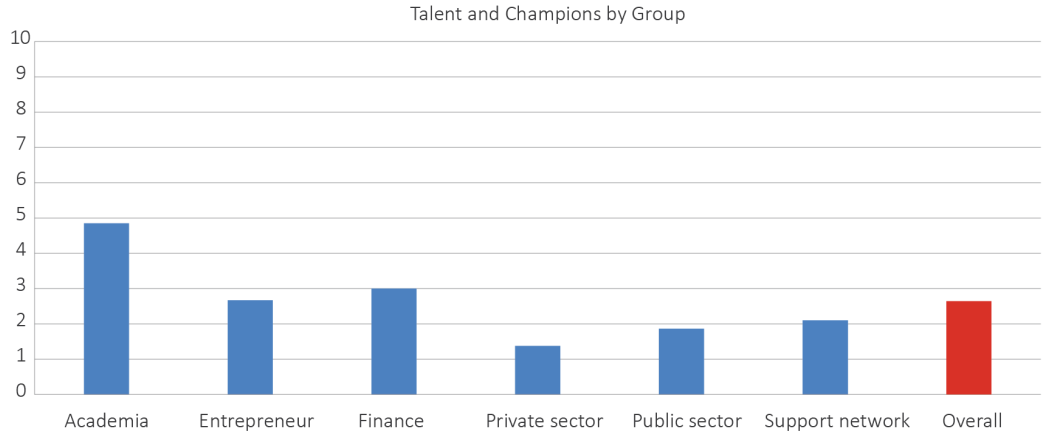
Friedrich Ebert Stiftung's Annual Review of Labour Relations and Social Dialogue in South East Europe[23] found that, in Albania, spending in education and R&D is half of similar countries in Europe, 2.8 per cent in 2015 budget compared to 4.6 percent in Eastern Europe. This is despite increase enrolment from institutions due to first reform in 1990s. This is in line with a broad finding in international reviews which have found that educational enrolment is strong, though behind much of Europe, but that the results of the education represent a weak point for Albania.

4.3.2 Pillar strength: Talent and champions

Based on the interviews, scores were assigned reflecting respondent views on the strength of the workforce and champions in the ecosystem. The scores were based combining scores of 0-2 on whether respondents saw sufficient technical and soft skills in the ecosystem, whether these were supporting innovation activities, how the education system is serving to provide human capital and whether champions were present and active.

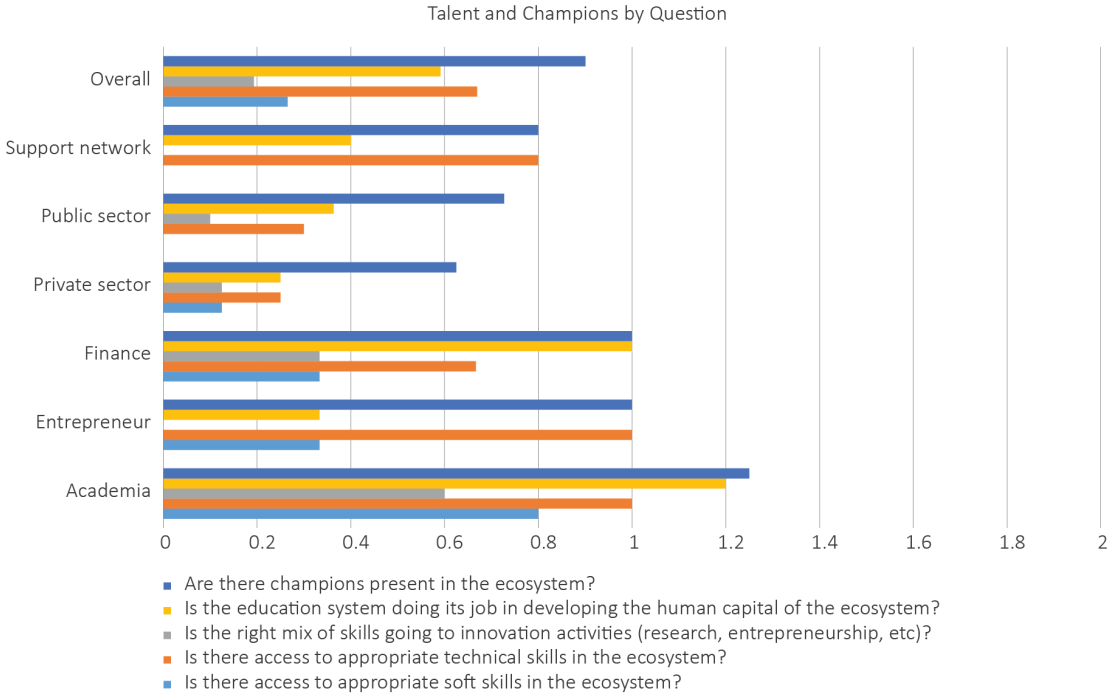
[22] http://www.entwicklung.at/fileadmin/user_upload/Dokumente/Landesstrategien/CS_Albania_2015-2020.pdf
[23] http://library.fes.de/pdf-files/bueros/belgrad/11534.pdf

Figure 11: Pillar strengths by stakeholder: Talent and champions



Source: ITU

Figure 12: Pillar strength by survey question: talent and champions



Source: ITU

It is notable that stakeholders from academia have a high opinion of this pillar. Clearly, they have a vested interest in seeing it as a strong area, and are more aware of successes and efforts to improve. Broadly, there was a perceived lack of soft skills available, though technical skills were seen as better represented. Champions were broadly seen as present. Private sector stakeholders had the lowest view of the availability of the workforce in Albania, stemming from their frustration in finding staffing for their businesses and organizations.

4.3.3 Main points and themes: Talents and champions

Talent opportunity

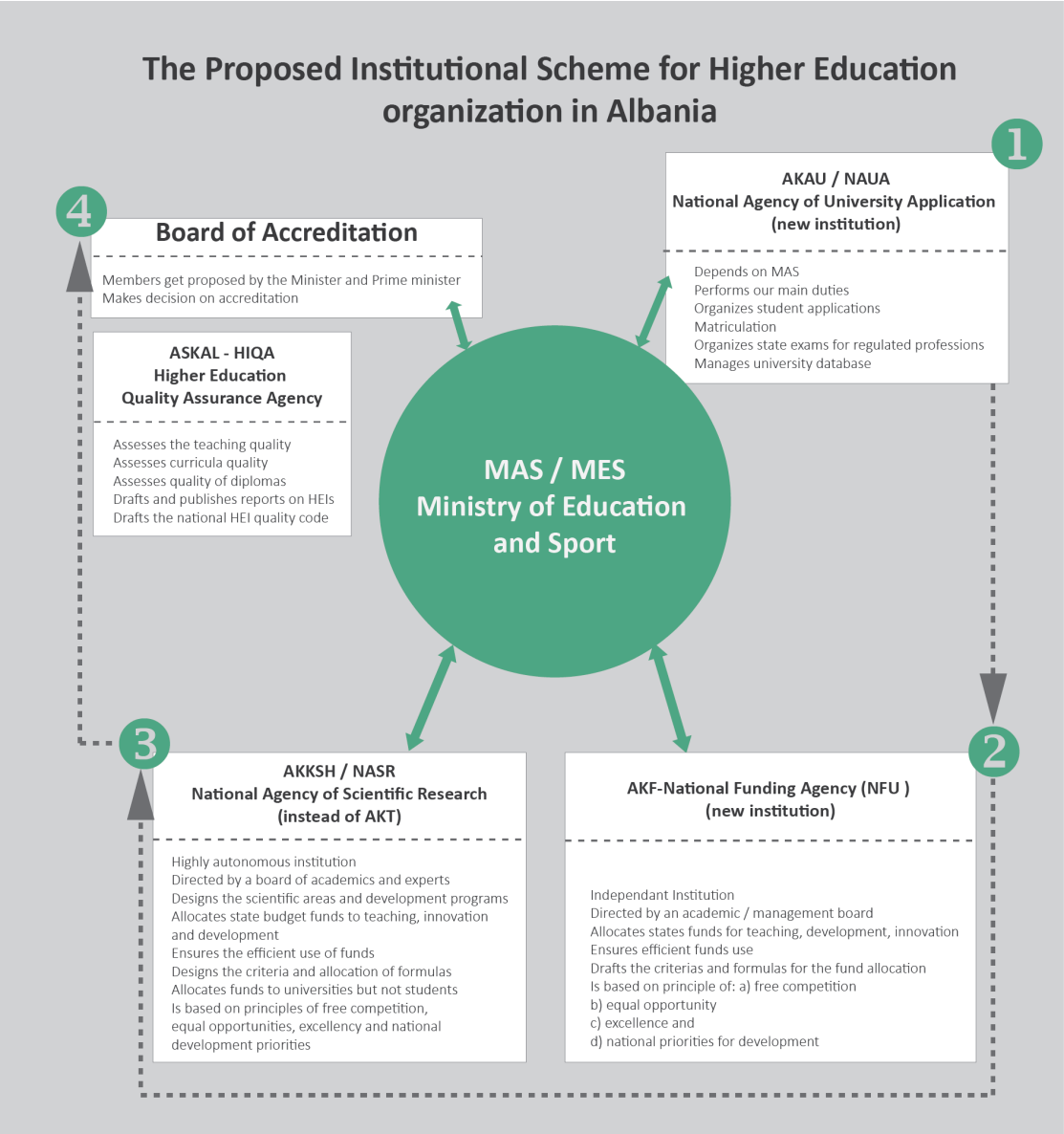
Albania is a small country with a relatively young population. This youth is more inquisitive, creative and enthusiastic about the future with technology. In the last few years, the number of people interested in empowering themselves with technology is growing. Many are multi-lingual speaking English, Italian and Albanian. This growing enthusiasm was helped by higher than normal salaries in the sector. A young Albania programmer, working with open innovation software can earn EUR 1 200 per month, a considerable income given that the living cost in Albania, and that the Albania Institute of Statistics (INSTAT) estimates the industry high end salary to be EUR 354. Regarding connections to Europe and the rest of the globe, the ability to provide strong wages that are still below international levels is an opportunity for the country.

Positive Trends

Competitive education implies more involvement by the business sector in curricula development and doctoral training so that skills better match industry needs. To fill existing gaps, many private sector actors are building their own skill programmes. There are efforts being made to improve both technology skills and soft skills with exchange and internship programmes as well, but they are just starting. Many are lacking the funding or the institutional structures necessary to scale, although the success stories are growing.

The education system is changing to incorporate more practical technology skills. The biggest improvement and positive trend in talent is the 2015 reform for higher education which is addressing systemic failure points in the education system with new frameworks aiming to achieve five goals: higher education as a public good service, competition, increased autonomy, integrating teaching and research and linking financing with performance base indicators. In the reform, most R&D institutes were aligned on public universities and new structures for funding and resource allocation to education were proposed.

Figure 13: Scheme for higher education in Albania



Source: Reform on Higher Education and Scientific Research in HEIs, Commission for Higher Education and Research, 2014

Champions and initiatives

> "People are at the centre of change. Technology is just there to help people do what they always wanted to do"-ITU Telecom Budapest.

Change champions are creating and allowing talented communities in the ecosystem to flourish. From knowledge dissemination organization such as NGO, to actors such as the Openlab community, the Garazh community, the iKub academy, and the ICT awards, the momentum is growing. Behind these communities are the change champions. They create favourable environments in their institutions or in their communities. Some private universities such as Polis embody this spirit of education. Albania has many unsung champions in both public and private sector.

In the new MIAP innovation hub project initiative- Mydream programme – and the various digital strategies that laid the foundations underpinning an enabling environment for ICT access that create demands for the ICT ecosystem are good examples of government as a champion.

Systemic flaws and missing skills

There is perception and evidence from the business community that the current system is failing in training strategic human resources with desirable market skills. The educational reform underway, modelled after the Bologna process of modular education, is foreseen to improve governance of universities, provide more autonomy to organize their activities in the areas of education and training, while securing quality of services via proper accreditation mechanisms.

In the past, many efforts from champions in the business community to impact academic curriculum were met with resistance from some professors, or from students themselves. This is simply a matter of incentives which hopefully will be addressed with the performance base funding from public sector thanks to the reform. More must be done to tackle the usefulness of skills for the various sectors.

The lack of adequate resources in education and research has led to the decrease in quality, and taken together with the lack of labs, equipment, of tools to offer practical learning. According to interviews with few academics, there is no systematic approach to finding funds and to support various needs in retooling the curriculum. The few instruments that exist do not have enough funds or were never design to provide the kinds of support they need.

Public sector actors who have a critical role to play do not necessarily get involved in fostering knowledge base institutions. The rationale for this position, according to a key public sector actor, is that the government should maintain the independence of academia, free of government influence. Regardless of the reasons, the lack of adequate coordination of knowledge based institutions appears to impact the quality of strategic human resources and their role in knowledge generation.

Most private sector entities only maintain a simple consumer relationship with academia. They are consumers of human resources or providers of internships. The missed opportunity is the ability to partner with academia for applied research, influencing curriculum, or to conduct joint beneficial initiative. One reason could be the flexibility or autonomy that academia previously didn't have prior to the new reform laws.

Talent mobility

An estimated 30 per cent of Albanians live outside Albania, with over 500 000 in Greece alone. Of the educated workforce, talent mobility is seen as negative, and due to the flow and speed of the movement, the brain-drain is a big loss for Albania.

In parallel with the brain-drain, good infrastructure, and an educated and multi-lingual workforce, diverts many qualified young people into low value-added businesses such as call centres, earning less income and providing less value to innovation and the economy. Their potential today is not fully utilized. Others lack the inspiration, ambition or opportunity to join innovative industries or the ICT sector at all, remaining in low level service jobs.

Under normal circumstance, talent mobility only helps to accelerate innovation by increasing the velocity at which ideas, resources and talents collide. But in Albania this trend has become a systemic barrier both with mobility inside the country and talent lost to other countries. As a small country, there are many businesses struggling to find the right skilled labour. Educated human resources in technology need to find productive employment and fair compensation.

Direction action toward talent gap

> "We have trouble finding good programmers in Albania, so we started our academy program to fix this problem"- Albanian ICT SME.

Some programmes, primarily led by private sector entities, are trying to fill the gaps in skill training based on their own needs. They collaborate in the process with existing local academic resources. Some initiatives incorporate foreign partnerships to bring new skills or new resources. There is also collaboration happening between public and private sectors. Organizations like Cisco, Microsoft are actively helping to strengthen public universities with technology education. However, many private sector organizations only seem to maintain traditional relationships with academia such as providing internships or jobs for graduates. But they do not actively participate in research with academic resources, nor do they influence curricula.

4.3.4 Gaps and strengths – Talent and champions

Strengths

The talent pool in Albania has great potential as the large number of students in tertiary education can provide the raw material for strong human capital feeding into the innovation ecosystem. Some key stakeholders in the ecosystem, in both public and private sectors, have started to create solutions to many of the gaps via the various nascent initiatives such as certification programmes, training, and labs.

Gaps

The large pool of potential human capital in Albania is not directed towards the needs of the ecosystem. Many respondents have noted that law schools and other non-technology related institutions make up the bulk of higher education institutions (HEIs). And for those HEIs with technology focus, there appears to be a lack of practical skills needed by the private sector. HEI graduates are diverted out of innovative activities and move into other markets fuelling a brain-drain. One respondent noted, however, "It is the failure of champions, not talent. They are lost without focus and energy". Presently, there are a number of potential champions in the innovation ecosystem, but they often do not recognize their role as champions. If they are engaged and encouraged to take on leadership roles, they can present solutions to many of the issues confronting the ecosystem.

4.4. Capital and resources

4.4.1 Literature review: Capital and resources

The World Economic Forum Global Competitiveness Report[24] found that access to financing was the second greatest barrier to doing business in Albania, ranking Albania 118 out of 140 countries surveyed for financial market development. The authors of the report specifically blame issues of availability of financial services, financing through local equity market, ease of access to loans, venture capital availability and regulation of securities exchanges. This is echoed in the Global Innovation Index[25], which found that although traditional credit and microfinance are relatively accessible, venture capital, stocks traded and strategic alliances, which are needed to support emerging firms,

[24] http://reports.weforum.org/global-competitiveness-report-2015-2016/economies/#economy=ALB
[25] https://www.globalinnovationindex.org/userfiles/file/reportpdf/gii-full-report-2015-v6.pdf

are essentially non-existent. The Global Entrepreneurship Index[26] also found that risk capital was a significant issue for the country.

Although there were not specific measures laid out, supporting the development of venture capital, angel investment and other measures to support entrepreneurship were themes explored in the Ministry of Economic Development, Trade and Entrepreneurship Business and Investment Development Strategy[27]. The lack of funding for entrepreneurship was identified as a substantial barrier, and solving it was set as a priority. One key policy recommendation is a measure for improving access to finance for SMEs. New schemes such as innovation vouchers, venture capital and angels networks, have been advocated, but the implementation and funding remains to be seen.

This strategy also identified Albania as a leader in attracting foreign direct investment (FDI), particularly in the telecommunication sector. Prior to the collapse of financial markets in 2008, foreign direct investment contributed to high GDP growth in Albania. Between 2008 and 2014, FDI has reached close to USD 1 billion per year with the majority estimated to come from Greece. Albania has been improving investment conditions to attract more FDI. However, most of that investment was in fairly traditional areas rather than in emerging and innovative areas of technology. In the 2016 World Bank Doing Business Report[28], Albania was reported improving minority protection, and making it easier to trade across borders.

Resources moving to programmes, which will help to develop the innovation ecosystem, are available through the various government led reform efforts. The funding for, as an example, development of geo-information services came in part through the work of the Ministry of Innovation and Public Administration, as laid out in the cross-cutting strategy "Digital Agenda of Albania 2015-2020"[29]. Many resources also come from international groups, such as the European Union. In the IPA II[30] document, the EU recommends the allocation of Euro 44 million to strengthen innovation in Albania from 2014 to 2020, and the Science Technology and Innovation Report[31] identifies international organizations as significant sources of funding.

4.4.2 Pillar strength: Capital and resources

Based on interviews, scores were assigned reflecting respondent views on the strength of talent and champions in the ecosystem. The scores were based combining scores of 0-2 on whether respondents saw investment in innovation, research and entrepreneurship being available, whether investment from abroad was possible, and whether capital markets were well developed.

26 https://thegedi.org/2016-global-entrepreneurship-index/ (Registration Required)
27 www.seecel.hr/UserDocsImages/Documents/Business_and_Investment_Development_Strategy_Albania.pdf
28 www.doingbusiness.org/~/media/GIAWB/Doing%20Business/Documents/Annual-Reports/English/DB16-Full-Report.pdf
29 www.inovacioni.gov.al/files/pages_files/Digital_Agenda_Strategy_2015_-_2020.pdf
30 http://ec.europa.eu/enlargement/pdf/key_documents/2014/20140919-csp-albania.pdf
31 http://portal.unesco.org/en/files/47499/12677115709STI_english.pdf/STI%2Benglish.pdf

Figure 14: Pillar strength by stakeholder group: Capital and resources

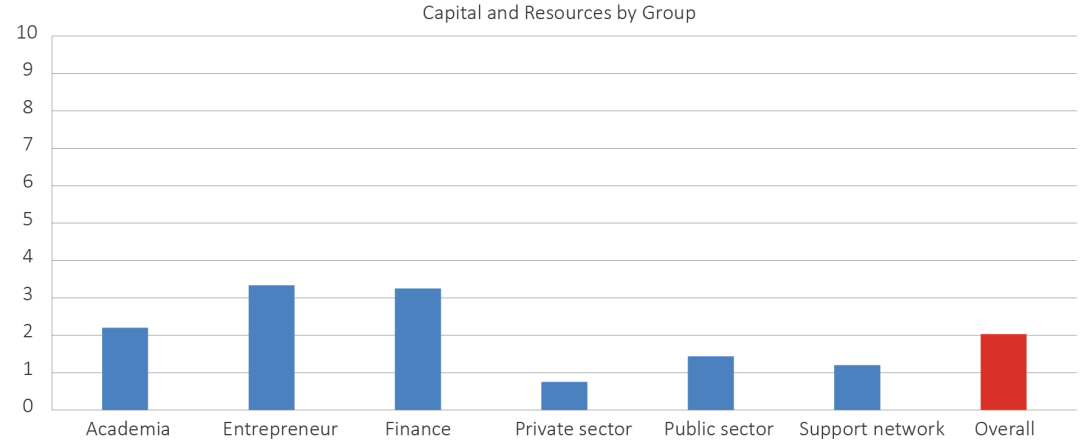
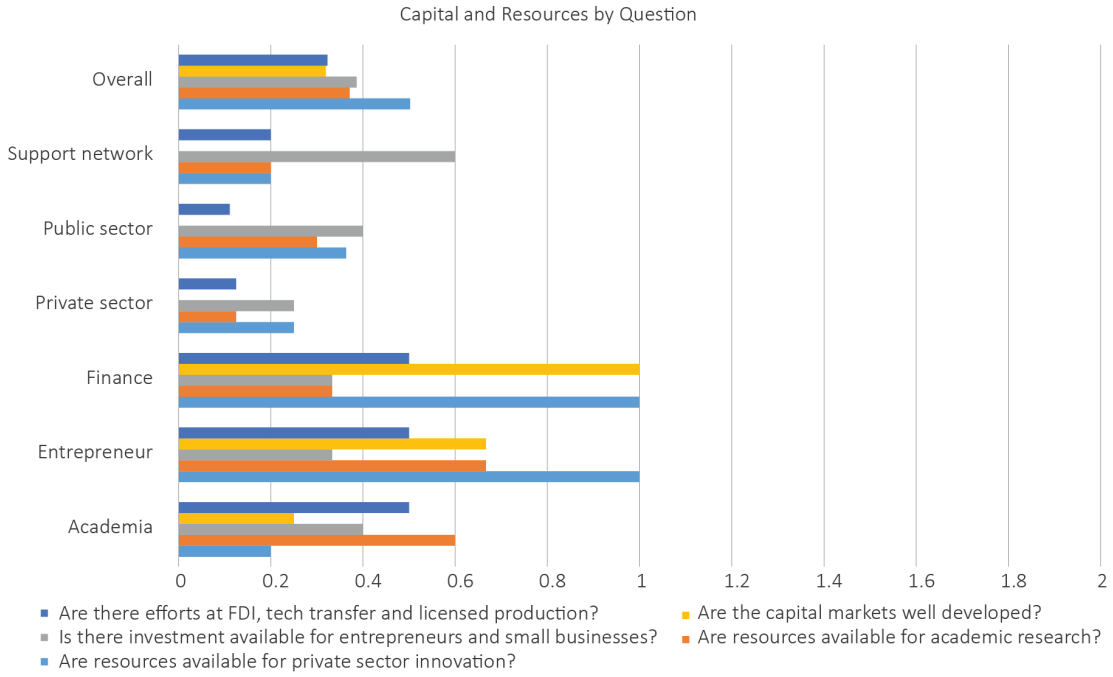


Figure 15: Pillar strength by survey question: Capital and resources



Overall, respondents saw capital as being a key gap in the ecosystem. Few respondents had a strong opinion of capital in Albania, overall. Entrepreneurs and financial stakeholders had a somewhat stronger opinion. The financial stakeholders are more familiar with the pillar and have an interest in it being strong. Entrepreneurs interact more with potential funding sources and so are more aware of their existence, similar to the view of academics on research funding, and support networks on investment.

4.4.3 Main points and themes: Capital and resources

Nascent opportunities

As will be noted below, there are many gaps in access to capital, resources and funds in Albania. While this is an issue, it is also an opportunity and one that actors in the ecosystem are working to explore. Certain verticals, such as energy, fintech and geoinformatics, do have resources available, these funding streams can serve as models for expanding capital access in other areas. In some cases,

capital is coming from outside of the country, notably from the EU, Italy and Bulgaria, and there is interest in expanding those flows.

However, there is also an awareness that reliance on foreign capital is unsustainable and that domestic funding sources, especially those coming from the private sector, need to be developed and expanded. Presently, banks in Albania are not focused on investing in innovation. However, there are interests in developing domestic investment, including the creation of an investment bank and a concept for an investment fund coming from academia based on the European Bank for Reconstruction and Development (EBRD) model. There are also several stakeholders looking at the creation of an angel network which would facilitate investment by high net worth Albanians. Peer to peer investment and crowdfunding were mentioned as interests with high potential. In order to make these investment streams feasible, there is also a need for support beyond finance through entrepreneurial support networks.

Stable, conducive environment

Presently, there are barriers to investment in Albania. For finance to flourish, there will need to be changes. There are many potential investors and potential entrepreneurs, but in many cases they are held back by culture, legislation and lack of support. Culturally, people are not comfortable with investment, both as investors and as entrepreneurs. Funds, their use and structure are not well understood by start-ups, making pursuing finance more difficult. Potential investors do not understand the process or the opportunities, and have concerns about the economy that make them more hesitant to invest. There is a need for legislative changes, made in cooperation with investors and entrepreneurs, since often legislative reform results in counterproductive changes. This was specifically noted in the campaign against the informal economy. Also in this legislative shift, there is a need to organize the process, providing a vision for the financial sector in the country that promotes investment.

Needs

Most respondents said that there was little available in terms of investment for start-ups in Albania. There is a need for investment to support innovators throughout their lifecycle, starting from basic research, through seed funding, angel investment, investment rounds, exits, and further licences for established businesses. Funding was described as a key problem with the ecosystem, and what was present was described as disorganized and uncoordinated, with those seeking funds not being aware of what is available and with those providing investment not being able to locate good projects.

Private sector resources

Several respondents noted that there was some amount of money from the private sector being invested in innovation activities. Most of this was seen as being internal investment, with established firms spending money on in-house R&D. There are also some telecoms and mobile operators who are spending to support entrepreneurs, notably Eagle and Alb and Vodaphone, and traditional infrastructure and construction firms looking to invest in start-ups. Overall, this is an area that many felt could be expanded, especially in terms of public–private partnerships.

Government role

In the absence of well-developed investment markets, the government has played a key role in investment. It is often the first resource entrepreneurs turn to, with programmes fostering research, innovation in several verticals, and the various e-governance and other initiatives stemming from the innovation agendas and other digital programmes. Many stakeholders called for specific government programmes aimed at strengthening private sector innovation, and fostering start-ups, especially in collaboration with other stakeholder groups.

Traditional banking

Presently, traditional banks are a key source of finance for businesses, though there is a mismatch between them and start-ups. SMEs are able to get loans, and there are special programmes for women. The market is well capitalized and interest is low. This allows for companies to invest in innovation and expansion as SMEs and established firms. However, start-ups needing large, long term and high risk investors are not able to use banks as a resource. There are efforts to develop investment banking including specific venture capital and angel investment opportunities, but they are still early phase.

International funding

In the absence of domestic investment, foreign finance was identified as critical. Most ICT investment was seen as coming from abroad, providing a deeper pool of resources with stronger networks and knowledge bases. Italy and Turkey were recognized as major players in this. The potential of tapping into the diaspora network, either through crowdfunding or direct investors was also noted. The Albanian Investment Development Agency (AIDA) was noted several times as an organization with untapped potential, as a platform for entrepreneurs to seek foreign investment, but it needs support from domestic investor networks and better means of locating promising start-ups.

International organizations

International organizations and development agencies were another source of funding seen as important to the ecosystem. USAID, Grameen, EU, World Bank and others are all bringing funding into Albania. These programmes often represent funds to be used by the ecosystem to develop projects and capacity rather than direct investment in businesses, but there are examples of both. International organizations have supported research by universities in Albania, start-up competitions and incubation programmes, government projects such as work by AKTI, and have delivered funding to firms in key verticals such as agriculture. The key need to strengthen this funding stream is access, as many stakeholders noted their need for assistance in locating and applying for funding from international organizations.

4.4.5 Gaps and strengths: Capital and resources

Strengths

Government programmes finance a number of innovation activities, banking is capable of providing capital to established firms, and there are a growing number of supports in the ecosystem.

There are some best practices and new initiative that show growth and potential. There is also funding available for projects in the ecosystem, especially from foreign sources.

Gaps

There are many missing elements in the Albania capital. Funding and investment for entrepreneurship is lacking across the board, seed funding, angel investment, venture capital are all weak, disorganized or absent. There are early efforts to develop these areas, though they are nascent. Strengthening this area will require support through legislative frameworks, and through networks which will help investors identify opportunities and guide them through the process.

4.5. Networks and markets

4.5.1 Literature review: Networks and markets

Albania is a small country, both in terms of population (2.8 million) and GDP (USD 13.3 billion). These factors were reflected in the Global Competitiveness Report[32] score for the market size, ranked 104 of 140 countries surveyed. Albania imports USD 5.23 billion of merchandise, and exported 2.43 billion. Hence a large trade gap in merchandise primarily attributed to mineral fuels and high value goods whereas trade in services has a net positive with USD 2.655 billion in export vs. USD 2.301 billion of imports. The Global Innovation Index[33] noted that there is also intense local competition inside the country, likely driven by the small market and how quickly it can become saturated, along with existing monopolies in the country, leading to problems for smaller businesses. This is undeniably a constraint on the development of innovative businesses in the country.

The Business and Investment Development Strategy[34] identified this issue as well, and reflected on the fact that, to thrive, the country will have to be connected with and open to international markets, especially those in the Balkans and more broadly in Europe. This was identified as broadly necessary, but was particularly called out as a need for the technology sector and for SMEs and start-ups. Albania main trading partner is Europe, primarily Italy, thus vulnerable to a concentrated trading partner risk. Albania is a WTO member, as well as a member of Central Europe Free Trade agreement, and has enhanced relationship with Europe due to the ascension process. Much potential exists to improve global exports by expanding to these markets. The challenges for Albania exist in both the domestic and international markets. The level of business sophistication in Albania is low allowing foreign firm to compete in their domestic markets.

Similarly, the cross cutting strategy "Digital Agenda of Albania 2015-2020"[35] identified improving access to domestic markets and integration into the European Single Digital Market as priorities. More than this, it recognized the substantial role played by public procurement and related sectors such as e-government services in supporting the market. It noted many areas where innovations are feeding directly into the government, and described the government as a large consumer of ICTs.

Networks we repeatedly noted as being valuable in Albania. Clusters were seen as major players in the economy in a number of reports, as noted above. The Science Technology and Innovation Report noted the potential value of building connections between the private sector and academia, and that building those networks represented a strategic priority. Finally, work from the Harvard University Center for International Development lay out the value of Albania's diaspora as a component of business networks connected to the domestic ecosystem. In particular, these networks bring significant resources, partially because of the monetary resources they have access to, but also because they can become mentors and success stories for domestic entrepreneurs, using their knowledge and experience to foster the ecosystem.

4.5.2 Pillar strength: Networks and markets

Based on the interviews, scores were assigned reflecting respondent views on the strength of networks and markets in the ecosystem. The scores were based on combining scores of 0-2 on whether respondents felt the domestic markets were well developed, whether trade flows were possible, whether public procurement was at an appropriate level, whether they had a clear mapping of the ecosystem, and whether networks were present.

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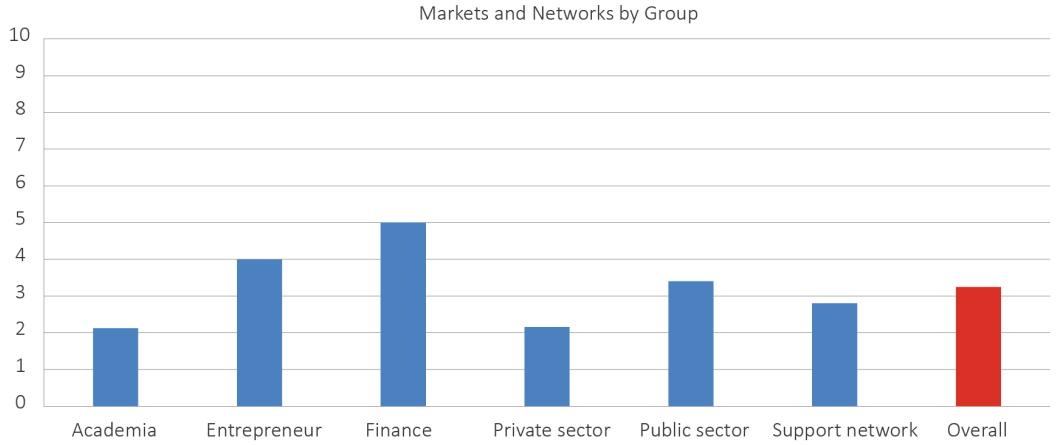
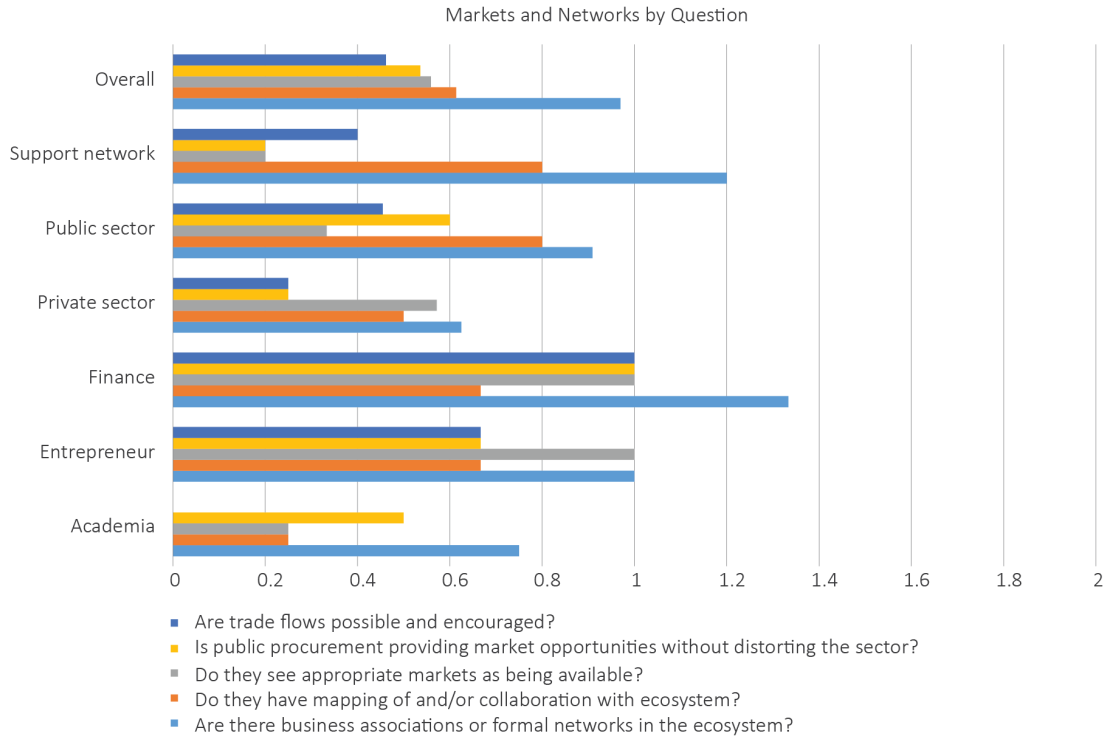
32 http://reports.weforum.org/global-competitiveness-report-2015-2016/
33 www.globalinnovationindex.org/content/page/gii-full-report-2015#pdfopener
34 www.seecel.hr/UserDocsImages/Documents/Business_and_Investment_Development_Strategy_Albania.pdf
35 www.inovacioni.gov.al/files/pages_files/Digital_Agenda_Strategy_2015_-_2020.pdf

Figure 16: Pillar strength by stakeholder group: Networks and markets



Overall, views of Albania networks and markets were fairly balanced. The financial respondents and entrepreneurs had higher opinions of domestic markets, probably due to finance having a very specific market and entrepreneurs necessarily having an optimistic view of domestic market opportunities. Most respondents had a high opinion of networks in the country, and many had either mapping or a strong sense of being connected to the ecosystem.

Figure 17: Pillar strength by survey question: networks and markets



4.5.3 Main points and themes: Networks and markets

Domestic networks and cooperation

A number of strong networks and events are present in the Albania ICT centric innovation ecosystem. There are a number of Chambers of Commerce active in the ecosystem, along with associations such

as RASH, AITA, and associations in the banking sector and other verticals. Many of these networks are linked with transnational counterparts or with international networks connecting various national players. Overall, there is a sense of the country being well connected in terms of formal networks. These networks are helping to drive enthusiasm in the ecosystem, and to bring in diversity to the ecosystem. Moreover, many respondents expressed an interest in developing further networks and in participating in collaborations to support the ecosystem.

More cooperation needed in some areas

One issue raised regarding the proliferation of networks was that there are still gaps. These networks are not well connected to one another and fail to make a number of key connections between stakeholders, such as between entrepreneurs and the private sector, where entrepreneurs felt they lacked strong representation in Chambers of Commerce; and between academia and the public and private sectors, where structured, long term collaboration through these networks remains elusive. A number of actors felt that in spite of engagement while creating and developing policy, as required by recent legislation, the government has not made sufficient efforts to actively engage them in ongoing networks of stakeholders working together on projects. As with other discussions around this kind of relationship, the other side of this is the feeling that government efforts to engage other stakeholders are not being taken up, leading to the perceived disconnect.

In many cases, these networks are not seen as delivering tangible results. This can occur because participants come to the networks to benefit from, but not share, their own resources. It can also happen because the organizers of the networks are not putting resources forward to support key projects, or create collaborative projects where all participants are invested and there are clear desired outcomes from the efforts. Overall, there is an interest in seeing more effective, organized networks in the ecosystem.

Domestic good practice

Within Albania, there are a number of successes that can be pointed to as good practices in developing networks and markets. Projects such as Innovation Week, Startup Weekend and Garazh are showing great potential in terms of building networks within the ecosystem to help entrepreneurs to develop. Innovation Hub, Tetra, Easypay, and others demonstrate that entrepreneurs can succeed in Albania and that the market is present, although international collaboration is often needed to find business services or markets to expand into. There are also efforts to build up markets and networks in the future through technology projects aimed at students in secondary and tertiary education and through tech transfer aimed at local capacity building. Any of these can be expanded, strengthened and used as the basis for future progress.

Ecosystem mapping

There are several efforts at mapping the innovation ecosystem within Albania. Some of these are broad based, such as data collected by INSTAT, others targeted specific verticals or stakeholders, such as academia or finance. Collecting this information and engaging in additional mapping to fill in any gaps will allow a clear picture of the networks and projects in the ecosystem and will facilitate more cohesive planning processes.

Regional integration

Overall, there is significant promise for markets in Albania because of the country's position in Europe. There is already significant integration with the rest of Eastern and Southern Europe with respondents noting ties to Austria, Bulgaria, Croatia, Germany, Kosovo, Poland, Slovenia, and others. The integration of local networks and activities into regional projects in the Balkans or further into Europe was seen as promising as well, notably regarding the World Information Technology and Services Alliance (WITSA),

Fintech associations and the Western Balkan Regional Strategy. Companies easily expand into these markets, and that seems to be a key strategy for start-ups launched in Albania.

These benefits are not without drawbacks, a number of actors noted the need for the Albania government and ecosystem to put in significant efforts and investment to strengthen these ties, and there is the risk of competition coming from abroad especially regarding public procurement. In particular, there were concerns that foreign firms could be more agile or more modernized than domestic firms and outcompete them, but the connections were seen broadly as a net positive for the market.

International Networks and Partners

A number of international partners from various sectors are active in Albania. Many of these are multinational private sector actors, such as Vodaphone and T-Mobile. Often these MNCs are helping with knowledge sharing and mentorship, and bringing in infrastructure such as M-Pesa. There is also international engagement in the public sector. Public sector actors in Albania work together with EBRD and WIPO (World Intellectual Property Organization), and National Agency for the Information Society (NAIS) and National Authority for Electronic Certification (AKCE) are looking to collaborate with their international counterparts. There are educational efforts, such as Clemson University collaborating with Marlin Barletti University and massively open online courses (MOOCs) in Albanian incorporating the diaspora network as knowledge resources. Broadly, these ties seem strong and can be used to strengthen the ecosystem in Albania, though concerns remain regarding tariff barriers and locally focused strategies that may be slowing collaboration in some areas.

Specific market issues

Currently, the biggest challenge is the small size of the country, and low demand for innovative products and services. The population is not big enough on its own to support many thriving start-ups, and this was pointed out as being a source of the lack of a successful app developer in Albania, and a relatively small number of successful tech start-ups overall. There is some room to expand, but start-ups in the country need to consider regional and international expansion very quickly. Fortunately, this is helped by Albania's location in and connection to the Balkans and Europe. Aside from the start-ups, markets are strengthening, given the growth of mobile operators and universities.

Procurement

In addition to moving into regional and international markets, focus on public procurement is another common coping strategy for companies in Albania looking for expanded markets. The Albania Government is a primary customer for many of companies. This has been especially important because of the focus of e-Albania on innovation activities, and the support the related projects gave. There are some issues with the process, however, especially regarding start-ups, where smaller and younger companies can have a hard time winning tenders. In many cases start-ups who could be fostered through government contracts have lost those contracts to international actors or larger companies through procedural requirements or because they were outbid by the established players. This issue also comes up in terms of some innovative products and projects that lost out because of having a price tag versus more traditional options.

4.5.4 Gaps and strengths: Networks and markets

Strengths

The Albania networks surrounding innovation are developing, and have significant potential to strengthen the ecosystem. The markets, both domestic and regional can provide some degree of opportunity for innovators. The small domestic market can provide a proving ground for innovations,

especially with support from the government, and the country's location and strong connections to the Balkans and Europe more broadly provide space for expansion.

Gaps

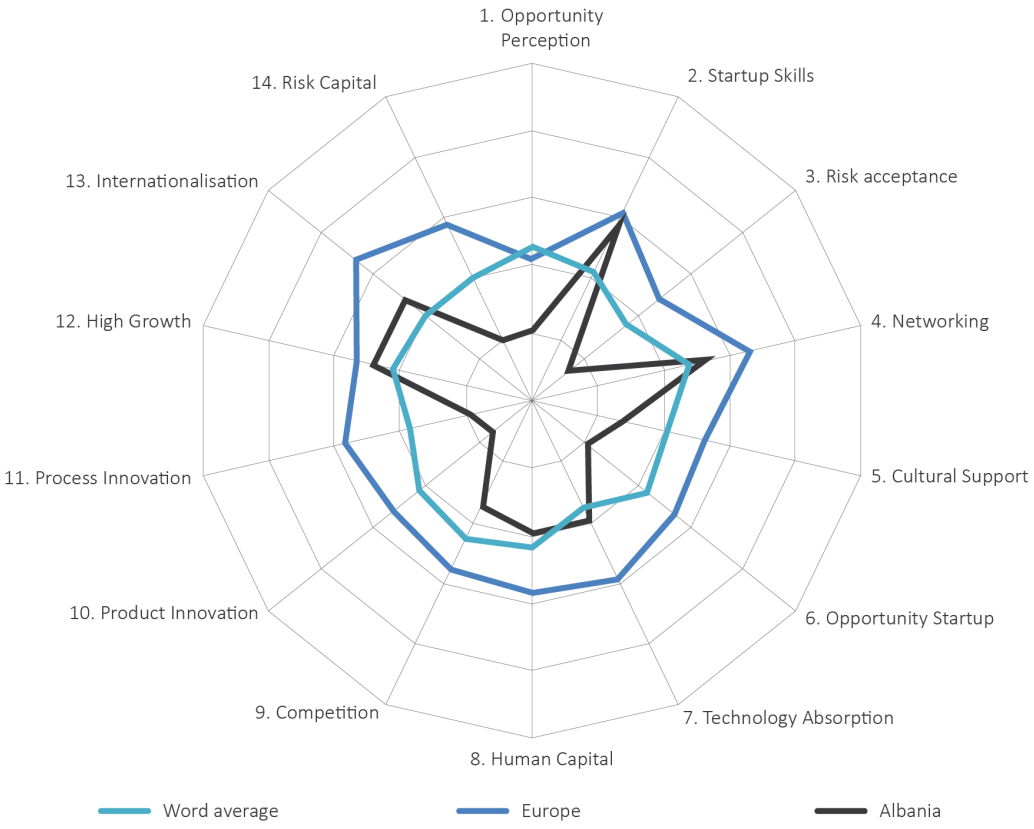
Albania's small domestic markets still constrain the growth of firms, and few success stories have emerged so far. International expansion thus becomes a key to growth. Procurement processes are a key support, but need to be better leveraged toward innovation and entrepreneurship. Finally, the proliferation of networks has led to issues with many of them being disconnected, and not providing tangible support to the ecosystem.

4.6. Culture

4.6.1 Literature review: Culture and communities

In the 2016 Global Entrepreneurship Index (GEI), Albania ranked 76th scoring below average on risk acceptance, product innovation, opportunity perception, cultural support, and opportunity start-up pillars. The Global Entrepreneurship Monitor and Global Innovation Index reports include cultural indicators as concerns as well.

Figure 18: GEI Category Ratings, Global, Europe, Albania



Source: GEI Report

These metrics, although they don't match perfectly with those used in this analysis, they do serve to indicate a relatively weak entrepreneurial culture in Albania, with entrepreneurship not being seen as a strong option, and risk aversion being widespread.

That said, there is reason to think that this situation may be changing. The Enabling the Flourishing and Evolution of Social Entrepreneurship for Innovative and Inclusive Societies (EFESEIIS) report, Social Enterprise, Social Innovation and Social Entrepreneurship in Albania notes that there is a history of entrepreneurial interest and that this interest is returning in the young generation. In particular, this is tied to the high unemployment rate among young people, and the identification of major social problems which they can contribute to solving.

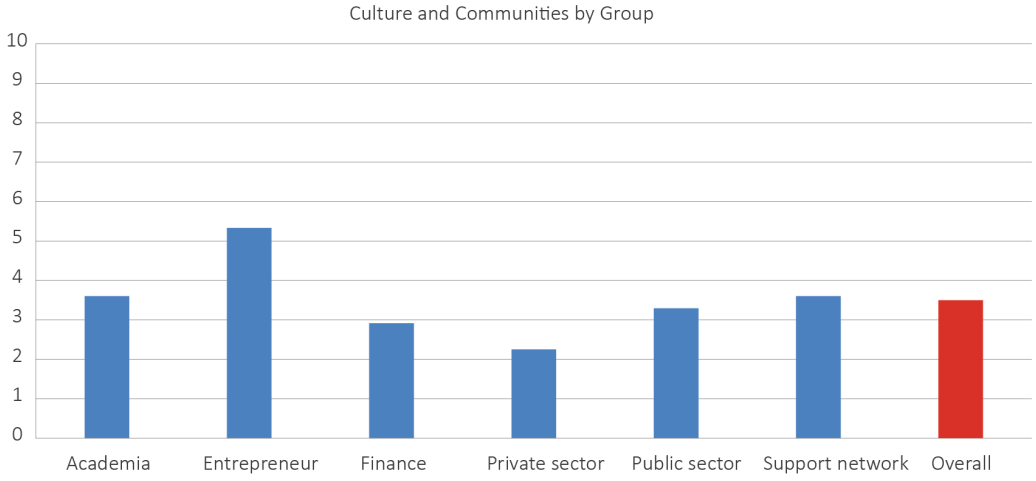
The INSTAT report *Youth in Albania: Challenges in changing times* brings the issue of unemployment into sharper relief. Not only is there high unemployment among Albanian youth, but many young people are dropping out of the labour force entirely, and among those who are employed, many are underemployed, or experience a skills mismatch. So far, one of the common solutions to this is migration, but this is neither a complete nor sustainable solution. These demographic shifts are commonly the breeding ground for a rapid growth in entrepreneurial culture, especially given the history of philanthropy and social entrepreneurship in response to crises outlined in the EFESEIIS report.

Another factor helping to bring forward a stronger entrepreneurial culture among young people are activities under the Science, Technology and Innovation Strategy, and the Business and Investment Development Strategy, among other government programmes. These reports clearly outlined that lack of entrepreneurial interest and skills were significant barriers to developing a robust innovation ecosystem. And so, they proposed strategies and programmes to build entrepreneurial skills and interest among young people at the secondary and tertiary education levels. Moreover programmes like those carried out by various independent actors, notably Startup Grind, and the American Chamber of Commerce, work to inspire potential entrepreneurs and provide them with communities and networks which can support them.

4.6.2 Pillar strength: Culture and communities

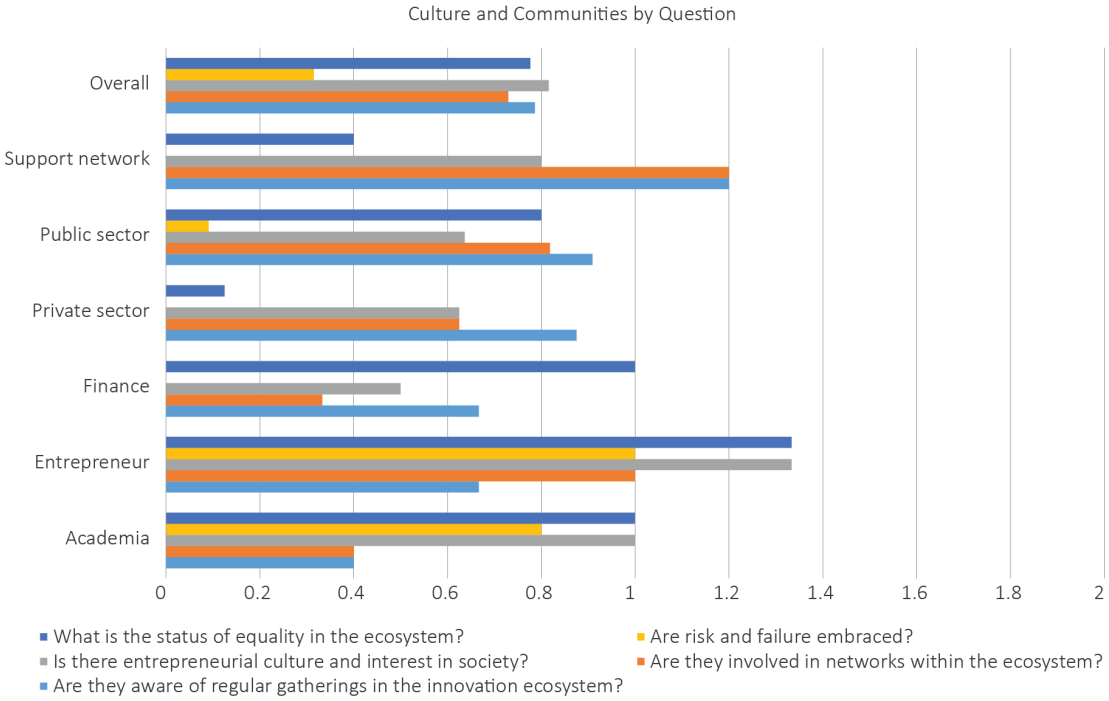
Based on the interviews, scores were assigned reflecting respondent views on the innovation culture in the ecosystem. The scores were based combining scores of 0-2 on whether respondents were part of communities in the ecosystem, whether they were aware of regular gatherings, how they saw perceptions of entrepreneurship, risk and failure, and their views on diversity in the ecosystem.

Figure 19: Pillar strength by stakeholder group: culture and communities



Source: ITU

Figure 20: Pillar strength by survey question: culture and communities



Source: ITU

Views on innovation culture in Albania were highly scattered, though diversity, communities and events were broadly seen as strong. Support networks are naturally more connected to the ecosystem networks and gatherings, this being part of their work, so their opinions of those areas were higher. One of the more telling points is that academia and entrepreneurs have higher opinions of entrepreneurial culture overall. Based on the overall interviews, it seems that the younger generation is less risk averse and more interested in entrepreneurship. Both entrepreneurs and academics tend to work more with younger groups and therefore would have more exposure to these attitudes.

4.6.3 Main points and themes: Culture and communities

Inspiration

Presently in Albania, there is a sense that the culture of innovation is changing. The historical mind-set tended to focus on the idea of getting a job, rather than creating a job. Many students feel that they are simply studying to get a job and many people feel that their goal should be to simply get a job, especially within government. This has kept researchers from taking steps to form start-ups and cut down on entrepreneurial ambition in the country. However, there are signs that this culture is starting to shift in Albania. There is a new interest in entrepreneurship from young people, often led by education programmes, government initiatives or communities promoting an entrepreneurial mind-set. The innovation strategies have been part of moving this mind-set forward, and will serve to help in the future as well. It is not a simple process, requiring ideas of collaboration, inventiveness and self-learning, which are often new skills for budding entrepreneurs.

Diversity

In addition to a growing entrepreneurial spirit, there is a sense that the diversity in the innovation ecosystem is positive. Male and female respondents reported few specific issues with gender balance, and ethnic integration was not seen as a problem. There are programmes to strengthen accessibility, notably within ICT education. There may be some issues tied to overall demographics, such as level

of education and workforce participation, but these seem to be minor. One notable exception to this was the division between rural and urban communities, where several respondents noted the fact that most resources and capacity were urban, reducing opportunities for rural communities, this is to some extent connected to diversity in the ecosystem as many ethnic and religious minority groups are more prevalent outside urban centres, but this seems to be largely incidental to the broader urban rural divide, rather than a systematic issue.

Systemic barriers

Presently, entrepreneurs within the Albania ecosystem are stifled in building and scaling their businesses by systemic barriers. It is legally complex to run a business, some respondents noted difficulty starting a business, though this was noted as an area where Albania performs better than expected in the Global Innovation Index. The education system and support networks are not building needed skills and capacities; more mature entrepreneurs are needed, with stronger backgrounds in interdisciplinary and soft skills, born out by several reports.

This is more fully explored in the section on talents and champions. Once founded, the businesses face barriers in securing financing and markets, and therefore in scaling up. Overall, this is making entrepreneurship a more difficult process, especially for younger Albanians who form the core community of potential entrepreneurs.

Practicality

To develop the potential presented by this cultural shift, there is a need for practical skills and ideas of entrepreneurship in the country. Presently, many potential entrepreneurs are excited by the idea of starting a business, but are not determined to develop a specific idea. There were many mentions of entrepreneurs turned off by hard work, presenting many ideas in rapid succession and copying concepts from other start-ups. These are signs of enthusiasm, but misplaced enthusiasm. Innovators need to refocus on concepts of business planning, development of concepts, and key skills; and their work should be steered by communities, support networks and government programmes, toward projects that create value and development for the market, economy and ecosystem in Albania.

Trust

Since innovation ecosystems thrive on collaboration, a lack of trust is a critical problem. Within Albania, trust is an issue. Because of lax IP enforcement and as a holdover from the Hoxhaist period, many entrepreneurs are more concerned with “protecting their house” and remaining individualistic than with sharing experiences and building the community. In some cases, there were accusations that competitions, accelerators and other support networks were engaged in or complicit in IP violations against participants, serious claims that must be addressed. This is presenting an issue as start-ups thrive in environments where ideas can be refined within the community before being taken to market and where skills are freely shared in order to improve the collective human capacity of the ecosystem. It also reflects the themes of collaboration and cooperation that are common throughout this report.

Risk aversion

Risk is an inherent part of innovation, and presently there is a sense that it is not generally well accepted in Albania. Failure is still seen as embarrassing and unacceptable by most respondents, and makes entering the market more difficult for an entrepreneur. There is also a sense of scepticism on the part of consumers, an unwillingness to try a new product or service.

Importantly, one respondent noted that, given the current situation and history of the country, an initial willingness to take risks may be present in society, but that potential entrepreneurs who are burned once may quickly be lost because of the lack of acceptance for failure.

Activities and communities

Innovation culture in Albania has benefitted from a number of activities and communities. Innovation Week, Startup Weekend, Startup Live, American Chamber of Commerce events, Garazh, and Open Labs were all noted by several respondents as examples of best practices. Additional activities integrate with international networks to strengthen their resources and reach.

These activities and events provide some of the needed soft skills and inspiration in the ecosystem, provide a space for networking and seeking talent, and an opportunity to share success stories with the ecosystem. Many of the entrepreneurial successes have come about because support networks have connected them with outside funding, and they have since become self-sustaining, so this is an established pathway for success in the country.

As noted several times, the e-Albania activities have also been a clear benefit to innovation in Albania. In particular, they have served to prime both innovators and the market. They have pushed innovators into areas creating value for the market through public service and have supported successful innovations through procurement. They have also helped to acclimate the public to technology and innovation preparing the market for a range of potential digital services. These observations extend to municipal smart city and innovation initiatives as well, which have had similar impacts. While there are positives and negatives to all of this, it appears to have had a net positive effect on the culture of innovation in the country.

Collaboration

Overall, these activities have been very effective, but they still have not engaged all stakeholders and are not necessarily well coordinated. Many participants were not aware of the activities, or felt that they did not have the opportunity to be involved. Also, there was a sense that international connections, to the EU, to multinationals and to ecosystems in other small nations, would provide access to greater funding, best practices and opportunities that would further strengthen the impact of these activities.

4.6.4 Gaps and strengths: Culture

Strengths

There is ambition in Albania. Many respondents discussed it as a young country with an interest in entrepreneurship and technology, partially fostered by projects like e-Albania. There are some methods, notably education programmes and networks, where a more complete culture of innovation can be fostered in the country.

Gaps

Innovation culture in Albania is missing a number of features at the moment. Albanians were reported as being risk averse, lacking trust, and focusing more on the idea of being entrepreneurs than on the hard work of building a company or creating products that will benefit their community. There is also a lack of collaboration between institutions and communities in the country, and systemic barriers slowing entrepreneurial growth.

4.7. Regulation and policy

4.7.1 Literature review: Regulation and policy

Since the early 1990s, the Albania Government has undertaken several structural reforms, involving land reform, financial market liberalization, and privatization. During this time, almost all state owned

companies were privatized, opening up opportunities for private sector SMEs to develop, and significant progress has been made lately in the privatization of strategic sectors such as telecommunications and banking. The banking sector has gradually increased the amount and quality of loans and financial services to SMEs. In 2006, Albania signed the Stabilization and Association Agreement (SAA), which is considered a milestone on its path toward EU membership. Albania has benefited from national and regional financial assistance under the Community Assistance for Reconstruction, Development and Stabilization (CARDS) programme. Between 2001 and 2006, more than 315 million euros were earmarked for Albania through CARDS.

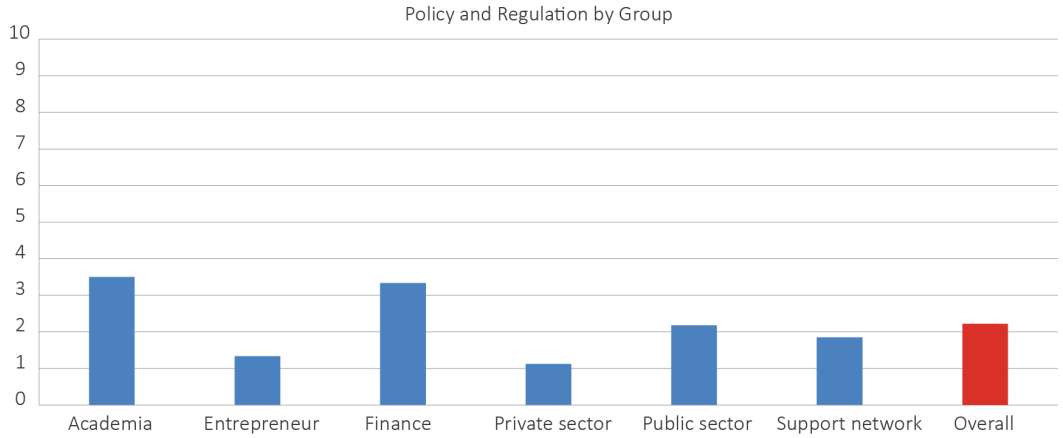
As a component of the accession process, the European Commission regularly reviews and analyses the state of public policy in Albania[36]. These reports cover a number of areas which can be broadly taken under the heading of "good governance", notably judicial reform, economic regulations, and policy making processes and democratization. Reforms and improvements in these areas are collectively part of the accession process. A number of these areas are relevant to the innovation ecosystem (IP protection, labour, trade), and this has shaped a significant amount of Albania policy regarding innovation.

There have been a number of specific recent changes in these areas. The Public Finance Management (PFM) Strategy[37] has put forward a number of reforms in the area of public procurement and fiscal management. The Public Administration Reform Strategy[38] lays out guidelines for strengthening meritocracy and efficacy in civil service. In connection with this ongoing process of policy reform, specific assistance was requested from the World Bank to implement digital public service management tools.

4.7.2 Pillar strength: Regulatory and policy

Based on the interviews, scores were assigned reflecting respondent views on the strength of talents and champions in the ecosystem. The scores were based combining scores of 0-2 on whether respondents felt policy in IP and R&D, ICT and SMEs, and finance and trade were appropriate, and whether they saw the public sector as being well connected and aware of their role.

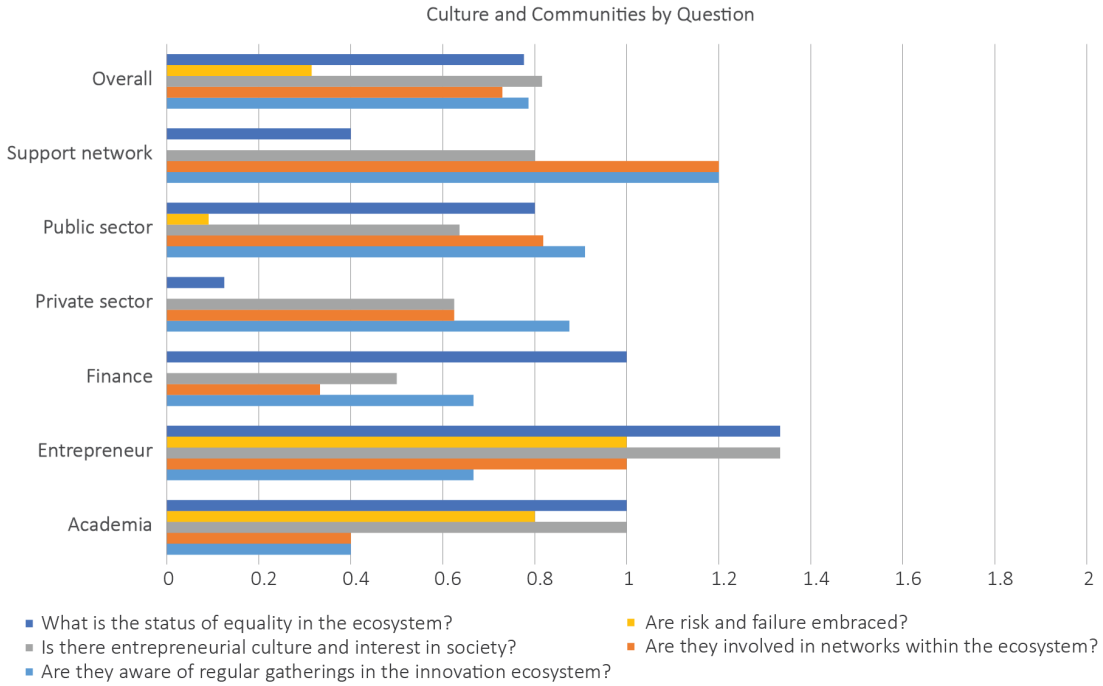
Figure 21: Pillar strength by stakeholder group: Policy and regulation



Source: ITU

[36] http://ec.europa.eu/enlargement/pdf/key_documents/2015/20151110_report_albania.pdf
[37] www.financa.gov.al/files/userfiles/Raportimet/Albanian_PFM_strategy_2014-2020.pdf
[38] http://docplayer.net/6619561-Crosscutting-public-administration-reform-strategy-2015-2020.html

Figure 22: Pillar strength by survey question: Policy and regulation



Source: ITU

Discussions of specific policies are a common area of complaint, not simply within Albania, but globally, so the scores for this area are relatively low. Good policy is often invisible, while policy issues are often highly visible. All stakeholder groups had specific issues to raise, and will be reflected below. The engagement of policymakers and regulators in innovation was broadly seen as strong.

4.7.3 Main points and theme: Regulatory and policy

Overall trends

Two of the major drivers regarding policy for the ICT centric innovation ecosystem in Albania have been the efforts toward electronic governance processes and the process of accession to the European Union. Both of these efforts have had significant positive impacts on the Albania ecosystem. Electronic payments, authorization and certification; improvements in geo-informatics and open data; measures improving openness, transparency and public accountability; cybersecurity and infrastructure improvements; and one stop shops were all cited by respondents as having a positive impact on the ecosystem and are connected to e-Albania and the accession process.

Vision, direction and awareness of roles

The positive changes in Albania policies have largely come about as consequences of various efforts, (EU accession process, infrastructure reform, electronic governance) but these efforts have either been incidental to innovation strategies or have been part of incomplete strategies. The digital agendas and innovation strategies have focused on infrastructure and e-governance, and those have been areas of positive and effective work. However, there is an understanding on the part of the stakeholders interviewed that the ecosystem has significant potential to develop, but that gaps in institutional barriers, human capital investment and investment are holding it back. A renewed focus on ICT innovation as a strategic enabler of the economy could spur private sector innovation in significant ways.

Within a cohesive innovation focused strategy, one key issue would be recognizing the key roles of a range of government ministries and offices play because of the cross cutting nature of innovation. Clearly, certain actors are aware of their role in innovation, notably MIAP and the members of ministries directly connected to ICTs or entrepreneurship. However, ensuring that actors such as the National Bank, the Ministry of Education, the Finance Ministry, the Ministry of Economic Development, Trade and Entrepreneurship, and the Patent Office, among others are explicitly brought in and engaged as innovation actors will help drive a cohesive policy framework forward.

Siloing

A clearer understanding of the cross cutting nature of innovation policy would allow for better collaboration between government actors. Presently, policies regarding ICTs and innovation are seen as siloes between the different ministries and offices, with many ministries being engaged on these issues in a piecemeal fashion, or being taken on as recipients and users of technology and innovation, rather than essential players in the creation of them.

Whether as a part of the same problem or due to a separate but similar issue, there are also gaps between the private sector, academia and the government actors. Recent legislation, passed in 2014, requires consultation on all new legislation, and is part of broader efforts to be more inclusive, however, the public sector stakeholders reported a lack of engagement by other groups, and respondents outside of the public sector feel that they are not fully included. This seemed to be primarily an issue of communication, as the public sector has a vested interest in getting outside feedback, and other groups reported an interest in being engaged. This has extended to regulation issues, where many actors feel there is a lack of clarity, and in the case of financial regulation, there is a sense that there is a lack of legal framework and specialized lawyers governing key issues such as investment, formation of financial entities and related topics. On the other hand, some public sector stakeholders, feel there is a lot of legislation especially in ICT innovation already in place via the EU. Yet, other stakeholders need to see them working for them.

Support in the Ecosystem

One of the major concerns regarding legislation and regulation is the lack of effective support for the innovation ecosystem. Increased and improved provision of services, especially to entrepreneurs, was a priority for the stakeholders interviewed. Beyond this, access to funding for various projects was of particular concern. Presently, there are a number of plans that have not been fully executed, projects that are not fully supported, or activities for which funding and support have lapsed. There are government run resources, such as research programmes, accelerators and incubators. These projects, along with their counterparts coming from academia and the private sector are not optimally effective, because they are not receiving the support and funding they need to thrive.

In some cases, these issues extend to policy measures such as reduced licensing fees and active support in encouraging foreign investment in Albanian firms. When they are effective, the support is often not provided along the whole lifecycle of the entrepreneur. Yet, some public sector stakeholders felt that Albania is one of the most open countries for FDI based on the SAA (Stabilization Association Agreement) with EU, which is obliged to remove all barriers of FDI.

There are often supports for companies as they are founded, but as they grow and expand, similar supports are not provided to carry the start-up through to profitability. One specific example of this occurs when incubation programmes provide incomplete support or fail to follow through. One critical element to be aware of is that these efforts will not necessarily be self-sustaining or profitable in the foreseeable future. They will often rely on government funding to continue, even in the long term, and efforts to make them self-sustaining will damage their effectiveness in the ecosystem.

Tax issues

A number of tax issues were cited by respondents, notably a number of tax breaks or credits favouring innovation were discussed. Currently R&D work cannot be declared as a business expense, this has slowed down R&D efforts. ICT, if recognized as a strategic sector, could benefit from some specific tax exemptions. Some concepts were specifically meant to help entrepreneurs and small businesses succeed, such as eliminating taxes on employees for small businesses or having them operate tax free for the first year. Generally, there were concerns about the complexity of tax law, which currently forces many innovative firms to either stop functions or operate in a grey market space unregistered for taxation.

Procurement

Public procurement is a major supporter of the innovation ecosystem in Albania. One respondent reported 90 per cent of tech companies focusing on government contracts. Through the e-Albania and smart city initiatives, public tenders have pushed a number of firms to branch out into emerging areas of technology. However, there were concerns. In some cases, follow-up and support are not incorporated into a tender, leading to problems with continuity of services and reliable funding for companies.

Procurement procedures are theoretically put into place to ensure value for cost, but often, exclude innovation or research criteria, and opens competition to larger firms and foreign firms which crowd out local entrepreneurs, or require firms be of a size or age which would exclude start-ups. Overall, public procurement may be too strong of a component of the economy, an issue further explored in the Markets and Networks section of this report.

Intellectual property

Finally, there were significant concerns from many stakeholders regarding intellectual property in the country. This has an impact on all levels of innovation. Researchers do not feel confident that their discoveries will be secure, entrepreneurs cannot protect their ideas and patents, and multinationals are wary of engaging with the ecosystem over piracy concerns. These concerns were mirrored in the EC report (European Commission, 2015), which stated that improvements had been made, but that IP violation was still widespread.

IP was not primarily seen as a problem strictly in terms of policy. Overall, respondents had high opinions of the law. It is broadly in line with international norms, though it is being brought into line with EU standards. However, it was not widely used, and only a small number of patents are filed annually, often by multinationals such as drug companies, looking to protect their products. Part of the cause of this is a lack of institutional support, there are not enough testing labs in the country to support the process of filing a patent and culturally IP is not seen as a priority. The much larger issue came in terms of enforcement. Many respondents discussed the fact that proving and winning a case over copyright or patent infringement was very difficult, and in many cases not worth the effort. Broadly, there is little respect for IP laws in the country, and depending on the impact and reception of recent legislative changes in the area of IP, there may be a need to revisit the legislation or enforcement in this area.

4.7.4 Gaps and strengths: Regulatory and policy

Strengths

E-Albania and the EU accession process have been extremely positive for innovation in Albania. These programmes have created significant space for ICT innovation in the country, and public procurement has proven to be a significant supplement to the otherwise small domestic market.

Gaps

One substantial gap in policy and regulation felt by the innovation ecosystem in Albania was simply that of awareness. Many public sector actors either were or were seen as being unaware of the impact of their work on innovation, and lacking connections to their counterparts in other areas, and to other stakeholders. A number of key supporting policies in taxation, and direct support were of interest to the respondents. The other significant gap in the ecosystem was in the enforcement of intellectual property, which needs substantial improvement.

5. Holistic review of the ecosystem

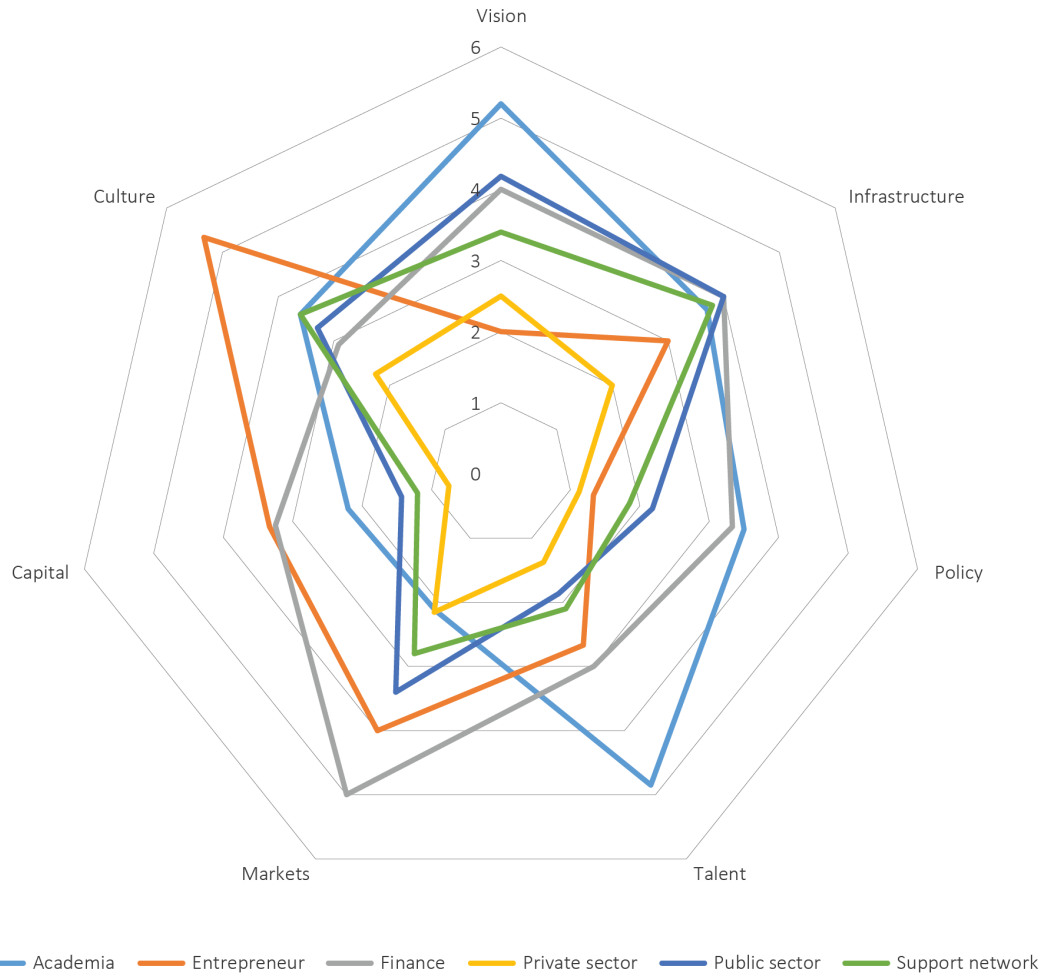
5.1. Collected analysis

Bringing together the scores for all of the pillars from each stakeholder group, the following picture emerges of the views of innovation stakeholders of the Albania ecosystem.

Overall, most groups had fairly similar views of the ecosystem, with similar sets of opinions shared by the private and public sectors, support networks and finance, except that financial stakeholders had better opinions of capital markets.

These groups felt that the infrastructure, vision, markets and culture were strong points, though with reservations. As noted above, there is physical infrastructure and emerging soft infrastructure support, though there is a need for improved infrastructure, especially in rural regions. The vision and strategy need to be clarified and need more active collaboration between the public sector and other stakeholders, but are a good starting place and have already had some initial positive effects. Albania was seen generally as being a good starting market, though small, and providing a good opportunity to connect regionally and throughout Europe. Culturally, Albanians were seen as having an interest in innovation, possibly some hesitancy about creating start-ups and issues with collaborating and accepting failure.

Figure 23: Overall opinions by stakeholder group



Source: ITU

There were concerns about talent, policy and capital for most of these stakeholder groups. Talent was seen as underdeveloped, with IT students not having the right mix of skills to meet the needs of the market. There were a number of specific policy issues noted, with taxation, IP, and the silo effect being major concerns. Finally, capital in Albania is severely lacking, though some funding is available, it is not enough to foster a strong entrepreneurial ecosystem.

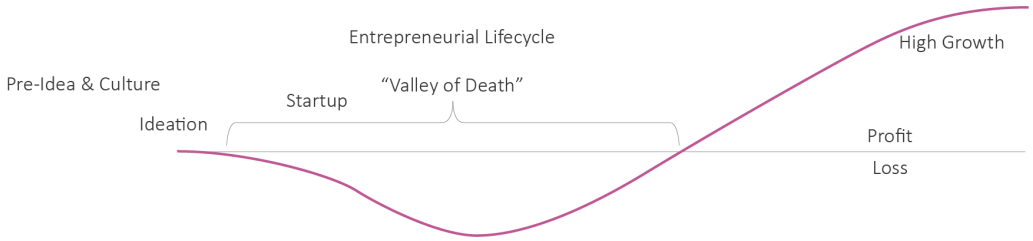
Entrepreneurs were much more enthusiastic about capital, markets, a talented community, and innovation culture than other groups, and less so about vision and strategy. The lack of enthusiasm for vision makes sense, given that they are less engaged than most groups in the planning of the ecosystem, and are likely to be acutely aware of needs. To be an entrepreneur is inherently an exercise in optimism, to devote the needed time and energy into developing a business, and so they have better views on many pillars of the ecosystem. Academics are part of the system developing talent, and therefore see that pillar as better than most groups do, and their view of markets is shaped by the fact that they have less direct interaction with them than most stakeholders.

5.2. Stakeholder interface canvas

The stakeholder interface canvas quickly analyses the work of the ecosystem in covering the key activities needed in order to take innovations from pre-ideation to high growth. It describes the role each stakeholder group can take on to support entrepreneurs and innovators at each stage of their lifecycle.

The canvas is based on the 'Valley of Death Curve', which shows the lifecycle of innovation and entrepreneurship. The lifecycle reflects growing companies, and notably identifies the 'Valley of Death', a period after ideation when innovators require significant investment and support, and where there is a high risk of failure as a business. This is possibly the most critical period for the ecosystem to provide support, though support throughout the lifecycle is critically needed. Similar to the need for support from all pillars of the ecosystem, if any part of the entrepreneurial lifecycle becomes a common failure point, it will vastly reduce the chances of success for all entrepreneurship in the ecosystem.

Figure 24: Stakeholder interface canvas



Entrepreneurship Phase	Pre-Idea	Ideation	Startup	The "Valley of Death"	SME
Entrepreneurs	Entrepreneurial interest	Problem discovery	Develop business models	Build collaboration	Expand & exit
Finance	Research funding	Seed funding	Angel investment	Venture capital	Business finance, equity & loans
Entrepreneurial Support	Gatherings & events	Hackathons & competitions	Coworking & soft infrastructure	Incubators & accelerators	Business associations & networks
Private Sector	Success stories	R&D programs	Internal incubator	B2B services	Skill training programs
Academia	Entrepreneurial inspiration	Basic research	Spin off facilitation	Skill training for entrepreneurs	Develop human capital
Public Sector	Vision & strategy	IP & R&D support	Public procurement	Tax support	Trade & finance policy

Source: ITU

Each stakeholder group has a specific group of actions representing the role they play in supporting innovators through the lifecycle discussed above. The roles mentioned under "Entrepreneurs" are unique in that entrepreneurs, rather than primarily providing support to the ecosystem, primarily receive support from the ecosystem, and are expected to perform the work of entrepreneurship and innovation.

The roles for each stakeholder group are noted in the stakeholder interface canvas above, and are explained here:

Entrepreneurs:

- Pre-Idea: Entrepreneurial interest: Before creating a start-up, potential innovators must have an interest in entrepreneurship.
- Ideation: Problem discovery: Entrepreneurs must discover and focus their work on relevant problems as they ideate a new innovation.
- Start-up: Develop business models: In creating start-ups, entrepreneurs need the skills to develop strong business models.
- The "Valley of Death": Build collaboration: To get one another through the "Valley of Death" entrepreneurs need to be ready to collaborate and share resources.
- SME: Expand and exit: As start-ups develop into proven SMEs, entrepreneurs will need to have the opportunity to expand, becoming high growth SMEs, or to exit through buy-outs or IPOs.

Finance:

- Pre-Idea: Research funding: Resources need to be provided in order to do basic research, leading to innovations.

- Ideation: Seed funding: Early stage, high risk investment, generally under USD 100 000, is needed to launch a start-up. It comes from various sources, including investors and the public and private sectors.
- Start-up: Angel investment: Start-ups need small, one time, early phase investment, provided by angel investors or networks in order to operate and develop their business.
- The 'Valley of Death': Venture capital: In the 'Valley of Death' firms require significant, still high risk funding in order to bridge the gap between growth potential and profitability.
- SME: Business financing, equity and loans: Once well established, firms need more traditional sources of lower risk finance. This comes in various forms, but all focus on SMEs and late stage start-ups.

Entrepreneurial Support:

- Pre-Idea: Gatherings and events: Events for innovators and potential innovators spread entrepreneurial culture and provide the support needed to begin the entrepreneurial lifecycle.
- Ideation: Hackathons and competitions: Ideation processes and competitions reward innovators for successful ideation and help to build connections to foster the process.
- Start-up: Co-working and soft infrastructure: Knowledge sharing institutions and resources are needed by early phase start-ups in order to develop and gain necessary skills.
- The 'Valley of Death': Accelerators and incubators: As start-ups develop, accelerators and incubators help them to develop their businesses through coaching, mentorship and connections with investors and other resources.
- SME: Business associations and networks: Associations and chambers advocate for and support businesses in the market and with the public sector. They also provide key networking and other services.

Private Sector:

- Pre-Idea: Success stories: Successful innovators need to be visible and accessible to younger entrepreneurs as mentors and inspiration.
- Ideation: R&D programmes: Funding and support for R&D by private firms is often a major source of support for upcoming innovations, both within the firm and outside.
- Start-up: Internal incubator: Often, start-ups and entrepreneurs are supported by in house incubators run by established industry firms in their field.
- The 'Valley of Death': B2B services: Start-ups in the valley of death rely on B2B services, often at special rate, in order to make their transition to profitable businesses.
- SME: Skill training programmes: As businesses grow, private skill training is needed in order to provide human resources needed in the sector.

Academia:

- Pre-Idea: Entrepreneurial inspiration: Universities need to provide environments and communities which inspire and foster new entrepreneurs.
- Ideation: Basic research: Basic research contributes to the ideation process by working on practical problems and developing valuable innovations.
- Start-up: Spin off facilitation: Universities need to foster and support spinoffs, start-ups which emerge from the research environment based on basic research.
- The "Valley of Death": Skill training for entrepreneurs: Start-ups in the valley of death require training in business skills and soft skills from academia to survive.

- SME: Develop human capital: Academic institutions are responsible for ensuring that there is sufficient and appropriate human capital available in the ecosystem.

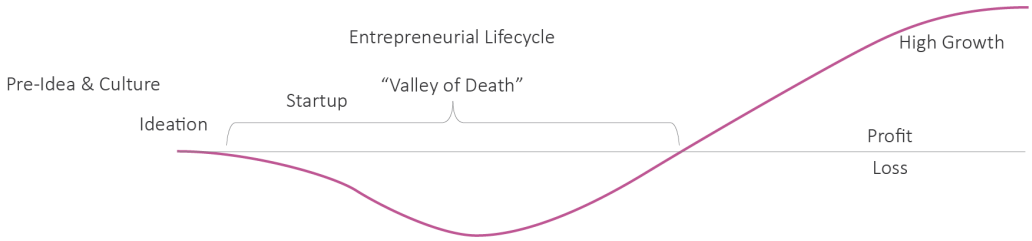
Public Sector:

- Pre-Idea: Vision and strategy: The government needs to provide a clear vision and strategy for the innovation ecosystem, and bring together stakeholders in support of them.
- Ideation: IP and R&D support: Public policy needs to support IP rights and research activities, through funding, legal protections and other measures.
- Start-up: Public procurement: Public procurement and tenders is an essential source of contracts for many early stage start-ups, is properly organized and implemented.
- The 'Valley of Death': Tax support: Start-ups in the valley of death often survive in part because of supportive tax policies which reduce operating costs and provide some added capital.
- SME: Trade and finance policy: As innovative business grow, they rely increasingly on international markets and capital investments. Policies are needed to foster those activities.

Taking this canvas, it is possible to identify gaps and areas of strength to quickly develop a 'heat map' of activities in the innovation ecosystem. Below is the same canvas with commentary on the areas, and colour coded to show gaps. The colours were based on survey data, desk research and interviews, and represent the following:

- Green cells were reported as being well supported;
- Yellow were partially, but insufficient supported;
- Red were largely unsupported;
- Blue were unsupported, but programmes to improve them were reported as ongoing.

Figure 25: Completed stakeholder interface canvas for Albania



Entrepreneurship Phase	Pre-Idea	Ideation	Startup	The "Valley of Death"	SME
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Public Sector	Vision & strategy	IP & R&D support	Public procurement	Tax support	Trade & finance policy

Source: ITU

The following are further explanations of the above ratings:

Entrepreneurs:

- Pre-Idea: Entrepreneurial interest: Programmes are looking to build inspiration and lower risk aversion
- Ideation: Problem discovery: Many entrepreneurs lack focus or fail to address major needs
- Start-up: Develop business models: Mentoring programmes are working to develop business skills
- The 'Valley of Death': Build collaboration: There are issues of secrecy, but communities are being developed
- SME: Expand and exit: Expansion is possible internationally, but needs support. Domestic growth is limited

Finance:

- Pre-Idea: Research funding: There are limited funds available, but need to be expanded
- Ideation: Seed funding: Little finance in available for early phase projects
- Startup: Angel investment: Investment is unavailable, but there are plans to develop angel networks
- The 'Valley of Death': Venture capital: Support from private firms exists, but proper investment systems are needed
- SME: Business finance and loans: Traditional banking provides funding to established firms

Entrepreneurial Support:

- Pre-Idea: Gathering and events: There are many events available in the ecosystem

- Ideation: Hackathons and competitions: Innovation challenges exist, more follow up is still needed
- Startup: Coworking and soft infrastructure: Programmes exist, but there are not enough to meet needs
- The 'Valley of Death': Incubators & accelerators: Some are available, but do not provide enough support
- SME: Business associations: There are a number of associations, but need to be better connected

Private Sector:

- Pre-Idea: Success stories: There are successes, but they are not made visible enough as inspiration
- Ideation: Research programmes: There are some internal and collaborative programmes, but need to be fostered
- Startup: Lab programmes: Some private players are working with support services, but not many
- The 'Valley of Death': B2B services: Firms are interested in working in Albania, but are concerned about IP issues
- SME: Skill training programmes: MNCs and Albania firms provide training, but not in an organized framework

Academia:

- Pre-Idea: Entrepreneur community: Universities are not doing enough to foster a community of innovators
- Ideation: Basic research: Research is going forward, though not well aligned to business needs or a common vision
- Start-up: Spin offs: Most researchers do not think of their work as the basis for start-ups
- The 'Valley of Death': Soft skill training: Business skills are not a sufficient part of education at universities
- SME: Human capital: Despite IT training, there are major gaps between needs and skills being trained

Public sector:

- Pre-Idea: Vision and strategy: Strategies are established, but remain scattered & lack stakeholder support
- Ideation: IP and R&D support: IP law is being improved, but enforcement is weak
- Start-up: Public procurement: Procurement is a major market component, but excludes innovative SMEs
- The 'Valley of Death': Tax supports: SMEs and start-ups lack support in tax policy
- SME: Trade and finance policies: The location of Albania is excellent for trade, but active support is needed

Taken together with the other elements of our analysis, this reflects some key gaps and needs in the ecosystem. Culturally, entrepreneurs need to be developing more relevant, practical solutions, and need to be more willing to collaborate. Finance is a major gap, but there are efforts to resolve much of that, as with the need for incubation services. IP is a major gap, as is the need for soft skills. Many other areas have been noted as more moderate gaps in terms of what is being done in the ecosystem.

5.3. Overarching themes

Ecosystem still developing

Albania broadly represents an emerging innovation ecosystem, one in development. Capital is hard to access, skills are still being developed, markets are somewhat weak, few champions and success stories are present, and policy and support systems are still being developed. Many of these issues will be resolved with time, given organic growth and development of the ecosystem. However, there is a need to carefully foster these areas. The support systems, capital, and skills have programmes which are starting to address those issues, but they need to be shaped and built carefully in order to ensure good development of those areas of the ecosystem.

Lack of cooperation

In almost every pillar, a lack of cooperation or collaboration was identified as a need. Many stakeholders felt excluded from the process of creating policy and strategy, and did not have enough awareness of or access to the events and activities in the ecosystem. Programmes and strategies have been developed by a range of stakeholders in the ecosystem, for different causes and verticals. These programmes did not work in concert with one another, failed to share resources and cooperate, and often lacked sufficient support. This is reflected on a more individual level in the lack of trust felt by entrepreneurs, many actors in the ecosystem are more likely to fall back on secrecy, rather than seeking ways to cooperate and collaborate.

As an example, the stakeholders from academia and the private sector reflected on similar issues, there is a lack of collaboration on research and a disconnect between the talents being developed at universities and the human capital required by the private sector. There are independent projects on both sides which were noted as being potentially useful in this kind of collaboration. There was no forum nor framework for these groups to connect and work together and neither was willing to be the first to step forward to create a relationship.

Leadership and regional engagement

The role of policy in the e-Albania initiative and the accession process was mentioned several times. E-Albania has created significant pressures for the development of innovative projects, and has put public procurement into place funding them. The accession process has improved a number of areas of policy and public service as well. Together, these policies have significantly shaped the direction of the Albania innovation ecosystem.

International assistance has been a major support to the ecosystem. UN and EU bodies along with others such as USAID, the American Chamber of Commerce, and several key multinationals are playing key roles in helping to develop certain activities. Finding methods to more efficiently implement these resources would be of great use. On a connected note, the access to the Balkan and European markets and to a lesser extent regional investment and business assistance is a major driver for start-ups looking to develop in the country, and should be fostered.

Money and procurement

The Albania domestic market is small, and investment capital hard to come by. Because of these factors, the government becomes a major consumer of goods and services, and a major source of capital, both to support start-ups and to build activities that foster the ecosystem. As noted, there is value to this, in that it can support growing firms through the ‘Valley of Death’ and has helped to build the ecosystem.

However, over reliance on government support and procurement is also a risk, it can distort markets, crowd out other sources of funding and encourage unsustainable businesses and activities that become unnecessary expenses rather than viable projects. The balance between the two is not easy to strike, but maintaining it should be a major priority in order to ensure the development of a strong and stable ecosystem.

5.4. Good practices from Albania

Collaborative programmes and smart societies

The European University of Tirana discussed their European University of Tirana Information Technology (UET IT) programme at some length during our interview. It was described as a platform for relationships between the private sector, public sector and universities. Students have the opportunity to work on projects for the private and public sectors, notably those connected to smart city initiatives being run on a municipal level.

These projects ensure that graduates have practical knowledge and relevant skills, and give them networks with potential employers. Students who choose to move into entrepreneurship do so with knowledge of research and development into innovative IT projects, and team management. This covers many of the soft and business skills often skipped in IT education in Albania.

Mapping efforts

Protik and other stakeholders in the ecosystem have initial mapping of the innovation ecosystem in Albania. This kind of mapping documents what stakeholders are active in the ecosystem and what projects and services they are undertaking. This allows the developer to plan the collaboration noted as a gap in many pillars of the ecosystem, and helps different stakeholders to work from a common vision. These mapping efforts are not necessarily exhaustive, and are often held for the use of the developer. If completed and shared, they would provide useful guidance to innovators in Albania, and could be the basis for strong communities and networks of stakeholders, which in turn could serve as platforms for collaborative projects and programmes.

Training partnerships

Several private firms, notably Easypay, iKub, and Tetra Solutions, have developed training programmes to bridge the gap between university IT skills training and their human capital requirements. They bring recent graduates up to speed in terms of specific technical skills, such as programmes or languages; and in terms of business skills, such as project management and creative processes.

Some of these projects, including some taken on by universities and support networks, include training by MNCs such as Oracle, Cisco and Microsoft, which certify trainees in the use of their software. These are industry standard software and certified skill in them helps bridge skills gaps in the ecosystem.

These programmes have some issues in the current ecosystem. They represent an investment by the firm which runs the training, one that can be easily lost, if the trainee decides to move to a competitor or leave Albania entirely. Outside of private firms, there can be a difficulty in finding qualified trainers. However, they represent a critical component of grassroots efforts to strengthen human capital in the ecosystem.

Private sector investment

Speaking on the topic of what investment is available for start-ups in the ecosystem, several respondents noted that some private sector companies were filling in gaps left by financial actors. ALBtelecom was mentioned as having supported several entrepreneurs, as were some infrastructure and civil engineering firms. This process of investing profits from one firm into new, innovative, start-ups, or the similar process of reinvesting profits into internal R&D can be a highly effective supplement to traditional investment, especially in circumstances like those in Albania, where there is a lack of capital. These kinds of activities often work in parallel with incubators and skills training run by the private sector in order to reduce the failure risk of start-ups invested in by the private firm.

ICT Award: Inspiring and connecting entrepreneurs

The ICT award (Albania ICT Awards, 2016), for example, is an initiative of the ICTS media since 2010. It is a national award that runs annually, under the patronage of the prime minister's office.

Every year, it launches a call for paper for all talents across borders, targeting the 6 million Albanian speaking community in the region. Prices are given for several categories: innovation, academic, mobility, diploma, rising star, women in ICT, best public service. The awards are chosen by revolving renowned jury of experts from the field. The ICT award is an evolving concept, much like any typical champion programme. The organizers, are now in the process of building support network such as angel networks and collaborative networks, so the winning entrepreneurs can benefits more.

6. Priority objectives

6.1. Explanation

In innovation policy, identifying high visibility political targets and connecting them with their policy underpinnings is a critical exercise to ensure both political support and sustainable progress. In this spirit, the following set of priority objectives represent key political or strategic goals found during the research process. Each is explained, rooted in its political background and sources of support, then connected with a number of the recommendations made in the following section of the report and the benefits to the country are explained. A graphic will accompany each lay out.

6.2. Public service delivery

6.2.1 Background

E-government and public service innovation have been major elements of innovation in Albania. They have represented components of the innovation strategies, and because of the central role of government procurement in supplementing demand from the market, public service innovation has been a significant area of interest for entrepreneurs.

These trends in the innovation ecosystem are supplemented by political forces. The accession process and recent governments have focused on good public services, notably improving transparency and ensuring easy access for citizens. To facilitate these goals, there is an interest in modernizing the use of technology in public services and aligning policies with international norms and best practices.

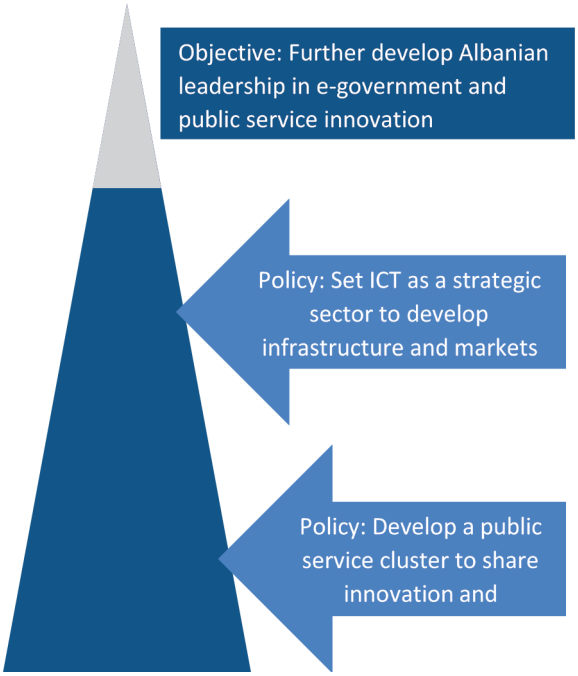
In practical terms, programmes such as the Geographic Information Service Geoportal established by the State Authority for Geospatial Information, and electronic certification services, have created a space in which entrepreneurs from the private and the public sectors have access to digital frameworks on which to build new public service solutions, and a space in which digitization of public services is increasingly accepted by the public at large.

6.2.2 Related recommendations

The recognition of ICT as a strategic sector would be a policy support for this objective as it would be a way of putting policy focus behind the kind of infrastructure investments and support to ICT innovators needed to develop this area of work.

Developing a dedicated public service cluster is a policy action for which the framework is established. The government has ties to a number of SMEs and start-ups working on public services or capitalizing on programmes such as certification and geo-informatics. Connecting these with an ICT innovation bridge cluster has significant potential value, as entrepreneurs and developers from the ICT sector can be connected with established players in public service, and the sharing of resources and networks between the clusters can expand their value to the area.

Figure 26: Public service delivery political objective and supporting policies



Source: ITU

6.2.3 Benefit

Encouraging innovation and the use of technology in public sector service delivery could allow Albania to further develop a sector that is seeing some success. The Albania ecosystem needs areas in which it can take regional and global leadership in ICT innovation, the existing progress in the area presents public service delivery as a field that can be developed in this way.

In terms of internal development, ICT innovation being brought to bear on public services can help improve the accessibility, efficacy, transparency, and efficiency of services during their delivery. Moreover, this kind of innovation can help to build up the kinds of reforms in the public sector such as those called for in EU Instrument for Pre-accession assistance (IPA II) documents.

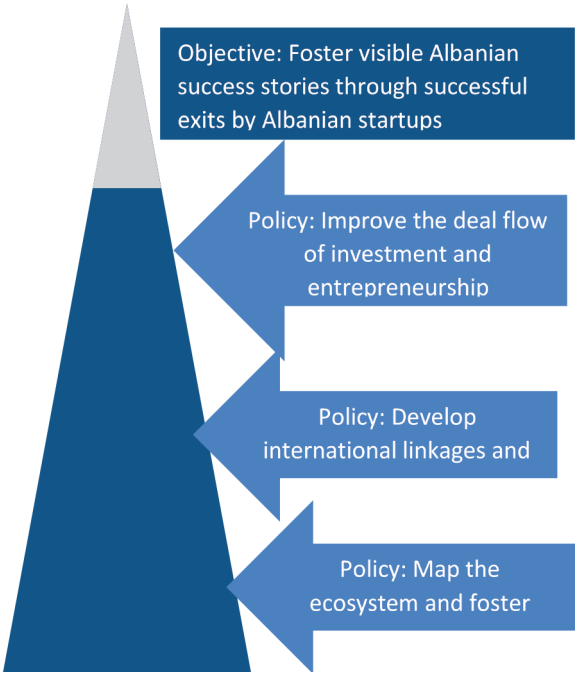
6.3. Fostering success stories

6.3.1 Background

Presently, there are not a large number of innovation success stories to point to in Albania as visible examples of the potential of the ecosystem. Working with the ecosystem to create supports for a limited number of successful exits among Albania innovators was put forward as an objective, and would be in line with broader needs discussed by the ecosystem.

Notably, the lack of high visibility success stories can impact the inspiration for young entrepreneurs, which in turn reduces the demand for support services, making it harder for them to remain financially viable. Additionally, it reduces the interest of investors in the country, and the availability of experienced mentors. These issues generate a negative feedback loop that weakens the ecosystem as a whole, as reduced services and investment make success more difficult, making the ecosystem less attractive for services and investors. A small number of highly visible successes can break this cycle and create both inspiration and perceived opportunity for support and investment.

Figure 27: Fostering success stories political objective and supporting policies



Source: ITU

6.3.2 Related recommendations

Focusing on fostering critical mass in the Albania ecosystem will be a key to achieving exits. This is an extension of the issues being discussed in that recommendation. There is a need to foster support networks and investors leading up to a presence of critical mass that will make them financially independent. Simultaneously, there is a need to inspire and encourage entrepreneurs until there are enough highly visible success stories in the ecosystem that the culture of innovation is built up. Both halves are mutually reinforcing and will help to lead to potential exits.

The ecosystem needs to work together to build up these kinds of successes, mapping actors and building collaborative projects can help to foster them. By creating stronger relationships between different stakeholder groups and between the government and stakeholders upcoming entrepreneurs can be strengthened by a more unified set of efforts. The mapping process itself can help to build up entrepreneurs, as they can be guided to available resources, where they can get needed supports.

Creating stronger linkages with regional and global ecosystems can help to foster entrepreneurs and in particular secure exits. With low levels of formal capital available in the domestic market seeking foreign investment is a good strategy for start-ups looking to exit. By developing those linkages and creating legal regimes friendly to these kinds of capital flows, this strategy can be encouraged creating fertile ground for exits.

6.3.3 Benefit

On the most basic level, fostering these kinds of success stories can be seen as a kind of proof of concept, showing the strength and potential of the Albania innovation ecosystem. It will be proof to investors that there is significant potential in the country, and to those considering becoming or supporting entrepreneurs that success is achievable as an Albania entrepreneur. Veteran entrepreneurs often become mentors, investors, teachers and founders of support networks. They also will often build on their successes recycling capital and expertise into new start-ups and becoming serial entrepreneurs. It will also be politically valuable, showing that the investments made into innovation in Albania, whether

infrastructure, support networks, education, promotion or anything else, have had a concrete impact and are worth continuing and expanding.

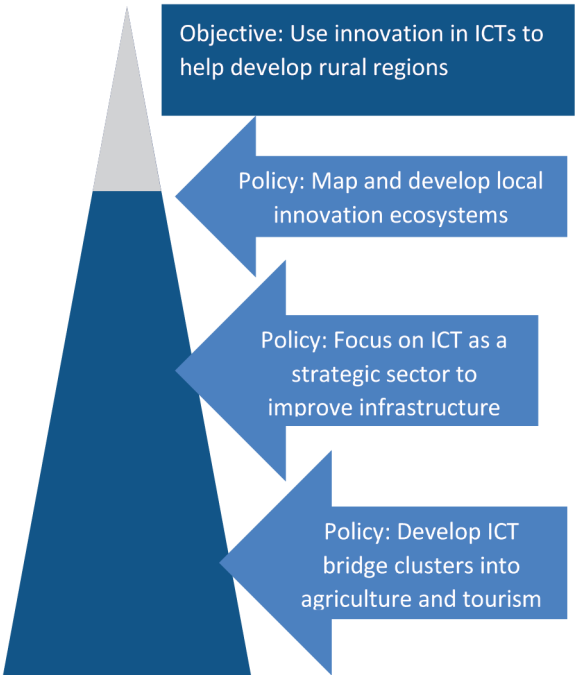
6.4. Rural Development

6.4.1 Background

Rural development has been highlighted by multiple groups, notably the EU in the IPA II and the ITU Measuring the Information Society Report[39] as a priority for Albania. Much of the progress which has been made, in terms of infrastructure, support networks and several other areas, has been unequally distributed. Rural areas are less connected and have less access to support networks and education. Most entrepreneurs are clustered in urban areas, especially Tirana, and serve primarily urban populations, largely as a consequence of the unequal distribution of resources. The benefits of their work, both in terms of economic development and utility for end users, is clustered in urban areas as well.

There are two mutually supportive components of this objective, supporting entrepreneurship ecosystems in rural areas, and encouraging entrepreneurship in sectors such as agriculture and tourism that would have a positive impact on rural areas in terms of innovation of activities and economic development.

Figure 28: Rural Development political objective and supporting policies



Source: ITU

6.4.2 Related Recommendations

Mapping of local ecosystems in rural areas would be a key first step in any kind of rural innovation development, as a diagnostic of current situations. Such mapping would serve as an initial effort to bring together the ecosystem and as a grassroots needs-analysis on a local level. Importantly, doing this kind of mapping in multiple rural communities in Albania would allow knowledge sharing among

[39] www.itu.int/en/ITU-D/Statistics/Documents/publications/misr2015/MISR2015-w5.pdf

stakeholders in different ecosystems, allowing them to expose synergies and resources, and share best practices.

One of the major issues of rural development is that of infrastructure, which is weaker outside of urban centres. The recognition of ICT as a strategic sector would be a major step toward encouraging the kind of investment required to build up rural infrastructure.

Connecting agricultural and tourist clusters with an ICT innovation 'bridge cluster' would bring technology and innovation to these areas that are central to rural economies. The modernization of these industries would be valuable for Albania overall, but particularly for rural areas. Additionally, it would create connections between rural businesses and urban innovators, academics and support networks that could be useful in terms of supplementing rural knowledge infrastructure.

6.4.3 Benefit

Fostering innovation ecosystems for 40-50 per cent of a country improves quality of life, economic development and provides significant opportunities to that population. Creating more equal access to resources and opportunities would help with issues of rural poverty, and would strengthen the critical sectors of agriculture and tourism for Albania.

Building up rural ecosystems would also be valuable in terms of building up a larger pool of potential innovators and of potential consumers for innovative products and services. A wider variety of actors would allow for greater experimentation and specialization among support networks as different programmes can develop along different lines. Coupled with best practice sharing this allows the national ecosystem to have access to a better array of potential concepts.

Finally, this would improve Albania's ranking and standing in international development analyses such as ITU connectivity studies and the EU accession process, and in ratings such as the Global Innovation Index of Global Entrepreneurship Monitor. Not only would this be a positive for the country on a political level, but it may also serve to strengthen the case that investors and international programmes should be interested in engaging with the ecosystems in Albania.

7. Recommendations

7.1. ICT as a strategic sector

A formal recognition of ICT as a strategic sector of the Albania economy would provide leverage and a basis for a range of policy activities and public services. A number of specific policy issues were reported by participants in the study. There were concerns that the different actors in public sector were not as coordinated as the ecosystem would like, and that strategies of different actors were at times moving in divergent directions. In terms of specific policies, there were concerns about taxation on ICT firms and start-ups, the role procurement plays in supporting the ecosystem, support for key actors and projects in the ecosystem, and the enforcement of intellectual property rights. Beyond specific policies, university education, infrastructure, and the financial sector were areas heavily influenced by policy and regulation that require a level of reform to fully support the ecosystem.

Broadly, this would bring in better coordination, both between ecosystem stakeholders and the public sector and between different public sector actors, more of this is discussed in the sections on Ecosystem Mapping and Collaborative Clusters.

Some of the specific policy shifts that could occur, in addition to facilitating the implementation of all of the recommendations below, would be:

- Taxes on start-ups and innovative businesses could be lessened by various means: All or part of a firm's taxes might be waived until it can demonstrate net profits year over year, or until it reaches a certain age or size.
- Research expenses could be counted as business expenses for tax purposes, reducing risk related to research.
- Reducing tariffs or excise taxes on hardware, software and manufacturing equipment related to ICT production might be considered.
- Ensuring appropriate levels and systems of public procurement, supporting innovation without distorting markets would be a focus of policy related to ICT as a strategic sector.
- Strengthening the enforcement of intellectual property rights would also be a focus.
- Hard communications infrastructure investment in rural areas could be increased to boost both the potential market and the capacity of ICT firms.
- Recognition of ICT as a strategic sector would allow the government overall to examine and strengthen policies on education and finance.

These are addressed to some degree below under section on internationalization and exits, improving the deal flow and collaborative human capacity building.

Policy Implication	Challenge	Recommendation
Enablement of ICT as a true strategic sector fostering growth, inclusion and jobs	ICT is not seen as strategic by stakeholders. Need transformational projects for private sectors. Tax burden of on ICT start-up ecosystem activities. Cost to import certain ICT related technology is high. Gaps in enforcement of IP laws.	Designate ICT as a strategic sector with specific benefits. Develop the right incentives and legislative support for acquiring technology, partnering with technology providers, etc. Ease burden felt by ICT start-up and entrepreneurs when they haven't reached profit yet. Accelerate and strengthen IP law enforcement by reinforcing institutions.

Good practice example: ICT sector in Israel	Over several decades, the Israel Government has set ICT leadership as a strategic goal for the economy. As a result of this focus, a number of specific policy actions have led to not only significant economic growth, but to global leadership in ICTs and ICT entrepreneurship.<?>

7.2. Ecosystem mapping

As noted, there are a number of efforts to map the innovation ecosystem in Albania. These efforts at mapping ideally should be leveraged to create a comprehensive map of the ecosystem, notably incorporating support networks, communities, start-ups and research institutions, among other actors. It may be based in part on the ecosystem review process as described in the ITU-D Innovation Policy Toolkit, or UNIDO Systems of Innovation Survey. Different mapping methodologies would have different specific uses, for example, the ecosystem reviews are focused on developing collaborative projects, and grassroots analysis, and the systems of innovation surveys are focused on giving a longitudinal mapping and economic measurement.

Whatever the format, this map would help to coordinate efforts to create new projects and activities, both by facilitating cooperation between existing actors and by highlighting gaps in the ecosystem where stakeholders can have a high impact. It would help potential entrepreneurs to locate resources to help them develop. In particular, it could serve as a way of drawing foreign resources and investment, by displaying entrepreneurial success stories and efforts that reduce risk, and by demonstrating opportunities and needs in the ecosystem. It would also help bring in financing for support networks, competitions, events, and other projects from abroad and from established industry players by raising the profile of these events and showing their potential impact. This kind of effort is rooted in our theoretical framework that is based in large part on a national systems of innovation model.

There is a critical need to strengthen linkages and collaboration between all stakeholders, understand priorities from the local ecosystems in various cities, engage in trust building, and map resources in terms of projects and programmes. To ensure good matching and policy coherence, mapping of local needs throughout the country is a key step to take in parallel with this. Having a common understanding of the needs and resources will help direct resources to the good practice grassroots programmes and engage the ecosystem in a process of development and transformation. To achieve these goals, a comprehensive mapping and measuring of the ICT sectorial system of innovation is needed. Following this, ecosystem gatherings, following the model of Innovation Week and other good practices should be encouraged in order to best develop networks and communities that can exploit these opportunities, especially on a local level.

Mapping exercises are also needed on a local level. This is because the best mapped and best developed ecosystems exist in Tirana and other urban centres. To better develop ecosystems throughout the country and lessen innovation divides, mapping and strengthening of local ecosystems is needed. This will help with rural development and in the connection of the ICT sector and cluster to the tourist and agricultural sectors.

Policy Implication	Challenge	Recommendation
Strengthen key stakeholders ability to connect to resources, to engage in collaborative transformation, and creates services for needs across the country.	Inability to find the resources needed to inspire, to innovate, and to scale. Inability to develop demand driven relevant projects to Albania context or market. Need synergies in experience sharing at national and global level. Need trust building activities between all stakeholders. Mismatch in demand of high impact projects and supply between actors especially public and private. Need cohesive vision supporting the entire ecosystem.	Conduct ecosystem review/mapping for major metropolitan areas, including creating relevant local initiatives and projects. Develop a local Knowledge sharing platform for all communities. Participate in global knowledge sharing platforms linking to global ecosystems and knowledge. Develop support network for government stakeholders, including local administrations, and ecosystem for bridging know-how and resources. Develop and communicate a cohesive vision at national level with supporting regional linkages and strategies.

Good practice example: Protik Ecosystem Mapping	As part of the process of launching, Protik developed a map of key actors in the innovation ecosystem. This included those who would be considered as competitors or colleagues, and those who would be involved in other activities. This was developed in house as a means of identifying key partners and resources, but would be a good baseline for the kind of mapping recommended above.
Good practice example: South Africa Network Mapping by ANDE	The ANDE map of South Africa Innovation Ecosystem identifies key actors, notably investors, but also consultants, academic institutions, media outlets, and foundations. It lays them out based on the kind of support provided and the stage of start-up they work with. It would be a valuable resource to a start-up or other potential entrant into the ecosystem, such as a support network or investor.<?>

7.3. Collaborative human capacity building

Many respondents reported that human capacity in Albania is not sufficient to meet the demands of the ICT centric innovation ecosystem. Currently, many IT graduates are emerging from the university system without the practical skills needed in order to support innovative industries. Similarly, students are not emerging from universities with the soft business skills needed to survive and thrive as entrepreneurs. Often graduates require months of training or retraining in order to effectively join the workforce.

Already, a number of actors are developing best practices to strengthen human capacity in Albania. A number of major multinationals, including Microsoft, Oracle and Cisco, are running training and certification programmes in the country, through universities, training centres and private companies. Several companies have also started to develop training efforts that supplement the skills provided by universities to meet their needs. Similarly, there are efforts by universities to provide additional hands on experiences for students, especially in IT. This includes internships with private sector firms, and programmes such as the UET IT lab, where students are brought through the whole IT development process, working on real world projects under the guidance of professors.

The ministry of education and public universities should develop these efforts into a framework for collaborative human capacity building. To achieve this, educational priorities, internal and national policies on curriculum development may need to be revised and overarching programmes may need to be developed. The goal should be to incorporate more activities such as university lab programmes, private certification and training, and private sector experiences such as internships into IT curricula in order to strengthen the skills of graduates. These kinds of training programmes can also dovetail over a medium term into R&D efforts where research topics by IT departments, graduate theses

and classroom projects can be defined in collaboration with the private sector and others, such as municipal governments. This ensures more relevant work and research experience to students and researchers, and allows the private sector a means to take into the knowledge bases of Albania Universities.

Policy Implication	Challenge	Recommendation
Reduce skills mismatch that exist between talented people coming out of formal educational and vocational schools to enable skills for the 21st century (fostering lifelong learning objectives).	Inability for talent to fulfil needs of business, especially in terms of soft skills. Need entrepreneurial skills curriculum throughout the educational system. IT skills not in line with latest technologies and tools. Need framework for cooperation between businesses and academia. Talent mobility seen as a negative issue by ecosystem.	Support systemic scaling of "good practice" coming from both public and private initiatives with specific framework and funding. Develop a policy framework and programme to support public and private partnership for collaboration around curriculum development and practical incentives for internship. Empower educators to experiment and adopt global resources.
Good practice example: UET IT Lab and private training	The UET IT Lab is an example of academic research working in partnership with end users to develop specific projects. The professors work in cooperation with the public and private sector to identify high value areas of research, and gather teams of students to work on them. This ensures that end users have access to university research and students leave the university with practical skills and experience. The private training programmes provided by multinationals, notably Cisco and Microsoft demonstrate the potential value of this kind of project in the ecosystem. Private companies and some university programmes work with these programmes to provide both skill training and certification in essential areas, building up the value of their staff or graduates.	
Good practice example: UPTEC Portugal	UPTEC is a Science and Technology Park attached to the University of Porto, Portugal. It is a centre for innovative firms in Portugal and provides them with incubation, and infrastructure, as with a standard tech park, but also a connection with the university. Through this connection, firms can work with researchers and students to support their innovation activity. The students not only gain access to practical experience, but also the exposure to start-up skills that they can use later on. http://uptec.up.pt/en	

7.4. Improving the deal flow

There are two simultaneous and interdependent issues confronting the innovation ecosystem in Albania. First, there is a lack of capital and other resources to support start-ups, a critical issue pointed out by a number of the stakeholders interviewed. Second, there is a limited pool of successful entrepreneurs to be supported by support networks and investment. The lack of investment prevents a critical mass of entrepreneurs from developing and the lack of critical mass means that support networks are unwilling to enter the market or cannot secure a sufficient return on investment.

One of the critical weaknesses in the ecosystem is the lack of capital, and, to a lesser extent, other support systems. At present, investment is seen as a high risk proposition, without a proven value proposition or proven track record of success in ICT innovation. Moreover, many support networks such as co-working spaces, incubators and so on felt that there was not a critical mass of serious, highly qualified start-ups in order for their work to become financially self-sufficient.

Entrepreneurs entering the ecosystem face challenges getting sufficient support in terms of skill training, inspiration, investment, and soft infrastructure such as accelerators and co-working spaces. Many start-ups which might have high potential value in the ecosystem fail to thrive because they lack

this key support. This leads, in turn, to the lack of critical mass described above and a lack of highly visible success stories which might otherwise inspire larger numbers of entrepreneurs.

Several stakeholders expressed interest in developing various financing streams and there are a number of support networks in operation at the moment. These efforts should be sought out and supported by the government or international funding such as the EU in order to keep them viable prior to the development of a critical mass of entrepreneurs. In addition to direct support, this work can be facilitated by introducing legislative and regulatory frameworks, ensuring that financial risk is mitigated and taxation is kept appropriate. Their work can also be strengthened through awareness campaigns, including the mapping activity noted above, and the work of AIDA and similar groups to promote Albanian investment abroad. Further support of investment in particular is detailed in Internationalization and Exits.

At the same time, direct efforts to bring in more young entrepreneurs are needed in order to accelerate the development of the critical mass of start-ups needed to achieve organic growth. There are several projects in place to move this process forward. High school and university education programmes are in place to promote entrepreneurship, but need to be strengthened, and need to emphasize skill training along with inspiration. Programmes like Garazh and Startup Grind which gather communities of potential innovators may be strengthened either through direct government supports or through awareness raising, such as mapping efforts or connections to other projects. Notably, efforts to strengthen the business and technical skills of potential entrepreneurs are needed, as the need is not just for a critical mass of interested people, but for them to be qualified as well.

Neither one of these issues can be fixed in the long term without the other being resolved, but efforts can be made to boost entrepreneurship and build up support networks. Ideally, if there is a robust system of support and investment, and a critical mass of entrepreneurs to make their work business viable, the synergies between the two, which currently hold both back, will lead to organic expansion and development. In the short run, both sides must be built up externally in hopes of reaching this critical mass.

Policy Implication	Challenge	Recommendation
Creating critical mass in the innovation ecosystem funnel to create measurable impact.	Need inspired and prepared young entrepreneurs. Need visible success stories.	Develop programmes inspiring students to be involved with technology and entrepreneurship. Communication campaign for sharing of success stories.
Development of entrepreneurial support to foster innovation in Albania.	Limited capital available, especially at early phases. Limited use of EU institutional instrument. No access to fund for replicating success stories or sharing them. Lack risk sharing issue in early life of projects.	Strengthen and expand existing support and investment efforts. Build capacity to access EU and other international funding. Develop a seed fund to support early phase innovations. Develop financial systems to help scale success stories and bridge between various missing funds.
Good practice example: AlbTelecom	AlbTelecom in one of a number of Albanian companies noted for reinvesting in the innovation ecosystem. They have supported a number of innovative projects in the ICT sector. This kind of work is needed, as established firms can serve as key sources of financing in ecosystems.	

Good practice example: ICT Awards, Garazh, Startup Grind	The ICT Awards, Startup Grind, and Garazh have taken different approaches to boosting interest in innovation in Albania, particularly young people. ICT Awards recognize outstanding potential actors and by supporting them, give an initial target for potential innovators to reach. Garazh and Startup Grind create accessible communities where people with an interest in innovation can locate key resources and support and can become inspired to found start-ups.
Good practice example: Infocomm Investments, Singapore	Infocomm Investments is an accelerator run by the government of Singapore specifically designed to support both start-ups and investors, and connect them. It supports the start-ups with resources and inspires potential entrepreneurs and innovators and provides investors with an artificial critical mass of potential start-ups to invest in.[<?>]

7.5. Internationalization and exits

Albania, as a small country, lacks sufficient markets to support a large number of innovative start-ups, especially in terms of those that develop into high growth SMEs or exit to an IPO or buy out. However, the country's strategic position in the Balkan region and more broadly in Europe can help to mitigate this as a barrier to entrepreneurship. Moreover, the country has a large diaspora population, representing significant knowledge and monetary resources that can be brought to bear in the country.

Several stakeholders spoke of a growth trajectory beginning domestically and expanding regionally and throughout Europe as being a common best practice for Albanian entrepreneurs. The Albania market, though small, can provide a space for proof of concept and initial launch, and the geographic, political and economic location facilitates international expansion. Policies and programmes encouraging open trade and common legal frameworks have helped to facilitate this, and can and should be expanded. This legal framework should be coupled with active trade promotion to better foster international expansion of business.

As start-ups grow into high growth SMEs or other more established firms, international resources become key in ensuring that they can successfully exit, either through international buyouts or through IPOs and other forms of equity investment. Promoting access to international financial markets by domestic businesses can allow developed financial sectors in, for example, the United Kingdom and Germany, to be viable targets. On a more moderate scale, several promising start-ups we spoke with had received significant support and investment the ABC Accelerator in Serbia and private sector firms in Italy. By encouraging regional linkages like these, innovators in Albania can tap into larger support networks than those available domestically.

In terms of international connections, one of Albania's greatest strengths may be its diaspora community. Several million Albanians live in countries around the world. They are broadly well educated and experienced in their professions, representing a significant pool of wealth and knowledge for the country. Programmes which can tap into this community, through investment, peer to peer learning and networking with Albanians living abroad, for example in the United States (Kosmo & Nedelkoska, 2015), should be developed.

Policy Implication	Challenge	Recommendation
Internationalization as a strategy for growth.	Small domestic market. Strong regional economic geographic and political linkages. International expansion identified as a best practice.	Develop legal frameworks to foster trade. Create connected legal and institutional frameworks to ease international business. Strengthen trade promotion activities as a path to promote innovative start-ups.

Policy Implication	Challenge	Recommendation
Access to international support and exit opportunities for Albanian entrepreneurs.	Need domestic investment and support systems. Limits to domestic expansion from population and economic development. Need for international best practices.	Encourage SMEs to seek support and investment from international leaders. Foster relationships between programmes in Albania and others in Europe, especially in the Balkans. Develop legal frameworks to ease international capital flows to start-ups in Albania.
Tap into the resources of the network of Albanians living abroad.	Brain drain diminishes Albanian human capital. Many successful Albanians move abroad. International remittances are falling in recent years. Diaspora communities are a relatively untapped knowledge and financial resource.	Success stories from the diaspora networks can be used to inspire and mentor domestic entrepreneurs. Diaspora communities can bring skills back to domestic innovators through online training. Investment can be channelled from the diaspora community in a structured fashion via crowdfunding or other means.

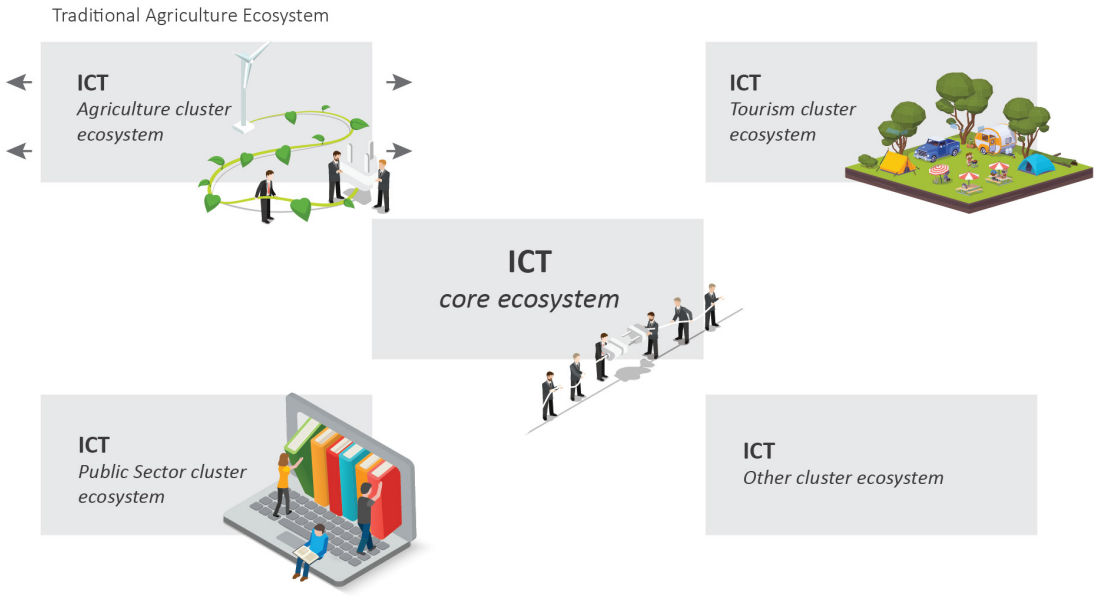
Good practice example: Tekes, Finland	Tekes, the Finnish funding agency for innovation plays a key role in connecting start-ups, SMEs and established firms in Finland with international markets and sources of funding, both domestic and international. It works with the firms to develop their businesses, provide international exposure, and connect with global resources, both in direct funding and in R&D capacity and other areas of support. https://www.tekes.fi/en/
Good practice example: Global Irish, Ireland	The Irish Department of Foreign Affairs runs the Global Irish programme to connect the diaspora network with the Irish innovation ecosystem. This includes helping start-ups seek Irish investment, helping diaspora start-ups seek resources and repatriate, and helping members of the diaspora to return and found businesses in Ireland. This is part of a broader set of resources for the diaspora, keeping them connected to the culture and current events in Ireland, building a diaspora network and leading to return and connection. https://www.dfa.ie/global-irish/

7.6. Collaborative clusters

Albania today is lacking relevant ICT led clusters that are focussing on unlocking high value growth for various sectors from agriculture to tourism, garment manufacturing, and others. Each specific sector already represents an industry loosely connected to the ICT ecosystem. There is an opportunity to bring these ecosystems together so that innovators in Albania can start finding solutions addressing the needs of these verticals, and developing innovation in Albania with competitive global aim.

Tremendous growth and job creation can result from building clusters, but their design and function needs to be organic. Various clusters in other countries struggled with sustainability when they were not built organically. The recommendation is to take a facilitative approach to cluster development by bridging gaps between existing ICT ecosystem stakeholders and sectoral ecosystems.

Figure 29: Collaboration between clusters



Source: ITU

Creating a cluster, can help to better align policy with stakeholder needs, create space for collaboration in the ecosystem, and provide stronger proposals for outside funding streams. The cluster can connect existing applied research in the vertical to ICT ecosystems, or work with actors in the vertical to solve key problems through ICT applications. The cluster can also work with the public sector to help develop grassroots programmes and policy proposals which will help the sector to develop and innovate and allow the public sector to create more effective legislation regarding the area. Finally, these clusters can be linked to similar bodies internationally, sharing best practices and fostering growth markets for innovations in Albania.

Policy Implication	Challenge	Recommendation
Development of ICT clusters to foster digital dividends (growth, jobs and new services) to reach society inclusively.	Need productivity in many sectors. Need business sophistication in sectors. Existing binding constraint with geography or history (land, market, reform, demand). Silos in ecosystems in various sectors. Need information and knowledge for other sectors (e.g. tourism, agriculture).	Develop a bridging ICT bridge cluster(s), with appropriate new funding and the aim to connect and retool various sectors ecosystem, to find and promote solutions with ICT. Develop new mechanism for finding information, sharing, connecting, and enable Albanian sectors to compete globally. Access funds and resources already in various sectors to promote ICT start-up, SMEs.
Good practice example: Corrallia, Greece	Corallia is an initiative in Greece to foster clusters in ICT. It incorporates clusters in gaming, microelectronics and space technologies. By bringing together key actors in these sectors in campuses around the country, it allows ICT resources to be shared and integrated more efficiently, and the campuses provide resources, networking and community to the firms housed in them. http://www.corallia.org/en/	

Good practice example: AgroIT, Hungary	The AgroIT is a bridging cluster similar to those recommended above. In addition to traditional cluster benefits of increased synergies and networks, it connects ICT firms with agribusinesses in order to develop innovative ICT solutions in the field of agriculture. http://agroit.hu/en/

7.7. Implementation framework

One of the most critical challenges in unlocking innovation potential is that the Albania ecosystem is struggling with developing trust between various agents, a lack of collaborative networks, and the lack of specific targeted policies to bridge these gaps in the ecosystems. Lack of coordination was consistently highlighted as an issue by respondents. They wanted to see improved collaboration between stakeholder groups in terms of innovation activities, especially between the public sector and other stakeholders. They felt left out of the process of creating strategy and policy, and public sector actors felt that they did not receive sufficient support and engagement from other stakeholders. Both groups felt that this led to policy mismatches.

One major step toward improved collaboration is the creation of, and engagement with, a working group of ecosystem stakeholders by the government during the process of drafting this study. Building on this process, the working group and other stakeholders should be brought in regularly to discuss policy issues and strategies with appropriate ministries, possibly in a round table format. Going one step further, the recommendation is to institutionalize an organization based on the working group that will have the objective of carrying forward the recommendations in this report, and being composed of ecosystem stakeholders, it will have a vested interest in the success of the resultant programmes.

Previous works by OECD (OECD and World Bank, 2014) and the Global Innovation Index (Cornell University, INSEAD, and WIPO, 2015) suggest that such institutions play a critical role in success of an innovation system. In Chile, Finland, and Israel, policy experimentation has been at the core of entrepreneurial success. This experimentation has been driven by grassroots ecosystem stakeholders, through key bridging institutions such as Foundation Chile, SITRA (Finnish technology fund for Research and Development), and OCS (Office of the Chief Scientist) in Israel.

Such an institution will need to represent a transparent public private collaboration, empowered to drive the ICT centric innovation agenda forward. The main aim of such institutions, whether a non-governmental organization or other, is to act as a bridge to help navigate, find challenges, resolve issues, create fluidity and the vibrancy needed for Albania.

The core principle of this institution should be to find the working systems, good practices in the ecosystem, to amplify them and to develop programmes, monitor and evaluate their success, connect silos, learn from other countries and ecosystems. Albania stakeholders interviewed during the study expressed the following principles for success:

- user centric approach;
- private sector led innovation;
- efficient resources utilization (e.g. find and invest in working good practices, and not to create a massive institution);
- replicable every year with fast changing ICT context;
- common language between all stakeholders (e.g. common understanding);
- everyone should have skin in the game (e.g. engaged);
- sustainable and predictable (e.g. stability);
- light footprint.

A critical role would be the monitoring and evaluation based on key performance indicator build from the expected recommendation outcomes. Building transparency and share community accountability will help the institution whether environmental changes.

Policy Implication	Challenge	Recommendation
Development of public-private bridging institution.	Need synergies throughout the ecosystems. Challenge with traditional government silos. Multiple programmes can be more effective. Need information and knowledge between all actors.	Migrate the informal working group to an institutional framework. Secure funds for programmes to kick start the ecosystem activities identified in previous recommendation. Establish mechanism to learn and share from other practitioners of policy experimentation.

Glossary

Albania organizations and agencies

AIDA *Albanian Investment Development Agency*

AKCE *National Authority for Electronic Certification*

AKEP *Electronic and Postal Communication Authority*

AKKSHI *National Agency for Scientific Research and Innovation*

AKTI *Agency for Research, Technology and Innovation*

ASIG *State Authority for Geospatial Information*

INSTAT *Institute of Statistics*

MEDTE Ministry of Economic Development, Trade and Entrepreneurship

MIAP *Ministry of Innovation and Public Administration*

NAIS *National Agency for the Information Society*

PFM *Strategy Public Finance Management Strategy*

RASH *Academic Network of Albania*

Albania Businesses, Programmes and Stakeholders

ALMOOC: An Albanian service offering massively open online courses (MOOCs) in Albanian from global universities.

EasyPay: An online and mobile payment system developed for the Albanian market.

Garazh: A community of young entrepreneurs and technology students conducting monthly gatherings to provide resources, discuss, brainstorm and develop teams for innovative ICT projects.

iKub: An Albanian web development SME working on a variety projects including an information portal, B2B services, which runs iKub Academy, a training programme for young developers

Innovation Hub: A project by MIAP, along with partners to support inclusion and employment for young people through support for ICT entrepreneurship and innovative activities.

MyDream: A government run competition for young ICT entrepreneurs in Albania to apply for funding and additional supports to develop innovative ideas.

Open Labs: A non-profit, non-governmental hackerspace dedicated using a community driven approach to promote the use of free and open source software, and develop local open source solutions

Protik: An ICT resource centre in Tirana that targets all parties interested in the ICT industry, including supports and knowledge sharing for SMEs and start-ups.

Tetra Solutions: An Albanian ICT SME offering full service IT solutions including networking, infrastructure and operational systems, business advice, safety information and education.

UET IT *European University of Tirana Information Technology:* A development lab run by the university designed to connect students with practical projects as part of their education.

International Organizations, Programmes and Agencies

American Chamber of Commerce: A series of national and regional groups representing the interests of private sector actors, especially United States multinationals, around the world, through advocacy, services and networking.

BDT *Telecommunication Development Bureau:* The secretariat of the ITU-D.

Bologna Process: A European process designed to ensure comparability in the standards and quality of higher education qualifications among European educational systems.

EBRD *European Bank for Reconstruction and Development*

EC *European Commission*

EFESEIIS *Enabling the Flourishing and Evolution of Social Entrepreneurship for Innovative and Inclusive Societies*: A European project devoted to studying and expanding social entrepreneurship.

EU *European Union*

European Digital Agenda 2020: An initiative of the EU intended to improve the region's economy through accelerating development of high speed Internet and the benefits of the digital single market.

GEI *Global Entrepreneurship Index*: An annual report by the Global Entrepreneurship and Development Institute on the quality of entrepreneurship ecosystems at a national, regional and local level.

GII *Global Innovation Index*: An annual report analysing global innovation along 82 indicators in 7 pillars: Institutions, Human capital and research, Infrastructure, Market sophistication, Business sophistication, Knowledge and technology outputs, and Creative outputs.

Grameen: A Nobel Prize Winning institution which established the concept of micro-credit community lending.

HDI *Human Development Index*: A composite statistic by the UNDP of life expectancy, education, and income per capita indicators, used to rank countries into four tiers of human development.

IDI *ICT Development Index*: An annual ITU report detailing the development of ICTs in all Member States based on 11 indicators in the areas of use, access and skills.

IPA II *Instrument for Pre-accession Assistance II*: A series of programmes, guidelines and funding allocations intended to align Albania's governance with European standards and smooth its accession to the EU.

ITU *International Telecommunication Union*

ITU-D *ITU Development Sector*

OECD *Organization for Economic Cooperation and Development*

SAA *Stabilization Association Agreement*: An agreement between Albania and the EU committing Albania to certain economic and political goals, and providing assistance and EU market access.

Startup Grind: An international network of events to educate and mentor entrepreneurs through monthly business events and speaking series in cities across the globe, supported by Google.

Startup Live: A programme intended to connect local innovation ecosystems and entrepreneurs on an international level through multi-day workshops, pitching opportunities, and other support services.

Startup Weekend: A global series of multi-day events where teams develop, prototype and pitch new business ideas over the course of a weekend.

SDG *Sustainable Development Goals*: A series of 17 global goals with development targets defined by the UN, intended to be reached by 2030.

UN *United Nations*

UNCTAD *United Nations Conference on Trade and Development*

UNIDO *United Nations Industrial Development Organization*

UNDP *United Nations Development Programme*

USAID *United States Agency for International Development*

WEF *World Economic Forum*

World Bank

WTO *World Trade Organization*

Terms

Accelerator: A startup service working with a startup or entrepreneur for a fixed period of time and providing intensive mentorship and development services.

Angel Investment: Early stage investment intended to provide a one-time boost to initially launch and develop a startup. Often provided by entrepreneurs, friends or families and connected with mentorship.

B2B *Business to Business*: Services or products from private sector companies intended to be used by other private sector companies.

Collaborative Regulation: Regulation created by collaboration among all the various government agencies involved in overseeing the digital economy.

Crowdfunding: Financing a new venture, product or project by collecting small amounts of money from large numbers of investors, often in exchange for perks such as early access to the product.

E-Governance: The application of ICT to the delivery of government services, government communications and backend services and activities within the government.

Entrepreneurial Support: Programmes such as incubators, accelerators, labs, and other services which provide entrepreneurs with resources such as training, mentorship and business services.

Exit: A step in a business where the founder sells their investment in the company, often through sale or an IPO, limiting losses from a failing company or making profit from a successful on.

FDI *Foreign Direct Investment*: Investment in the form of a controlling ownership in a business enterprise in one country by an entity based in another country.

Fintech *Financial Technology*: The application of ICTs to make financial services more efficient.

GDP *Gross Domestic Product*: The monetary value of all the finished goods and services produced within a country's borders in a specific time period.

Hard Infrastructure: Physical infrastructure to support businesses such as mobile and fixed connectivity, power, water, roads, physical plants, equipment and other elements.

ICT *Information and Communication Technology*: An umbrella term covering wireless and wired communication, the hardware and software related to them and their applications.

ICT Centric Innovation Ecosystem: A description of an innovation ecosystem recognizing that ICTs are often at the center of innovation, and have a cross cutting role in many other sectors of the economy.

ICT4D *Information and Communication Technology for Development*: The use of ICTs for the purpose of economic and social development, humanitarian response or promotion of human rights.

Incubator: A startup service providing business services and trainings, early stage support and mentorship and often office space and communities for startups and entrepreneurs.

Innovation: The implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations.

Innovation Ecosystem: The major stakeholders and processes supporting innovation and the establishment of new businesses in a particular area, and their associations and connections.

Investment Rounds: A series of investments made in a business intended to develop a business, each round focuses on a different stage of development, developing business models, expanding and scaling.

ISID *Inclusive and Sustainable Industrial Development*: Development in which all parts of society benefit from industrial progress, which provides the means for tackling critical social and humanitarian needs.

IP/IPR *Intellectual Property/Intellectual Property Rights*: The rights of persons over their creations. They usually give the creator an exclusive right over the use of his/her creation for a certain period of time.

IPO *Initial Public Offering*: the first time that the stock of a private company is offered to the public. This often raises significant amounts of capital, but shifts the the company to a publicly traded firm.

MNC *Multinational Corporation*: A corporation which operates across national borders.

Peer-to-Peer Lending: The process by which individuals lend their own money to other individuals or businesses directly generally through a mediating entity.

PPP *Public Private Partnership*: A public sector project or business venture executed through a collaboration between a government entity and a private business.

Seed Funding: Small amounts of investment, often in the form of grants or angel investment, used to initially launch or develop a company.

SI *Systems of Innovation*: An understanding of innovation as a process representing the flow of information and collaboration between various actors.

SME *Small or medium enterprise*: A private firm which is beyond the stage of being a startup, but which is still young, with limited staffing and/or income. The exact definition in terms of upper and lower bounds on age and scale varies between institutions.

Soft Infrastructure: Programmes and resources in an innovation ecosystem which provide mentorship, skills, experience and other knowledge resources to support innovative businesses.

STI *Science Technology and Innovation*

User Centered Design: A design process focused on the experience of the end user, concentrating on empathy with users and use cases.

Venture Capital: High risk investment in an early stage business which have proven growth potential, intended to help the business develop and expand.

Valley of Death: The period early in the development of a business where the amount invested in developing the business outweighs its current revenue. Businesses need continuous investment and other supports and often fail during this time.

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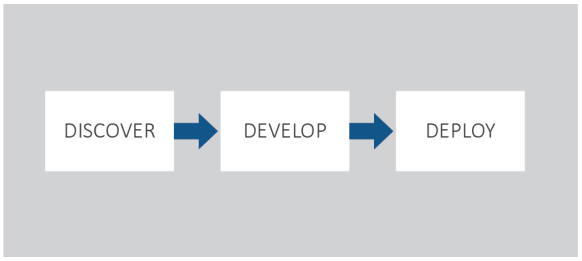
Appendix A: Systems of innovation primer

Another fallacy associated with the linear approach is that commercial research and development (R&D) is seen as applied science, and "basic scientific research does not always lead to the design of innovations". Figure A.1 below illustrates this type of innovation process within the economic space of industries and markets.

Figure A1: Linear model of innovation



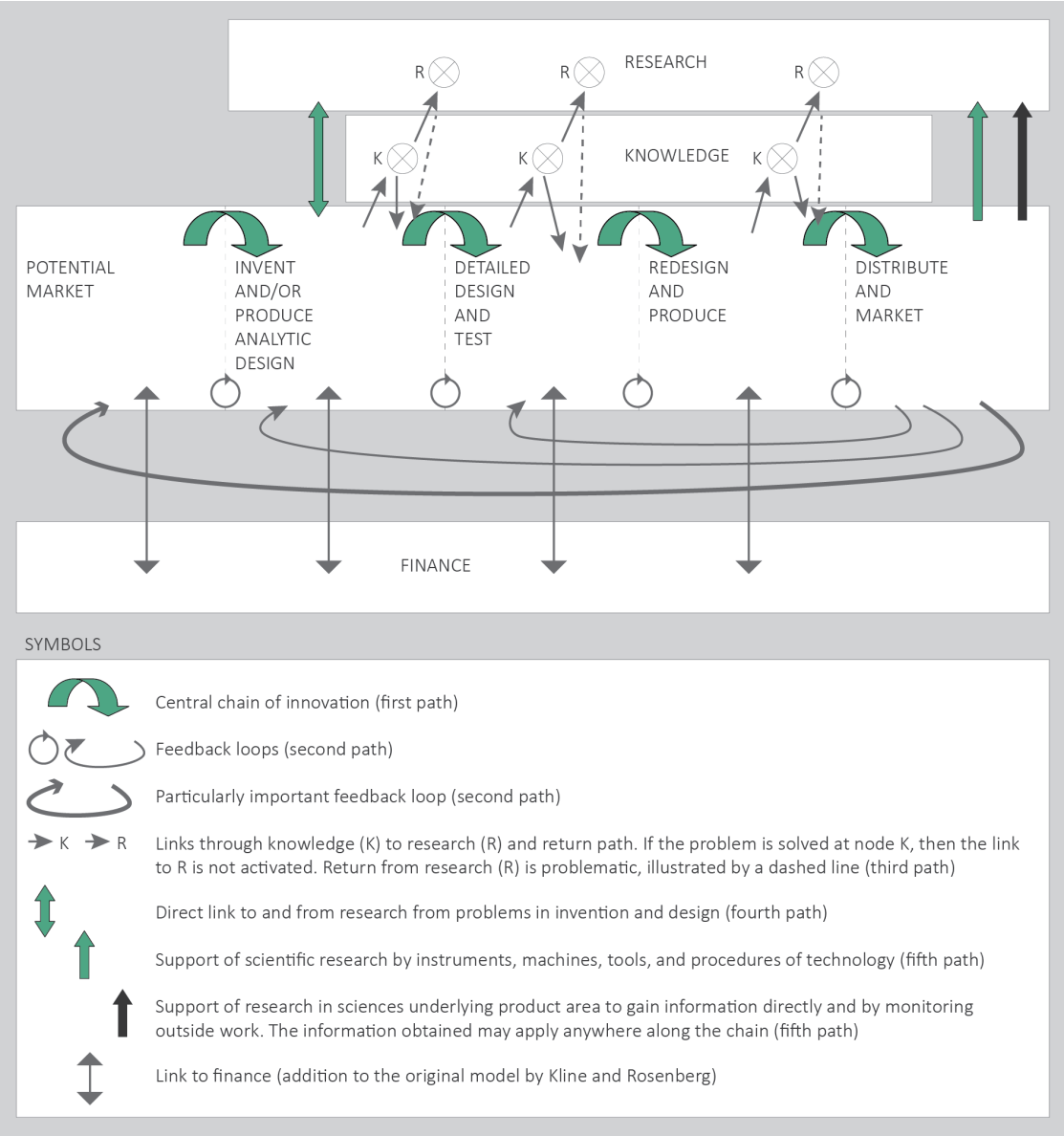
Source: Adapted from Padmore, Schuetze and Gibson, 1997

This view is arguably simplistic and unrealistic. However, its earlier legitimacy is due particularly to its consistency with neo-classical economic theories and 'market failure' explanations for the need for direct and indirect public support of industrial R&D (Arrow, 1962).

Lessons from the post Fordist era brought criticisms to the 'orthodox' linear model of innovation (Fisher, 1999) and lead to the evolution of a more 'heterodox' (Balzat, 2002) approach, with empirical evidence indicating firstly that there is no directionality associated with the innovation process (Nelson & Winter, 1982); and secondly that innovation may occur independently of scientific interaction (Mytelka and Farinelli, 2000). Rather different rates and intensities of feedback exist between upstream (technology related) and downstream (market related) phases of the innovation process (Fisher, 1999). Such considerations support an alternative iterative or 'chain linked' model of innovation characterized by a design initiated chain (motivated by competition) supported by multiple feedback loops, and supplemented by lateral transfer of ideas from one area of the chain to another (Padmore, Schuetze and Gibson, 1997). This conceptualization marks the beginnings of the theory and empirics of the systemic approach to innovation with a greater influence of demand side dynamics and policies (Edquist & Hommen, 1999).

Kline and Rosenberg (1986) earlier influenced the development of the chain linked model by visualising that "all the links in such a chain draw on the existing corpus of knowledge or could be used to create new knowledge through research" (Padmore, Schuetze and Gibson, 1997, pg.607). They advanced the model through an additional dimension indicating different depths of the level of innovation based inquiry i.e. shallow or deep.

Figure A2: Chain linked model



Source: Adapted from Padmore, Schuetze and Gibson, (1997)

The chain link model of innovation, by recognizing: the multidimensional nature of innovation; numerous feedback links among the stages of product development; as well as external sources of knowledge incident on innovation has been an important advancement in innovation theory.

Appendix B: Tirana manifesto

Multi-stakeholder Consultation within the Framework of the National Review on the ICT Centric Innovation Ecosystem
2 February 2016
Tirana, Albania
TIRANA MANIFESTO

Based on the discussion, the participants identified the following set of challenges and recommendations, which may serve as a base for planning and implementing future activities fostering national ICT centric innovation ecosystem in Albania. The set of challenges and recommendations developed by the community gathered at this meeting are all equally important and are non-binding and only for consideration and to be used as an input to the national review carried out under the ITU EUR Regional Initiative 5 adopted by the World Telecommunication Development Conference 2014.

Recognizing the critical role of ICTs across all sectors of the economy and the particular contribution of ICT centric innovation and entrepreneurship to socio-economic development, the following key challenges were articulated by the ICT ecosystem stakeholders present at the meeting:

Private sector

- Public sector being the major contractor in the country might extend the number of the opportunities to the private sector, including provision of funding for innovative projects;
- More incentives (e.g. taxes, funds) from the government for private sector are necessary in order to unlock new opportunities driven by the private sector and the fostering ICT centric innovation ecosystem;
- Academic programmes need adjustment in order to address the real needs of the private sector, as currently there is a significant lack of skilled human resources on the market and the skill set of fresh graduates does not meet expectations of the private sector;
- There is lack of mentors in ICT, innovation, entrepreneurship etc.;
- Awareness raising among wealthy Albanians and a simplified finance process may unlock sources of seed funding and venture capital within the country;
- There is lack of structured written information regarding the ICT sector and ecosystem.
- Academia
- Lack of platform for interaction between academia, finance and the private sector aiming at unlocking new opportunities and funding streams for applied research;
- There is a need for more funds targeting ICT centric innovation. Currently, opportunities for innovative research come solely from the public sector;
- Universities need access to the international research networks in order to facilitate transfer of knowledge and create new opportunities for cross-border collaborative research projects;
- Need for strengthening of ICT component in the education system, revising curricula, with the aim of making sure that the youth may use ICTs efficiently and effectively while pursuing studies or making research.

Support Network and Financial Sector

- There is a need for incentives from the government in supporting entrepreneurship, incubation processes, and accelerators. This may include a mix of tax breaks, co-funding and collaboration with incubation and acceleration groups;
- The government should support incubators and accelerators and facilitate the recruitment of entrepreneurs for those programmes, leading to an increased quality of entrepreneurs in those programmes;
- The government should support entrepreneurship skills training in secondary and tertiary education;
- More support from the government is required to attract venture capital, angel investors, and donors;
- Greater support is needed to encourage both the global access of Albanian entrepreneurs, and foreign investment in Albania's innovation ecosystem;
- Structured engagement with the diaspora community can lead to benefits across the innovation ecosystem, drawing investment and seed funding, skills, networking, and opportunities for international collaboration;

- Support networks play a key role in ensuring that entrepreneurs compete globally and reside locally, retaining skills and innovation in the Albania ecosystem;
- Improvement of transparency in government interactions with the private sector, including taxation, incentives and other areas is necessary.
- Public Sector
- Greater engagement with and from the stakeholders, in terms of meetings and conversation, is needed in order to build the ICT centric community. Existing projects should be better exploited to create this engagement;
- A platform for systematic collaboration between the government and other stakeholders involved in the ICT centric innovation and entrepreneurship ecosystem is necessary in order to better support user driven innovation, collaborative development and co-creation at the national, regional and global level;
- Awareness and visibility must be increased for the private sector on ICT for programmes and policies (transparency and confidence in use of ICTs);
- Funds must be raised for ICT innovation, e.g. projects, programmes, etc.
- Financial incentives are needed (e.g. taxes) in order to foster ICT centric innovation
- Raising awareness of intellectual property rights protection is a component of innovation processes;

Lack of human capacity corresponding to the needs of the market requires adaptation of the curricula and skills trainings;

- The digital literacy of citizens to and their confidence and competence in the use of ICTs and digital services should be improved, notably in terms of e-services offered by the public sector.

Appendix C: Institutions surveyed

ADISA/ISDA	BKT Bank	Marlin Barletti University	Science Academy
AIDA	Easypay	MIAP	Startupgrind.al
AITA	European University of Tirana	Microsoft	Start-up live
AKCE	findit.al	NAIS	Talent Garden
AKEP	Garazh	Network of Albanian Academics	Telekom Albania
AKTI	General Directorate of Patents and Marks	Open labs	Tetra solutions
ALBtelecom	Geospatial information office	OSFA SOROS	University of Polis
ALCIRT	ICTS Media	PLUS Communication	University of New York Tirana
American Chamber of Commerce	ikub.info	PROTIK	Science Academy
ASIG	INSTAT	Raiffeissen	Startupgrind.al
Bank of Albania	Intesa San Paolo bank	RASH	

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