Japan International Cooperation Agency

KITE

Mongolian Marketing Consulting Group

# Baseline survey of the Mongolian start-up ecosystem

## Final Report

Ulaanbaatar, Mongolia
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**List of abbreviations**

| | |
|---|---|
| Adtech | Advertisement technology |
| Agtech | Agriculture technology |
| AI | Artificial Intelligence |
| B | Billion |
| B2B | Business to business |
| B2C | Business to customer |
| B2G | Business to government |
| CVC | Corporate Venture Capital |
| Edtech | Education technology |
| GDP | Gross Domestic Product |
| GSER | Global Startup Ecosystem Report |
| HR | Human resource |
| ICT | Information and Communication Technology |
| IEO | Initial Exchange Offering |
| IP | Intellectual Property |
| IPO | Initial Public Offering |
| ISIC | International Standard Industrial Classification of All Economic Activities |
| IT | Information Technology |
| JICA | Japan International Cooperation Agency |
| LLC | Limited liability company |
| M | Million |
| MES | Ministry of Education and Science |
| MNT | Mongolian tugrug |
| MNUMS | Mongolian National University of Medical Science |
| MULS | Mongolian University of Life Science |
| MUST | Mongolian University of Science and Technology |
| MVP | Minimum viable product |
| NGO | Non-government organization |
| NSO | National Statistical Office |
| NUM | National University of Mongolia |
| R&D | Research and Development |
| SRLED | State Registration of Legal Entities Department |
| STEM | Science, Technology, Engineering and Mathematics |
| STF | Science and Technology Fund |
| USA | United States of America |
| USD | United States Dollar |
| VC | Venture Capital |

# Executive summary

According to the StartupBlink 2021 Global Startup Ecosystem Index, **Mongolia is ranked #88 out of the top 100,** a jump by 5 spots since 2020. In 2021 Mongolia also ranked #67th for the first time in the global top for Software and Data. **Ulaanbaatar** ranked for the second time in 2021 at # 491 out of 1,000 cities, a jump of 199 spots from 690 in 2020. The report noted that Mongolia's startup ecosystem is still in the development stage but already it is showing good promise with the government initiatives for the digital economy and growing tech talent.

**Your local entrepreneurs are talented enough to create magic. Make sure the infrastructure of your startup ecosystem is ready for them.**
*Eli David CEO, StartupBlink*

The goal of a startup ecosystem is to launch and to grow companies in a competitive technology-driven global value chain. Globally, founders and investors seek to find the best ecosystem that maximizes their success in becoming a unicorn while policy makers compete in creating favorable policy and regulatory environments to increase the economic impact of startups.

This survey report attempts to quantify the potential of the startup ecosystem in Mongolia and to gather the attention of policy makers, private sector, investors, and international organizations in supporting its growing pool of tech-startups and in prioritizing its human capital development. Total 80 startups, 10 incubators, accelerators, innovation hubs and meetup groups, 9 universities, technology colleges, and research institutions, key policy makers and international development organizations have been interviewed in this assessment.

**The total value of the Mongolian startup ecosystem is estimated to be at least MNT 452 billion** based on the mean valuation of the startups surveyed. **Total funds raised is estimated at MNT 96 billion**. Startups in the survey are estimated to have a **total revenue of MNT 60 billion or and they created 1318 jobs** in the economy of which 717 are full time jobs.

The potential contribution of the startup ecosystem is more evident if we compare it to the travel sector. According to the National Statistics Office (NSO), the travel sector generated MNT 54 billion in revenue contributing 0.5% to the GDP of the country in 2021 and it supports 1237 jobs in the economy.

The Mongolian startup ecosystem is relatively young, with 63% of startups becoming operational in the last 3 years with an average 3.6 years of operational history. Specifically, 32% of surveyed startups have become operational in 2021. 90% are officially registered with the General Authority for State Registration of Mongolia. The startups registered 137 intellectual properties of which 10 are international, all of which are in commercial use. Startup founders are well-educated with 48% having an advanced degree and 44.6% with a degree in STEM. The founders bring sufficient expertise and on average they have established 2.4 startups. That said, the startup ecosystem, in order to grow, needs to address challenges and most of these challenges require policy interventions and a commitment from the government. All key stakeholders interviewed for this survey have provided frank and constructive comments on how we could tackle some of these challenges.

At startup level, **recruiting is the major challenge faced by startups in the interview (63%)**, followed by capital raising (55%), sales and customer acquisition (49%), team development (38%) and internationalization (35%). The **top five most needed support identified by startups are:** investment

funds (61%), improved tax regulations (54%), subsidies/grants (40%), intellectual property and regulations to protect innovations *(*39%) and loans (31%).

Startups view Mongolian startup ecosystem as evolving and identified **top 5 factors to support the ecosystem development:** educated workforce (68%), stable economic environment (59%), level of innovation (41%), purchasing power of the population (34%), and availability of team members (29%).

**The view of policy regulators and government agencies is less positive** when it comes to the startup ecosystem development. In their view, innovation transfer, cluster development and policy regulations need improvement. In addition, lack of investors is holding back the development of startups. From donors' perspective, **the government commitment to the development of the startup ecosystem is the key factor** in accelerating startup growth. They also believe that the government role should be of an enabler by creating favorable and well-researched policies and regulations. We have also looked at ecosystem in Japan and Singapore, as well as in Lithuania and Estonia to provide some examples of good international practices on supporting the startup ecosystem development.

Based on the feedback from key stakeholders we have suggested four key areas for the startup ecosystem development, namely:

1. **Create enabling policy and regulations to support startups economic growth:** Mongolia ranks #110 in business environment in the Global Innovation Index 2021 (GII-2021). The government can become a champion in bringing international investors into Mongolia while relying on experience and expertise of the private sector to develop the startup ecosystem. This view has been echoed by all stakeholders including international donor organizations. The government policies and regulations need to be updated to allow connectedness within the key stakeholders to flourish.
2. **Incentives for startups and investors:** Countries, in their commitment to support startups, create various incentives for startups and investors. Lithuania is the best case of well structured support to startups tailored in accordance to the development stages of startups. Tax incentives and better business environment are important to drive investments into startups.
3. **Promote startup ecosystem connectedness and synergies:** Mongolia ranks #123 in Innovation linkages and #124 in knowledge diffusion (GII-2021). Local and international connectedness are week. Therefore, key stakeholders need to promote startup ecosystem connectedness and synergies. Startup association / consortium, database are few examples on how key stakeholders could create an enabling startup ecosystem in Mongolia.
4. **Educational reform in STEM to support innovation and workforce:** Mongolia ranks #81 in human capital and research (GII-2021). Educated and skilled workforce is a key to the development of Mongolian startup ecosystem. Recruiting and building a skilled team has been stated as a key challenge for startups in Mongolia. Reduction in enrolment to STEM profession is another indicator for the government to have a new path in reforming STEM education.

# Methodology

In this assessment the startup definition was narrowed to technology-based companies that seek to disrupt ways of doing business within their sectors. The methodology the survey attempted to follow was the Global Startup Ecosystem Report (GSER) approach (Startup Genome LLC) in measuring emerging ecosystems to enable comparison with other ecosystems. This methodology uses five key indicators of ecosystem development with specific weights assigned to each indicator.

- Performance;
- Funding;
- Market Reach;
- Experience, Talent and Knowledge;
- Connectedness.

The major weakness in assessing the Mongolian Startup ecosystem is lack of reliable third-party data sources used globally to measure startup ecosystems. For example, in the GSER, Startup Genome uses Crunchbase, Dealroom as third-party data sources. At the same time, the GSER utilizes global founders survey as well as on the ground research by local companies.

Since relevant databases are not available for Mongolian startups, our approach is based on qualitative assessment of the startup ecosystem by interviewing key stakeholders of the startup ecosystem. A total of 80 startups, 10 accelerators / incubators and innovation hubs, 9 universities and technology colleges (KOSEN), international development organizations and government organizations have been interviewed in this assessment. The startup sector classifications also followed the GSER classification with few additions.

The ecosystem value and annual revenue are based on the responses provided by startups during the interview process and, hence, cannot be verified. Therefore, the estimated value is purely derived to represent the potential of the sector rather than the true value of the sector. In addition, the mean value of responses, in interval value, has been used to reduce upside/downside bias.

We used the mean of data in interval as a midpoint of each interval or class. These midpoints then are multiplied by the frequencies of the corresponding classes. The sum of the products divided by the total number of values brings us to the mean value by which we have estimated the ecosystem value, annual revenue and other factors.

Ecosystem value, including total and average startup valuation and exit valuation of surveyed startups, were estimated as indicators of performance. For funding indicators, total and average of initial and follow-on funding were used and analyzed by sources of funding to understand access and quality of investment landscape for Mongolian startups.

Given the data limitations, it is not possible to estimate the market reach of Mongolian startups as per GSER's methodology. However, we have tried to look at the current situation with other additional indicators such as perception of target markets by startups in terms of size and their market shares in their target markets. We also included sales revenue of startups and jobs they have created to understand the role of startups in the Mongolian economy. For the talent and experience, startup founders' talent and experience are discussed as well as registration and commercialization of intellectual properties. We have attempted to summarize our findings in regards to connectedness to provide suggestions for further growth of Mongolian startup ecosystem.

# I. Overview of Startups

"Startups are rooted in innovation, addressing the deficiencies of existing products or creating entirely new categories of goods and services, thereby disrupting entrenched ways of thinking and doing business for entire industries" (The Forbes).

Total 80 startup founders were surveyed in the Mongolian Startup Ecosystem Survey.

In general, the Mongolian startup ecosystem is relatively young, with 63% of startups becoming operational in the last 3 years with an average 3.6 years of operational history. Specifically, 32% of surveyed startups have become operational in 2021. 90% are officially registered with the General Authority for State Registration of Mongolia. Startup founders are well-educated with 48% having an advanced degree and 44.6% with a degree in STEM. The surveyed startups have on average 2 founders and a maximum of 5 founders. Over half of startups were founded by all-male teams (54%), all-female teams founded 14% and teams with both male and female founders accounted for 32%.

*Figure 1: Education, n=80*

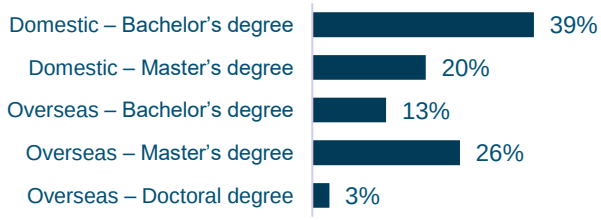
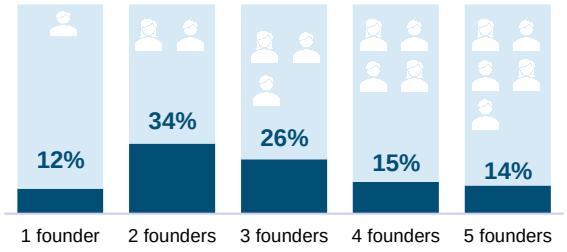
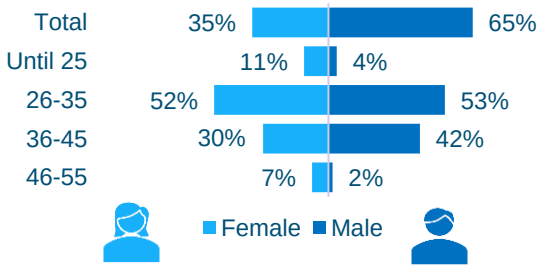



*Figure 2: Number of founding team members, n=80*



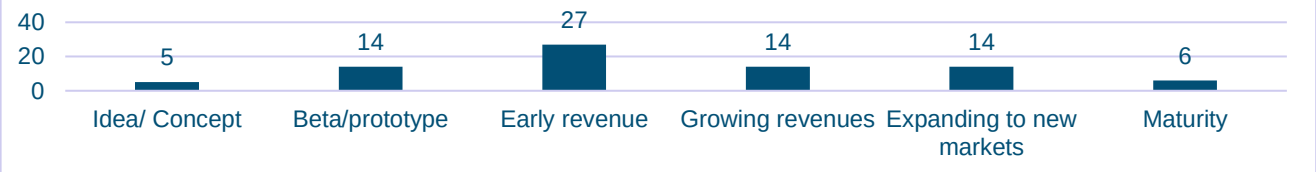

The gender ratio of the founders is 65% for men and 35% for women. They are quite young with an average age of 34 years old (youngest at 22 and oldest at 51 years old). The surveyed startups have on average 20 employees. The surveyed 80 startups have created a total 1318 jobs of which 717 are full-time jobs and 601 part-time jobs. The maximum number of full-time employees per startup is 33, and the maximum number of part-time employees is 300.

*Figure 3: Age-gender pyramid of founders, n=80*




The startups in idea / beta prototype stages of development represent 24%, between early revenue to expanding to new market represent 69% of startups and 7% of startups considered as mature.

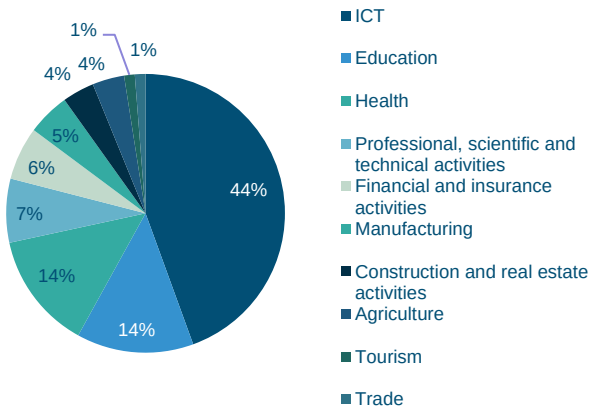
*Figure 4: Startups by development stages (by count), n=80*



## Mongolian startup ecosystem

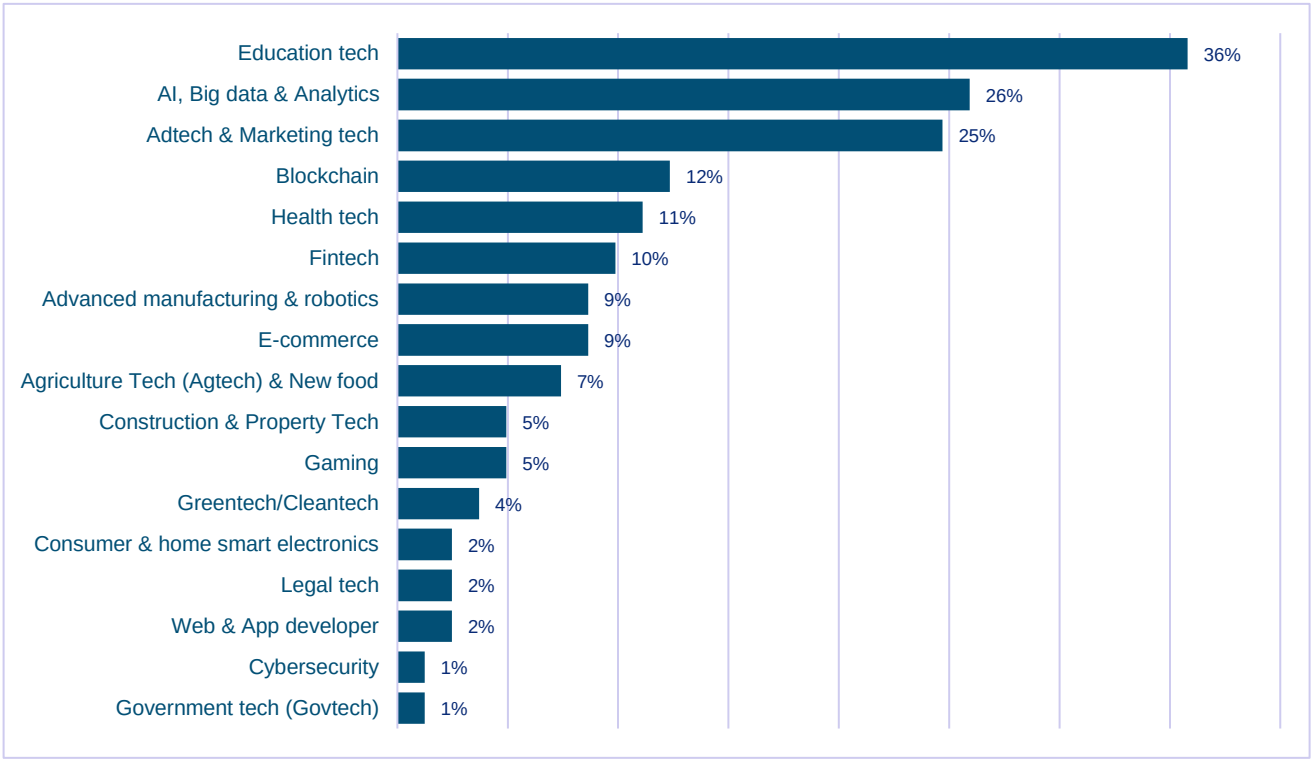
To understand the dynamics of our startups we have investigated the new companies established in 2021. According to the State Registration of Legal Entity's Department (SRLED), a total of 13,519 limited liability companies (LLCs) were newly registered in Mongolia in 2021. According to the National Statistics Office (NSO) of Mongolia there were 73,221 active companies as of December 2021. Both SRLED and NSO use International Standard Industrial Classification of All Economic Activities (ISIC). The ISIC and the GSER sector classifications are different, hence, it not possible to compare our survey with official statistical data.

*Figure 5: Sector of startups, n=80*




The surveyed startups have been classified in accordance with the GSER methodology (with added categories such as e-commerce, legal tech, web and app developer). According to the GSER classification, startups are predominantly in education tech (36%), followed by AI, Big Data and Analytics (26%), Ad / Marketing Tech (25%). Education tech (by count) is leading the startup sectors while fintech and blockchain sectors lead in revenue.

*Figure 6: Subsectors of startups, n=80 (double counting)*



# II. Performance

The GSER methodology includes three main factors in estimating performance such as **ecosystem value**, **exits**, and **startup success**.

*Table 1: GSER's performance indicators, n=80*

| Indicators | Sub-indicators | Evaluation of Mongolian startups |
|---|---|---|
| **Ecosystem value** | Sum of startups estimated valuation | MNT 423.9 B |
| | Sum of exit valuation | MNT 28.2 B |
| | **Total ecosystem value*** | **MNT 452.1 B** |
| **Exits** | Number of exits more than $50M | None |
| | Number of exits more than $1B | None |
| **Startup success** | **Growth stage success** | |
| | # of Series C-to-A startups | None |
| | # of Unicorns | None |
| | **Speed to exit** | |
| | Average company age at the exit | About 5 years |
| | Average company age at IPO | About 4 years |
| | **Early-stage success** | |
| | # of Series B-to-A startups | None |

*Note: * - Duplicated estimation. Exit valuation has double counted in estimated valuation.*

The GSERs collect information from the third-party databases such as StartupGenome.com, Crunchbase.com and Dealroom.com and others. The deals from Mongolian startups are not included in these databases. Hence, the information related to startup valuations, exits, revenues and other confidential data was derived from self-reported data of the surveyed startups. Some of the performance factors, including exits of more than $50M and $1B, growth stage success and early-stage success, cannot be estimated based on the information provided by startups in the survey. Furthermore, to protect confidential information, the survey has been constructed to collect the information related to the performance as a range rather than an absolute number.

## Ecosystem value

Ecosystem value consists of the estimated sum of startups valuation and exit valuations in accordance with the GSER methodology. Based on the responses of the surveyed startups, the **total startup valuation was estimated at MNT 452.1 billion**, the sum of startups latest valuation was estimated at MNT 423.9 billion with average valuation at MNT 9.2 billion and the sum of exit valuation was MNT 28.2 billion with average exit valuation at MNT 1.5 billion.

**SUM OF STARTUPS ESTIMATED VALUATION**

423.9

Billion MNT

**SUM OF EXIT VALUATION**

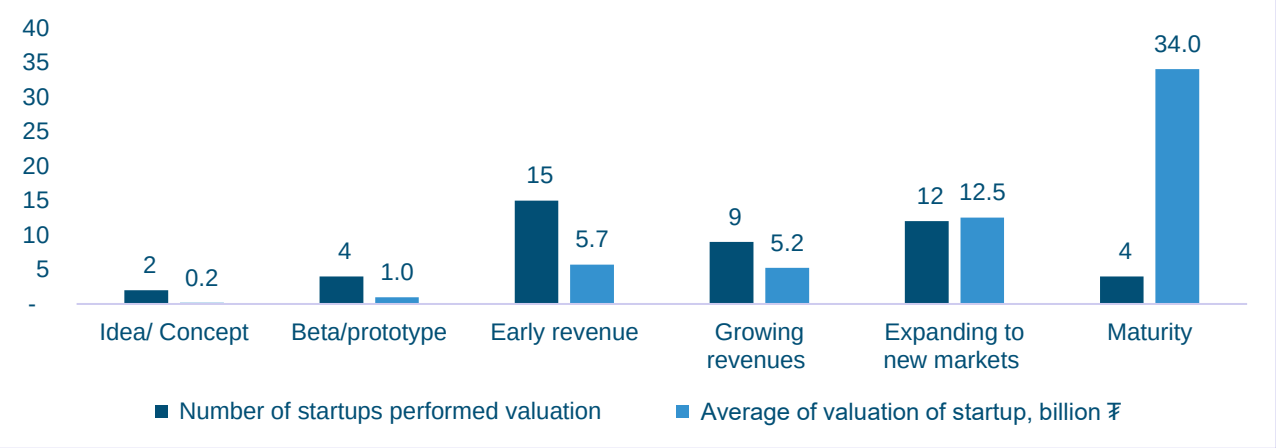
28.2

Billion MNT

## Startup valuations

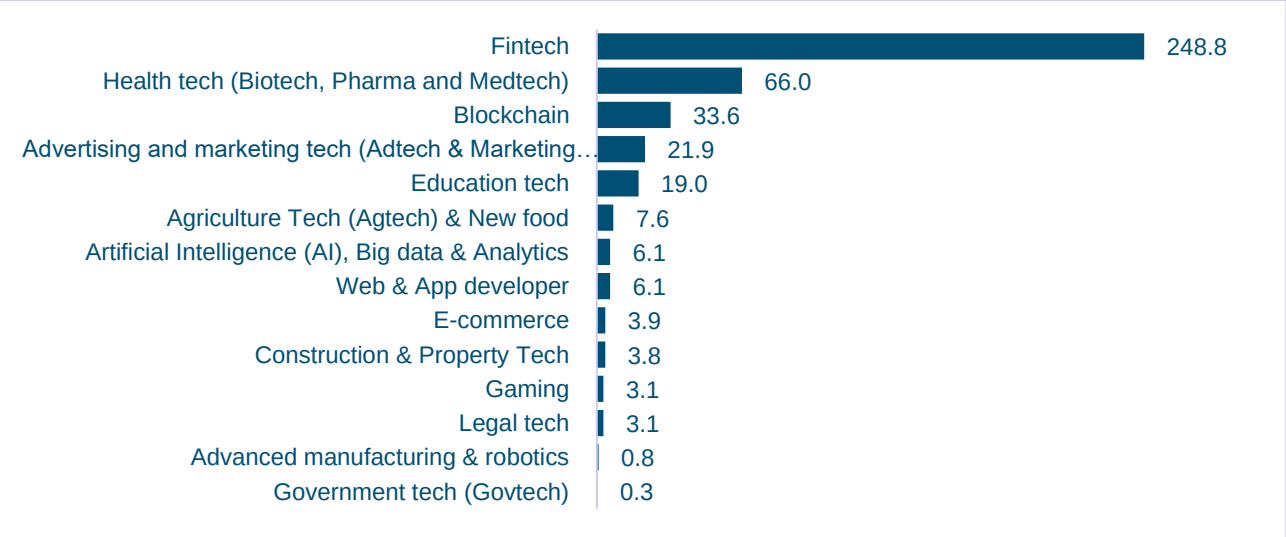
46% of surveyed startups performed company valuations performed valuations of their companies internally, 44% had not valued their companies and only 10% had a third-party valuation such as Socratus, Ard Credit, Rhino Asset, and Standard Investment. The average amount of the startup valuation was MNT 9.2 billion, the maximum amount of the startup valuation was MNT 125 billion. As startups move along the development stages the average valuation increases as well.

*Figure 7: Number of startups performed valuation and their average valuation, MNT billion, by development stages, n=46*




The sector with the highest valuation is fintech (MNT 248.8 billion), followed by Health tech (MNT 66.0 billion), and blockchain (MNT 33.6 billion). The startups in fintech sector are valued higher given their market reach in terms of customers as well as the overall need for finance in Mongolia. Blockchain and AI are also associated with Fintech than with any other sectors in our survey. Given multiple responses by startups on sub-sectors (i.e. one startup could belong to several sectors like fintech / blockchain etc.).

*Figure 8: Sum of startup valuation, MNT billion, by subsectors, n=46*



## Exit valuation

19 of surveyed startups (24%) had a partial sale of their equity of which 5% through IPO and 95% through private offerings to large corporations. The total exit valuation was approximately MNT 28.2 billion. The startups which have reported partial sales of their equity had impressive records of exit valuation of 12 times from their initial funding.

***The total value of exit startups has increased 12 times from the total initial investment.***

Sum of initial funding for partial exit startups

**2.3**

billion MNT

**x12**

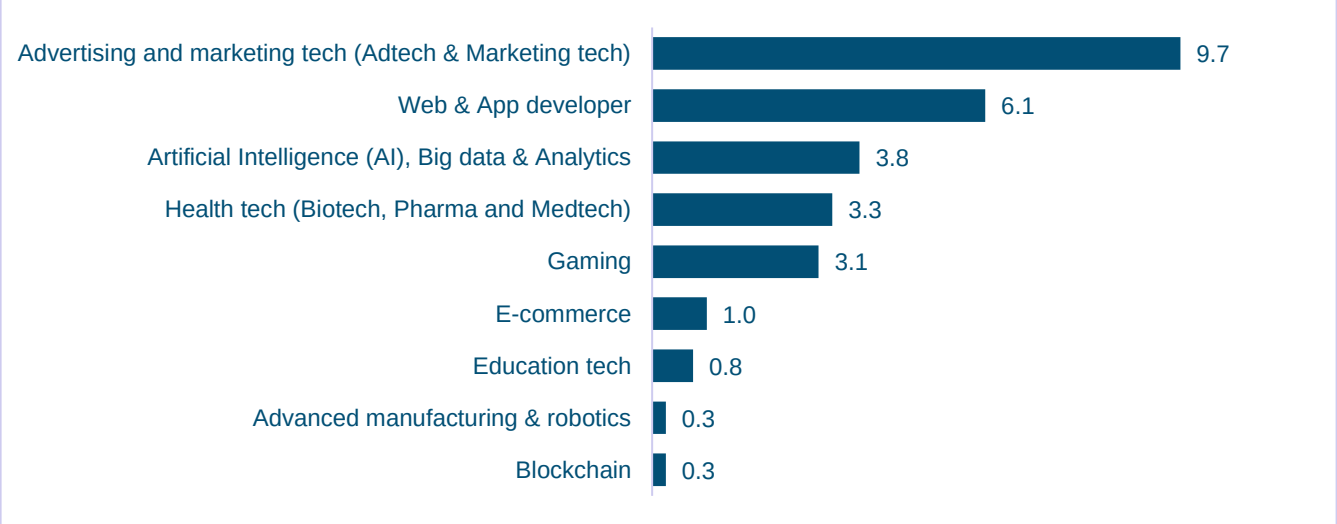
Sum of exit valuation for partial exit startups

**28.2**

billion MNT

By subsectors (identified by multiple choices), AdTech & Marketing tech startups reported the highest exit valuation (MNT 9.7 billion), followed by web and app developer (MNT 6.1 billion), and AI, Big data and analytics (MNT 3.8 billion). The average exit valuation was MNT 1.5 billion.

*Figure 9: Sum of exit startup valuation by subsectors, MNT billion, n=19*




## Startup success

The GSER methodology to assess startup success consists of three main indicators: **growth stage success, speed to exit** and **early-stage success** as shown below.

| GROWTH STAGE SUCCESS | SPEED TO EXIT | EARLY-STAGE SUCCESS |
|---|---|---|
| Growth stage success investigates the number of Series C-to-A startups and unicorns. | Speed to exit investigates the average company age at the exit and the average company age at IPO | The number of Series B-to-A startups expresses Early-stage success. |

Given the data limitations, our survey is not sufficient to assess startup success based on the GSER methodology.

In terms of growth stage success, it is also too early to assess the growth stage success and Mongolia has not produced unicorns either. According to our survey, the speed to partial exit is about 5 years (maximum 11 years) and the average company age at IPO is about 6 years.

According to the Crunchbase Data as of first half of 2021, global average /median of Series B was around USD 40 million/ USD 30 million respectively and global average /median of Series A was around USD 15 million/ USD 10 million respectively. Based on our survey, we have not recorded any companies which have raised Series B. However, based on the median amount of Series A, we can assess from that at least 2 of surveyed startups succeeded in raising Series A funding, Mongol NFT with approximately USD 14.2 million investment through initial exchange coin (token) offerings (IEO) and CoinHub with approximately USD 10 million through initial coin offering (ICO)) . In addition, AND Global with investment from Marubeni of USD 10 million as per media news (for the puspose of this survey AND Global was interviewed as incubator / investor and not as a startup). This confirms our conclusion that Mongolian startup ecosystem is still in a very early stage of development and, hence, creating a favorable ecosystem to support the growth of startups is important.

## III. Funding

The GSER estimates funding by early-stage funding ( sum of all Seed and Series A funding) metrics and for emerging ecosystems funding is calculated by the access, which includes count and sum of total early-stage funding deals, and by quality, which includes volume, experience and activity of investors. Given lack of investors information our survey cannot cover the quality of funding. However, we added analysis of initial and follow-on funding to provide further information on startup funding in Mongolia.

Series A financing or Series A investment follows a startup company's seed round and precedes the Series B Funding round. "Series A" refers to the class of preferred stock sold. To receive a series A round startups need to demonstrate that they have a minimum viable product (MVP). As mentioned above in the performance section, global average / median of Series A was USD 15 million and USD 10 million respectively. However, it is important to note that Series A average differs by continents, by ecosystems.

As we have discussed in the performance section, only 2 startups in the survey have raised series A as per global median of Series A (USD 10 million) and there are no startups that reached Series B.

However,by expanding the description of early-stage funding to include seed funding and Series A funding, the fundraising story becomes more appealing.

Seed funding is the first investment in a startup company in exchange for equity/partial ownership of the company. The equity given up in exchange for the seed funding is generally in the range of 10% - 25%. Globally, seed funding varies widely from tens of thousands of dollars to around USD 10 million. According to the fundz.net, the average seed funding amount in 2020 was USD 2.2 million. Typical investors in the seed funding are angel investors, accelerators, micro venture funds and large corporations (primarily for acquisition purposes to create synergies to existing operations).

Based on this broader description, startups in our survey are primarily in Seed Funding stage. There are no startups with funding above $ 50M (Series A as per the GSER Methodology) in Mongolia. Their average funding of MNT 2.3 billion or USD0.8 million is 1.8 times lower than global average seed funding ( USD 2.2 million as per the fundz.net average).

## Initial funding

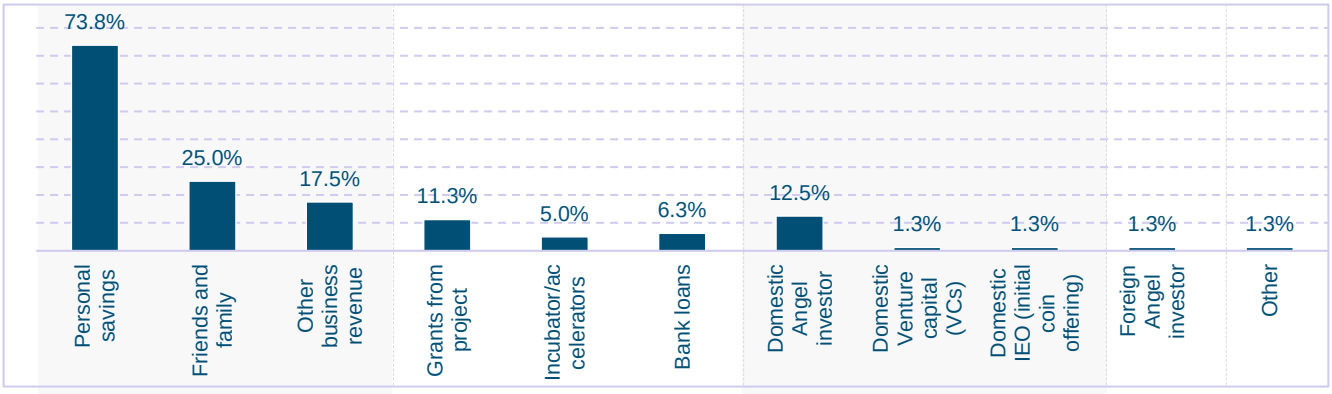
According to our survey, the sum of total initial funding was MNT 13.4 billion and average initial funding amount was MNT 183 million.

*Table 2: Initial funding indicators evaluated for startups in the survey*

| Indicators | Statistics | Amount, billion MNT |
|---|---|---|
| **Initial funding, n=80** | Average amount of initial funding | MNT 183M |
| | Maximum amount of initial funding | MNT 5.7B |
| | **Total sum of initial funding** | **MNT 13.4B** |

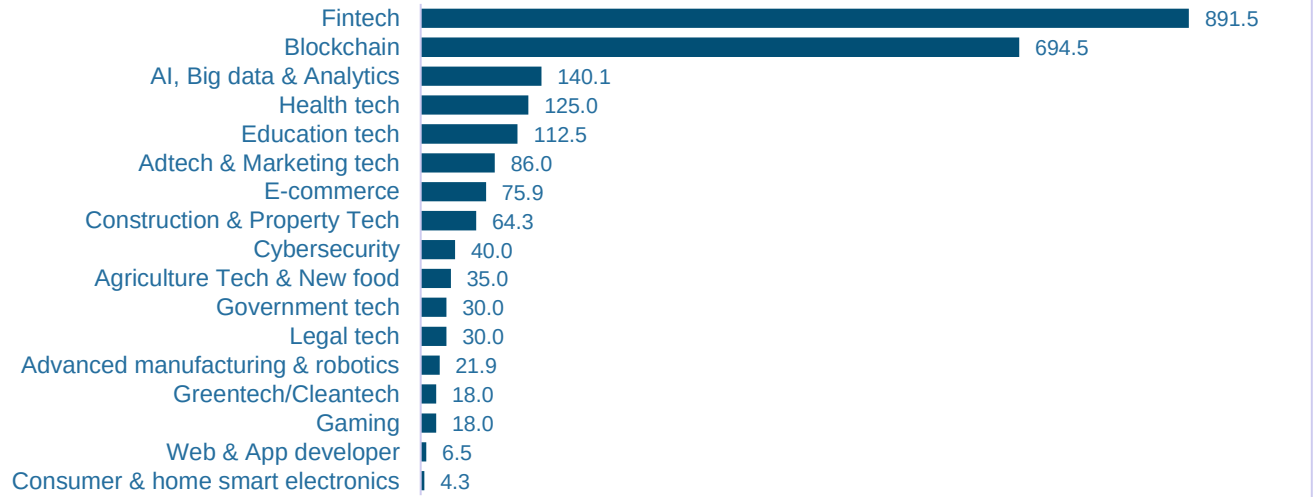
Access to funding remains the most significant challenge (by counting identified multiple choices of funding), particularly in the early stages of development as founders primarily rely on personal savings (74%), friends and family (25%), followed by other business revenue (17%) and domestic angel investors (12.5%). Grants provide 11% of initial funding, while accelerators/incubators offer 5% and loans finance another 6%. Domestic venture funds and foreign angel investors are scarce, each representing only 1.3% of funding.

*Figure 10: Source of initial funding, n=80*



The initial funding by sectors shows that fintech and startups in blockchain have raised the highest initial funding, followed by AI, big data & analytics, health tech, and education tech.

*Figure 11: Average initial funding, by subsectors, MNT million, n=80 (double counting)*




## Follow-on funding

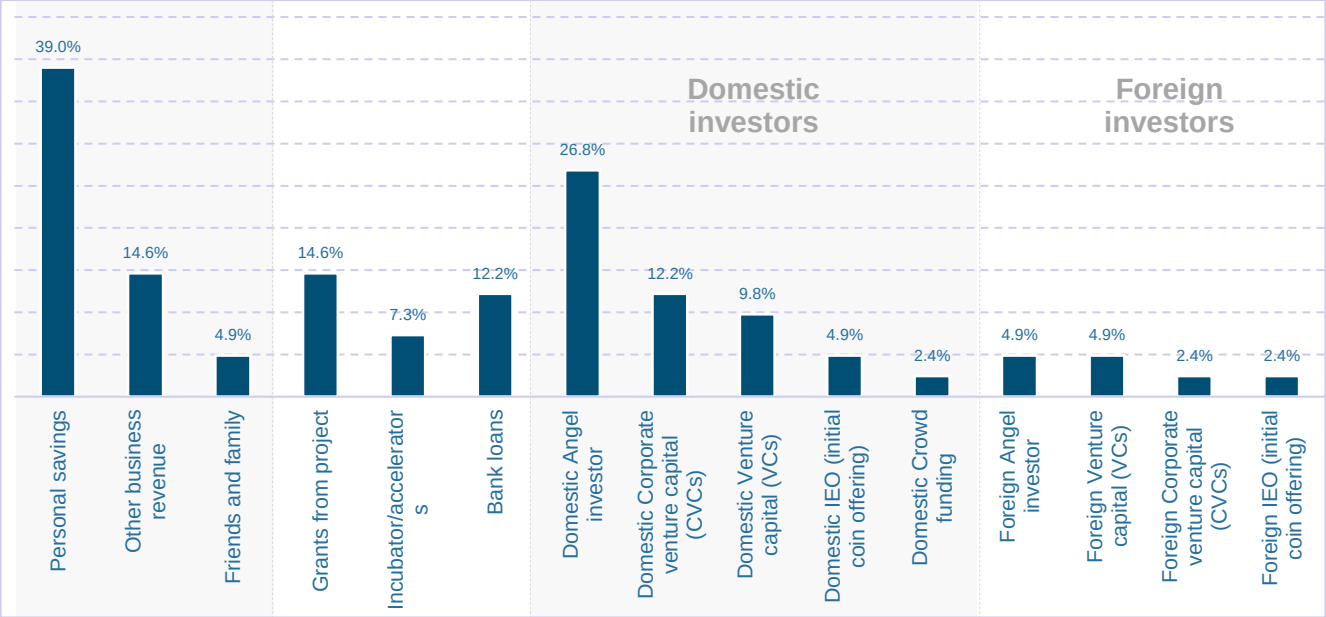
41 startups or 51% of the surveyed startups have received the follow-on funding with a total of MNT 88.9 billion. On average, startups had 2 follow-on funding (10 maximum), the average fundraising amount of follow-on funding rounds was MNT 2.3 billion.

*Table 3: Additional funding indicators evaluated for startups in the survey*

| Indicators | Statistics | Amount, billion MNT |
|---|---|---|
| **Follow-on funding, n=41** | Average amount of follow-on funding | MNT 2.3B |
| | Maximum amount of follow-on funding | MNT 40.0B |
| | **Total sum of follow-on funding** | **MNT 88.9B** |

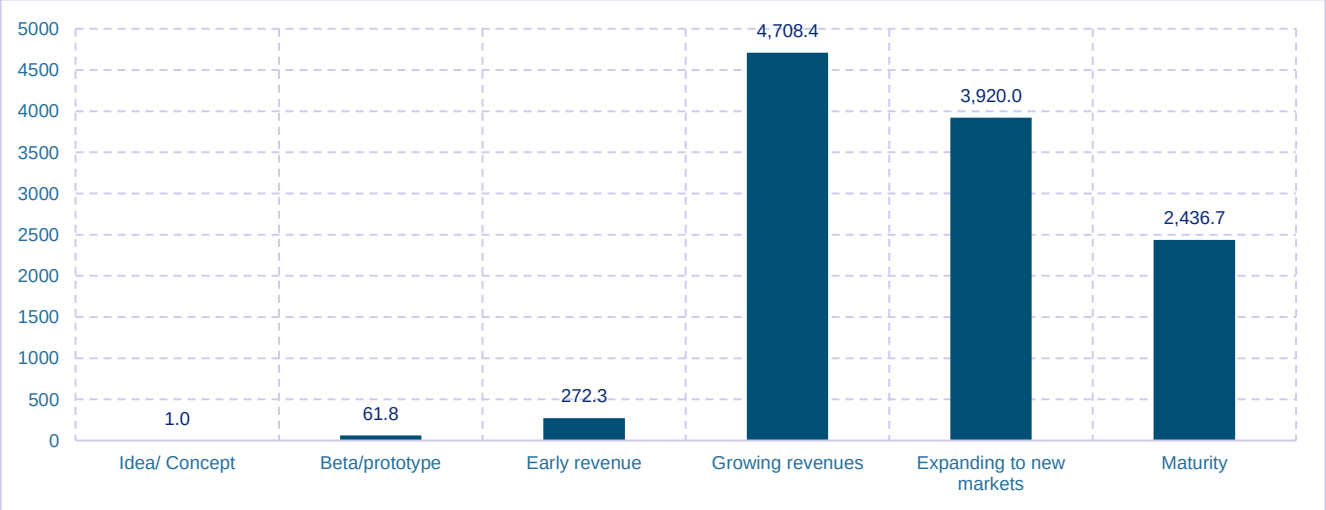
New types of investors such as corporate venture funds and foreign VCs, crowdfunding platforms become more available to startups during follow-on funding. Some of the more successful startups have raised MNT 40 billion from large international corporations and domestic venture funds. On a positive note, more domestic corporate venture investors are entering the market. Most notable investors include MCS Investment, Shunkhlai, Premium Group, TESO and others. New types of investors such as corporate venture funds and foreign VCs, crowdfunding platforms become more available to startups.

*Figure 12: Source of follow-on funding, n=41*



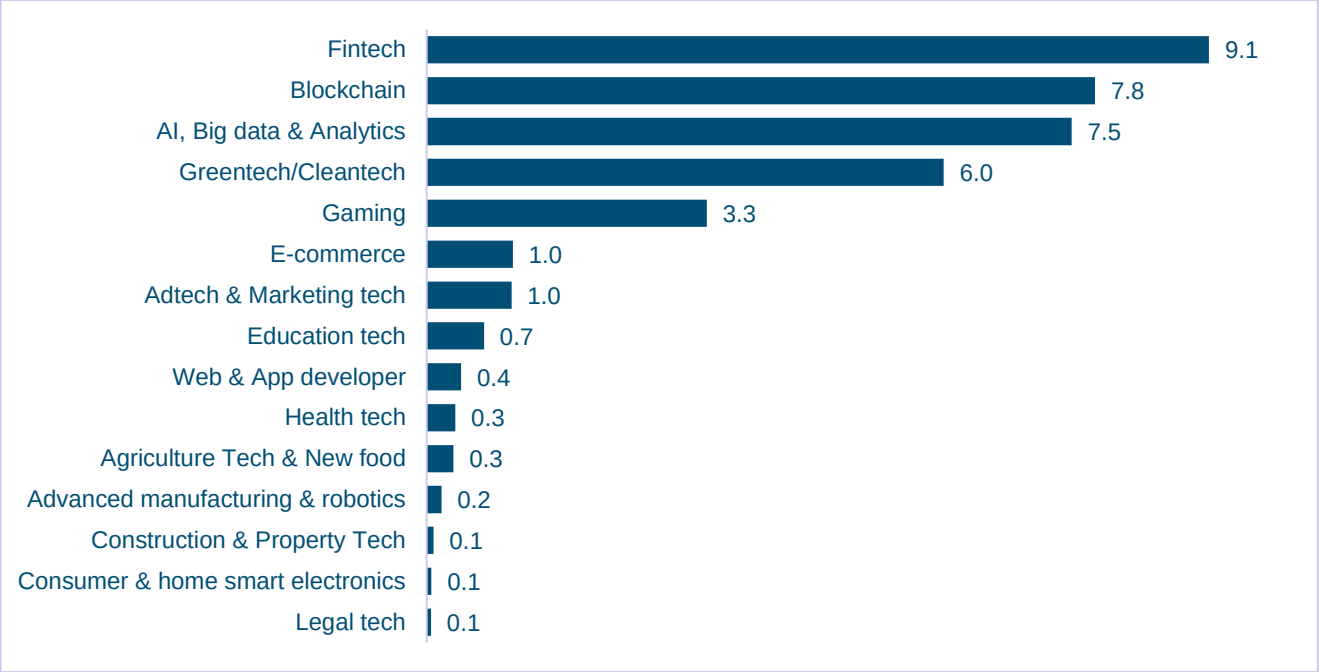

The average amount of follow-on funding by the development stage of startups is the highest for growing revenue companies (MNT 4.7 billion) followed by startups that are expanding to new markets (MNT 3.8 billion) and startups that reached maturity stages (MNT 2.4 billion).

*Figure 13: Average amount of follow-on funding, by development stages, MNT million, n=41*



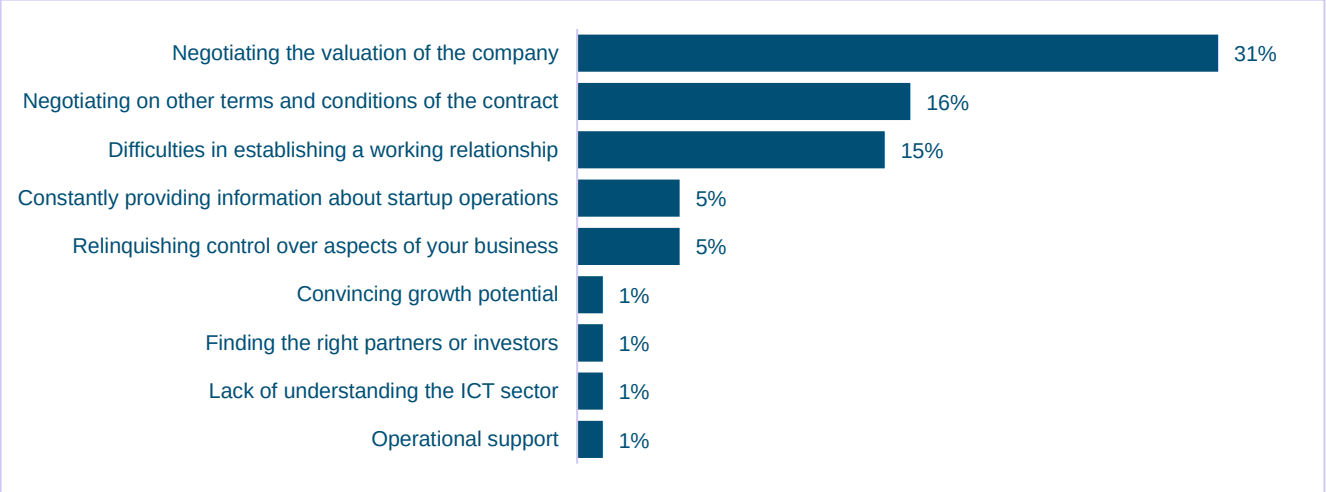

By sectors, similar with the initial funding, fintech (MNT 9.1 billion), blockchain (MNT 7.8 billion), and AI, Big Data & Analytics (MNT 7.5 billion) received the most follow-on funding.

*Figure 14: Average amount of follow-on funding, by subsectors, MNT billion, n=41*




Startups stated that negotiating the company's valuation (31%), terms of agreement (16%) and establishing working relationships (15%) were the biggest challenges in getting the funding.

*Figure 15: Main challenges in getting an investment, n=41*



# IV. Market reach

The GSER methodology evaluates market reach for emerging ecosystem based on early-stage startup access to customers allowing them to scale and "Go-Global and by commercialization of intellectual properties (IPs):

*Table 4: GSER's market reach indicators*

| Indicators | Sub-indicators | Evaluation of Mongolian startups |
|---|---|---|
| **Globally leading companies** | The ratio of the billion-dollar club (Unicorn) to GDP | None |
| | The ratio of exits over $50M to GDP | None |
| | The ratio of exits over $50M in 2018-2021 | None |
| **Local market reach** | GDP of country | MNT 43 trillion |
| **Quality** | The commercialization of tangible IP assets *(tiers from 1 to 10, score based on the International IP Index, measured at the country level)* | NA |

Given the data limitations, it is not possible to estimate the market reach of Mongolian startups as per the GSER's methodology. However, we have tried to look at the current situation with other additional indicators such as perception of target markets by startups in terms of size and shares and sales revenue of startups to understand the role of startups in the Mongolian economy. In addition, we asked whether the startups plan to enter the global markets, which countries they have identified as potential markets, and what problems they face in entering the international markets.

## Domestic market

The total revenue of surveyed startups was MNT 60.2 billion. The average revenue of startups in this survey was MNT 952 million.

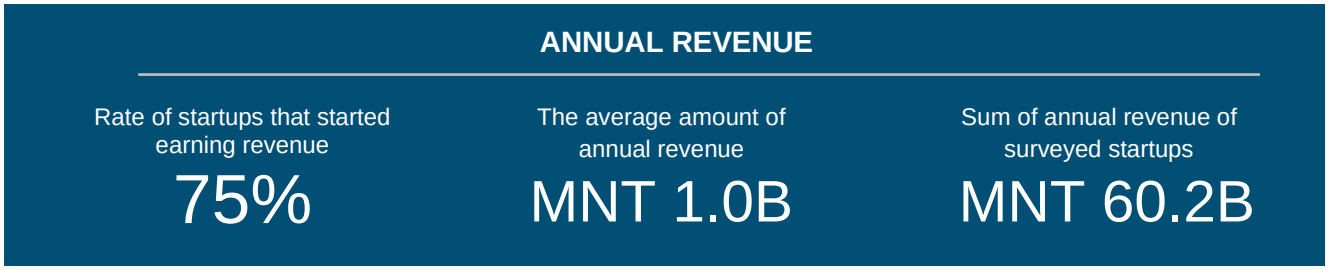
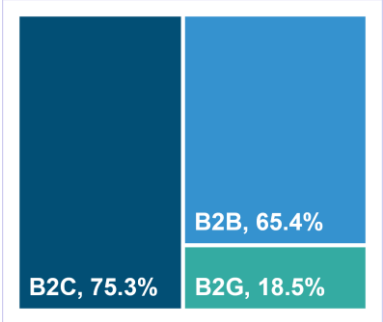



*Figure 16: Type of markets of tech-based startups, n=80 (double counting)*

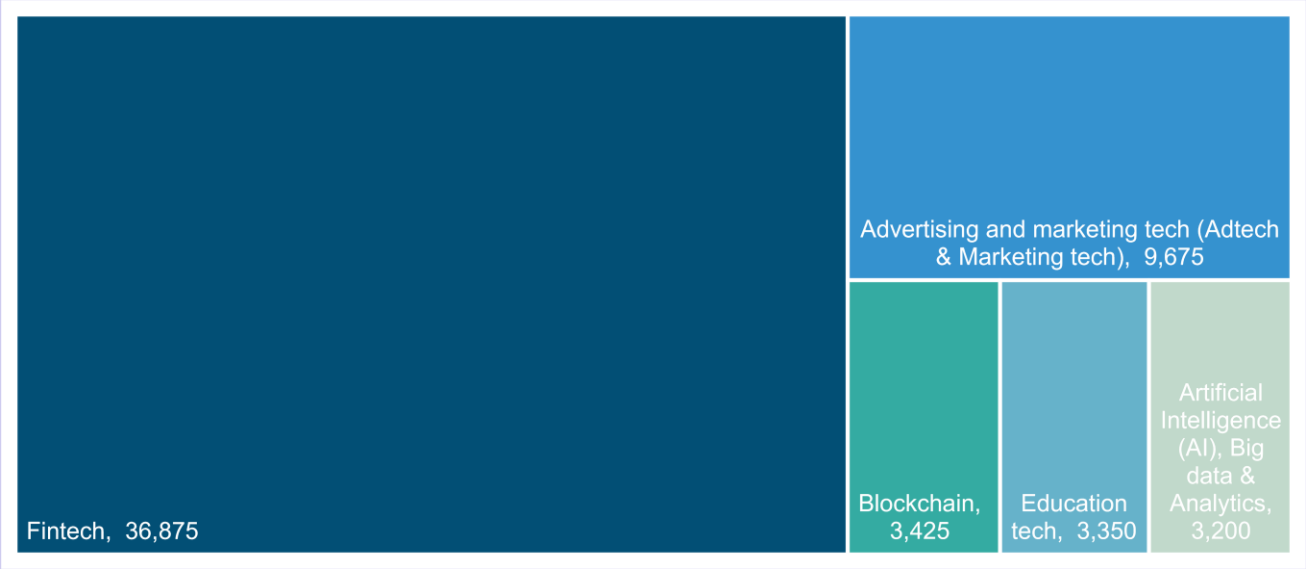



Startups self-identified their markets as primarily in business-to-consumer (B2C 75.3%), followed by business-to-business (B2B 65.4%) and business-to-government (B2G 18.5%) (double-counting as one startup can serve different types of customers).

On an aggregate basis, the total domestic market was perceived by startups to be MNT 11.1 trillion, which is 26% of GDP. On average, startups are optimistic about their domestic market reach as they believe they hold 15% (max 80%) of market share in their respective sectors.

Top 5 startup sectors in terms of revenue are Fintech (MNT 36.9 billion), Advertising and marketing tech (MNT 9.7 billion), Blockchain (MNT 3.4 billion), Education tech (MNT 3.4billion) and AI, Big data & Analytics (MNT 3.2 billion). Significant need for funding drives the fintech revenue and startups while advertising and marketing startups work with big corporations that drive their revenue.

*Figure 17: Top 5 startup subsectors by revenue (MNT million)*




75% of surveyed startups have started earning revenues. 64% of startups have begun making revenue in the first year, 15% in the second year and 21% in three or above years. It took them, on average, 1.8 years to start earning revenue and 3.3 years to become profitable.

**Average time to start earning revenue**

**1.8 years**

**Average time to become profitable**

**3.3 years**

## Global market

21.3% of startups entered or have intentions to enter into international markets covering countries such as the USA, Japan, Korea, Central Asia, Philippines, and others. Of these startups 65% have performed market research.

*Table 5: Main problems to access & compete in the foreign market*

| Indicators | Rate |
|---|---|
| Finding the right foreign partner | 55% |
| Financial Support | 54% |
| Legislations / regulations | 30% |
| Product adaption | 23% |
| Language barriers | 16% |
| Cultural differences | 15% |
| Tax differences | 9% |

The main problems to access and to compete in the foreign markets are **finding the right foreign partner (55%)**, **financial support (54%),** and **legislations & regulations (30%)**.

# V. Experience, Talent and Knowledge

The GSER assesses experience by the depth and diversity of the pool of prior startup experience in an ecosystem, talent by the accessibility, quality, and cost of software engineering expertise and knowledge by patents, research and policy:

*Table 6: GSER's experience and talent indicators*

| Indicators | Evaluation of Mongolian startups |
|---|---|
| **Experience:** Captures the degree of startup experience in an ecosystem | |
| **Startup experience in ecosystem:** | |
| **Funding of Series A** | Total: $24.6 M (MNT 70B) as per global median of USD10mn (Crunchbase) |
| **Scaling experience in ecosystem:** | |
| Number of exits of more than $1 billion | None. |
| Number of exits of $50 million | None. |
| **Talent:** Assesses the talent to which early-stage startups have access | |
| **Quality & Access:** | |
| Count of exits over $50 million | None. There are no exits of $ 50M. |
| Share of top Github coders to total Github coders | None. According to the Github statistics (https://github.com/), there were 395 accounts (#111 in the world) and 2,399 followers (#95 in the world). For the top coders, there is no one in the list. |
| Count of coders on Github.com with more than 10 followers | There is no reliable data. On average 6 followers are for one account. |
| Software engineers have English proficiency score | 30%, based on responses given in the interview. |
| **Cost:** | |
| Software engineer salaries | MNT 2.2M |
| Funding runway: ratio of Median Series A funding rounds by software-engineer salary | 30 months.<br>It is calculated as median seed funding MNT 66.5M is divided by average software engineer salary MNT 2.2M in Mongolia. It means that startups could pay 30 months' salary of one software engineer by the median funding. |
| **Life Sciences:** | |
| STEM students: Number of STEM students | ~ 9000-9500 (in 2020) |

## Experience

The founders are highly educated with 48% having an advanced degree and 44.6% with a STEM degree. **On average, founders have founded 2.4 startups.** Founders have on average 6.4 years of professional experience in the sectors where they operate and 6.9 years of professional experience in other sectors.

| PERCENTAGE OF FOUNDERS WITH ADVANCED DEGREE | PERCENTAGE OF STEM GRADUATES | THE AVERAGE NUMBER OF STARTUPS ESTABLISHED |
|---|---|---|
| 48% | 44.6% | 2.4 |

*Table 7: Personal strength of founders, n=80*

| Personal Strength of founders | Percent |
|---|---|
| Sector experience/knowledge | 77% |
| Networking | 57% |
| Leadership skills | 56% |
| Foreign Language | 38% |
| Financial management experience/knowledge | 28% |
| Experience of working abroad | 26% |
| Legal Knowledge | 14% |
| Others | 15% |

77% of founders believe that sector experience, networking (57%), leadership skills (56%) and foreign language (38%) helped them in founding and operating their startups.

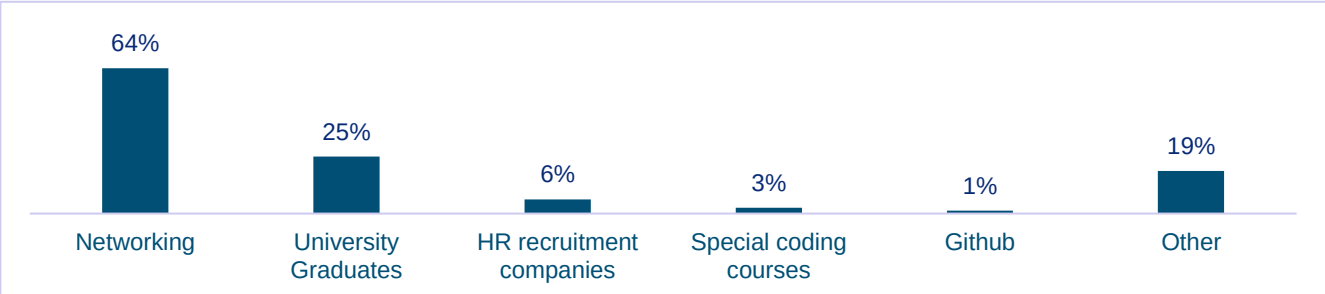
## Talent

Talent measured as the accessibility, quality, and cost of software engineering expertise. The survey shows that there is a significant lack of qualified software engineers. On average, startups have five IT professionals (max 30) in their teams, of which two (max 12) have language proficiency. While 78% of startups have IT professionals in their teams, recruiting qualified and skilled employees has been identified as the main challenge. Compared to the monthly average salary in the private sector (MNT 1.5 million as for 2020 according to the NSO), the monthly average salary of IT professionals is MNT 2.2 million or 46.7% higher.

| PERCENTAGE OF STARTUPS | THE AVERAGE NUMBER OF IT PROFESSIONALS | THE AVERAGE SALARY OF IT PROFESSIONALS |
|---|---|---|
| 78% | 5 | 2.2 MNT million per month |

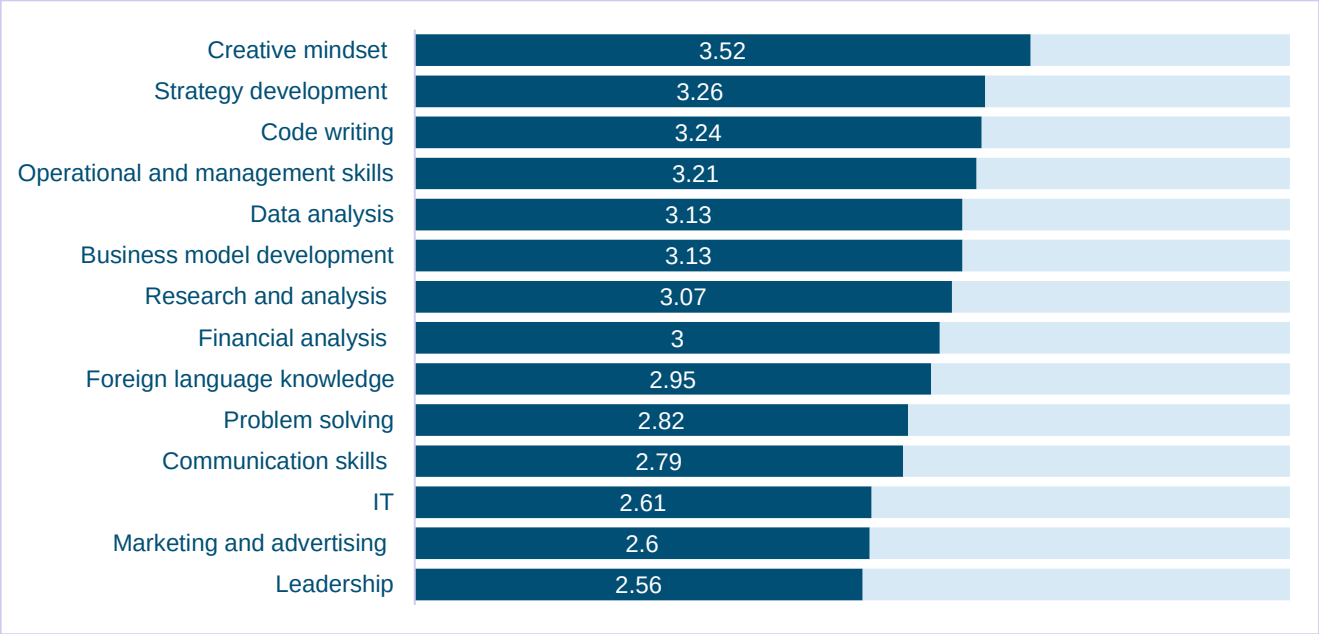
64% of startups find their IT staff through networks, 25% from universities, 6% through HR companies, 3% from coding courses, 1% from Github and 19% through announcements etc.

*Figure 18: Recruiting IT talent, n=80*



Startups have identified the top five skills as most needed: creative mindset, strategy development, code writing, operational and management skills, and data analysis.

*Figure 19: Most needed skills in the team, n=80*




## Intellectual properties

43% of startups registered 360 intellectual properties domestically and 10 internationally, all of which is in commercial use. On average, startups registered 15 intellectual properties (maximum 40). Startups assessed the effectiveness of certifying and securing new ideas as intellectual property at 4.7 on a scale of 1 (not at all complicated) to 10 (very complicated). In interviews, startups mentioned the following difficulties related to IP regulation in Mongolia.

- They also thought that protection of IP rights in Mongolia is very insufficient. Mongolia, as a state, lacks competence in protecting their IP rights.
- The process of IP registration is too long. In some cases, it took 9 months to register a trademark. They felt the risk of IP theft during long processes. They are required to make enquiries several times during the process and they need to go there several times to make it work.
- There is no regulation on how digital products should be registered. For example, it is unclear how original code is protected.
- Initial explanation of the process for startups is insufficient and not transparent. Full list of required documents to register IP is unknown. There are no advisory services by respective public organizations. One startup did not understand if their logo and name should be in English or Mongolian.
- Aside from the long process, startups felt officials' reluctance to register IP, hence, there is significant bureaucracy. The startups mentioned that IP registration requires too much irrelevant information and their forms have too many irrelevant questions with unfriendly design.
- Officials lack knowledge and skills to understand their products. For example, the officials make mistakes such as registering only one author when two people's name were submitted
- The startups also wanted online submission and there is no automation.

*Box 1: The Laws and Regulations on Intellectual Properties*

In the Law on Intellectual property (2020) of Mongolia, intellectual property is defined as follows: **"Intellectual property" means copyright works, objects of related rights and industrial property rights created as a result of intellectual creative activity".** For industrial property rights, there is only invention, utility model, design, trademark and geographical indication. It does not include any classification on startup related digital products, coding etc.

In the registration form of new copyright from the Intellectual Property Office of Mongolia, copyright types are listed as follows:

- Scientific or literature all types of oral and written work;
- Musical work with or without words;
- Art, sculpture, graphic design all work and its blueprints;
- Garden, green space, architecture blueprints
- Art of decoration, all stage work, their blueprints;
- All types of stage product including drama, dance, pantomim etc;
- Video content of all types;
- Map, atlas, architectural blueprint, plan, scheme, diagram, 3D design, explanatory picture of scientific and technical manner;
- **Computer program;**
- Created work;
- **Database;**
- Glossary, encyclopedia, almanac etc which is done by integrating several books, short stories.

The Law only registers computer programs and databases, and it does not classify digital products in detail.

The Law states (Article 5.1) that "intellectual property rights (copyright and related rights and industrial property rights) shall be protected". The Law states (Article 26.1) that "A person or legal entity that violates this Law shall be subject to liability specified in the Criminal Code or the Law on Violations".

In the Criminal Code of Mongolia (Article 18.4 - Infringement of the rights of the holders of an invention, industrial design, utility model certificate) it states that "Producing, storing, transporting, selling and crossing of the state borders of the invention, industrial design, creation covered by an utility model certificate without patent holder's consent that causes more than a small amount of damage shall be **punishable by a fine** equal to from two thousand seven hundred to five thousand four hundred units, or **community service** for a term from two hundred and forty to seven hundred and twenty hours, **or limitation of free travel right** for a term from one month to six months, or **imprisonment for a term from six months to one year**.

In other words, punishment for stealing the copyright is very light. It does not recognize copyright theft as theft. It only enforces the protection of tangible assets, not intangible assets.

# VI. Connectedness

In the GSER connectedness is measured by how connected the ecosystem is to the global fabric of knowledge (Global Connectedness) and within the local ecosystem (Local Connectedness and Innovation Infrastructure).

Global Connectedness measures **international outbound** (number of relationships with founders from top ecosystems) and number of founders of top ecosystems met locally. Local Connectedness measures "**Sense of Community**" which is defined by 50% of average hours local founders get helped by investors + 50% average hours local founders get helped by fellow founders. It also considers the log (number) of local tech events, research grants, and R&D anchors in the ecosystem.

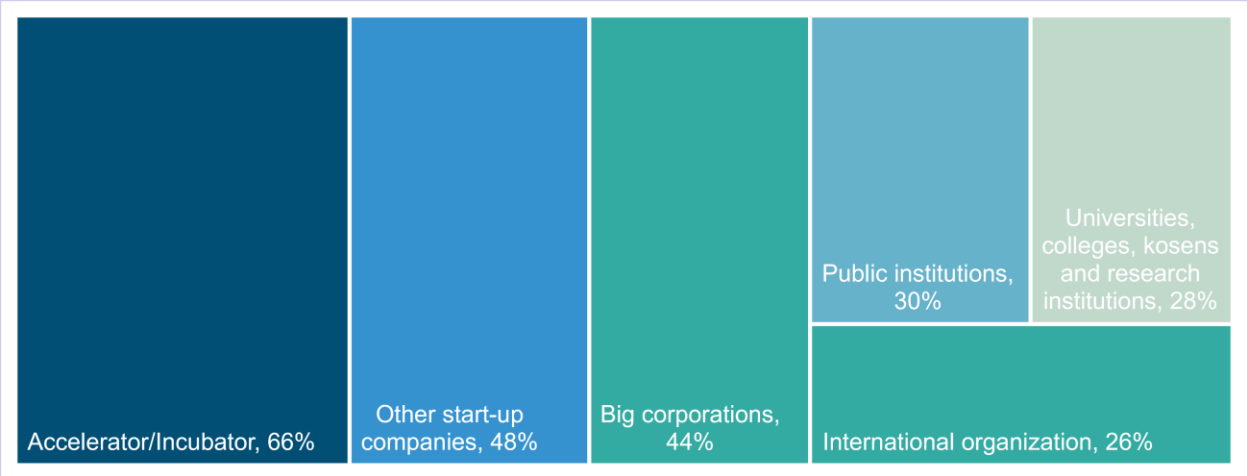
We cannot replicate GSER methodology given our data limitation, however, we interviewed all key stakeholders of the startup ecosystem in Mongolia to identify their connections. Key stakeholders of Mongolian startup ecosystem are:

- Startups
- Accelerator/incubators
- Big corporations
- Academia - Universities, Kosen (Colleges of Technology), and research institutions,
- Public institutions and international organizations.

## Startups (Overview)

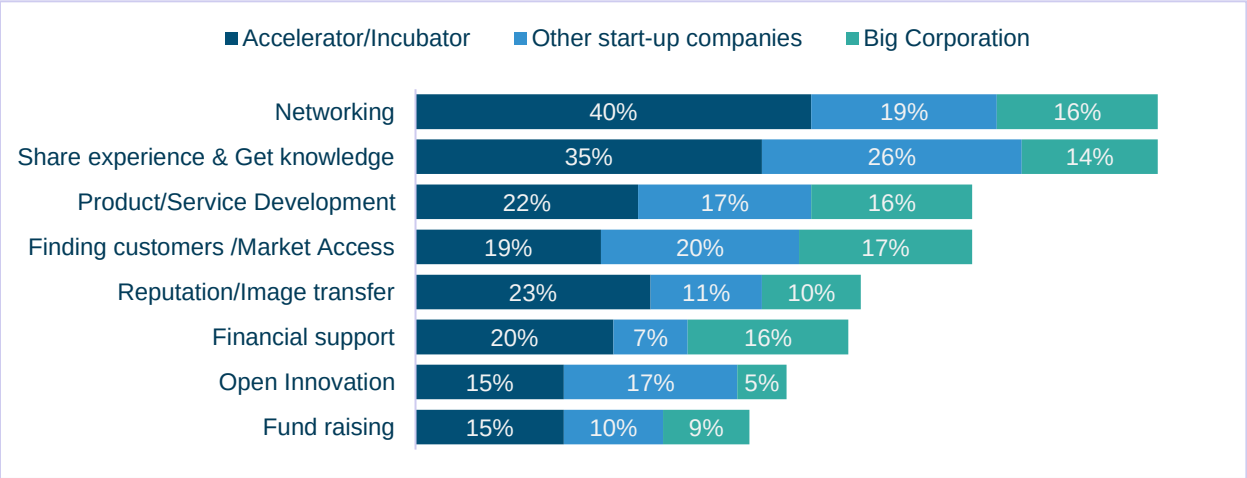
66% of startups collaborate with accelerators / incubators, 48% with other startups, and 44% with large corporations. The connectedness with academia and research institutions is around 28% of interviewed startups, 30% of startups collaborated with public institutions and 26% with international development organizations. 20 startups are listed on StartupBlink website.

*Figure 20: Cooperation, by stakeholders, n=80*



The top areas of connectivity among startups are: share their experience and knowledge with other startups (26%), cooperate in finding customers and market access (20%) and networking (19%).

*Figure 21: Type of cooperation, by organizations, n=80*




## Accelerators / Incubators

**Mongolian ecosystem is viewed to be fairly developed by accelerators and incubators (80%)** who have worked with approximately 261 startups of which 105 are tech-based startups. The survey included 9 accelerators and incubators of which 4 were established by large corporations, 3 established by private individuals, 1 is a not-for-profit organization, and 1 is a government owned innovation / incubation hub (IT Park). The survey also included one meetup group on machine learning, a not-for-profit organization. The IT-Park is the oldest government owned incubator hub, which was established in 2002. Excluding IT-Park, the average years of operations of accelerators / incubators / meetup groups is 3.8 years, of which 56% were established in the past three years.

Majority of accelerators / incubators have defined their objectives as to develop the startup ecosystem, entrepreneurship culture and capacity of young entrepreneurs, support startups in fundraising, and networking. However, some incubators / accelerators, primarily established by large corporations, have more specific goals such as selecting, incubating and accelerating early-stage tech startups into international growth companies.

66% of startups reported that they have some type of collaborations with accelerators and incubators and 55% of startups presented their ideas to them. Accelerators / Incubators rank high among startups in terms of different types of cooperation and engagements such as networking, sharing experience and knowledge, product development and services, financial support, and others.

Interest in accelerator and incubator programs is increasing. However, on average existing accelerator/incubator programs accept about 23% of the applications and only a handful of them are

focused on tech-based startups. Accelerators/ Incubators utilize on average 73% of their current capacity.

The services accelerators / incubators provide are primarily training programs (8 out of 9 accelerators / incubators), of which 4 are in collaboration with international accelerators / incubators such **Global Accelerators Network** (M-Stars), **Founders Institute** (Exponential Partners), **Aspire Launchpad** (SMS Marketing Space), **Lean startup** (Startup Mongolia). Three of 9 interviewed accelerators / incubators provide walk-in co-working space (M-Office, SMS marketing space, Socratus) while three provide co-working space for startups in their accelerator programs based on specific selection criteria (M-Stars, AND Global, IT-park). Four out of 9 accelerators / incubators focus on investing in selected startups (M-Stars (MCS Ventures, AND Global, Start and Socratus (through Gund Investment LLC) while two work on the government / international donor programs (Startup Mongolia and SMS Marketing Space).

Accelerators and Incubators are important linkages in bringing international connectedness by organizing local and international demo-days such as **Seedstars, Techstars, She Loves Tech** and others. They also invest and incubate startups and for those who invest into startups the average investment is MNT 55 million per startup (includes grants from government/ international donor programs). KITE Mongolia LLC has created an international cooperation and become a partner organization for ADB Ventures in finding the best tech-startups in Mongolia. START Mongolia merged with StartupJohor to form a united brand START in 2019 to build a global acceleration hub for startups in Johor region of Malaysia, while becoming the gateway to global expansion for Mongolian startups.

On average, accelerators / incubators incubated 80 startups annually of which 11 are tech-based startups. They spend on average MNT 113 million on a startup annually (a maximum is MNT 500 million) and this includes grants by international donors and government organizations. Accelerators / Incubators assist startups in meeting investors and on average 55% of their participants get outside external funding.

Accelerators / Incubators view **policy and regulations as the main weaknesses in the current startup ecosystem**. The comments include lack of sectoral policy for bringing IT innovation in other important sectors of the economy, outdated legal framework and definition of startups, for government innovation hubs, soft infrastructure such as management and support of R&D development, and deficiency of human resources. Accelerators / incubators indicated the need for long-term well-researched policies to support startups and investors through tax exemptions in early stages, improve double taxation treaties and investment regulation to support venture capital, angel investors, as well as reduction of government bureaucracies.

## Big corporations

44% of startups work with large corporations and collaboration is increasing. Finding customers and gaining market access (17%), development of products and services (16%), financial support (16%),

primarily sponsorships, networking (16%), sharing experience and getting knowledge at 14% are the top areas for cooperation with big corporations. However, only 5% of startups collaborate on open innovation and, while corporations are increasingly looking to enter into the startup sector, only 9% raised funds from big corporations. The biggest players from big corporations include MCS Ventures, And Global, APU through its investment into Infinite Solutions, ICT Group. Premium Group, and TESO Group are primarily looking to invest in startups that create synergies with their current operations.

## Academia

The connectedness with academia and research institutions is around 28% of interviewed startups. The quality of connectedness is low, primarily networking and recruitment of their employees. To better understand the connectedness of academia with the startup ecosystem, a total of 9 universities and 3 Kosen Colleges of Technology were interviewed for the survey. The research institutions and universities have innovation hubs and startup programs to support collaboration between professors and students and to foster entrepreneurial spirit in their students. Some of the interesting cases are highlighted in the box below.

*Box 2: Startup support activity cases in universities*

**National University of Mongolia (NUM) Startup program (2017-2021)**

Annual NUM startup program is a competition program established in 2017 to foster entrepreneurship by giving students an opportunity to understand the business basics. Rio Tinto, national companies and NGOs support the program.

Under their professors' guidance students form a team to develop an innovative product for the annual competition and receive startup grants for three best startup projects. On average, 8-12 teams are created and over 70 professors and students are involved.

NUM has 6 startups registered under which copyrights belong to NUM. They are registered officially with the Ministry of Education and Science; 3 startups products are commercialized.

**Mongolian University of Science and Technology (MUST)**

It has 12 volunteer clubs and 10 professional clubs. Clubs establish startups and compete in solving social problems in renewable energy, geology and construction and winning projects are awarded with grants.

**Regional Entrepreneurship Acceleration Program (REAP, MIT, 2021)**

As part of the REAP, three students from MIT led a course on mobile application development and entrepreneurship. The intensive summer course participants developed ten mobile application startups and pitched their ideas at Demo Day in Ulaanbaatar. Eighty-percent of the Mongolian students indicated that they planned to continue developing their startup business after the end of the program.

Universities also provide funding to their startups. Successful startups from universities repay back the funding they received. The success rate of startups from universities is around 50% or lower.

*Box 3: Unsuccessful startup support case*

**Unsuccessful example. MUST "Health bread"**
For commercialization of R&D intellectual property, MUST successfully established and implemented startup business creating a health bread, which met all conditions of innovative food technology. Shops used to sell bread named "MUST". The university is a non-profit organization. However, when it entered the market, it started to operate as a for-profit organization. As a startup, it needs to merge its accounting with the university balance sheet and this creates a host of issues. Now this startup, which operated successfully for 3 years, has stopped its operations just before becoming a company.

The public universities in Mongolia put forth R&D research collaboration policy for social issues in their strategy plans. It emphasizes the importance of economical, technical, environmental research in collaboration with government, private sector and industries. As a result, universities in Mongolia established Technology and Innovation Transfer Centers. These centers aim to commercialize university-originated innovations and intellectual properties, to establish research driven startups and promote their products. Their baseline research, R&D projects are often funded by the government and supported by some international organizations. The R&D research funding differs by public and private universities.

*Box 4: Successful example of R&D project at a university*

**Successful example. Mongolian National University of Medical Sciences (MNUMS)**

MNUMS organizes a project grants program of MNT 400-600 million per year. It is designed to support their researchers, professors and students, whose projects reached a certain level of success and where they need funding to scale up their progress. As of 2022, the university administration decided to increase these grants by reallocating tuition fees deductions for master's and doctor's students. They decided to transfer the tuition fee deduction of MNT 3 million for a master's student and MNT 5 million from Science and Technology Fund (STF) covering 250 students for R&D projects per year instead. Currently, they have 134 R&D projects, out of which 54 are funded by the STF. As a result, startups such as **Em Farm**, **Derma Lab, Mon HB** and **Ujin Med** are established at the MNUMS. Most startups that received university support were able to create innovative products.

For example, **a diagnostic device was invented to diagnose COVID-19 from saliva** by the project team of students and professors of the university. It is more sensible than the smear from nose and throat and it is internationally accepted. As of today, it has generated a **revenue of MNT 1.6 billion**. This laboratory was established in April 2021 but it has already returned a net profit of over MNT 900 million to the university.

Public universities have started establishing inter-sectoral open laboratories and currently NUM has 26 laboratories, MUST has 45 (of which 15 are inter-sectoral open laboratories), and MNUMS has 26 laboratories. In addition, professors execute baseline projects, political and syndicate projects, and international projects for domestic and foreign cooperation. However, the laboratories and research centres need to be upgraded to support innovation. In addition, the regulations and bureaucracy need to be significantly reduced to enable the establishment of innovation and startup hubs at the universities.

Some universities cooperate with big corporations. Cooperation and memorandums are signed to introduce the scientists' works to the mining and construction sectors. For example, MUST cooperates with Erdenet Plant, Erdenes Tavan Tolgoi, the President's Security Council, and STF. The MUST branch in Erdenet city works with Erdenet mining corporation in providing human resources.

However, the rate of innovation transfer to companies remains low. According to university researchers, however, not all corporate-university cooperation is transparent to the researchers within the universities. Universities sign memorandums and agreements with corporations, however, actual relations with businesses are established only at chairpersons' level of the companies and universities without involving researchers. University promotes these agreements with the purpose of improving public relations but it does not work closely with researchers /professors to create innovations and it does not provide enough information to them to realize actual cooperation in R&D projects with the private sector.

Furthermore, Mongolian academia lacks competence in terms of preparing a highly skilled STEM workforce, a crucial element for the startup ecosystem development. Number of STEM programs in higher education is continuously decreasing and participants have commented that the entrance into STEM professions is decreasing every year. On the positive side, technology colleges (KOSEN) are entering into the education sector. Their focus on engineering and tech professions helps them to compete successfully with universities and research institutions in creating STEM students and professors

There are few challenges in nurturing university-led startups and creating collaboration with the private sector. These includes but not limited to following issues identified by academia interviewed:

- **Conflicts with legal environment:** Universities and Colleges of Technology are not-for-profit organizations. Therefore, they are unable to participate in tenders with their innovative products.
- **Funding needs**: Universities conduct research works with tuition fees received from students. To broaden the scope of R&D, funding issues need to be resolved.
- **Technology difference:** Universities mostly conduct research and experiments in laboratory conditions. When innovation is transferred to industrial conditions, a difference occurs. It is very problematic to directly enter into the production stage and market.

- **Lack of research laboratories, equipment and research tools:** Classrooms and laboratories are insufficient during technological research. Although there is certain financial support, there are cases when teachers need to purchase tools and equipment with the money gained from their research.
- Research developing stage is complicated: Process of getting foreign project is really difficult due to many stages of processing. **When a project fails, private companies steal the ideas**. Sometimes, they just change some design of the project and receive the funding. This way, the know-how is lost to a private company. Some researchers become attracted to higher salaries in the private sector and take away the ideas generated at the universities.

## The Government organizations

30% of startups collaborated with public institutions. These relations are primarily related to networking and grants related to entrepreneurship development. Few startups also provide B2G to the government agencies and ministries.

The “Vision 2050”, Mongolia’s long-term development policy document, has set Information Technology and Creative Production as one of the priority economic sectors and stated to support and to increase their contribution to the economy. However, there are no specific law or policy dedicated to startup or startup ecosystem development. Current policies and regulations are geared towards innovation and science technology research development with limited benefits for tech-based startups.

Main government policy document for startup related activities is the Law on Innovation (revised in 2019). According to the Law, the Government has following duties:

- Develop and approve state policy and legislation on innovation,
- Approve innovation directions,
- Develop national innovation system and innovation, approve, and enforce laws and regulations,
- Approve and implement state budget investment and finances, issue grants,
- Approve and implement regulation on park activities.
- According to the Law on Innovation, state central administrative body in charge of high technology and national innovation development has following duties:
- Implement a policy to develop national innovation system;
- Develop a proposal on program, planning and finances to develop innovation priorities and national innovation system, submit it to the Government;
- Provide ministry, agency, province and capital city governor’s office activities with general management;
- Implement a policy to provide correlation of stakeholders’ partnership and operations in developing the innovation system;

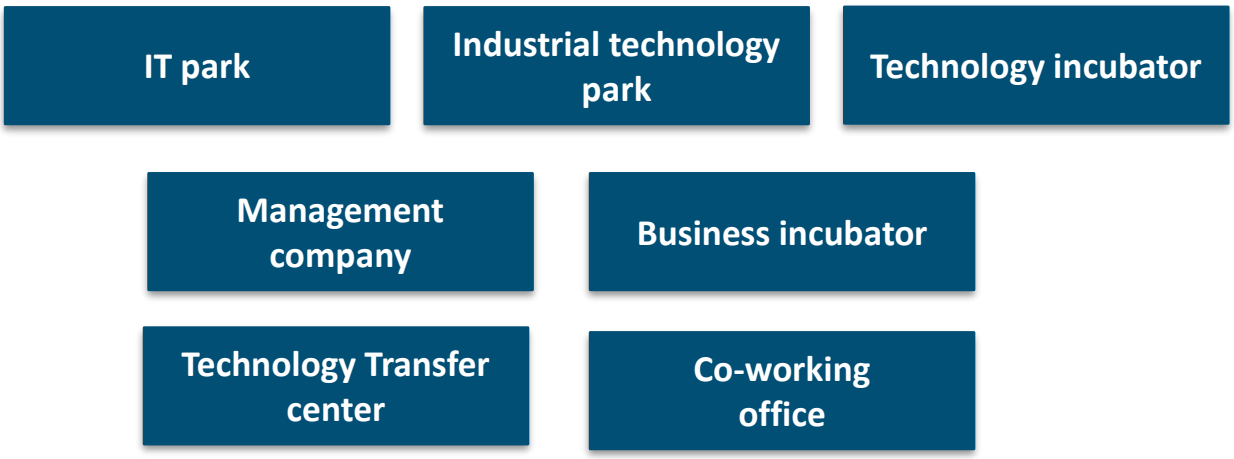
- Develop a proposal on establishing state-funded and state involved legal entity to implement the innovation activities, submit it to the Government;
- Develop regulation/project related to the scientific park, discuss at the national council of science and technology, submit it to the Government;
- Implement nationwide and strategic innovation projects to implement by state budget by Government subscription;
- Issue finances on repayable basis, insist on repayment;
- Create a database of innovation projects together with related organization(s) and serve customers;
- Develop a methodology to evaluate development of the national innovation system and create innovation database;
- Develop and implement a project on developing stakeholders' human resources together with related organization(s);
- Cooperate with foreign countries and international organizations;
- Promote and advertise innovation activities;
- Make conclusion on innovation products, approve and implement regulation on the works of professional experts;
- Correlate state policy on science, technology and higher education with innovation priorities, provide implementation;
- Organize works on developing, financing and implementing innovation projects;
- Develop proposal on planning and implementing establishment of innovation infrastructure and submit it to the Government;
- Create database on the results of innovation related science and research, experimental and designing works;
- Issue innovation grants to technological experiments and improvements;
- Prepare and train human resource;
- Support promotion of innovation culture.

To understand further the role of the government, the interview has been conducted with the Ministry of Economy and Development, the Ministry of Education and Science and Education, the Ministry of Digital Development and Communications. The Ministry of Education and Science is the main responsible government institution for innovation development until 2022. Under Government resolution # 13 on January 06, 2022, the Ministry of Economy and Development became the state central administrative body in charge of high technology and national innovation development. Newly established Ministry of Economy and Development and the Ministry of Digital Development and Communications have not clarified yet their structure in terms of responsible units for innovation and startup ecosystem development and their duties. Although the government policies on innovation were modified up to 2020, they were canceled in 2021 in accordance with the new Law on Development Policy and Planning.

**Therefore, currently there is no specific government institution, department or agency responsible for the startup ecosystem development.** Related ministries and agencies have limited knowledge, perception about the startup ecosystem and have low participation and involvement.

According to the Law on Innovation of Mongolia, the innovation infrastructure consists of following parties.

*Figure 22: Innovation infrastructure stakeholders according to the Law on Innovation of Mongolia*




The law does not clarify the duties and responsibilities of each stakeholder in the ecosystem, does not provide any incentives for them except their definitions and there are many uncertainties on how they should cooperate and connect to create an enabling ecosystem for innovation.

The Law on Innovation specifically states that “the government will support a startup which is registered in a Technology transfer center or in a co-working office and/or entity who works in the software development field by tax policy”. However, the definition of startup provided in the Law on Innovation, is very limited (see box 4 on the definition of a startup in the Law on Innovation).

“The regulation to establish startup within research institutions” was established in 2014 (The government Resolution №374, 2014 - outdated). According to this resolution, there are only 27 startups in Mongolia as of 2021. The Ministry of Education and Science states that only these 27 startups are eligible for government support stated in the Law on Innovation.

*Box 5: The Startup definition – The Law on Innovation of Mongolia*

**"Startup" – means the company established to produce new innovative products (3.1.8).**

**"Innovative product" means the results of innovative activities that meet the requirements and conditions set forth in this law [Law on Innovation]** and are more technical, economic, scientific, value-added and competitive than similar products and services on the market (3.1.4);
Furthermore, **innovation projects** supported by the government must satisfy following conditions:

- contain proposals with common goal of creating innovation (14.1.1);
- evidence uniqueness of the project's products and services or confirmation of industrial intellectual property rights (14.1.2);
- feasibility studies of the innovation project and efficiency calculations (14.1.3);
- conform to the priorities of the innovation activities stated in 6.1.2 of this law (14.1.4);
- registered as the innovation project as stated in 14.3 of this law (14.1.5).

The law further limits the startup's definition by requiring "**Innovation projects shall be registered by the state central administrative body**" in charge of high technology and national innovation development in accordance with the procedures approved by the Government" (14.3).
The law also limits the innovative product by defining it as follows:

- Newly produced in Mongolia, or are more competitive with better technical and economic performances compared to similar products, technology and services on the market (15.1.1);
- Import-substituting or to increase export resources (15.1.2);
- Manufacturer of the product is the owner of the intellectual property, or signed a license contract with its owner (15.1.3).
- The state central administrative body in charge of high technology and national innovation development shall make a conclusion on whether the innovative product meets the requirements set forth in this law based on the expert conclusions. (15.2).

According to the Law on Innovation, startups may be funded from following national and private sources.

- **State and local budget investment (12.1.1);**
- **Capital from the development bank of Mongolia (12.1.2);**
- **Other special funds of the Government (12.1.4);**
- Capital from investment company (12.1.5);
- Capital raised from primary market of startup company (12.1.6);
- Own assets of innovation stakeholder (12.1.7);
- Loans, aids and donations from foreign countries and international organizations (12.1.8);
- Other sources not prohibited by the law (12.1.9).

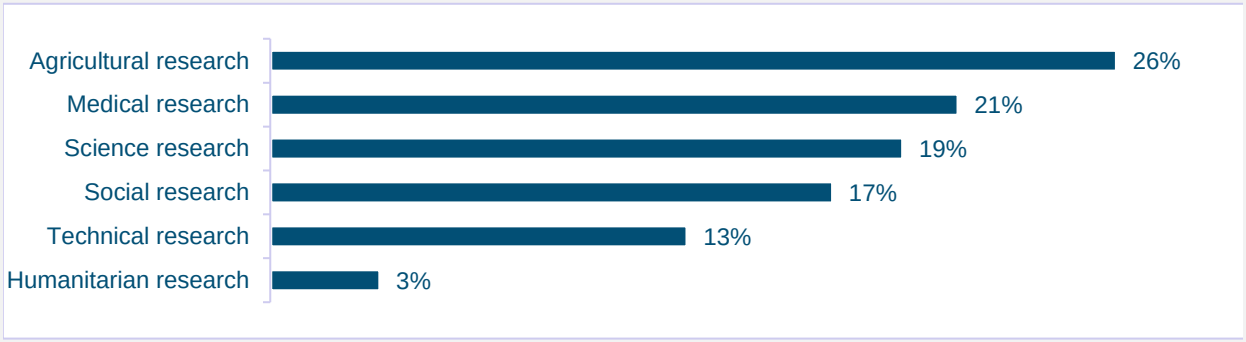
Forms of financing innovation activities (article 12.2) include funding on repayable conditions, grant funding and innovation grants. However, it does not specify any incentives for main investors in startups such as investment funds, angel investors, corporate venture funds etc.

*Box 6: National Investment Fund (Source: Science -2021, 100th anniversary journal, STF, https://fliphtml5.com/ddfdf/kosa*

**Science and Technology Fund – National Investment Fund**

Science and Technology Fund (STF) is the national fund for financing technology and innovation-based R&D projects and aims to contribute to sustainable development of Mongolia by funding and developing Mongolian R&D projects up to international standards. It is regulated by Government Special Fund Law. It supports science baseline research projects, R&D projects, and innovation. The Ministry of Education and Science decides the type of research initiatives that STF is able to fund. In 2018-2021, STF funded 1,520 research projects in total, with a total budget of MNT 24.0 billion.

*Figure 23: STF funding by research types*




They allocate funding for public universities, NGOs, research institutions, private institutions and hospitals. The STF does not have a specific duty/role to support startups.

Between 1975 and 2020, STF funded numerous projects to support innovations. As a result, 5,832 publications were made on international science journals, 689 new product prototypes, 349 new patents, 284 product designs and 148 copyrights were created. Only **17%** of all projects were commercialized and received benefits.

## International companies and organizations

26% of startups have some form of collaboration with international companies and international development organizations. Few have technology partnerships and cooperate on product and development with international companies.

Collaborations with international donor organizations are primarily related to media activities on behalf of donor organizations and participation in networking events. Some of the startups interviewed have participated in the SMART program, run by the government, World Bank and Startup Mongolia.

The Smart program started in 2015 with the purpose of introducing IT technology solutions to the public services run by the government. It has the following components 1) citizens digital participation (111 call center - system update development, business analytics, big data creation etc.) 2) digital infrastructure: E-Governance infrastructure (secure data storage / data center for the general registration agency (more than 50% of services), registration of assets and many other small projects) and 3) open data to make the government data available to the public (e.g. NSO – developed an entire system for gathering information & research). Within this project a small component was to support Innovation in public services through participative approach with youth, startups, and companies. From 100 applications 14 solutions were selected and Startup Mongolia works as a consultant on this programme.

GIZ implemented a program to primarily support entrepreneurs (startups in a traditional sense) in rural areas. It included grants for startups of MNT 40 million per startup. GIZ is now implementing the “Progress” project which seeks to build on their previous project on entrepreneurship but also includes support for improving the business environment and creating two regional hubs for SMEs.

Each of the donor organizations emphasized that their programs are not for startups but broadly support entrepreneurship and innovation in Mongolia. The applications into the program are high (between 100-200 applicants) which illustrates the need for further support of entrepreneurship in Mongolia. The success rate of those projects is mixed. As per interviews with the donor organizations, good teams with purpose and organization have developed good products and are already advertising and selling their products. But the rate of success is primarily due to capacity, discipline and commitments on the part of some entrepreneurs, hence, they see cases of failures. Donor organizations have also commented on the lack of knowledge on startups by consultants as well. Hence, the overall view is that the startup ecosystem needs to evolve further. The MonJa program by JICA in collaboration with Mobicom and Japan Center for Human Resources is the only program focused on tech startups, and it seems to succeed given its specific focus. ADB and EBRD have programs for SMEs with ADB primarily focusing on MSMEs in ger areas. Both organizations do not currently have any projects that specifically support startups or the startup ecosystem.

All international development organizations in the interview view the commitment from the government / the Prime Minister’s cabinet as a key in developing the startup ecosystem in Mongolia. They have commented that the government should provide policy support, create connectedness of Mongolian startup ecosystem in the international arena. The Prime Minister could appeal to international investors to come to Mongolia, share their experiences and create awareness of possibilities in Mongolia. Some of the support that the government could provide is to create a database for startups, service providers and investors based on the best practices of other countries. The view is that the database can be owned by the government but the services can be outsourced

to the private sector such as an association that incorporates all key stakeholders of the ecosystem. Amalgamated services to bridge the lack of experience by startup founders can be provided by the private sector on a competitive basis through this database.

International development organizations also expressed a view that the private sector should drive investments into the startup ecosystem as it is globally recognized as a high risk sector with high rates of failures. Hence, the government budget should not be used for investing into the startups but rather support their internationalization, create tax and other incentives as per the best international practices of successful startup ecosystems.The international development organizations recognize the importance of the startup ecosystem development as a key for innovation, diversification of the economy and creation of skilled jobs. They also view that without supporting the startup ecosystem Mongolia may experience “brain-drain” as startups will look for more favorable ecosystems. International development organizations can provide technical assistance to bring expertise in developing the right policies, regulations and incentives to support the startup ecosystem in Mongolia, provided that the government has commitment to its development. They have expressed a keen interest in receiving the findings of this survey.

# VII. The Startup Ecosystem - challenges and needs

At startup level, recruiting is the major challenge faced by startups in the interview 63%, followed by capital raising (55%), sales and customer acquisition (49%), team development (38%) and Internationalization (35%).

*Figure 24: Top challenges for startups, n=80*

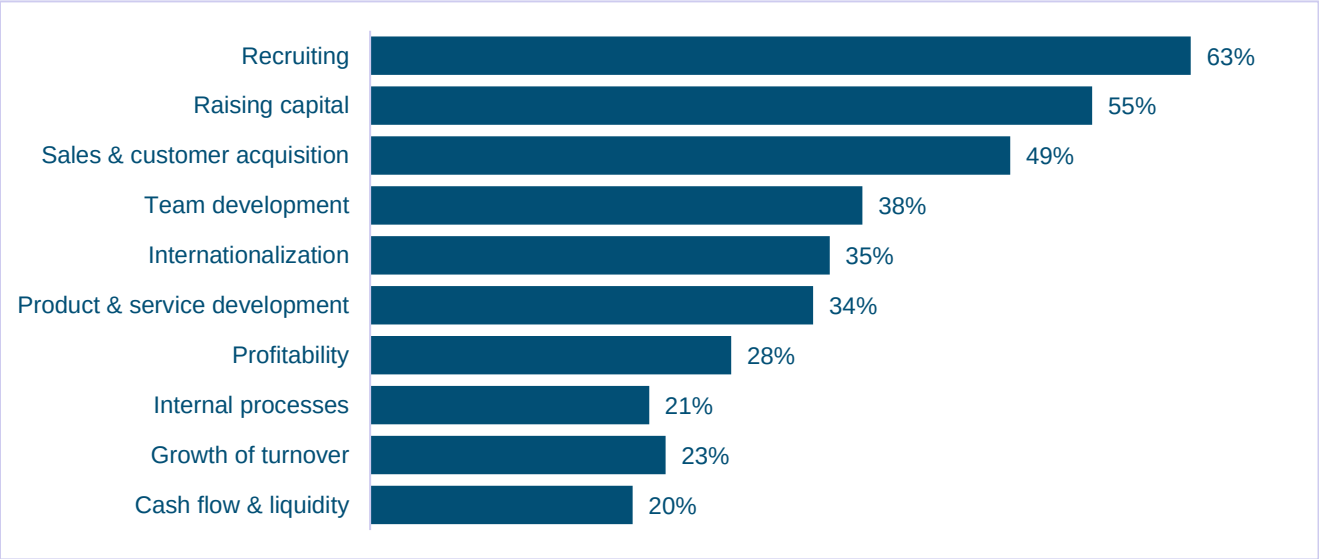
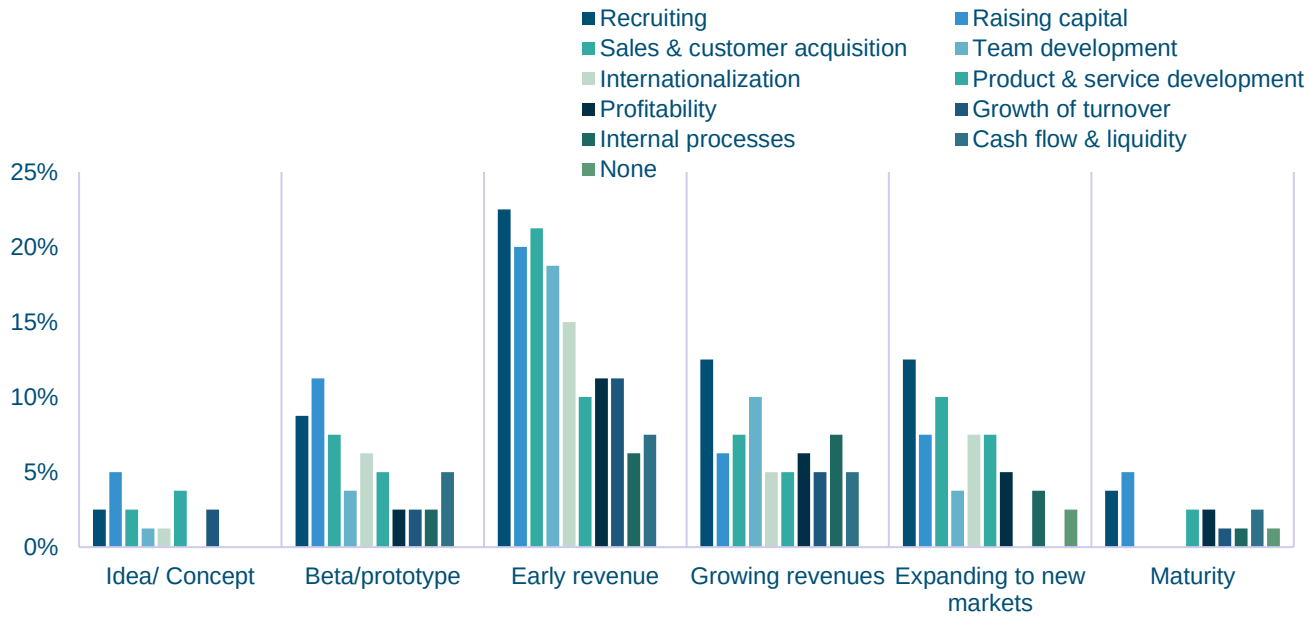


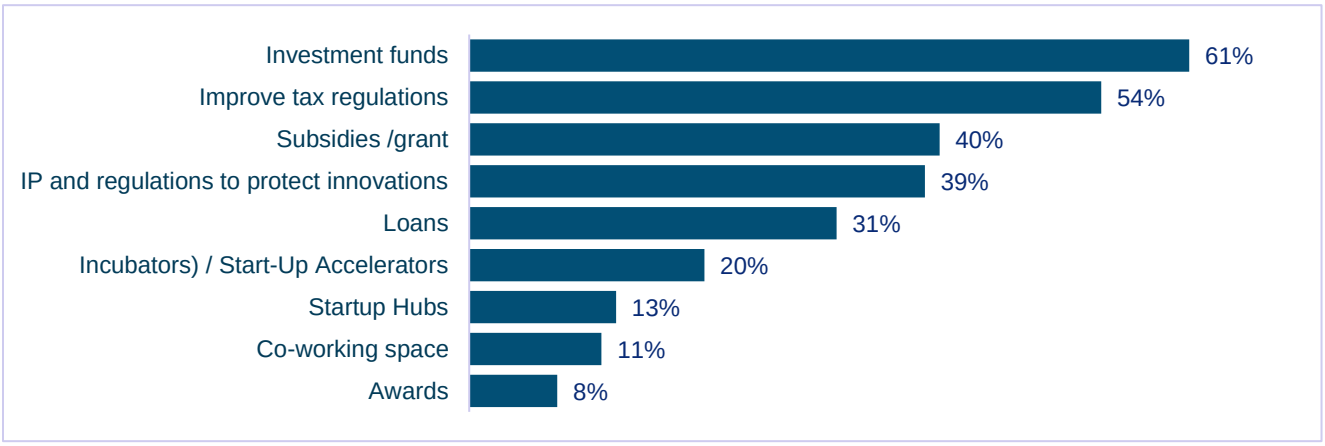
*Figure 25: Startup challenges, by development stages, n=80*




They have also stated people's bilingual ability (25%), level of entrepreneurial mindset (25%), level of motivation to develop startups by the government (21%), stable banking environment (20%), availability of mentoring (14%) and geographic location (8%) all play an important role in developing Mongolian startup ecosystem.

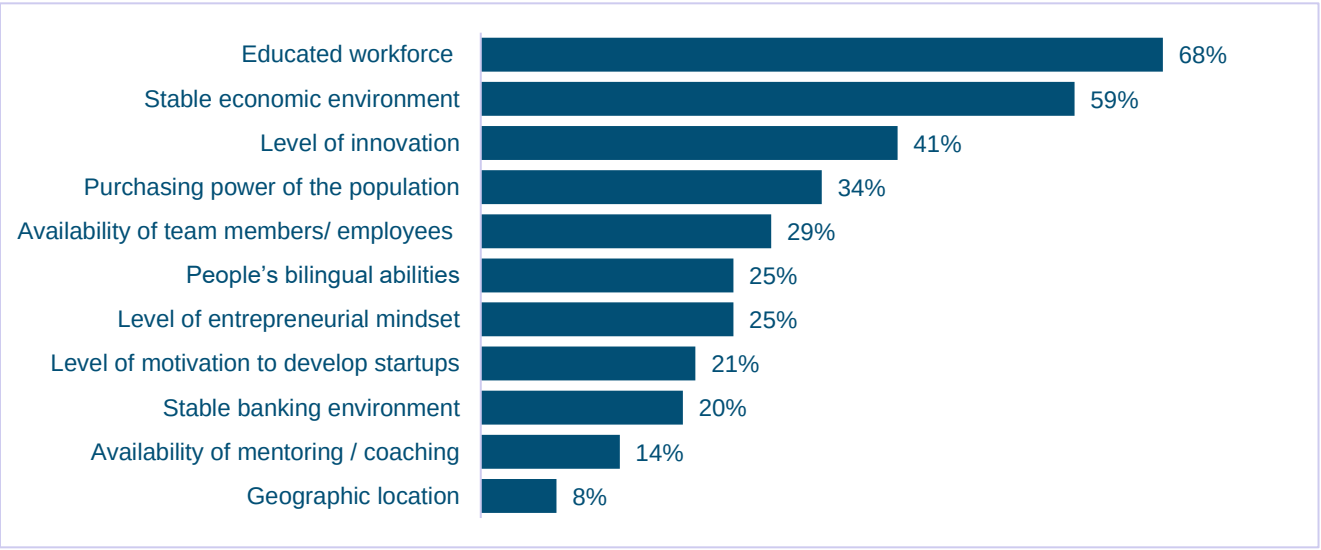
The top five most needed support identified by startups are: investment funds (61%), improved tax regulations (54%), subsidies/grants (40%), intellectual property and regulations to protect innovations (39%) and loans (31%). In addition to these support startups expect support in accessing incubators / startups (20%), innovation hubs (13%), co-working spaces (11%) and awards (8%).

*Figure 26: Government support wanted by the startups, n=80*



Startups view Mongolian startup ecosystem as evolving and identified **top 5 factors to support the ecosystem development:** educated workforce (68%), stable economic environment (59%), level of innovation (41%), purchasing power of the population (34%), and availability of team members (29%).

*Figure 27: Important factors to develop Mongolian startup, n=80*




**The view of policy regulators and government agencies is less positive** when it comes to the startup ecosystem development. In their view, innovation transfer, cluster development and policy regulations need improvement. In addition, lack of investors is holding back the development of startups. From donors' perspective, **the government commitment to the development of the startup ecosystem is the key factor** in accelerating startup growth. They also believe that the government role should be of an enabler by creating favorable and well-researched policies and regulations. The government can become a champion in bringing international investors into Mongolia while relying on experience and expertise of the private sector to develop the startup ecosystem.

## International experience

### JAPAN

Tokyo ranks # 9 in the Global Startup Ecosystem Report 2021 by Startup Genome LLC and #1 in terms of regional ecosystem funding. Its ecosystem value is estimated **at USD 44.7 billion**. It excels in the Funding, Experience, and Knowledge Factors.

The startup culture in Japan is less competitive and more stable with 91.5% of Japanese startups still in existence after 3 years compared to 65.0% in the US.

The government is actively supporting its startup ecosystem development. A new startup visa is available in National Strategic Special Zones, including Tokyo. In December 2020, Tokyo ranked third in the Mori Global Power Cities Index, which analyzes cities' attractiveness for relocation based on startup activity, levels of R&D, and livability. Tokyo also hosts the Gartner IT Symposium/Xpo, where IT executives and experts convene virtually to share insights, as well as the Tokyo Financial Information & Technology Summit, which focuses on data and technology in capital markets.

In addition, cities in Japan create startup ecosystems to support its international appeal as well as to support local startups. For example, the information on stakeholder organizations and on the constitution of the Startup Ecosystem Tokyo Consortium can be found on their database (see-https://www.ecosystem.metro.tokyo.lg.jp/en/aboutus/). The ecosystem in the Tokyo metro area is the most vibrant startup ecosystem as the majority of Venture Funds are located in the capital city, as well as the government ministries and organizations like JETRO.

On the other hand, since it is very difficult to break with tradition and status quo in Japanese culture, international companies (not only startups) may have a hard time adapting to the Japanese market. Japanese startups also have a hard time going global on average and it has fewer "unicorn" startups. **Currently, Japan has only 8 unicorns, compared to 366 in the US or 162 in China. This is quite controversial since it ranks 3rd among the largest economies in the world.**

Another important element of Japanese culture that impacts startup culture here is the aversion to failure. In Japan, failures and mistakes are generally considered as a bad thing, hence, there is a pressure not to fail and not to make mistakes. Therefore, when it comes to the startup ecosystem in Japan, it is still an emerging ecosystem, although the Japanese government's efforts to develop the startup culture in the country are starting to bring some results.

## SINGAPORE

Singapore is one of the most technologically advanced smart cities in the world. Through the strong leadership of the government, it has successfully established an innovation hub in a short period of time.

"The government has led the creation of the ecosystem as well as in identifying gaps where others could enter. Singapore's government has actively cultivated the ecosystem both in country and abroad. It has also steadily identified gaps in the ecosystem and taken bold steps to address them. For example, the current experience in supporting specific deep-tech verticals demonstrates this role as the government has prioritized deep-tech in its national strategy, helping universities, funds, accelerators and start-ups to enter deep-tech verticals".

Singapore ranks # 17 in the Global Startup Ecosystem Report 2021 by Startup Genome LLC and #3 Regionally. Its ecosystem value is estimated **at USD22.3 billion**. It has produced #44 unicorns. Singapore is a clear leader in terms of VC and PE investments in the ASEAN region, and it is ranked as one of the most developed ecosystems by global standards. It has approximately 190 accelerators, incubators, and other intermediaries (such as angel networks), over 3,800 tech start-ups.

Singapore's active and growing entrepreneurial scene has only gotten stronger over the past years due to **its business-friendly environment with low taxes and government programs and subsidies for startups.** The government has emphasized building global linkages making Singapore a regional hub for numerous global tech giants including Google, Facebook, Microsoft, LinkedIn, and Stripe, which all have offices in the country. According to the data from Singapore's Economic Development Board, 59% of technology multinational corporations have regional headquarters based in Singapore. The government continually supports and facilitates its international connections. **The Open Innovation Network** was launched to facilitate the co-development of innovative solutions between the startup community and the wider innovation ecosystem while the **Global Innovation Alliance** supports business internationalisation. Such efforts have propelled notable unicorns such as Carro and Patsnap, who secured US$360 million in June 2021 and US$300 million in March 2021 respectively.

**The government is supporting specific sectors** primarily taken from its roots as an industrial country and a growing emphasis on deep-tech sectors. Among other things, the Singaporean government set aside $300 million in 2020 as part of an initiative to catalyze investment in Deep Tech startups. The public sector is taking a lead role in beginning the specialization process, which could ultimately incentivize the private sector to follow suit. Additionally, multiple institutions and programs have been established with sector specific focuses: CATALYST, PIER71, ICE71, Seeds Capital, Diagnostics Development (DxD) Hub, The National Additive Manufacturing Innovation Cluster (NAMIC) and GROW. On the other hand, too much dependence on the public sector is causing startups not to care. In fact, 69% of startups received government grants and subsidies. Private investors are also not effectively incentivized to engage with start-ups, and in general to build a market-driven ecosystem.

Singapore has also established its position as a financial hub and a regional leader in terms of venture capital activity. The government played an active role in this capacity as well through serving as a co-investor through public sector entities such as Temasek Holdings and TIF Ventures, in addition to directly creating VC funds. But funding gaps remain, Singapore ranks below the global average for early-stage funding. According to the 2021 Global Start-up Genome report, the average early-stage funding size for start-ups stood at $284,000, versus an average of $202,000 in Singapore. Additionally, funding for later-stage companies may also be harder to come by in the country. The country's small market size also means that many investors need to operate with a regional scope to ensure a sufficient pipeline.

Singapore has a strong regulatory oversight with many laws, restrictions and regulations associated with starting a business in Singapore. **Its strict intellectual property laws have been one of the main reasons why many technology companies have decided to locate here rather than elsewhere in Asia.**

**Singapore has a highly educated workforce** with talent covering a wide range of skills that are sought after by international companies. Singapore is home to number of world-class universities with specializations in engineering, technology, and other sciences. The government is involving several universities as well as A*STAR in its efforts to build strong linkages between researchers, students, startups, and industry. In addition, innovation and start-up challenges and incubation programs also encourage aspiring entrepreneurs to start companies in key campuses. Many universities also have programs that establish and strengthen international linkages. In addition, English is one of the main languages in Singapore allowing international professionals and startups to settle in and adapt more easily than in other parts of the world.

# VIII. Suggestions for the startup ecosystem development

The baseline survey has identified 4 key areas of the potential support to help Mongolian ecosystem to grow.

## 1. Create enabling policy and regulations to support startups economic growth

**Commitment to developing the startup ecosystem from the government is vital.** This view has been echoed by all stakeholders including international donor organizations. To illustrate the importance of the government commitment we have looked into Singapore and Japan's examples of delivering the necessary support for their startup ecosystems.

> "The Evolution and State of Singapore's Start-up Ecosystem is recognized for its responsiveness and agility in reacting to changes in the market. One example is the Ministry of Trade and Industry's proenterprise panel, an inter-government body that convenes different government agencies in an effort to streamline regulations affecting businesses. The panel has also created the First Mover Framework and New Idea Scheme. The framework provides entrepreneurs access to public sector support, while the scheme helps government agencies implement new business ideas."
>
> The Evolution and State of Singapore's Start-up Ecosystem: Lessons for Emerging Market Economies, World Bank (March 2021)

The government commitment accelerated Singapore into becoming one of the leading ecosystems in Asia. The government has demonstrated its commitment over a few decades to enhance its business environment and support the creation of its startup ecosystem launching a wide variety of policies and programs. By removing barriers to conduct the business, bringing agility and speed to

policy changes in responding to the evolving markets, Singapore developed a vibrant entrepreneurial community that generates globally competitive startups. The policies go back to 1990 with the shift to knowledge economy and development of National Technology Plan, Science and Technology Plan in 2005 and to Research, Innovation and Enterprise (RIE) Plan in 2005, which continues to evolve determining key areas for future development of the startup ecosystem. The current RIE 2025 plan emphasizes public research performers' connection with one of its key priorities being to support the scaling of start-ups. In doing so, Singapore specifically focuses on deep technology startups (AI, quantum computing, advanced materials, or bio-technology) to bring forward looking innovation that Singaporean economy and society is facing.

Similarly, the Tokyo ecosystem has great potential for expanding into a leading global deep-tech hub. According to the Tokyo Start-up Ecosystem Report (the World Bank - 2021), Japan's strong national science and technology innovation system supported by active R&D, involvement of universities in the ecosystem and robust commercialization, and the strong government support for programs nationwide, it can create highly competitive deep-tech start-ups. The government has set out policies such as "Society 5.0," a vision for a human-oriented society that strikes a balance between economic growth and the solution of social issues through the development of new digital technologies, including utilization of AI and robots, revitalisation of the sharing economy and the development of fintech.

Another good example is Lithuania, which ranks #11th in ease of doing business report; #2nd in procedures for starting a business in the World Bank's Doing Business Report 2020. They have the 3rd lowest corporate income tax in the EU. Lithuania, and more specifically its capital, Vilnius, has carved out a niche for itself in the fintech space, being ranked #4th in the global fintech ranking. Vilnius has created a favourable environment for the establishment and development of fintech start-ups and has managed to attract one of the largest fintech players, Revolut.

The government support differs depending on the stage of evolution of a startup, i.e. pre-startup, startup, scale-up, and different national and international structures or entities offer their support services. These entities are the Lithuanian government, pre-accelerators and accelerators, local and foreign investors, incubators/hubs, sandboxes, and support programs.

Mongolian government can draw on these and other many successful strategies to present its commitment in supporting the startup ecosystem. The discussions during two seminars where the findings of this report have been presented, stakeholders commented on importance of policy support with specific actions such as updating the Law on Innovation to improve innovation transfer, bringing the policy and regulations that reflect global trends in developing Mongolian ecosystem, supporting internationalisation of startups, budget support for research laboratories at the universities and technical colleges. However, private sector participants as well as public organizations warned against overregulation of the sector, heavy reliance on public financial resources such as budget and Development Bank of Mongolia to support innovations. Instead they require speedy and agile

government policies and to focus on specific forward looking technology trends to spring forward the startup ecosystem in Mongolia.

**Definition of the startup needs to be clarified and applied to tech-startups.** The definition of a startup in Singapore very specifically relates to tech entities and, accordingly, the support provided by the government is well targeted. It also continually evolves reflecting the government priorities within the country's economic and social challenges and opportunities it seeks to resolve with use of advanced technology. These include aging population, food security, climate changes and others.

According to Enterprise Singapore, **the start-up definition in 2020 refers to tech entities** that (Enterprise Singapore is currently reviewing Singapore's tech start-up definition): a. Have innovative technologies with the potential to disrupt existing industries; b. Are registered in the past 5 years; c. Have more than 50% individual shareholding at the reference year; and d. Employ at least 1 person.

The definition of startup in Japan is much broader, i.e. startups are defined as businesses engaged in business activities in growth industry areas that have been in business for around 10 years or less and are unlisted (White and Case: JFTC and METI Proposed Guidelines for Business Collaboration with Startups, Jan 2021). However, the J-Startup makes further clarifications into the startup definition to describe it as winning startups in the world that bring new value to the world with innovative technologies and business models. The J-Startup program is promoted by the Ministry of Economy, Trade and Industry and supports startups in AI & AI control technology, IoT device & ICT, Services & Platform, Mobility, Robot, Medical Engineering & Biotechnology, Environment, Energy and Society, Aerospace, Manufacturing and Materials.

The current definition of a startup in Mongolia is defined in the Law on Innovation, which describes the concept of a startup in a very limited manner (see box 4: The Startup definition – The Law on Innovation of Mongolia). It is important to note that startups, academia, research and government organizations seem to agree that the definition of the startup in this law is outdated and needs to be revised. Under the rapid development of technology, the description in the Law is too outdated. Furthermore, innovation priorities and industries that could assist in devising policies to support startups have not been yet determined. Furthermore, by the same law, all startups have to be registered with the government agencies and the state makes decisions on whether its products are innovative. This creates another layer of bureaucracy without apparent benefits. This lack of policy support limits startups that are already operating on their own and are not specifically engaged or willing to enter any of these government structures as described in the Law on Innovation (see figure 22).

In addition, the concept of startup is often confused with new entry businesses at administrative and legislation levels. The definition 'Гарааны бизнес' (Startup in Mongolian) language expresses all entry level businesses in general. When discussing possible startup support by the government, it is often associated with supporting entrepreneurship among youth or household businesses. Therefore, the definition of an entrepreneur and an innovation / technology driven startup needs to be separated in the laws and government policies in accordance with priorities of the government in supporting research, innovation and startups. This separation of definitions can assist in providing the targeted support to both entreprenuers and tech startups.

**Lastly, the government role in developing the startup ecosystem needs to be clarified** as the newly established Ministry of Economy and Development and Ministry of Digital Development and Communication have overlapping roles, while innovation is being part of the Ministry of Education and Science and Education. Bureaucratic policies in regards to registering innovation and intellectual properties as well as in allowing universities and colleges in transferring innovation to the real economy needs to be reduced.

Therefore, the government needs to clarify the roles of which government organization in developing its startup ecosystem. It can seek support from international organizations in revising its Law on Innovation and related policies and procedures in defining key areas for economy and society (e.g. Society 5.0) in deploying advanced technologies and supporting its startup ecosystem.

Intellectual Property Office of Mongolia (IPOM) is the government agency in Mongolia responsible for intellectual properties (IP) regulations and registrations. Patent or prototype registration process takes significant time. More importantly, Mongolia needs to follow Singapore's example in terms of IP protection to support and attract winning startups in Mongolia.

## 2. Incentives for startups and investors

Countries, in their commitment to support startups, create various incentives for startups and investors. Lithuania is the best case of well structured support to startups tailored in accordance to the development stages of startups. For example, Lithuania offers:

1) **Business Mentor Network** (Pre-startup, Startup) - A virtual platform where experienced businessmen share their knowledge with other businesses;

2) **Enterprise Lithuania** (pre-startup, startup, scale-up) - Enterprise Lithuania team is an advisor and assistant for the startups, growth and export of domestic companies, especially SMEs. One of the main tasks of the organization is to advise businesses and provide them with e-tools and services. Enterprise Lithuania is a recognized facilitator of the startup community and ecosystem in Lithuania.

3) **Lithuanian Innovation Center** (Pre-startup, startup, scale-up) - Lithuanian Innovation Centre activities are organized on a project basis. LIC takes part in various tenders, calls for proposals announced by the European Union, other international organizations, and Lithuanian Government. Activities are carried out and services provided after the applications are approved and financial support is ensured. The benefits are business consultations how to attract funding;

4) **Co-Investment Fund for Transport and Communications** (Startup, Scale-up) - Coinvest Capital invests in micro and small companies working on sustainable mobility and the development of environmentally friendly transport, with the aim of reducing carbon dioxide emissions. Investment amounts up to €1.6 million; and

5) **LVPA - Experiment (Scale-up**) -The Lithuanian Business Support Agency is an institution established by the Ministry of Economy and Innovation which administers EU funds granted for the development of Lithuanian business, R&D, tourism, and energy sectors. The aim of the "Experiment" call is to encourage companies to invest in innovative products and to generate the research (R&D) necessary for the creation of new products, technologies, or services, as well as to encourage business development by investing in the development of R&D and innovation infrastructure.

**The key indicator of a successful startups ecosystem is access to and quality of investors, angel investors and venture funds**. Japan ranks #1 in terms of access to venture funds. Japan's Venture Fund Association was established in 1971. With new funds such as Softbank Vision Fund, Sony Innovation Fund, Dentsu Ventures Global Fund etc Japan has already propelled to #10 in the global startup ecosystem ranks.

Singapore is already established as a regional financial hub and a home to multinational banks, asset management companies and, more recently, to venture funds. Investment is likely to remain high because of the government's efforts to promote Singapore as the region's innovation and start-up hub. These efforts include co-funding schemes where the government matches private capital investments, for example SEEDS Capital's (the investment arm of Enterprise Singapore) initiatives. In January 2019, SEEDS Capital appointed seven co-investment partners to catalyse over USD65 million of investments in agri-food tech startups.

The results of such support are clear. According to Enterprise Singapore, VC investments climbed 36% year-on-year to hit SGD13.4 billion during the first nine months of 2019 and digital tech companies received 93.2% of the funds. Furthermore, during the first nine months of 2019 there was a 25% increase in investments in early-stage deep tech startups in advanced manufacturing, in healthcare and biomedical sciences, urban solutions and sustainability, compared to the same period in 2018.

**Sample of tax exemptions: Singapore** (Venture capital investment in Singapore: market and regulatory overview – Wong Partnership LLP)

1. **The income tax system encourages VC and PE investment**. Under the one-tier corporate tax system, once corporate income tax is paid by a Singapore tax-resident company, shareholders are not taxed on dividends paid by that company. The comptroller exempts tax-resident companies from tax on foreign-sourced dividends if all of the following conditions are satisfied
   - The foreign income was taxed in the jurisdiction in which it was received before it is paid to the Singapore resident company.
   - The highest corporate tax rate of that jurisdiction is at least 15% at the time the income is received in Singapore. (Although that need not be the actual tax rate that is imposed on the foreign income.)
   - The comptroller of income tax (comptroller) is satisfied that the tax exemption is beneficial to the tax-resident company.

2. **There is no capital gains tax on gains derived from the disposal of capital** investments provided that a divesting company meets certain criteria such as i) Immediately prior to the share disposal, the divesting company holds a minimum shareholding of at least 20% in the investee company ii) The divesting company has held this interest continuously for a minimum of 24 months and others.

3. **VC funds, partnerships, foreign-incorporated companies and Singapore variable capital companies (VCC) approved by Enterprise Singapore (ESG) for the Section 13H tax incentive are exempt from tax for up to 15 years (can be extended for 5 more years on specified income from the following investments:**
   - Gains arising from the divestment of approved portfolio holdings.
   - Dividend income from approved foreign portfolio companies.
   - Interest income arising from approved foreign convertible loan stock.
   - Specified income derived from designated investments through the Offshore Fund Incentive Scheme, Resident Fund Incentive Scheme and Enhanced-Tier Fund Incentive Scheme.

**Lithuania and Estonia** created a digital environment for registration of companies, online financial and tax reporting. Tax exemptions are also provided for startups. For example, in Estonia there is no corporate income tax on retained and reinvested profits for startups. Taxes can be declared fully online and it takes only 3 minutes to declare them.

Another interesting case is Portugal where the main tax incentives towards early-stage startups are based on the Enterprise Investment Scheme (UK) model. It is possible for a Business Angel, who is certified by IAPMEI (Governmental Small and Medium Enterprise Agency) and makes a certified investment in an SME (or startup) less than 3 years old, to claim a deduction on the individual income

tax of 20% of the investment made in the startup (the 20% deduction must not exceed 15% of the income tax).

The financial incentives for startups are primarily linked to specific grant and subsidies programs to support tech startups in priority areas. However, it should be noted that countries with developed startup ecosystems have significantly higher GDPs and the government can afford providing such grants and subsidies.

In Mongolia, the Law on Innovation provides tax exemption as follows: “22.5.4. tax on income from the sale of innovative products, works and services, specified in the Law on Innovation and newly created by a startup company within three years from the date of its registration” is considered for tax reduction. **However, because of the definition of startup within the Law of Innovation, currently only 27 companies are eligible for it.**

Startups are only able to benefit from general tax regulation for small business entities. The submission of all financial and regulatory document requirements make it more difficult to run a business in Mongolia. All business entities regardless of size, years of operation must submit their financial statements. And their annual financial statements must be audited by the authority. They are also required to submit value added income tax, business entity income tax, half of social security payment for its employees four times a year.

*Table 8: Tax regulation for business entities*

| **Business entity income tax** | | |
|---|---|---|
| **Entity type** | **Tax percentage** | **Frequency of financial statement submission** |
| Entities with income up to 50 million MNT | 1% of profit | Once a year |
| Entities with income up to 300 million MNT | 1% of profit | Twice a year |
| Entities with income 300 million MNT – 1.5 billion MNT | 10% of profit, gets back 90% of payment | Twice a year |
| **Personal income tax for all employees** | | |
| All entities | 10% of wages | Four times a year |
| **Social security payment for all employees** | | |
| All entities | 11-12% | Every month |

Investment funds and improvement of tax regulations are the key in supporting startups economic growth in Mongolia. With the facts gathered during this baseline survey, the startup sector is promising and it can grow into one of the drivers of economic diversification. By developing a

favorable investment regime and tax environment Mongolia can increase direct foreign investments, increase exports of tech enabled services and products and achieve economic diversification.

## 3. Promote startup ecosystem connectedness and synergies

The government commitment is the key in creating the startup ecosystem and creating connectedness both internationally and locally.

### Local connectedness:

Currently connectedness within the startup ecosystem is improving. That said, local connectedness needs to evolve further and bring all stakeholders into a more organized and structured way in resolving challenges and opportunities in developing the startup ecosystem.

**Startup ecosystem association / consortium**: Startup ecosystem stakeholders need to unite to be able to discuss issues faced by stakeholders. The association / consortium should be able to present to the policy makers and regulators research and white papers bringing suggestions and solutions in improving the regulatory environment including IP regulations, tax environment, and other government support needed to grow Mongolian startup ecosystem. The consortium can bring the main representatives of all key stakeholders. It also needs to consolidate its efforts in connecting to the international ecosystem and put Mongolia onto the startup map. It could start with becoming a member of Startup Genome and create a report to put Mongolia into the Global Startup Ecosystem report. To ensure its sustainability, the startup ecosystem members can have a membership fee to fund the activities of the association / consortium.

### Startup ecosystem database

As a part of its effort to develop the startup ecosystem, Mongolia needs to create a transparent, neutral, accessible database to present startup ecosystem participants. It is of utmost importance that the database is not used for someone's interest, rather supports all members of the startup ecosystem participants. The association could oversee its development and update it regularly with the cooperation of all members. Independent research organizations should update the data on an annual basis with the official request of the association so that the startup ecosystem development is measurable.

Startup Lithuania helps facilitate the national startup ecosystem between startups, venture capital funds, accelerators, startup-friendly companies, and the government. The organization also publishes news about the startup ecosystem, provides a startup database, a job market, administers visa programmes for startups and startup employees, organizes events such as hackathons, workshops and the Startup Fair, the main event of the year for startups. It runs the best database on the startup

ecosystem and we believe Mongolia should draw on its example in making Ulaanbaatar city a hub for startup ecosystem (see Lithuania: https://www.startuplithuania.com/startup/).

Estonia has an active, open and supportive startup ecosystem, eager to support ambitious entrepreneurs and startups. In total, Startup Estonia has partnerships with 110 organizations in Estonia, which provide a wide range of services to startups. The Startup Estonia website offers a database of Estonian startups as well as a tab with the types of assistance provided by type of development (Startup Mindset, Pre-startup, Startup, Scale-up).

JETRO in Japan provides information on the Japanese startup ecosystem as well as the news from private sector such as interviews with the leading venture funds in the country. The J-Startup lists all supporters of its program to bring together all stakeholders for its main initiative to support 10,000 startups.

## Internationalization of the startup ecosystem

Connectedness to international startup ecosystems and markets is a key element for startup growth. As the largest country connecting Asia to Europe, it is a strength to be leveraged. Startups in many countries are provided with soft support such as internationalization of their operations, capacity building though accelerators and incubators. Collaborations with different ecosystems such as Japan and Singapore would be a real springboard for Mongolian startup ecosystem to grow, and a way to show the world our potential.

The biggest support in internationalization of startups is to make the country a mainstay for international businesses and to support startups' ambitions to scale. Singapore ranks #1 in the World Bank's Doing Business index which helped it to become a regional base for numerous global tech giants including Google, Facebook, Microsoft, LinkedIn, and Stripe. According to data from Singapore's Economic Development Board, 59% of technology multinational corporations have regional headquarters based in Singapore.

We need to learn from ecosystems that are similar to us, such as Lithuania, Estonia, which have managed to outperform in a spectacular way as leading startup ecosystems. They have all created an enabling business and investment environment for international startups to settle in their countries while supporting local startups to enter into global markets.

EU-Startups.com has ranked Estonia among the top 3 European countries to create a startup. Estonia is an attractive destination for startups because of its strong education system, highly digitized procedures and ease of obtaining a work and entrepreneurial visa. Many new founders like Estonia because of the national IT infrastructure, known as e-services, where you can do everything online, from setting up your company in one day to doing your taxes in three minutes.

### Exchange of knowledge with international startup ecosystem

Exchange of knowledge with international startup ecosystem players is a concrete step towards growing Mongolian ecosystem. Given the rising potential of Japan's startup ecosystem (ranks ahead of Singapore), availability of professionals with Japanese language proficiency, geographic proximity and cultural and economic ties to the country, it is important that Mongolian startups benefit from this international connection. It will significantly enhance market reach of Mongolian startups and potentially create the first unicorn out of the country. Organizing annual events to exchange knowledge is a key in developing the partnership with Japanese startups.

For example, the government of Japan introduced the J-Startup program to support 10,000 highly innovative startups entering global markets and to empower its ecosystem. The government support includes primarily soft support such as creating publicity, assisting in exhibiting at large-scale international events, utilization of a regulatory sandbox system and handling requests related to regulations.

Cities in Japan compete in creating a favorable environment for startups. For example Shibuya created "Shibuya Startup Support" an initiative by the Shibuya City Office, that provides face-to-face advice and resources for all startups, including international startups and creates connections to the local business opportunities.

## 4. Educational reform in STEM to support innovation and workforce

Educational reform to support STEM is a key to creating talent for the ecosystem and the government can draw on good examples of developing STEM colleges from Japan and other countries and creating linkages among universities, students, startups and industry.

Singapore host world-class universities with specializations in engineering, technology and other sciences. The government supports innovation and startups through its A*STAR program in its efforts to build strong linkages between researchers, students, start-ups and industry. In addition, universities are encouraged to establish in key campuses to support innovation and start-up challenges and incubation programs and many universities also have programs that establish and strengthen international linkages.

Japan's strength of its technical universities and colleges helped it to emerge its startup ecosystem into the global arena in a short timeframe. Its key strength in engineering, robotics are being enhanced by AI and deep learning creating an ability to support its deep-tech startups. In addition, universities in Japan have their innovation funds such as the University of Tokyo Edge Capital Co Ltd (UTEC), Kyoto University Innovation Capital Ltd, and Keyo Innovation Initiative Inc.

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Educated and skilled workforce is a key to the development of Mongolian startup ecosystem. Recruiting and building a skilled team has been stated as a key challenge for startups in Mongolia. Reduction in enrolment to STEM profession is another indicator for the government to have a new path in reforming STEM education. The model of Kosen Colleges of Technology, a five-year engineering education from 15 years old, proved to be a driving factor of Japanese industrialization and innovation and Mongolia could take a similar path in bringing skilled workforce to support its startup ecosystem.