



INSTITUTE FOR INTEGRATED TRANSITIONS

The Entrepreneurship Ecosystem in Uzbekistan



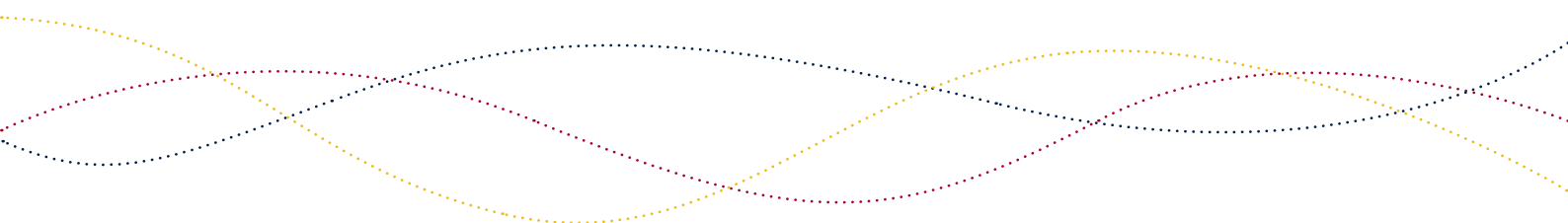
Assessment and Strengthening Plan

ADRIAN MAGENDZO

NOVEMBER 2022

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Executive Summary

Entrepreneurship can be a powerful driver for sustainable and inclusive economic development. It can make a substantial contribution to overcoming the financial and economic difficulties countries in transition face by moving them onto an innovative development path, diversifying the economy, broadening market relations and introducing greater competition. Technological innovation, and the entrepreneurial ability to transform new ideas into business opportunities, generate the higher productivity gains needed for long-term economic growth. This IFIT report, prepared in cooperation with the Uzbekistan Brain Trust – and drawing on desk research and in-depth interviews with various business, education and public sector actors – looks at Uzbekistan’s potential to build a solid entrepreneurial and innovation ecosystem that could strengthen and accelerate the country’s economic transition started in recent years.

Uzbekistan has historically had a commodity-based economy, and as such, its entrepreneurial ecosystem remains nascent. The success of entrepreneurship is seen as key to a wider process of economic diversification and development, and the 77% growth in the number of companies between 2016 and 2020 highlights promising increases in entrepreneurship. The country ranks eighth in the world in Ease of Starting a Business (source: WIPO 2021 Global Innovation Index). Nevertheless, limitations in access to capital markets, legal and property rights protection and deficiencies in regulation and tax policies still constrain small business growth.

Uzbekistan has an ambitious science, technology and innovation (STI) policy; initiatives like the IT-Park are a strong base to build on. The government’s “Science, Technology and Innovation Plan for 2019-2021” helped to develop human capital in Uzbekistan and provided greater funding for research and development. The 2022-2026 Development Strategy, adopted following the re-election of President Shavkat Mirziyoyev, listed among its goals creating conditions for entrepreneurial activity and introducing innovations into the economy.

However, the fact remains that overall support is not strong enough, and there are many barriers to foreign investment and capital, especially due to weakness in the rule of law. Ultimately, this means that people in Uzbekistan typically resort to entrepreneurship out of economic necessity, rather than starting their own business due to economic opportunity. Understanding this difference is crucial for designing and implementing specific policies and support programmes. Opportunity-based companies create new markets with new products or services unknown before. They require support that goes beyond traditional companies and, if successful, they tend to have high growth and employment potential. In that regard, much of the impetus for the necessary reforms continues to lie in the hands of the government, both in providing direct support and creating a more attractive environment for business and investment.

The development of a solid entrepreneurial and innovation ecosystem requires a holistic approach ensuring that all its components are addressed concurrently because the ecosystem works at the pace of its weakest link, not its strongest one. A successful entrepreneurial ecosystem has three key components:

- **Inputs** – Refers to required resources such as human capital, intermediate organisations that support entrepreneurs, access to finance, and an adequate regulatory environment.
- **Ecosystem actors** – Includes all actors involved and interacting with the entrepreneur to add value, for example: financial institutions, incumbent companies, mentors, intermediate institutions, universities, other entrepreneurs, and the government.
- **Process** – Involves three recursive phases: 1) ideation – coming up with the opportunity, 2) incubation – discovering a viable and replicable business model, and 3) scaling – expanding the commercialisation process.

Based on the assessment of the current state of the entrepreneurial ecosystem in Uzbekistan, a set of recommendations is proposed for its strengthening. Several practical actions are further detailed in the report and marked for immediate implementation or longer term investment. They are structured into three pillars:

Pillar 1 – Entrepreneurial process

- **Improved R&D and ideation:** Greater support is needed for universities, where critical R&D research and ideation take place, in order to develop technologies with greater commercial viability. This could be achieved via a process of technology mapping to produce a standardised list of technologies and their commercial values, and the strengthening of R&D infrastructure via investment in 3-D printing or Fab Labs.
- **Technology transfer:** On the supply side, creating an Uzbek Technology Platform where technologies can be uploaded and made available for commercial use is recommended. On the demand side, start-ups should be made aware of this resource and encouraged to take advantage of these technologies.
- **Incubation:** More public sector support is needed for intermediate organisations such as business incubators and accelerators, angel investor networks and venture capital funds, technology transfer offices, and specialised government institutions which play a fundamental role in assisting entrepreneurs in the incubation process.
- **Scaling and internationalisation:** Due to the relatively small size of the Uzbek economy, access to international markets will be required to allow businesses to scale-up. A strong engagement of the Uzbek diaspora could support this process.

Pillar 2 – Inputs of the entrepreneurial ecosystem

- **Better funding:** Organising and coordinating an Angel Investment Network which will invest in early-stage technology start-ups is recommended. This should include training the investors and recruiting a network manager to assist with the coordination and initial operation of the network.

- **Development of human capital:** Training for intermediate organisations and entrepreneurs and early-stage investors is important. This should include training not only for business incubator and accelerator managers, technology transfer experts, angel investors, and venture capital managers, but also as part of incubators or accelerators or in universities.
- **Government support instruments:** A focus on solving market failures and providing incentives is recommended, but without taking the place of the private sector. Instruments should include matched funding for some angel investors, loans for new incubators and accelerators, and a government policy framework on entrepreneurial ecosystem development.

Pillar 3 – Enhancement of the ecosystem environment

- **Interaction activities:** Regular interactions between entrepreneurs, investors, government officials, and inventors and innovators should be encouraged in order to promote knowledge transfer and the sharing of ideas and experiences.
- **Knowledge generation:** Enhanced support is needed for knowledge-generating organisations like think tanks, research centres and institutes and universities. This could be achieved via links to international universities or global think tanks and foundations.
- **Education, training and skill development:** Training centres and universities should receive earmarked support for specialised courses which advance innovation and entrepreneurship.
- **Entrepreneurial culture:** Entrepreneurship and innovation can be promoted via the launch of a national innovation award and the showcasing of successful entrepreneurs on television and in social media.
- **Institutional design:** It will be important to have a plan which enables spaces for interaction and engagement between the private and public sector. The creation of a public-private steering committee could help by enhancing trust and allowing for greater idea exchange and policy co-design.

These recommendations draw a clear path for innovation and entrepreneurship development in Uzbekistan. Combined with a strong commitment by the country's leadership, they could help Uzbekistan to become a regional leader in innovation and entrepreneurship and equip the country with more resilience to face the plethora of challenges in the current global and regional environment.

As with many other emerging economies, Uzbekistan has been actively developing policy and programmes to foster innovation and entrepreneurship to create new jobs and prosperity. These efforts, combined with its growing regional status, present a great opportunity to become a regional hub for innovation and entrepreneurial activity and prepare a new generation of young entrepreneurs to confront the challenges ahead.

1. Introduction

As [earlier IFIT work](#) suggests, there is a great deal of evidence on the broad socioeconomic benefits of robust entrepreneurial ecosystems. They boost productivity, growth, and employment; drive economic development; and increase political stability. Inclusive growth follows the launch of opportunity-driven entrepreneurial firms whose multiplier effects stimulate broad-based economic dynamism, helping the wider set of small, household enterprises increase their gains in the process.

Creating a favourable environment for entrepreneurship to flourish is challenging in any country, but it is particularly difficult for economies transitioning from strongly centralised systems, like the post-Soviet countries. This report looks at Uzbekistan and its entrepreneurial ecosystem and intends to provide constructive recommendations for its strengthening. It was prepared in cooperation with and through the [Uzbekistan Brain Trust](#): a group of Uzbek thought leaders aiming to contribute to Uzbekistan's successful transition towards a prosperous, just, and inclusive society, building on the country's distinctive development model.

Uzbekistan is a Central Asian country with a population of 34 million and economic activity strongly concentrated in its capital and largest city Tashkent (2.2 million people). Since 1991, Uzbekistan and various other Central Asian republics have been transitioning from a Soviet state-controlled economy to a market economy. The transition process has been relatively cautious, but has shown some important achievements, multiplying economic activity from under 10 billion USD in 2001 to over 60 billion USD today, with a current GDP per capita of \$1,724 USD.

However, despite strong economic growth in the last two decades, Uzbekistan ranks 91st in the Economic Complexity Index (ECI), indicating a commodity-based economy. Gold, petroleum, copper, and cotton represent over 65% of exports,¹ primarily to a handful of countries, which include Switzerland, the United Kingdom, Russia, and China. The state still controls key sectors of the economy, including significant parts of the agricultural, manufacturing, energy, and finance sectors. As a result, international investors and local private businesses are largely relegated to non-strategic industries like tourism.² This tends to concentrate economic activity and discourage new entrants with innovative products, services, or business models.

In the past five years, there has been an increased focus on entrepreneurs and entrepreneurship as key tools for economic development in Uzbekistan. Building on these efforts, more ambitious policies and initiatives could be put in place to amplify innovation and opportunity-based entrepreneurship in the country. This report proposes a series of achievable recommendations, taking account of the current entrepreneurial ecosystem in Uzbekistan and complementing it with international evidence and lessons from other transition economies. The report draws on desk research and extensive interviews with key actors within the Uzbek entrepreneurial ecosystem, along with contributions from the Uzbekistan Brain Trust.

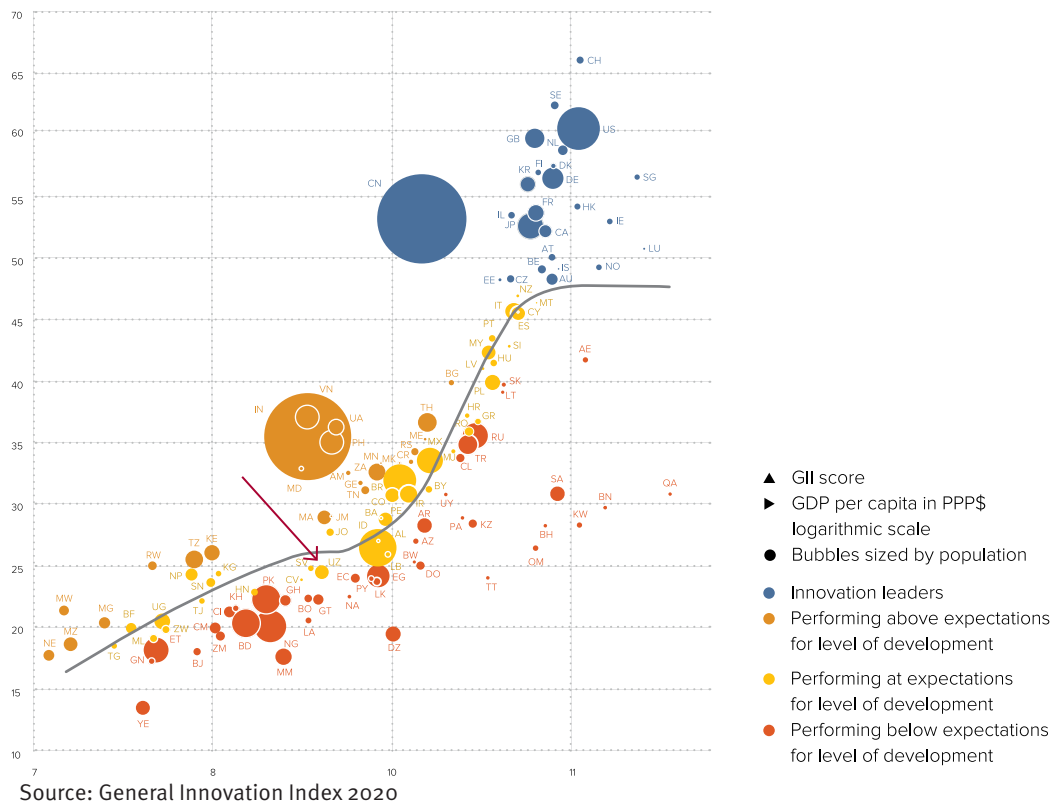
The first part of the report explains the importance of a solid entrepreneurship and innovation ecosystem for a country’s economic growth, outlining its key building blocks. The subsequent sections examine the state of the entrepreneurial ecosystem in Uzbekistan, including the SME environment and government policies. The final section offers recommendations grouped into three main pillars that, if implemented, could lead to a stronger environment for entrepreneurship and for Uzbekistan to become a regional leader in innovation.

2. Entrepreneurial and Innovation Ecosystems

2.1 Entrepreneurship and innovation – the drivers of a country’s economic growth

Growth economists and economic historians agree on the importance of technological innovation for long-term economic growth and productivity gains, as well as its correlation with creating new jobs and sustainable income levels. The World Intellectual Property Organisation (WIPO) annually ranks 133 nations in innovation intensity using a General Innovation Index (GII) through a combination of a series of innovation variables such as research and development (R&D) expenditure, market sophistication, intellectual property (IP) protection, and human capital, among other parameters. Evidently, innovation can play a key role in advancing a country’s development as demonstrated in the graph below showing a strong correlation ($R^2=0.68$) between the GII and the GDP per capita for 133 countries.

FIGURE 1: THE POSITIVE RELATIONSHIP BETWEEN INNOVATION AND DEVELOPMENT



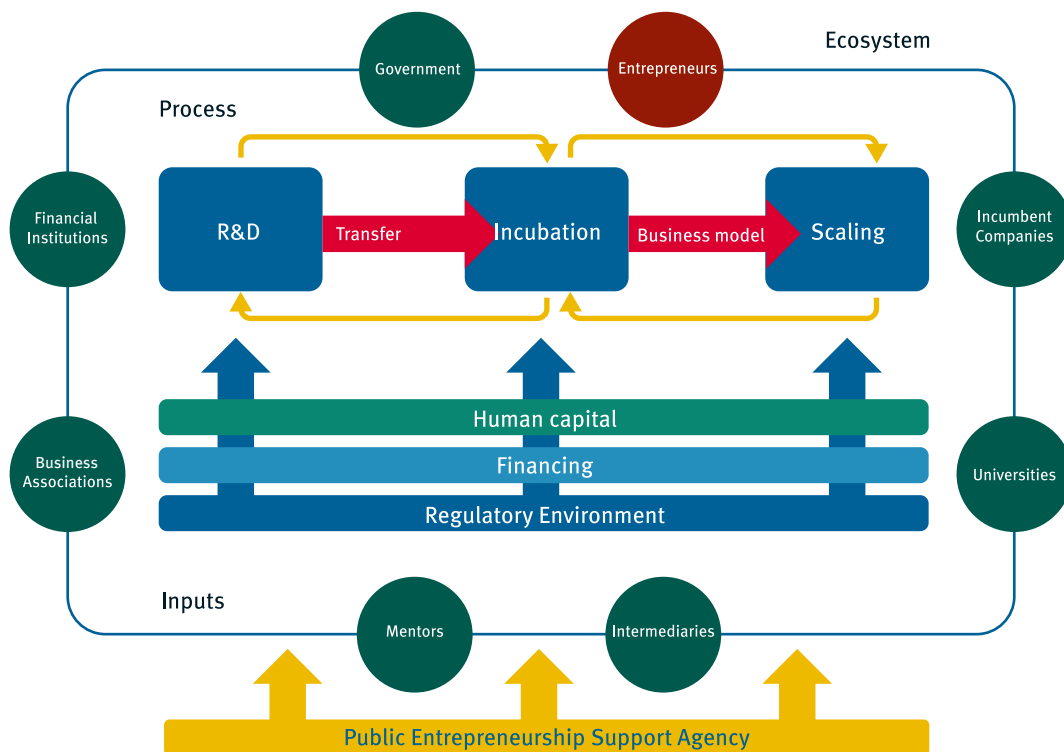
Outlier countries, such as wealthy oil producers in the Middle East that tend to have low GII indexes with high GDP because their economies are based on oil exports, have in recent years implemented robust innovation programmes to offset the fact that the world is transitioning to a carbon-free emission economy.

Innovation means “executing new ideas to create wealth,”³ however new ideas only provide value if they are organised and acted upon. Entrepreneurs grasp the opportunities derived from innovation and create a vehicle for execution to propel innovation forward using their skills and vision. Any growth is important for economic development, but entrepreneurship promotes unique kinds of growth. The Kauffman Foundation, a leading entrepreneurial foundation in the US,⁴ has determined that while older and larger firms are the primary source of employment, 95% of new jobs are created by young, high-growth technology-based businesses.⁵ The same phenomenon can be seen in terms of productivity gains, where research has indicated that high growth technology-based firms make disproportionate contributions to increases in output and productivity.⁵

For entrepreneurs to make their ideas reality, it is essential that societies support their needs by building strong and diverse entrepreneurial ecosystems. Doing so not only brings economic benefits, but also can encourage trust and empathy, compliance with the rule of law, and dialogue (rather than conflict) to solve problems.

2.2 Entrepreneurial ecosystem – the conceptual model

FIGURE 2: ENTREPRENEURIAL ECOSYSTEM



An entrepreneurial ecosystem is a space where relevant actors interact to create value for entrepreneurial initiatives. An ecosystem is composed of three parts:

- **Inputs** – Refers to required resources such as human capital, intermediate organisations that support entrepreneurs, access to finance, and an adequate regulatory environment.
- **Ecosystem actors** – Includes all actors involved and interacting with the entrepreneur to add value, for example: financial institutions, incumbent companies, mentors, intermediate institutions, universities, other entrepreneurs, and the government.
- **Process** – Involves three recursive phases: 1) ideation – coming up with the opportunity, 2) incubation – the discovery of a viable and replicable business model, and 3) scaling – expanding the commercialisation process.

The development of an entrepreneurial ecosystem requires that all its components be addressed concurrently because the ecosystem works at the pace of its weakest link, not its strongest one. For example, if there is R&D available but no venture capital, R&D will stay in the laboratories with little chance of commercial use. Similarly, if there is enough available funding but no deal flow of technological opportunities, investors will not allocate funding because of a lack of innovation.⁶

The holistic nature of an entrepreneurial ecosystem has important policy implications. Government support programmes tend to focus on the financial aspects of the entrepreneurial process, providing grants, tax relief, or loans contingent on success. Yet if the ecosystem as a whole is fragile, financial support on its own does not produce the value expected from the public and private investment.

This, in turn, discourages both public and private agents from being involved in the ecosystem over the long term.

Entrepreneurs can plan and execute activities that translate potential ideas into actual innovations that have a footprint on the market. Thus, supporting a healthy entrepreneurial ecosystem leads to a more creative, innovative, and dynamic economy. For this reason, governments from all over the world have developed a series of programmes to support entrepreneurship activity. However, the development of an ecosystem is a slow incremental process. It may take decades and require a significant cultural change in how society appreciates and values entrepreneurs, what they do, the benefits of their work, and the risks involved in their endeavours. As such, the sooner a country has an entrepreneurial ecosystem strategy, the better.

It is important to note, however, that not all entrepreneurship is equal. The Global Entrepreneurship Monitor (GEM) and many scholars distinguish between two types of entrepreneurial opportunities:

- **Necessity-based start-ups** - Most small businesses are started by people to complement or replace a job or bring home a salary. Many people prefer to work for themselves or cannot find a job that satisfies their income needs. If successful, a

well-run start-up can provide the entrepreneur and family with enough, or more than enough, income. Usually, these businesses are based on conventional sectors and have difficulty differentiating themselves from similarly small companies. Typically, the company's founder knows the product, understands the market sector, and usually does not have high growth expectations. Some examples of these types of companies are cleaners, grocery stores, restaurants, flower shops, small consulting companies, etc. They typically receive funding from traditional bank or friends, or rely on personal savings.

- **Opportunity-based start-ups** - There is another category of start-ups based on business opportunities detected by the founders where the value proposition has to do with the solution of a problem (“market pain”) in a better, more efficient, or less expensive way than the existing solutions. Initially, the founders have to iteratively discover a business model that produces a fit between the product and the identified problem. Then, the founders build a start-up around this idea. These are usually based on technologies that can bring new products or services to a large existing market, but sometimes opportunity-based companies create whole new markets with previously unknown products or services. As a result, they typically require venture capital to fund the initial investments and technical and business support that goes far beyond the needs of a traditional company. If successful, however, they tend to have high growth and technical employment potential.

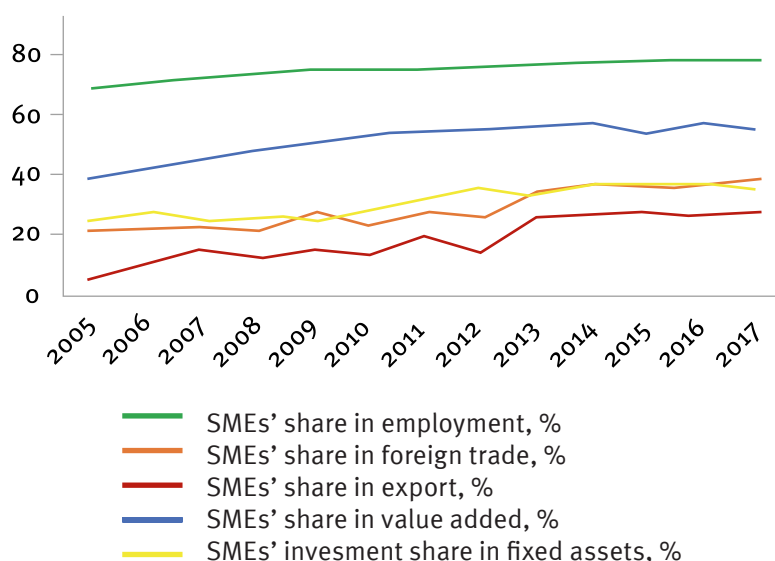
It is essential to distinguish between these two categories of start-ups when designing and implementing public or private support programmes. For example, traditional small companies are supported with services like accounting, finance, marketing, legal, etc., while opportunity-based start-ups require a more holistic and sophisticated type of support.

3. Small Business Environment in Uzbekistan

All start-ups begin as micro or small enterprises, but only a small fraction of them will have the ability to scale up. As such, building a solid ecosystem for entrepreneurs and innovators needs to start with creating a business environment that allows SMEs to flourish.

In Uzbekistan, small business is a driving force for economic growth and increasing GDP, and is the primary solution to acute social problems such as unemployment and poverty, especially among women and youth.⁷ In 2005, SMEs represented 38.2% of the country's GDP; and by 2017, it was 54.9%. They provide over 80% of all employment, over 50% of the economy's added value and a significant increase of total investments, all of which are proxies of innovation activity.

FIGURE 3: THE SME SECTOR IN UZBEKISTAN



Source: State Statistics Committee

Despite their importance to a healthy and growing economy, SMEs face many challenges in Uzbekistan that require active government intervention in order to improve the business environment and facilitate their operation. From an entrepreneurship perspective, four main groups of policies need attention: 1) tax policy, 2) regulation, 3) access to the capital markets, and 4) legal protection, property rights and economic freedom.⁸

Tax policy

Policymakers concerned with entrepreneurship understand that a trade-off exists between entrepreneurial growth and taxes. Entrepreneurship is an activity that requires investment, consumption, and income generation to be successful. Excessive corporate income taxes, for example, reduce the incentive to start or expand a business, and capital gains taxes reduce the incentive to invest. A sound tax policy that encourages company formation and investments should be devised as a tool to promote entrepreneurial activity.

In Uzbekistan, with the adoption of the 2008 tax code (and subsequent 2020 code), the tax process has been simplified and encouraged saving and investments. Micro and small firms are subject to simplified taxation regulations replacing profit tax, VAT, property tax, land tax, and others. Capital gains tax is treated as ordinary income, and it produces liability only when gains are attributed to the sale of equity.

To encourage early-stage investments, especially in technology-based start-ups, capital gain taxation could be revised to differentiate early-stage investors from regular investors in established firms. Also, specific tax breaks for companies engaged in R&D or innovation activity has proven to be a very effective mechanism to encourage innovation, technology development and technology transfer in many countries. Legal

entities engaged in specific activities or expanding production and infrastructure may be granted temporary tax exemptions. Something similar could also be applicable to small businesses and start-ups.

Regulation

Excessive labour market and business regulation can be costly for entrepreneurs. A less-regulated labour market serves small and young companies as it reduces the burden of hiring and terminating contracts. Reducing compliance costs can be accomplished by providing a single-window service centre where small companies and entrepreneurs can find help by allowing electronic filing and storage, thus reducing paperwork and friction.

Uzbekistan ranks very favourably in the ease and cost of creating a new company. Nevertheless, as reported by interviewed entrepreneurs, navigating government procedures and regulations is cumbersome. While some regulations are likely necessary to protect workers and businesses, they should be continuously re-evaluated to ensure their relevance.

Access to capital markets

The cost of starting a business or growing an SME to its full potential is a critical factor to assure economic growth and employment. Unfettered access to adequate capital markets will provide the greatest opportunity for entrepreneurial expansion. Unfortunately, in Uzbekistan, SMEs and start-ups have very limited access to bank loans. As reported by several interviewed entrepreneurs, banks often don't understand or are unwilling to give loans to companies with higher risk profiles.

Banks could be encouraged to engage with small companies with the support of government guarantees or other mechanisms which have been very successful in many countries. Additionally, the capacity of SMEs to engage with banks and subsequently to manage the funds received could be strengthened through tailored technical and managerial support.

Legal protection, property rights, and economic freedom

A legal property right is defined as the right to control, use and obtain the benefits from goods or services. Without property rights, including intellectual property rights, there is low incentive from investors to invest in early-stage start-ups and SMEs with growth potential.

Uzbekistan ranks rather low (117) in the 2022 Economic Freedom Index.⁹ Especially low are the rankings on Rule of Law in Property Rights, Judicial Effectiveness, and Government Integrity. The country ranks well in Trade Freedom but below average in Investment and Financial Freedom.

There is plenty of evidence that higher rankings in the index correlate to higher rates of SME and entrepreneurial growth. Economic freedom and the rule of law are critical and should be addressed along with more specific ecosystem interventions. While

government often focuses on active policies such as tax breaks, grants, and business loans to foster entrepreneurial activity, passive policies – where the role of government is to create an environment that is “friendly” to entrepreneurs without regard to specific business groups, sectors or the size of the company – are equally critical.

4. Science, Technology and Innovation in Uzbekistan

4.1 The state of the STI sector

For the assessment of the science, technology, and innovation (STI) environment in Uzbekistan, several internationally recognised reports and studies provide useful insights into the state of play of this sector.

According to the WIPO 2021 Global Innovation Index (GII), Uzbekistan ranks 86th out of 132 countries and below average for its level of economic activity.¹⁰ The ranking shows a series of strengths and weaknesses worth noting:

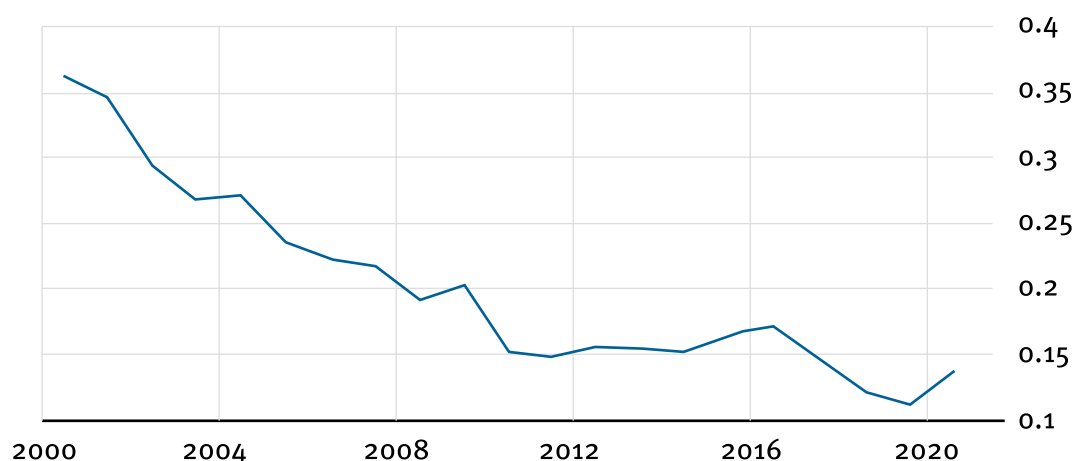
Strengths

- Uzbekistan ranks 8th in the world in Ease of Starting a Business. This ranking is usually associated with low transaction costs for start-ups and creating the right incentives to found new companies. It shows the state’s goodwill to reduce red-tape in creating new companies.
- Uzbekistan ranks 7th in the indicator of Graduates in Science & Technology and 28th in expenditure on education. Knowledge in Science, Technology, Engineering, and Mathematics (STEM) is an essential indicator of innovation and entrepreneurial activity.
- Uzbekistan ranks 37th in General Infrastructure, which is one of the main pillars necessary for economic growth.
- Uzbekistan ranks 24th in Market Sophistication. The ease of protecting minority investors is considered a strength, and the ability to protect minority investors is a sign of goodwill to safeguard small businesses and entrepreneurs.

Weaknesses

- Uzbekistan’s institutions exhibit weaknesses in general (94th). The indicators on regulatory quality (126th) and rule of law (123rd) are deficient. The lack of long-term regulations is a deterrent to entrepreneurial activity, as start-ups require clear and stable operational rules, especially when significant investments are needed early on.
- Gross Domestic Expenditure on R&D (GERD) has a low ranking (99) and has been worsening year on year. In 2000, it was 0.36% of GDP; since then, it has been reduced to 0.14% of GDP in 2020, which is very low.

FIGURE 4: RESEARCH AND DEVELOPMENT EXPENDITURE (% OF GDP) IN UZBEKISTAN



As for the “Doing Business” ranking of the World Bank, Uzbekistan rose from 141st place in 2015 to 69th in 2020.¹¹ It ranks highly (22nd) in enforcing contracts, which is very important for start-ups that usually have to compete with larger companies or governments under disadvantaged conditions. By contrast, Uzbekistan ranks relatively low (100th) in resolving insolvency, thus disincentivising the creation of innovation-based start-ups, which tend to have a higher failure rate. Slow or difficult insolvency resolution prevents the reallocation of retained capital and accumulated talents for more productive use.

A final report worth mentioning is the 2020 “Mapping Research and Innovation in the Republic of Uzbekistan” report produced by UNESCO in association with the Uzbek Ministry of Innovative Development and the financial support of the Islamic Development Bank. It analyses Uzbekistan’s STI environment and policies and outlines several recommendations for improvement.¹² The STI SWOT analysis included in the study contained the following conclusions relevant for the entrepreneurial ecosystem assessment:

Strengths

- Existence of leading players in the STI system and ongoing efforts to enhance it
- Ongoing and increased investment in research and innovation infrastructures
- Political stability
- Availability of emerging technologies

Weaknesses

- Need to implement a holistic national STI policy
- Need to improve STI governance system
- Need develop human capital for STI
- Need to address regional development challenge

The study gives a series of recommendations, including 1) putting in place a ten-year STI policy strategy and creating strategic institutions for better policy implementation, including an advisory agency and an execution agency for the design and execution of policy instruments; 2) creating Fab-Labs (digital fabrication laboratories), technical prototyping labs, technology-based incubators and accelerators, diversified funding mechanisms and a national Technology Transfer Office (TTO); and 3) ensuring significant development of STI skills across the board at academic, governmental, and private sector levels.

4.2 Uzbekistan's STI policy

The government of Uzbekistan is highly committed to STI as a vital tool for achieving socio-economic development and has set ambitious goals. There is an intensive effort to set up a National Innovation Strategy (NIS), encourage R&D and innovation, and commercialise research results.

The STI policy of Uzbekistan was initially defined by a presidential decree in September 2018. Although the decree only makes a single reference to entrepreneurship, some parts of it directly pertain to the strengthening of the ecosystem:

- **Human capital:** The policy envisages improving the quality of STI education at all levels, including through effective mechanisms to integrate education, science, and entrepreneurship for the implementation of R&D results.
- **Investment in R&D and technology transfer:** The decree recommends a strong increase in public funding in R&D from 0.2% to 0.8% of GDP; creating a regional network of Technology Transfer Offices to facilitate translation of R&D outputs into technology-based commercial opportunities; and strengthening intellectual property protection capacity.
- **Strengthening of STI institutions:** The decree orders all ministries to coordinate activities in order to have an action plan ready, and imposes execution control on the prime minister, the head of administration, and the deputy prime minister. Furthermore, the programme outlines a series of actions like creating IT-Parks and technoparks, which are already successfully being implemented, and creating state-supported joint international organisations.

After the re-election of President Mirziyoyev in late 2021, a new Development Strategy for 2022-2026 was adopted. Among its 100 goals, one is dedicated to “the widespread introduction of innovations in the economy, development of cooperative ties between the industrial enterprises and scientific institutions” (Goal 51). A separate goal foresees “creating conditions for the organisation of entrepreneurial activity” (Goal 29) – although this goal is conceived to address employment rather than the business environment. Youth and women entrepreneurship get attention under separate goals. All of these are important, but overall, the Development Strategy lacks focused attention on the development of an entrepreneurship ecosystem.

The STI policy execution arm is the Ministry of Innovative Development, which offers programmes and instruments to promote and support innovative projects, as well as funding for health care, agriculture, IT, manufacturing projects and more. In addition, there is a venture fund programme called National UzVC that has the following objectives:

- Develop a venture capital market;
- Improve the regulatory framework of the venture capital ecosystem;
- Act as an agent between the state and the private sector;
- Develop a business incubation and acceleration system; and
- Improve venture financing literacy.¹⁵

Additionally, the Ministry of Innovative Development has a Youth Academy that specifically supports youth-led start-ups.¹⁶

5. Examining the Entrepreneurial Ecosystem in Uzbekistan

5.1 The state of entrepreneurship in Uzbekistan and government policy

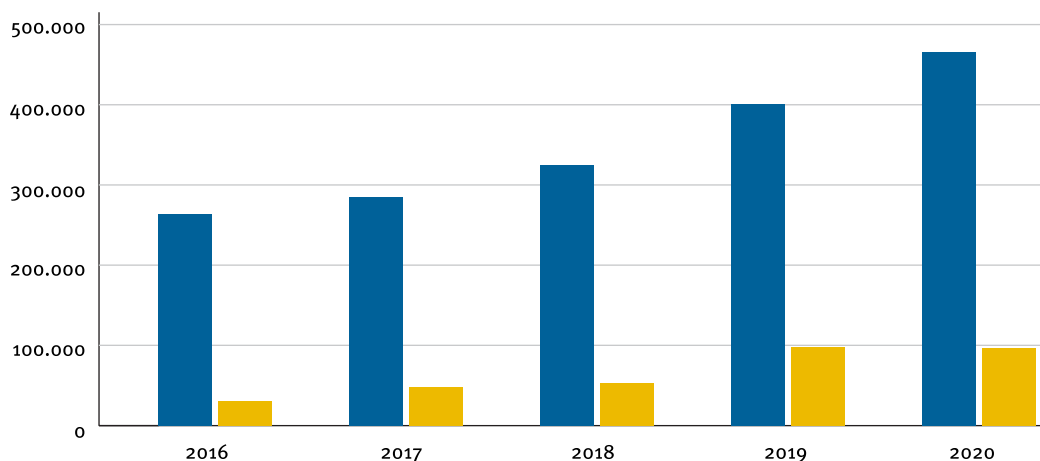
Entrepreneurship has a long history and strong roots in Uzbekistan. Uzbeks have traditionally been merchants, brokers, business people, and traders, as evidenced by their role in the Silk Road trade. During the Soviet period, however, Uzbekistan was forced to be a cog in the centrally planned Soviet economy. Its economic sectors — such as cotton production — were highly specialised, and it had to depend on the rest of the Soviet Union for markets, goods, and supplies.

Since the country's independence from the Soviet Union, a renewal of its historic entrepreneurial spirit has emerged. Both the private and public sectors have understood the importance of entrepreneurial activity as a primary driver of economic growth. The constitution explicitly states that entrepreneurship is a “guaranteed right of the Uzbekistan people”. As early as 2000, when former President Karimov gave a speech on the topic, the importance of entrepreneurship for the country's future prosperity was recognised.¹⁷

Since then, many resolutions have been passed geared at enhancing entrepreneurship activity. Likewise, many administrative agencies have been created to foster entrepreneurship and assist those seeking to create their own company (e.g., the Chamber of Commodity Producers and Entrepreneurs dealing primarily with the training of entrepreneurs; the Agency of Insurance Protection of Private Entrepreneurship and Small Business providing several insurance options for entrepreneurs; and the Market Skill Development Centre Agency providing training for business personnel and infrastructure specialists for SMEs).

The Uzbekistan entrepreneurial environment has made significant progress between 2016-2020.¹⁸ The number of companies rose from 268,000 in 2016 to 475,000 in 2020, an increase of 77%.

FIGURE 5: COMPANIES IN UZBEKISTAN



Companies are distributed amongst the regions, with 22% in the Tashkent region, 8.3% in Fergana, 8.8% in Samarkand, 7.8% in Andijan, and 6.3% in the Namangan region. Interestingly, in other emerging economies, typically over 50% of companies are located in the capital region. In Uzbekistan, companies are more equally distributed.

In July 2019, President Mirziyoyev held an open dialogue with small businesses and entrepreneurs and announced significant financial support to entrepreneurs. He also mentioned the need for pre-trial settlement of disputes and announced the creation of an agency in the Ministry of Economic and Industry System to promote entrepreneurship and small businesses. Subsequently, in August 2020, the President held a summit with 3,500 entrepreneurs, where he outlined the most pressing problems and elaborated on a programme of activities in several key areas including 1) financing and lending, 2) tax reform, 3) land allocation and private property, 4) infrastructure problems, 5) exports, and 6) transport and logistics. In the most recent round of such dialogues, in August 2022, the President committed to further reforms in the areas of taxation, financing, infrastructure, property rights, and judicial proceedings. The creation of the Public Council for Entrepreneurship Support under the President will oversee the implementation of these commitments.

Specific efforts have been made since 2016 to boost the ICT sector, with bandwidth capacity growing massively. In addition, in 2019, the first scientific accelerator (CAscience) was opened, as was an IT-Park. Many experts see IT-Parks as the most critical government initiative to foster innovation and entrepreneurship in Uzbekistan.

In terms of support to technology-based start-ups, the IT-Park, the Youth Union, the Chamber of Commerce and Industry, and the Innovation and Labour Ministries (in conjunction with UNDP) are working on a large-scale start-up initiative to develop the entrepreneurial ecosystem to support high-potential IT companies. Along with this project, the first venture capital fund under the umbrella of the IT-Park has been established. The Ministry of Economic Development and Poverty Reduction and the UNDP have also launched a project titled “Empowering Youth to Embrace the Digital Economy and Digital Entrepreneurship”, aimed at encouraging young people to start their own businesses, participate in entrepreneurial activities, and improve their digital skills.

5.3 Perceptions on the ground

While there is an evident commitment by Uzbekistan's leadership to advance the country's business and entrepreneurial environment and develop its entrepreneurial potential, the policies and institutions put in place do not address the needs of the sector efficiently. To better understand the current status of the entrepreneurial ecosystem, twelve interviews were performed with a range of relevant stakeholders in the Uzbekistan entrepreneurial ecosystem.

The conversations were aimed at understanding the start-up environment across multiple vectors: culture, governmental support, human capital, access to funding, and intermediate organisations. An open-question methodology was applied. The most significant conclusions are presented below, grouped into five categories:

A. Entrepreneurial Environment

Uzbeks have a historical entrepreneurial drive. However, the country still faces biases from the Soviet era that translate into cultural, regulatory, funding, human capital, business climate, and ecosystem challenges that need to be addressed to ensure a modern, dynamic and thriving entrepreneurship ecosystem.

- Across the board, all interviewees acknowledged that creating a new company in Uzbekistan is easy, fast, and inexpensive. However, it was mentioned that the problem is not creation but scaling.
- Even though it is reasonably easy to create new companies in Uzbekistan, the proper contacts in government are needed to receive further assistance. Many expressed that “the only way [to secure assistance] is to have your own network”; or “you have to know the right person in government, otherwise you can't get things done”; or that “the most important [thing] is that you have to know the right person, the business itself is secondary.”
- Regarding Uzbek entrepreneurial drive, most interviewees supported the idea that Uzbeks are entrepreneurial in nature and that entrepreneurship is embedded in Uzbek culture and history. Interviewees mentioned that not even the Soviets could control the Uzbek people's entrepreneurial drive. However, some argued that the Soviet era had decreased Uzbeks' affinity for trading and commerce, and that entrepreneurial skills should be taught in schools and universities to reactivate the innate Uzbek entrepreneurial drive.
- A survey conducted by the government determined that 50% of people older than 25 aspire to become entrepreneurs. Still, only a fraction of them believe they will be successful, even if they had the money to do it. This has to do with a lack of government connections and technical skills.

- In some of the interviews, the distinction between necessity-based and opportunity-based also arose (e.g., one interviewee strenuously argued that most Uzbek entrepreneurs go into business as a survival mechanism, not as a means of exploiting opportunities).

B. Business Environment and Government Support

The Uzbek government has been implementing various initiatives to foster innovation and entrepreneurship through the Ministry of Innovative Development and some universities (e.g., the IT-Park, its incubator, and the training of entrepreneurs and coders). Nevertheless, most interviewees reported a counterproductive and mutual distrust between the government and entrepreneurs, making policy programmes harder to implement and operate. Although the government has set the goal of transforming Uzbekistan into an IT hub, the initiatives being implemented are not geared toward forming or strengthening an ecosystem of entrepreneurship and do not differentiate between opportunity- and necessity-based entrepreneurship. Creating new companies is easy and inexpensive, but there is work to be done in bankruptcy law, IP protection, technology transfer regulations, and tax exemptions. It will also be essential to integrate the regions and explore ways to integrate the diaspora into the ecosystem.

- Uzbekistan is the largest country in Central Asia (50% of the population). According to one interviewee, many international companies, particularly IT companies, would like to be established in Uzbekistan, but constant changes in regulations preclude investors from coming because of the uncertainties they face.
- Many interviewees mentioned governmental and other barriers like high taxes, fees, expensive rental rates, and very restrictive banks. But most emphasised mistrust as the biggest barrier. Even when the government launches a programme to promote entrepreneurship, entrepreneurs tend to distrust it and prefer not to get involved. Mistrust from the government towards entrepreneurs was also mentioned: “If they [the entrepreneurs] become rich, they will want political influence.” But there are some positive initiatives, such as the Entrepreneurship World Cup 2020, which helps stimulate interactions between the government and entrepreneurs.
- The issue of bankruptcy laws was also raised. Failed companies have a challenging time closing their operations, making it very difficult to allocate capital to other business opportunities, as capital is locked up in the long bankruptcy process.
- Many interviewees mentioned that job creation is a strategic goal of the government and identify entrepreneurship as a means of accomplishing this goal and a primary reason as to why the government should be interested in supporting new programmes to foster entrepreneurial activity.

- According to all interviewees, the most important and impactful government initiative to foster entrepreneurship are IT-Parks. The government plan to train 1 million coders and transform Uzbekistan into a regional IT hub was also mentioned.
- Many interviewees mentioned the significant difference between what happens in Tashkent versus the regions. “Any programme to support the entrepreneurial ecosystem should address the mismatch between Tashkent and the regions.”

C. Human Capital

According to all interviewees, any attempt to strengthen the entrepreneurial ecosystem in Uzbekistan will require cross-the-board training and skills programmes for intermediate organisations, practitioners, and government officials.

- Uzbekistan has a 99% literacy rate, but the interviews underscored the urgent need for skill-building programmes on innovation and entrepreneurship at all levels of the education cycle. Comments from interviewees include: “Most university students aspire to become entrepreneurs but they don’t have the skills to do it”; “Entrepreneurial skills are not being taught enough in universities;” and “Students don’t have the creative skills to come up with a good deal flow of opportunities.”
- It was also observed by interviewees that government personnel in charge of the formation of the entrepreneurial ecosystem lack the skills necessary to design, implement and operate training and assistance programmes to foster entrepreneurship, and thus also require training.
- According to most interviewees, public universities “are not very good and are very bureaucratic.” Moreover, most universities are located in the Tashkent region, leaving other areas without strong education programmes.
- Interviewees mentioned that one reason entrepreneurs tend to start companies in traditional sectors with scarce innovation is because there are no formal links between what is being done in universities and laboratories with businesses. There is thus a disconnect between the generation of technological knowledge and its transfer and adoption by start-ups that create value and capitalise on technological opportunities.

D. Funding for Entrepreneurial Activity

Interviewees mentioned that they have a difficult time financing their start-ups. Banks are unwilling to give loans to early-stage companies. In addition, there is minimal seed capital from the government for early-stage R&D and innovation. Although there is a slowly growing interest from early-stage angel investors, there are no early-stage venture capital funds available. Several interviewees also mentioned banks' and investors' limited ability to evaluate business risk.

- All interviewees agreed that it is challenging for entrepreneurs in Uzbekistan to get funding for their projects. Banks do not give loans to entrepreneurs, and there are scarce government or venture capital funds available.
- Although investors still prefer to invest in established companies, there is positive and growing interest in investing in high-growth potential start-ups. Additionally, small bank loans are being provided to university graduates to fund their start-ups. However, no formal angel investor networks operate in the country.
- The overall lack of funding for start-ups has to do with the fact that banks and investors “don’t know how to evaluate the risk and don’t know how to structure the financing operation for high-risk new ventures.” “It is a knowledge problem that needs to be solved.” Training programmes for investors are considered essential for them to understand how to manage high-risk early-stage investments.
- Most interviewees mentioned a general lack of funding for R&D. “There is no budget allocated for technology transfer and innovation.”
- Some expressed doubt about the ability of many entrepreneurs to make a case for their offering. Incubation and training programmes would assist the entrepreneur in understanding how to advocate better for their project when pitching to investors.

E. Intermediate Organisations

Interviewees frequently mentioned IT-Parks as the best institutional support for entrepreneurs. Other intermediate institutions were mentioned (e.g., an incubator at the University of Westminster). But the general perception is that there is inadequate support for non-IT-related start-ups.

- Entrepreneurial support from intermediate organisations is relatively new to Uzbekistan, but there are emerging initiatives. However, unlike IT-Parks, these other initiatives are not widely known.
- Currently, most support for non-IT-related start-ups comes from entrepreneurs' networks, rather than from any formal institutions.

Six different types of institutions have been identified:

- **Articulators** are institutions that have a role in coordination. For example, the Ministry for Development of Information Technologies and Communications and the Ministry of Innovative Development are significant contributors to the Uzbek ecosystem. Beyond the allocation of funds, articulators have the role of facilitator, coordinator, and ecosystem trainer.
- **Enablers** are institutions that facilitate the entrepreneurial process. This category includes incubators, innovation clubs, venture funds and technology centres. IT-Parks are the central and most crucial enablers of the ecosystem.
- **Linkers** with organisations that facilitate interactions between different stakeholders of the ecosystem. This includes institutions like chambers of commerce, investor networks, and technology brokers.
- **Knowledge Centres** are educational institutions like universities where entrepreneurship and innovation are taught and researched. These centres are usually related to enablers such as incubators and accelerators, which facilitate students' execution of entrepreneurial projects.
- **Promoters** are media, portals, and congresses that promote entrepreneurial activity. These can be TV or radio stations like Shark-Tank in the US, or the Kauffman Foundation that organises Startup Week.
- **Community** includes institutions that create community opportunities for entrepreneurs like FU Night, Global Shapers organised by the WEF, and virtual portals where entrepreneurs can meet to share knowledge and experience.

The most relevant institutions of the ecosystem identified in the assessment and interviews are as follows:

IT-Park

IT-Park comprises six regional offices and divisions pertaining to start-up ecosystem development, investment, and education. It has specific programmes to facilitate promising IT-based start-ups along with its primary mission of creating an IT hub in Uzbekistan. It has also created an extraterritorial free economic zone for IT companies, including integration with scientific and educational institutions. The Park provides a diverse set of accelerators, educational projects, IT courses, and investment opportunities. It is an Enabler because it creates a system of support for IT entrepreneurs and facilitates their development in the global market.

Ministry of Innovation Development

The Ministry's mission is to ensure accelerated innovation-driven growth of all economic and social sectors based on international best practices, facilitate the adoption of new technologies for industry, and encourage innovative ideas and developments. It is considered an Articulator due to its central role in shaping the ecosystem by setting innovation policy, providing financial capital for innovation and R&D, and implementing

a series of initiatives. Its activities related to the ecosystem include the creation of Khorezm Innovative Technopark, Yashnabad Innovation Technopark, and the Youth Innovation Centre, along with support for entrepreneurship associations such as the Uzbek Businesswomen Association.

Start-up Factory

The Factory’s mission is to partner with entrepreneurs and help them with funding and mentor high-potential start-ups. It is a private institution with a structured start-up development process. It invests with “smart money,” giving the entrepreneur legal, accounting, tax, digital marketing, and PR support. Start-up Factory is considered a Linker that connects small businesses with mentors from established companies and supports them through educational seminars and legal and business support.

UzVC National Venture Capital Fund

The Fund is a government agency that acts as a bridge between the state and the private sector, facilitating communication between the private sector and government to shape the state’s policies towards the venture ecosystem. It deploys acceleration and incubation programmes to boost start-up activity in Uzbekistan. Along with the principle of venture funds, it finances start-up projects based on equity participation under a bilateral agreement. UzVC National Venture Capital Fund is an Enabler with some Linker characteristics.

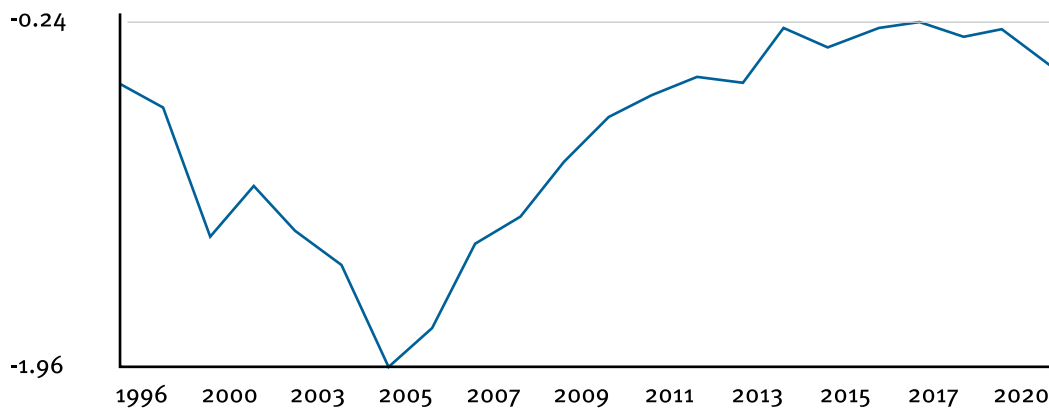
Uzbek Businesswomen Association

Known by its Uzbek name “Tadbirkor Ayol,” the Association unites women entrepreneurs to expand, protects their economic and social rights and supports their business initiatives. Its mission includes strengthening a climate of mutual trust and partnership, introducing innovative educational programmes, increasing the competitiveness of women’s labour through retraining, raising their qualifications, creating institutional legal mechanisms to improve economic and social opportunities for women, and providing legal support to women entrepreneurs. The Association is considered a Community Institution for its activities in supporting and facilitating women’s participation in the process of shaping market relations.

6. Recommendations for Strengthening the Entrepreneurial Ecosystem in Uzbekistan

Developing an entrepreneurship ecosystem is a complex and long-term endeavour. Government plays a fundamental role in coordinating the diverse actors involved, providing funding, setting policies, reducing red tape, and introducing legislation to facilitate its operation. However, moral hazard arises when political cycles are shorter than the time required to make any noticeable improvements in the ecosystem. Hence, governments tend to allocate fewer resources and goodwill than needed because they will not see the long-term benefits during their tenure.

FIGURE 7: UZBEKISTAN POLITICAL STABILITY INDEX



According to The Global Economy,²⁰ political stability in Uzbekistan has been improving in the last fifteen years. This is a critical factor for long-term ecosystem development. Governments need to ensure a seamless handover of innovation policy to the next administration to ensure healthy development of the ecosystem over the long term.

Based on the innovation model presented in section 2.2 and the information gathered during the interviews, the following pillars for intervention are defined, and specific executable actions are proposed and prioritised for each pillar.

Pillar 1 Entrepreneurial process	Pillar 2 Inputs of the entrepreneurial ecosystem	Pillar 3 Enhancement of the ecosystem and interactions
1.1 R&D and ideation 1.2 Technology transfer 1.3 Incubation 1.4 Scaling and internationalisation	2.1 Funding 1.2 Human capital and culture development 2.3 Government support instruments	3.1 Interaction activities 3.2 Knowledge generation activities 3.3 Education, training, and skill development activities 3.4 Entrepreneurial culture, dissemination, and communication activities 3.5 Ecosystem institutional design

Actions are prioritised according to implementation feasibility and impact. It is expected that successful short-term efforts or “low hanging fruits” will pave the way for progress and the necessary goodwill for the implementation of long-term actions. In this regard, the work of the Ministry of Innovative Development combined with the IT-Parks may be the best starting points for strengthening the ecosystem further. The resources and political goodwill the government is investing to develop the IT industry in Uzbekistan should be leveraged and extended to benefit the ecosystem as a whole.

Pillar 1 - Entrepreneurial process

This pillar of intervention supports entrepreneurs in the ideation-discovery-scaling process of their entrepreneurial projects. The issue is that, except for IT-Parks and other scattered initiatives, there is minimal support for entrepreneurs in Uzbekistan.

Subpillar 1.1. R&D and ideation

This subpillar corresponds to applied research performed by universities and other institutions to develop technologies that may have commercial viability. Although R&D activity requires specific policy, institutions, and resources (which are not the focus of this report), there are a series of actions to enhance last-mile R&D like prototyping and technology readiness assessment that need to be considered to enable the technologies that are being developed to become commercially-ready.

Action 1.1.1 Technology mapping

Goal: Technology development is a critical source of deal flow for high-growth potential start-ups. It is advisable to make a general field assessment of the technologies being developed at a national level, identify their Technical and Commercial Readiness Level (TRL), and register them according to international standards, making them available for transfer and commercialisation. Particular attention should be placed on mapping technologies being developed at the IT-Parks, identifying commercialisation potential and linking them to start-ups or established companies. Uploading the technologies to global technology platforms would make them available for global commercialisation.

Proposal: Map all technologies being developed in Uzbek R&D institutions, interview the researchers, assess their commercial viability and potential, and categorise according to international TRL standards.

Expected output: The output would be a standardised list of technologies with an evaluation of readiness for commercialisation and a path to move forward with the technology. As part of the mapping process, a group of evaluators should be trained and available to evaluate technologies after this activity is concluded.

Implementation: An expert technology readiness evaluator should be brought in to train local technology readiness evaluators and assist them in conducting the first technology assessments. Technology assessment experts may be brought in from technology transfer offices, technology-based incubators, government, or engineering or business faculties.

Timing: Short-term

Action 1.1.2 Strengthen last-mile R&D capabilities

Goal: Even though R&D activity is not in the scope of this report, it is vital to have prototypes and proof of concept available for innovators and entrepreneurs. Prototypes allow entrepreneurs to test the market and improve products according to market needs and with optimal design.

Proposal: Establish one or more fab-labs and 3-D printing facilities and make them available for innovators and entrepreneurs.

Expected output: The output would be a prototyping facility capable of assisting innovators and entrepreneurs in building prototypes for market testing.

Implementation: The Fab-Lab and 3-D printing facility may be implemented within the IT-Park, an engineering school or a technology-based business incubator and offered to relevant innovators and entrepreneurs as a service, whilst also ensuring that it is open to the public.

Timing: Mid-term. (The technology mapping process will determine the importance and the need for this type of service.)

Subpillar 1.2 Technology transfer

In under-developed ecosystems, the deal flow of entrepreneurial opportunities is often of low value because the ecosystem does not facilitate the transfer of technologies that start-ups can adopt to exploited them commercially. This process requires coordinated efforts from R&D institutions, technology transfer offices, and technology-based incubators or accelerators. The transfer of technologies can also be directed to established companies that may adopt new technologies for productivity gains.

Action 1.2.1 Supply of technologies

Goal: Create the Uzbek Technology Platform (UTP), an online portal where commercially-ready technologies are uploaded and made available for incumbent and start-up companies. The initial technologies that can be uploaded to the platform are the ones identified and mapped by the technology assessment process described in 1.1.1 above. The advantages of implementing the portal are that technologies are made available for commercialisation in a centralised, certified platform in a TRL standard that allows the technologies to be accessed globally, linking the UTP to international technology platforms. Training the R&D institutions and Technology Transfer Officers on the process of uploading technologies is also important.

Proposal: Implement the UTP and upload technologies ready for commercialisation. This activity should be ongoing as new technologies become commercially-ready. R&D institutions and TTOs should have adequately trained personnel to evaluate, format, and upload new technologies to the UTP. It will also be vital to identify technological opportunities emanating from the IT-Park and have them in the pool of technologies offered and uploaded to the UTP.

Expected output: The output would be a UTP with a series of commercially-ready technologies.

Implementation: The UTP may be implemented within an IT-Park with a broader technology scope or within a university that would coordinate the rest of the R&D centres with the selection, evaluation, and uploading of the technologies.

Timing: Short-term depending on the number of technologies from the technology mapping.

Action 1.2.2 Adoption of technologies on the demand side

Goal: Organise and coordinate activities to promote the transfer and adoption of commercially-ready technologies by incumbent and start-up companies. Having the technologies available through the UTP is not enough. Specific action needs to be taken in order for companies to be aware of and understand the benefits of the technology and incentivise them to transfer and adopt them.

Proposal: Organise a series of demand-side activities at a local and international level. This could include technology trade shows, meetups between entrepreneurs and established business executives to incentivise corporate ventures, or technology challenges where companies dare innovators to solve specific industry problems.

Expected output: The output would be a series of events and meetups between entrepreneurs, incumbent companies, and R&D centres, all of which would encourage value interaction between technology supply institutions and companies.

Implementation: Once the technology mapping has been completed and the technologies are available for commercialisation, the following activities are recommended:

- A first UTP launching event, which can be structured in the format of a moot court competition, where a series of locally developed technologies are selected and presented to a panel of experts who evaluate the technologies, give feedback and propose steps to advance it to the next level of readiness. Established companies from the industry would be invited to participate, learn

about the technologies, participate in the evaluation process and provide recommendations.

- A second set of activities would be to participate with selected technologies in the TechConnect technology transfer event in the US, and to organise local technology business events.

Timing: Short-term depending on the number of technologies selected and their level of readiness.

Subpillar 1.3 Incubation

Incubation is the process by which an entrepreneur iteratively discovers a viable and sustainable business model based on an innovation-based opportunity. The incubation process involves a series of validation and funding activities requiring the activation of several networks that interact with the entrepreneur in multiple ways, adding value to the start-up in the process.

Business incubators and accelerators, angel investor networks and venture capital funds, technology transfer offices, and specialised government institutions are intermediate organisations that play a fundamental role in assisting entrepreneurs in the incubation process. Therefore, public support for intermediate organisations is critical. (Specific forms for that support are analysed in Pillar 2.)

Subpillar 1.4 Scaling and internationalisation

As the opportunity pursued by a new company is validated during the incubation process, the next step is to scale sales and growth. This phase is critical for the viability of the start-up and the funding appetite of risk investors. In a smaller economy like the Uzbek economy, scaling will require the company's internationalisation into larger markets. Therefore, the Uzbek entrepreneurship ecosystem needs to be connected to large international ecosystems.

A strong relationship with the diaspora would act as a bridge to connect the ecosystem with global capacities, highlighting opportunities and connecting Uzbekistan with external partners. (Specific actions to support entrepreneurs with internationalisation are analysed in pillar 2.)

Pillar 2 - Inputs of the entrepreneurial ecosystem

A series of inputs must be present in a functioning ecosystem. Inputs constitute resources and organisations that support entrepreneurial activity without being directly involved in the entrepreneurial process. Government resources are usually needed to launch and operate these organisations and programmes.

Four different inputs are analysed below – funding, intermediate organisations, human capital and skills, and government support – and a series of actions is proposed to launch or strengthen them as needed.

Subpillar 2.1 Funding

Most start-ups require equity capital to be viable. There are instances where entrepreneurs are able to raise financial capital from family, friends and fools (the 3Fs), but equity capital will generally be provided by angel investors or venture capital funds, which happens only under certain conditions related to profitability, skills, and regulations.

In fragile ecosystems, the perception of risk faced by investors tends to be exacerbated, either because of a lack of knowledge or experience in early-stage investments or because the entrepreneur may lack the skills, tools, or ecosystem support to execute appropriately. Therefore, mitigating the risk perception asymmetry is essential and requires several systemic measures to improve investor appetite for investments in early-stage start-ups.

Specific actions to encourage early-stage investments are presented below.

Action 2.1.1 Angel Investors Network

The first step to encourage funding in early-stage start-ups by private investors is to gather a group of people willing to invest small amounts of money into different vetted opportunities. Investors are recruited not only because of business opportunities but also because of their desire to help new entrepreneurs, give back to society, or other non-financial considerations. The angel investors could be alumnae from a university business school that launches an investment “club”, and could also be publicly recognised by the government and influential peers.

The IT-Park is the natural setting for this network. Focusing on the sectors defined for the IT Park (Fintech, Medtech, Agrotech, E-Gov, E-Commerce, IoT, Autotech, and GameDev) would likely increase government support for the network. A matching grant in the form of a “side cart fund” (see 2.1.2 below) would also incentivise angel investors to invest in high-risk early-stage opportunities. A manager would need to be hired to oversee the detection, vetting, and selection of investment opportunities.

The deal flow of opportunities should also come from outside the IT-Park and be a catalyst for the development of selected start-ups with “smart money”, where the value of the network is not only financial capital but also the experience and sector-specific knowledge of the people involved.

Goal: Organise and coordinate an Angel Investment Network that will invest in early-stage technology-based companies.

Proposal: Assist with the recruitment of 7 to 15 angel investors, train them, and support a network manager with the initial operation of the network.

Expected output: The output would be a managed angel investment network that identifies, prepares, and periodically selects investment opportunities.

Implementation: The organisation of the network will require advocating for its creation, determining the institution under which the network will operate, selecting and training the investors, and selecting and training the network manager.

Timing: Short-term

Subpillar 2.2 Human capital and culture development

The availability of sufficient and trained human capital for innovation and entrepreneurship is crucial in developing an entrepreneurial ecosystem. In the last 15 years, entrepreneurship has evolved from being a skill that many considered unteachable to a discipline based on a sophisticated conceptual framework rooted in experimentation and science. As a result, many new concepts and practical tools have emerged. The knowledge of these concepts allows entrepreneurial practitioners worldwide to connect and quickly interact because of their shared entrepreneurial language and vision based on the conceptual background they have acquired.

Entrepreneurial human capital development can be structured into two main categories:

- Training for practitioners in intermediate organisations: There is a profound need in Uzbekistan to train personnel for intermediate organisation entrepreneurial support. The programme should include business incubators and accelerator managers, technology transfer experts, angel investors, and venture capital managers. There should be an initial “train the trainers” programme.
- Training for entrepreneurs and early-stage venture investors: Specific training programmes for entrepreneurs and investors should be implemented. Entrepreneurs should generally receive training as part of their university degree or incubation or acceleration programmes. In addition, special accelerated courses for investors should be implemented, which usually include interactions with local and international early-stage investors.

Culture development and trust are essential for a healthy functioning ecosystem. This can be fostered through challenges and competitions where entrepreneurs and intermediate organisations interact directly with government officials in charge of the STI policy implementation and execution. Entrepreneurship and innovation should become aspirational activities that are publicly rewarded by high-ranking government officials.

In France, i-Nov is an annual innovation competition where the president presents an award to the winner, and there is an additional effort to promote the winner in the press. Role models are essential to promote innovation and entrepreneurship.

Having well-known local or international entrepreneurs tell their stories and interact with new entrepreneurs makes entrepreneurship an aspirational activity with a significant cultural impact over time.

Incentivising international entrepreneurs and investors to come to Uzbekistan to incorporate and develop their start-ups or invest in Uzbek start-ups would have a significant cultural impact by association. Examples of this are the Start-up Chile programme, which grants seed capital to vetted non-Chilean start-ups incorporated in Chile (see action 2.3.1 below). Similar programmes have been implemented in Peru and Uruguay and at a regional level in Pacific Alliance countries (Chile, Peru, Colombia, and Mexico).

Action 2.2.1 Entrepreneurial curriculum for universities

Goal: Support universities and other training institutions to design and implement a series of formal entrepreneurial capacity-building programmes focused on entrepreneurs.

Proposal: Assist with designing and implementing entrepreneurship courses that can form part of the regular university curricula at business, engineering, IT, or scientific-based schools and faculties. These courses could be structured to become a Master of Science degree in Innovation and Entrepreneurship. Additionally, shorter courses should be created for other institutions like the IT-Park and business incubators or for informal institutions such as business clubs, meetups, and so on.

Expected output: The output should be three to five institutions with programmes in entrepreneurship in Tashkent and a similar number in other regions in the next two to three years. Through the training courses, entrepreneurs will acquire the necessary skills to lead start-ups.

Implementation: An expert in entrepreneurial learning curricula should assist interested institutions in designing and implementing teaching programmes according to each institution's characteristics. The expert should be available for several years to get the courses up and running.

Timing: Short-term

Action 2.2.2 Entrepreneurial training for practitioners at intermediate organisations

Goal: Design and implement training courses for practitioners at intermediate organisations.

Proposal: Assist with designing and implementing short entrepreneurship courses for business incubators, accelerators, angel investors and TTO managers, government officials related to innovation and entrepreneurship, and other professionals involved in the support of entrepreneurs. The courses should teach what institutions can do to assist entrepreneurs. The first cohort may be trained in programmes outside of Uzbekistan, so that the students not only acquire the conceptual knowledge but can also have first-hand exposure to the operation of intermediate institutions similar to the ones where they work in Uzbekistan.

Expected output: The output would be trained intermediate organisation managers (from Tashkent and other regions) who can run local support institutions.

Implementation: Depending on the type of institution, an expert trainer should be available for training in the specific subject. Training for business incubators and accelerators will differ from training investors and government officials. If an international programme is implemented, it should incorporate a “learning by doing” approach where students acquire the conceptual background and actual practical experience.

Timing: Short-term

Example: Chilean technology-based business incubators manager training

When the Chilean incubator programme supported by the government was established in 2008, selected business incubators, many associated with universities, could apply for a matching grant from the government to cover the costs of inception and operation for five years. It was a condition of the application that the incubator’s managing team had received formal training in business incubation and acceleration. To this end, the government signed an agreement with the IC2 Institute at the University of Texas at Austin. There were multiple elements of the programme:

- * Managers had to apply for the programme and were evaluated by the university.
- * Only 30 slots were opened to make it competitive. Approval depended on English level, academic performance, and experience in entrepreneurship.

In addition, applicants had to agree to incubate the technology project of at least one Chilean innovator or entrepreneur during the six-month training period as a real-world case study.

* The programme included two months of conceptual learning in classrooms, one month of work at the incubator in the US, and two months of assistance to the entrepreneurs or innovators.

* The experience with the IC2 Institute facilitated the establishment of a Chilean incubator network with highly trained managers, and forged links between Chilean and US-based incubator managers that allowed many Chilean entrepreneurs to internationalise their ventures in the US.

Subpillar 2.3 Government support instruments

As mentioned previously, government support for entrepreneurial ecosystems in an early stage of development is crucial. There is also ample evidence that governments should enable and support other actors to develop key components of the ecosystem. In particular, governments should allow the private sector, academia, and intermediate organisations to do the heavy lifting. The focus of government action should be on implementing the right incentives and solving market failures that impede the natural evolution of the ecosystem.

This sub-pillar describes a series of instruments that governments can execute to facilitate the development and strengthening of the Uzbek entrepreneurial ecosystem.

Action 2.3.1 Side Cart Fund as an incentive for angel investors

As mentioned, Uzbek entrepreneurs have a significant problem when it comes to funding their start-ups. Banks are reluctant to give high-risk loans, and there is no functioning venture capital industry.

An angel investors network is proposed as part of sub-pillar 2.1. Here, a side cart fund is proposed to reduce the perception of risk for investors and incentivise investments in early-stage companies. The fund is triggered if and when an investor secures his or her investment.

Goal: Co-invest along with angel investors in early-stage technology-based start-ups.

Proposal: An accredited angel investor triggers a government matching fund in a relationship of 1:1 or 2:1 (government to investor). The fund may operate as a typical venture capital fund where the government becomes a limited partner (without seniority); as a contingency-based loan paid if the start-up is successful; or as a regular grant with no return.

Expected output: The output would be available matching funds for accredited investors that invest in early-stage start-ups.

Implementation: The fund may be implemented within the IT-Park or another agency that can manage this type of mechanism. Regulatory conditions will need to be examined when the fund is designed.

Timing: Short-term (as the angel investor network is launched)

Action 2.3.2 Supporting business incubators and accelerators

As mentioned in sub-pillar 1.3, intermediate organisations that support entrepreneurs are a fundamental component of the ecosystem. However, these institutions typically have difficulty funding their inception and operation because their business models often operate on success fees that will not be available initially. They also require a period of time and learning to recruit start-ups.

Goal: Assist business incubators and accelerators with launching and operating matching funds.

Proposal: Put out an open call for intermediate institutions interested in starting or strengthening their operations. A predetermined number of institutions would be selected, making the programme competitive and aspirational.

Expected output: The output would be a network of eight to twelve operative incubators/accelerators across the country within a couple of years.

Implementation: The programme should be competitive. Local institutions backed by established and known champions like universities, enterprise associations, or corporations may apply. An IT-Park may be an excellent candidate to operate the programme. The Ministry of Innovative Development or the Ministry of Economy would also be good options.

An independent committee should execute the selection process with recommendations from a team of experts in incubation. The proposals should include a sound incubation model, a series of local and international networks, trained staff, and a managing director with a business background. The incubator should be controlled by a government fiduciary and backed by a well-respected and recognised champion.

Timing: Mid-term

Example: The incubators matching grant programme in Israel

Israel has an extensive R&D matching grant programme for technology-based start-ups. It grants up to 500,000 USD to companies requiring last-mile R&D activities like technology prototyping or developing proof of concept. Accredited technology-based incubators manage the grants.

Action 2.3.3 Supporting SMEs

As mentioned previously, supporting innovation-based start-ups is different from supporting traditional SMEs, which are the most important source of employment in most countries in the world. SMEs in traditional sectors require technical support in finance, marketing, manufacturing, legal advice, and access to conventional financial institutions.

One successful SME assistance programme is the US national network of Small Business Development Centers (SBDCs).²¹ SBDCs are hosted by leading universities, colleges, and centres partially funded by the US Congress in partnership with the Small Business Administration. Over 1,000 centres in the US offer free face-to-face consulting and training programmes.

Goal: Assist SMEs to scale and improve productivity.

Proposal: Adopt a programme similar to the SBDC model or Peruvian CITE (see below).

Expected output: The output would be that SMEs received coaching and service to scale, export, and increase productivity.

Timing: Mid-term

Example: CITE (Peru)

Peru has implemented a successful SBDC-inspired programme (Red de Centros de Innovación Productiva y Transferencia Tecnológica, CITE) with the help of the SBDC at the University of Texas at San Antonio. Currently there are 46 CITEs geographically distributed in Peru: 27 are funded and managed by ITP, a government SME support agency; and 19 are privately owned and government-funded. All CITEs are specialised according to the industrial sector of the region where they are located (e.g., fishing, garment production, energy and mining, manufacturing, wood and timber, marketing, logistics, and creative industries). The goal of CITEs is to assist Peruvian SMEs in using and adopting technologies, processes, and methods to make them more productive and competitive.

Action 2.3.4 Supporting government's institutional design and policy strategy

As mentioned above, neither the STI 2017-2021 strategy nor the new 2022-2026 strategy include entrepreneurial ecosystem development policy. The Ministry of Innovative Development, the Ministry of the Economy, and the Ministry of Information Technologies collectively determine the STI policy, and are accompanied by execution agencies (i.e., the IT-Park and the Agency for the Development of Entrepreneurship). Policy and execution instruments are thus scattered across various ministries and agencies, becoming hard to follow and implement.

Goal: Assist the government in complementing the already defined STI strategy with an entrepreneurship policy. Additionally, help the government with an adjusted institutional design and the definition of instruments required to comply with the policy.

Proposal: Assist the government in complementing the STI policy with an entrepreneurship policy definition; determine the institutional structure; and design an entrepreneurship execution agency.

Expected output: The output would be an STI policy with entrepreneurship elements incorporated, a developed institutional structure, and the design of an execution agency.

Timing: Mid-term

Pillar 3 - Enhancement of the ecosystem environment and interactions

A vibrant entrepreneurship ecosystem is one where its actors create value through fluid and frictionless interactions. In weak or new ecosystems, these interactions are often fragile or inexistent because of its members lack trust or knowledge. In Uzbekistan, distrust exists between large companies and entrepreneurs, and between entrepreneurs and the government.

To improve interactions and increase trust, a proactive effort should be made in creating opportunities for members of the ecosystem to engage in meaningful exchanges that reduce friction. A persistent and prolonged effort will be required to see tangible results.

The following areas of intervention are recommended:

Subpillar 3.1 Interaction activities

- **Entrepreneurs with entrepreneurs:** These interactions allow entrepreneurs to share experiences, new business opportunities, corporate venturing, and more. Business incubators and accelerators usually organise these events. Many of them are associated with international forums like First Tuesday, FUNights and Startups.com, which can provide a specific format for the activities.

- **Between entrepreneurs and investors:** These are usually demo days where entrepreneurs showcase their start-ups to investors and aim to raise financial capital. Business incubators, accelerators, and angel investor networks often organise these events.
- **Between government officials and the ecosystem in general:** The government, represented by the Entrepreneurship Agency, is an essential actor in the ecosystem. Government officials should engage in formal and informal activities with other ecosystem actors. Formal activities include presentations of annual accounts, programmes, studies, diffusion events, etc. Informal activities include government participation in events organised by civil society, intermediate organisations, award events, etc.

Subpillar 3.2 Knowledge generation activities

Monitoring the development of the ecosystem requires data and knowledge collected and developed by specialised organisations like universities, think tanks and research centres. Helping them to develop joint research or benchmark projects with international technical organisations like GEM, GII, Kaufmann Foundation, and foreign universities should be encouraged.

Subpillar 3.3 Education, training, and skill development activities

In connection with action 2.2.3, training centres and universities should be encouraged to apply for government support for specific courses or programmes that advance innovation and entrepreneurial skills. The implementation of programmes in high schools would also be worth exploring.

Subpillar 3.4 Entrepreneurial culture, dissemination, and communication activities

Public events that disseminate activities related to innovation and entrepreneurship are essential to making them aspirational, especially among younger generations. Events may include competitions, workshops, technology fairs, and more. A national innovation award given by the country's highest authority or public figure, or showcasing successful entrepreneurs on national television, would mark innovators and entrepreneurs as figures of success in the public mind.

Action 3.4 Open bid programme for the ecosystem environment enhancement and interactions

Implementing interaction activities is a complex endeavour and it is difficult to decide what should be prioritised. An open bid programme is thus recommended. Through it, organisations related to the entrepreneurship ecosystem could present projects that would be evaluated and selected by an independent committee. The projects should support at least one of the relevant areas:

- Interaction initiatives
- Knowledge generation initiatives
- Education and training initiatives
- Culture, dissemination, and communication initiatives

The selection committee should select the most impactful and relevant initiatives in Tashkent and other regions, subject to a budget defined and made public in the bid description.

Goal: Execute a series of cultural and ecosystem enhancement initiatives.

Proposal: A series of initiatives to enhance the entrepreneurship ecosystem executed by civil-society and private organisations with the support of the government entrepreneurial agency.

Expected Output: The output would be an annual set of activities executed by the private sector and aimed at enhancing the ecosystem and the interactions within it.

Timing: Mid to long-term

Example: The Chilean PAE Programme (Entrepreneurial Environment Support Program)

In 2011, a national Entrepreneurial Ecosystem Environment Support Programme (PAE) was launched in Chile by the National Innovation Agency. Over 60 applications were received in the areas of training and education, knowledge, interaction enhancement, and internationalisation. The projects involved a cap of USD 100.000 with 25% matched by the applicant. The maximum execution period was set at 36 months. In the end, 25 initiatives were selected and funded, totalling USD 2.8 million.

The programme was so successful that it became a new division (Ecosystem Support Division) within the agency, and the PAE programme was executed once a year for over ten years. Matching grants were contingent on communicating and disseminating the results of the projects to the public.

Subpillar 3.5 Ecosystem institutional design

A rich and thriving entrepreneurial ecosystem is based on an institutional design that enables spaces of interaction, engagement and trust building between the private and public sector, and where both are able to express their needs, share long-term goals, and co-design policy.

Action 3.5 Public-private steering committee / Innovation council

Both the private and public sector should define a country's innovation and entrepreneurial strategy, policy, and execution instruments. A 15-member Innovation Council that annually recommends strategies and policy to the Prime Minister could be a suitable vehicle for this in Uzbekistan. The Council could have representatives of the relevant ministries (i.e., Ministry of Innovative Development, Ministry of Development of Information and Communications, Ministry of Foreign Affairs, Ministry of Finance, Ministry of Economic Development and Poverty Reduction, Ministry of Higher Education, and Ministry of Energy).

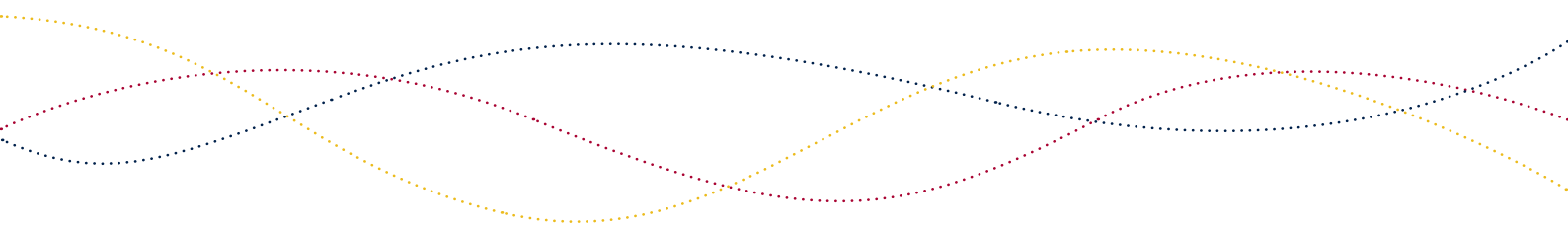
Participation of the ministers themselves would enhance the role of the Council. The Council could also include prestigious representatives of the private sector and academia. Likewise, the Council could define smaller executive groups to deal with specific policies, instruments, or sectors at a ministerial or agency level (e.g., an energy subcommittee with three or five members to define policy regarding innovation in the energy sector).

List of Abbreviations

ECI	Economic Complexity Index
GDP	Gross Domestic Product
GEM	Global Entrepreneurship Monitor
GERD	Gross Domestic Expenditure on R&D
GII	General Innovation Index
R&D	Research and development
SME	Small and medium sized enterprises
STEM	Science, Technology, Engineering, and Mathematics
STI	Science, technology and innovation
WIPO	World Intellectual Property Organisation

Endnotes

1. See <https://oec.world/en/profile/country/uzb>.
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4. Kauffman Foundation, “Tech Starts: High-Technology Business Formation and Job Creation in the United States”, 2013, <https://www.kauffman.org/entrepreneurship/reports/firm-formation-and-growth-series/tech-starts-hightechnology-business-formation-and-job-creation-in-the-united-states/>.
5. Haltiwanger, Jarmin, Kulick and Miranda, 2017 “High Growth Young Firms: Contribution to Job, Output and Productivity Growth”, <https://www.nber.org/books-and-chapters/measuring-entrepreneurial-businesses-current-knowledge-and-challenges/high-growth-young-firms-contribution-job-output-and-productivity-growth>.
6. “Deal flow” is the number of investment opportunities available at a given time to a particular company or investor or within a particular region or market sector. The term is used by investment bankers and venture capitalists to describe the rate at which business proposals and investment pitches are being received.
7. Dildora Tadjibaeva, Small and Medium-Sized Enterprise finance in Uzbekistan: Challenges and Opportunities, ADBI Institute, 2019, <https://www.adb.org/publications/small-medium-sized-enterprise-finance-uzbekistan-challenges-opportunities>.
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10. See https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2021.pdf.
11. Doing Business Report 2020, <https://openknowledge.worldbank.org/bitstream/handle/10986/32436/9781464814402.pdf> (in 2021 the World Bank Group management took the decision to discontinue the Doing Business Report).
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13. Mapping Research and Innovation in the Republic of Uzbekistan, UNESCO, 2020, <https://unesdoc.unesco.org/ark:/48223/pf0000374566>.
14. Decree of the President of the Republic of Uzbekistan of 28 January 2022, No. UP-60, <https://lex.uz/ru/docs/5841077>.
15. See <https://nationaluzvc.uz/en/home/>.
16. See https://yoshlarakademiya.uz/en/home_en/.
17. William Eshee (et al), Entrepreneurship in The Republic of Uzbekistan: A Model for Other Emerging Nations, 2011.
18. Center for Economic Research and Reforms (CERR) 2021.
19. The interactive version of the map can be found [here](#).
20. See https://www.theglobaleconomy.com/Uzbekistan/wb_political_stability/.
21. See <https://americassbdc.org/about-us/>.



This report has been prepared by the Institute for Integrated Transitions and its Uzbekistan Brain Trust.

The [Uzbekistan Brain Trust](#) is a multidisciplinary platform of leading Uzbek experts actively engaged in shaping the country's future. Working on a non-partisan, expert basis, the Brain Trust aims to contribute to a successful transition towards a prosperous, just, and inclusive society, building on Uzbekistan's distinctive development model and holding open channels of policy dialogue with relevant officials and stakeholders.

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