MAPEO TIC BOLIVIA

MAPPING OF THE DIGITAL TECHNOLOGY ECOSYSTEM IN BOLIVIA

2021

FUNDA·PRÓ
FUNDACIÓN PARA LA PRODUCCIÓN

FUNDACIÓN SOLYDES

FUNDACIÓN EMPRENDER FUTURO

BIM
Asset Management

icco COOPERACIÓN

Mapping of the Digital Technology Ecosystem in Bolivia 2021

Coordination

FUNDA-PRÓ: Rolando Sahonero & Paola Mur

Fundación Emprender Futuro: Allison Silva & René Silva

Fundación SOLYDES: Alvaro Villarroel & Anabel Ariñez

BIM: Daniel Maldonado & Glenda Börth

ICCO with FIDA support: Ariel Tito & Sergio Condemayta

Ecosystem Survey Data & Processing

Segmentación S.R.L.

Design

Eressea Solutions S.R.L.

Bolivia, 2021

Acknowledgements

We want to thank all the organizations and people who shared their information, experiences, suggestions, and, above all, their valuable time to make this third Research the new milestone enabling us to make decisions for the benefit of all the Ecosystem's players.

The contribution of everyone engaged with this Research made this document a reality.

We would like to acknowledge the contribution of:

- All Startups that contributed to the Mapping of the 2021 Bolivian Digital Technological Ecosystem
- SOLYDES ACELERADORA
- IME
- INNOVA UP
- FUNDACIÓN MAYA
- ES2LATAM

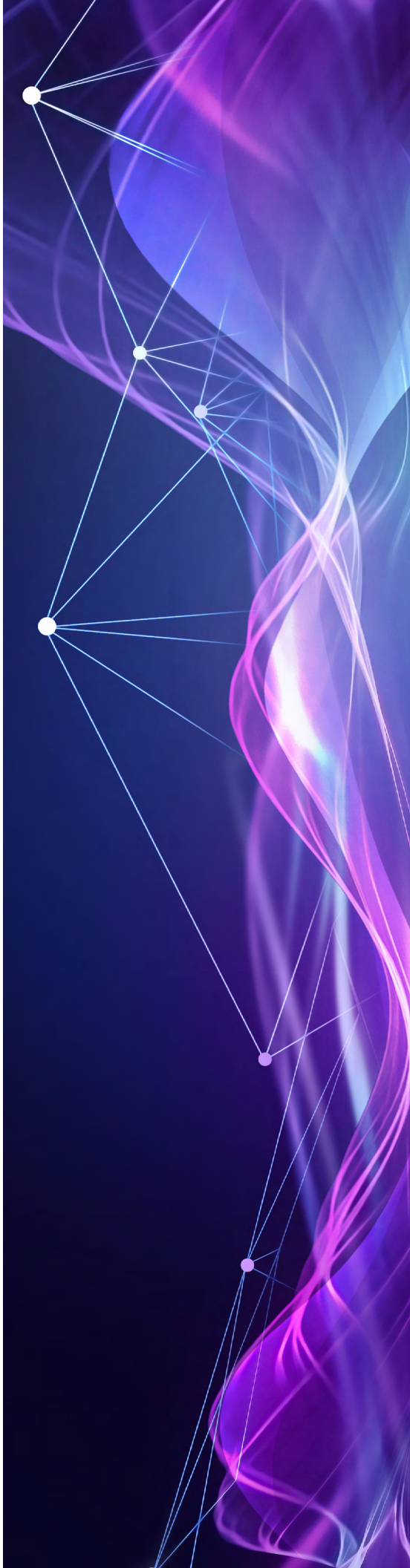


Table of Contents

1. Preface

FUNDA·PRÓ
FUNDACIÓN PARA LA PRODUCCIÓN

1.1 FUNDA-PRÓ

Coordinating and cooperating are two of humankind's skills that have given us the means to get to where we are today, for better or for worse. Both social tools, which evolved with our species, have been enhanced by Information and Communication Technologies (ICT), upgrading them to levels never reached in history.

In FUNDA-PRÓ, we have understood that the attributes of Information and Communication Technologies, safely used, can be powerful levers enabling us to continue collaborating to improve the conditions of many Bolivians that we have had and still have the privilege to serve.

Information and Communication Technologies have scaled up in several countries. Hence, ICT has shown to be the effective financial inclusion method given its inherent merit of incorporating new and innovative digital platforms for agriculture, energy, health, education, entrepreneurship, etc. New services, expressed as applications, are at the heart of emerging digital economies and, thus, digital inclusion.

In its third consecutive year, we are honored to present the Mapping of the 2021 Bolivian Digital Technological Ecosystem with our allies. A tool to assist the improvement of coordination and cooperation within the Ecosystem. With the aim that it may, under the premises of digital inclusion, improve the means and living conditions of Bolivian society.

1.2 SOLYDES

Technology is vital for the economy since, through technological innovation, countries become more competitive. Today, facing the innovative technologies transforming the world and giving way to globalization, enterprises have been forced to change continuously to adjust to these modern times. Thus, increasing the Bolivian technological level, given this sector's varying speed, is necessary.

For more than three decades, Solidarity and Sustainable Productive Development Foundation - SOLYDES has demonstrated its vocation and commitment to the fight against poverty in Bolivia – has introduced ingenious initiatives leading to the financial and social inclusion of the most vulnerable.

SOLYDES Foundation's mission is to create or adapt sustainable mechanisms that generate opportunities for people to prosper based on their effort's implementation of economic, social, and cultural projects. SOLYDES is characterized as innovative, environmentally friendly, and, accordingly, improving Bolivians' quality of life.

Nowadays, Solydes Foundation is committed to innovating technology, energy, education, health, and environment areas by implementing projects seeking to maximize the social impact within the economic rationality framework. To enhance economic and social development, we must use science and technology for the common good of humanity, whereby we will be able to discover, prevent and combat the risks threatening the environment and, by doing so, we will solve some ecological problems.

Innovatory ideas are crucial to the progress of such areas and, hence, the role of entrepreneurs begins to play a relevant role. Moreover, for these ideas to work out, it is crucial to count on the necessary support.

This research contributes to the analysis of Startups in the Mapping of the Bolivian Digital Technology Ecosystem. It is an input to evaluate our country's state of the art and the steps to take in the future. For this reason, we hope our research information is enormously valuable for building up, among all the Digital Enterprises Ecosystem players, the finest Bolivia.

1.3 EMPRENDER FUTURO

Undoubtedly one of the most impactful consequences, during and after the COVID-19 pandemic, has been the merging of technology use and the resort to digital services in our daily activities.

The implementation and acceleration of digital transformation's use and development entail technological advances and, more importantly, the cultivation of talent in the people making up a team.

We can achieve teams' talents employing the UpSkilling (strategy to develop new skills in the trainee) and the ReSkilling (trainees build up new competencies to perform in a different position than their usual). Both sets of skills will assist team members in the transition to a technological and innovative culture. Technology can be acquired, but the teams' ability to adapt to a digital future depends on developing skills, revealing the talent, and evaluating the processes established in enterprises from the corporate culture perspective.

While the immediate future leaves many questions unanswered, we must bet on reskilling and upskilling our teams so that together we develop the skills required to adapt ourselves to the increasingly changing and demanding market successfully.

As the Fundación Emprender Futuro, we are committed to opening opportunities by forming and cultivating talent in entrepreneurs, young businesspeople, and young people using technology as a vital tool.

BIM
Asset Management

1.4 BIM

The ongoing and rapid evolution of technology worldwide has turned around how enterprises conduct their business locally and internationally and how populations evolve and develop daily. Furthermore, the Bolivian economy has historically been typified by exporting its abundant natural resources and importing technological resources required to progress both its economy and its population. Nevertheless, in recent decades, Bolivia has increased the advancement of technology at the national level.

The expeditious spread of "Information Technology" (IT) and the capacity to access data has enabled Latin American countries to become their technology developers –and Bolivia is not the exception. In recent years we have witnessed the birth and growth of enterprises whose essence is technological development, and their services support distinct sectors of the Bolivian economy. The lack of technology (applied science capable of adapting itself to the specific needs of a productive economic sector as unique and diverse as Bolivia is) has opened the window for expressing our intellectual talent and taking part in Bolivia's sustainable growth from a new angle.

2020, an unprecedented year due to the rapid expansion of COVID-19 worldwide, has awakened the need to implement technologies that serve all productive and consumer sectors in the region. This third research conducted at the national level clarifies Bolivia's technological Ecosystem's evolution and dynamism, allowing us to extensively understand the needs, opportunities, and supply and demand for the use of technologies. The Mapping turns into the source of organized information, maximizing the potential of development and use of local technology. Consequently, it promotes the growth of a new productive economic sector in Bolivia, which is essential for social and economic growth.

As part of the Panamerican Group, Bolivian Investment Management (BIM) focuses on making investments that seek to produce a positive impact and contribute to the progress and growth of different economic sectors in the region. BIM has evaluated and made more than two hundred investments in enterprises and institutions in 14 Latin American countries. Thanks to this, we have come to understand the importance of using technology as an essential tool for the sustainable growth of developing countries. Thus, we consider it essential to be aware of the progress of technology to optimize its use and dissemination. Along this vein, we are immensely grateful to "Mapeo" for being an enriching source of information.

COOPERACIÓN ❯

1.5 ICCO

Inequality and exclusion affect people's lives, especially to the most vulnerable populations. In this context, ICCO seeks to develop innovative responses that open better opportunities utilizing our programs and models. We pursue new connections between rural areas and the cities taking advantage of technology – linkages reflected in better job opportunities for young people, granting vulnerable communities' greater economic empowerment.

Along these lines, we believe that technology's appropriation, use, and development can provide better opportunities, for young people, particularly for women and the rural population. Today more than ever, technology can enable us to build connecting bridges between the most vulnerable people with problems and entities that can help them solve those. Putting technology and innovation at the disposal of the most disadvantaged people and communities has never been as possible as it is today. Young people are more open to technology, innovation, and entrepreneurship, making them the key players in the local economic development of their communities.

In this context, the 2021 Mapping of the Bolivian Digital Technology Ecosystem jointly with allied entities tried to look for ongoing coordination and strengthening of the Digital Ecosystem in Bolivia to foster innovation and the use and development of technologies that stimulate the economy and open better socioeconomic opportunities for the population.

2. Introduction

– **Yuval Noah Harari**, in his TED presentation on **Why humans run the world?** makes us reflect on the ideas that

We, humans, have been able to dominate the world, unlike animals, because we can COORDINATE in a FLEXIBLE way -meaning, we can modify the way we "articulate" depending on the events- and mind you, on a LARGE SCALE because our IMAGINATION drives all this.

Crises are opportunities to change the game rules since we can get rid of the old thinking structure and the premises binding us, concealing those great opportunities in front of us, waiting for us to discover and develop them.

This decade begins with the so-called New Normality, marked by the health emergency caused by the COVID - 19 virus pandemic. The opportunities and threats arising from this situation combined with past circumstances give way to multiple potential futures. All we need is the ability to envision them, but the most important clue is to have enough energy to materialize them.

The changes that gradually accumulated over several decades have precisely crystallized that by 2025, 71% of the world's population will have adopted mobile and digital technology in their daily lives. Undoubtedly, the pandemic has accelerated all this. Yet, the excellent opportunity does not lie in having new devices, but it will lie in the fact mobile Internet will have reached 61% of the population[1]. In other words, this access coverage will enable digital services to introduce new and innovative digital platforms to various sectors.

Information and Communication Technology (ICT) is the one to underpin the economy's future, constantly expanding digitally since every economy sector is moving at the technology's pace, little by little. For this reason, the digital economy's emergent challenge is to be more inclusive and integrating. Whether forced or not, the first noteworthy evidence was enterprises of all sizes going digital and managed to survive the pandemic, regardless of the times of economic slowdown and social distancing.

For the technology adoption trends --emerged in the pandemic, even before-- to continue to grow positively, it is essential to consolidate a digital ecosystem reflecting reality and the ongoing changes. In this context, experts suggest working on three fundamental axles that today ensure building up the digital economy and tomorrow guarantee an inclusive digital economy integrating as many people as possible worldwide, particularly in Bolivia.

The primary axle is the access. It is crucial to spare no effort for all populations and communities, even those far away from urban centers, to count on technological and financial infrastructure at their disposal to participate in digital economies.

The secondary axle is the technology trend adoption. People not participating in today's digital economies must decide to do so and know they will benefit from such a choice. Thus, it is essential to continue the communication work and expand the information currently concentrated in some groups to reach this goal.

The third axle is the feedback and integration as recommended by the experts. Since it is not enough to progress manufacturing devices at the development and innovation centers, the goal should be focused on the users, whose needs are technology, and be part of the digital economies.

[1] UNCDF, 2020, "LEAVING NO ONE BEHIND IN THE DIGITAL ERA", Global Strategy: Leaving No One Behind in the Digital Era - UN Capital Development Fund (UNCDF)

Gain tangible benefits for the Bolivian community is fundamental. To this end, we must evaluate the Ecosystem's conditions because enterprises incubate and develop in it. And they are the seeds germinating to be the enterprises we want to have.

The objective of the baseline research for 2019 and the subsequent research 2020 Bolivian Digital Technology Ecosystem was to begin a dialectic process among all Ecosystem's players.

The first baseline research of the 2019 Bolivian Mapping Digital Technology Ecosystem is an informative document furnishing the status and future challenges of the Bolivian Ecosystem. The second research of the Mapping 2020 Digital Technology Ecosystem accounts for the progress made in the Ecosystem.

This 2021 Mapeo seeks to continue with the quantitative measuring of the Ecosystem's evolution, using indicators, namely the number of technological enterprises (from now on, Startups), supporting institutions, and so forth. Likewise, we incorporated qualitative development dimensions for its players and the Ecosystem as a whole. Having presented two reports at the national level, we consider it appropriate to disseminate this third report at the regional level. Thus, our research results can be part of the international statistics; accordingly, this last axle constitutes one of the 2021 research objectives.

Throughout the document, we use the word STARTUP frequently, which in collective understanding refers to the known disruptive technology-based enterprises with the potential to scaling up their operations and sales volume. As part of a process of continuous improvement of the Mapping process, in this version, we placed greater emphasis on deepening and refining the preceding criteria to identify the group of high potential Startups every Ecosystem wishes to develop.

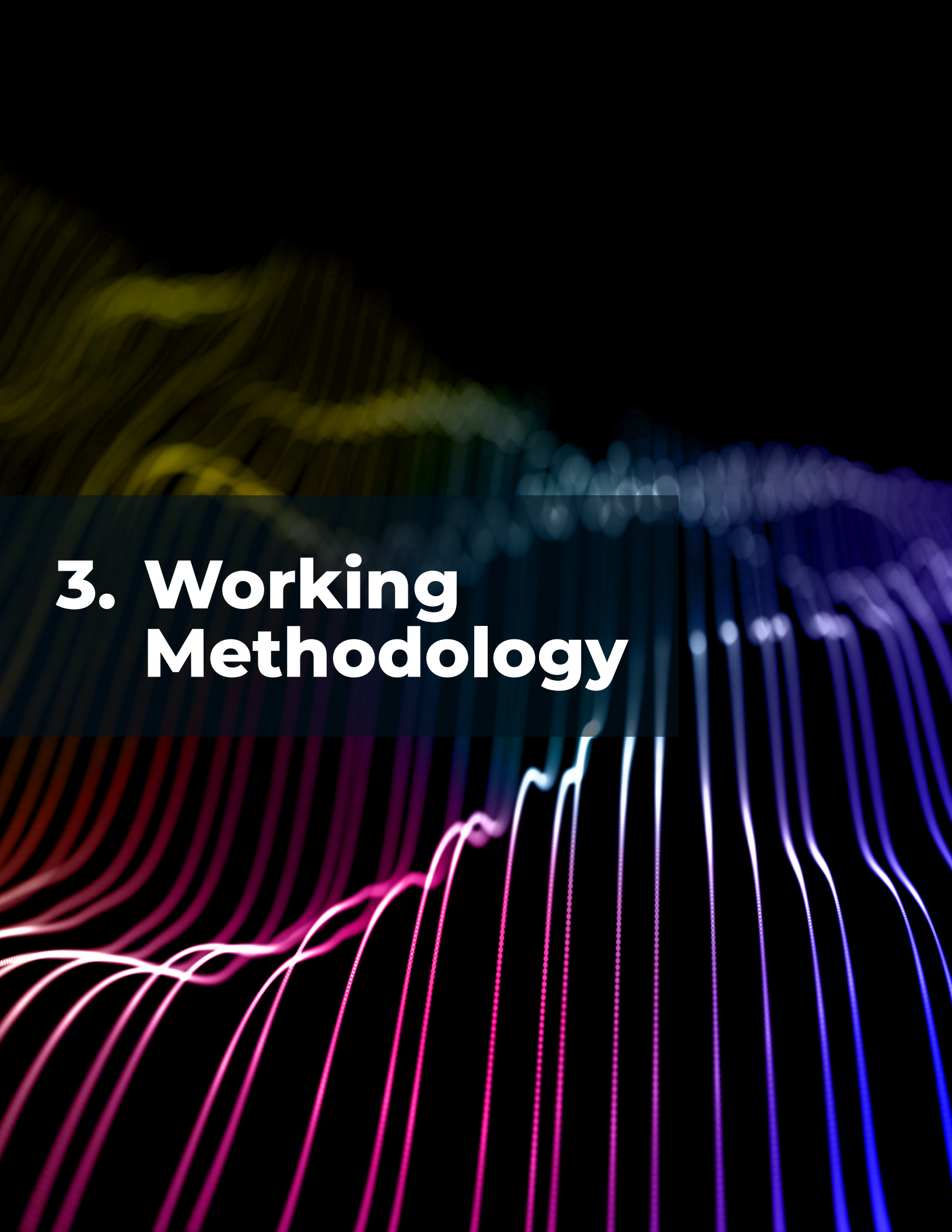
Furthermore, this research seeks to answer questions such as:

Is there only one digital technology ecosystem in Bolivia, or are there more ecosystems? If there is more than one Ecosystem, what is the degree and intensity of their interaction? And more importantly, do institutions coordinate and complement their actions?

After two years of disseminating our results, are Startups acquainted with the Ecosystem? and do they receive quality support? With adequate types of quality?

As a final note, the following sections present the methodology used, the quantitative and qualitative results of the Ecosystem, the social capital indicators, the central coordination activities, the comparison made with other countries in the region, and some success stories.

We invite you to discover the answers and, above all, to contribute to building up the ECOSYSTEM!



3. Working Methodology

We present the most relevant methodological aspects to inform the reader about this third research approach applied to the Mapping of the Bolivian Digital Technological Ecosystem.

3.1 Research Scope

From the initial geographical research scope of investigation based on La Paz, Santa Cruz, and Cochabamba's capital cities, we extended it to the El Alto city and the departments of Sucre and Tarija thanks to the connection established with entities supporting the Digital Technological Ecosystem.

The analysis began with the information, sources, data, and instruments review used in the 2019 and 2020 pieces of research to update the sampling frame (the list of observational units) and the data measuring instruments. This analysis consisted in:

- Validate whether the measuring instruments are tuned to the objectives proposed for the current year›s research scope.
- Define the analysis hypotheses along with the Project›s partner institutions.
- Determine the relationships amongst the research variables.
- Define the minimum sampling size depending on the number of stakeholders participating in the Research.
- Review of the baseline indicators and their evolution over time (determining the expected values).

The analysis plan formulated for the Research was based on the first two Mapping experiences comprehensive analysis, allowing for the indicators' revision, their definitions, and adaptation.

Based on the analytical plan guidelines, we updated the mappings' database (sampling frame) conducted in 2019 and 2020, which by way of example and not limitation, included::

- Identify the Startups created in 2020 and the 2021 first semester.
- Track the Digital Technology Ecosystem players, focused on technology-based Startups, and detect those units in active operation and those no longer operating.
- Evaluate and analyze the Startups› life cycle (establishment, maturity, and decline).
- Identify and systematize «Corporate Venturing» experiences in the sectors prioritized by the Project›s partner institutions.
- Identify innovation ventures with a positive impact on the environment.
- Identify digitally based ventures in rural areas or undertakings establishing linkages between cities and rural areas, allowing for the generation of economic opportunities and the factors facilitating or hindering their development.

We measured the impact of the activities conducted by the Digital Technology Ecosystem's players (Ecosystem Evolution), which by way of example and not limitation, included:

- Measure the social capital index based on the indicators proposed in previous years.
- Identify the number of partnerships, professions, trades, and others.
- Generate a score that allows the Startups classification

3.2 Hypothesiss

The outcome of the analysis plan is four starting hypotheses, two general ones referring to the Ecosystem, and two to the Startups.

The Ecosystem-referred hypotheses are:

- Bolivia counts on a single Digital Technology Ecosystem, in which players interact with each other, regardless of the distances among cities where the Startups are located. Here, the alternative hypothesis would be that there are three or more ecosystems (strongly, moderately, or loosely) linked among each other.
- The Bolivian Ecosystem has a high degree of coordination and complementarity among its parts, maximizing the resources and minimizing the duplication of efforts. Here, the alternative hypothesis would be that the degree of coordination and complementarity among its players is weak and does not optimize resources.

The Startups-referred hypotheses are:

- Startups are thoroughly familiar with the Ecosystem›s existence. They are acquainted with the rest of the participating Startups and the services they offer.
- Startups receive quality help, resources, and advice from the other Ecosystem players at an affordable cost.

3.3 The Players of the Bolivian Digital Technology Ecosystem

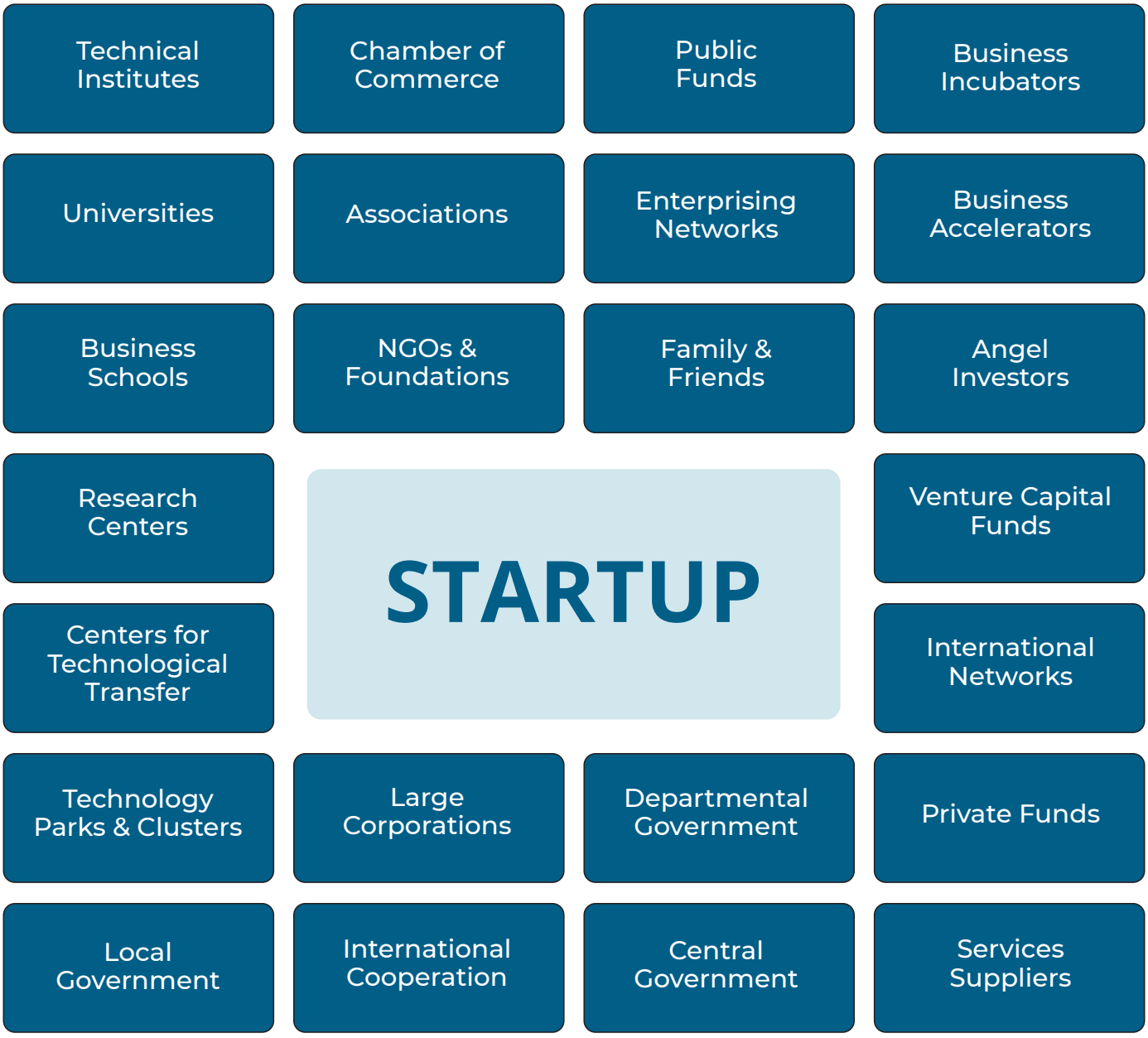
The population of interest defined for this Mapeo is consistent with the 2020 research and baseline documents. Being specific, these are:

- Already identified Startups
- New Startups to be determined yet
- Academia (Universities and Institutes)
- Direct support governmental institutions
- Business Incubators
- Business Accelerators
- Investors
- Private companies investing in Startups

Given their roles, these participants are classified into the following groups:

- **Supporting entities.** They provide specific support at various stages of the Startups, such as formation, training, advice, consulting, networking, etc. Some of the Support entities also provide economic resources to encourage entrepreneurs to participate in contests or training –incentives understood as the seed capital.
- **Coordinators.** They play a more decisive role because they collaborate with entrepreneurs and link them with investors. Mainly they are business incubators and accelerators whose work focuses on shaping the venture to be attractive to investors. To this end, coordinators help entrepreneurs validate their business ideas, delineate their target markets, train them to overcome their weak areas to produce a viable prototype. Further, assist them in obtaining the seed capital to startup operations and finally, attain the investment capital to take off their Startups.
- **Investors.** They are the holders of the means and resources necessary to enhance or even make ventures a reality. Some become partners to the Startup, buying equity, and others grant a soft loan.
- **Networks.** They provide networking services among entrepreneurs as well as training and guidance. Supposedly, they promote public policies that encourage and facilitate entrepreneurial activity and, if necessary, defend their members› interests before any authority or other private sector bodies.
- **Startups.** They are the ecosystem core and the purpose of practically everything the Ecosystem›s players do.

Below is a schematic representation of the Ecosystem players concerning their closeness to the Startups.



3.4 Means for Data Gathering

We used electronic questionnaires distributed via email and WhatsApp (business edition) for the data gathering activity. The platform used (Typeform) automatically controls the consistency of the information, the entry of intelligent data, the rotation of attributes, and practically generates a debugged database. For each type of participant, we designed and adapted the appropriate data-gathering instrument.

The data gathering process conducted seventy-four surveys to the Startups and twenty-three surveys to the Ecosystem institutions --complemented and enriched with twelve in-depth interviews with the Ecosystem participants.

A relevant topic of the surveys --thoroughly presented in this document-- regarding the Startups' characteristics indicates that not all Startups meet the criteria of being disruptive, relying on a technological base as their primary competence, and having the possibility of great scalability.

3.5 Data Processing

Once the segmentation variables were defined, the data processing phase started with the programming of crossover variables, the configuration of results tables, and the development of indicators. The process used SPSS, a state-of-the-art software specializing in statistical analysis.

We developed output tables for each module of a form and indicators for the total aggregate and the specific variables of interest.

In addition, we observed the behavior of each of the records making up the database to identify the observation units outside the general data trend, which may impact the aggregate data result.

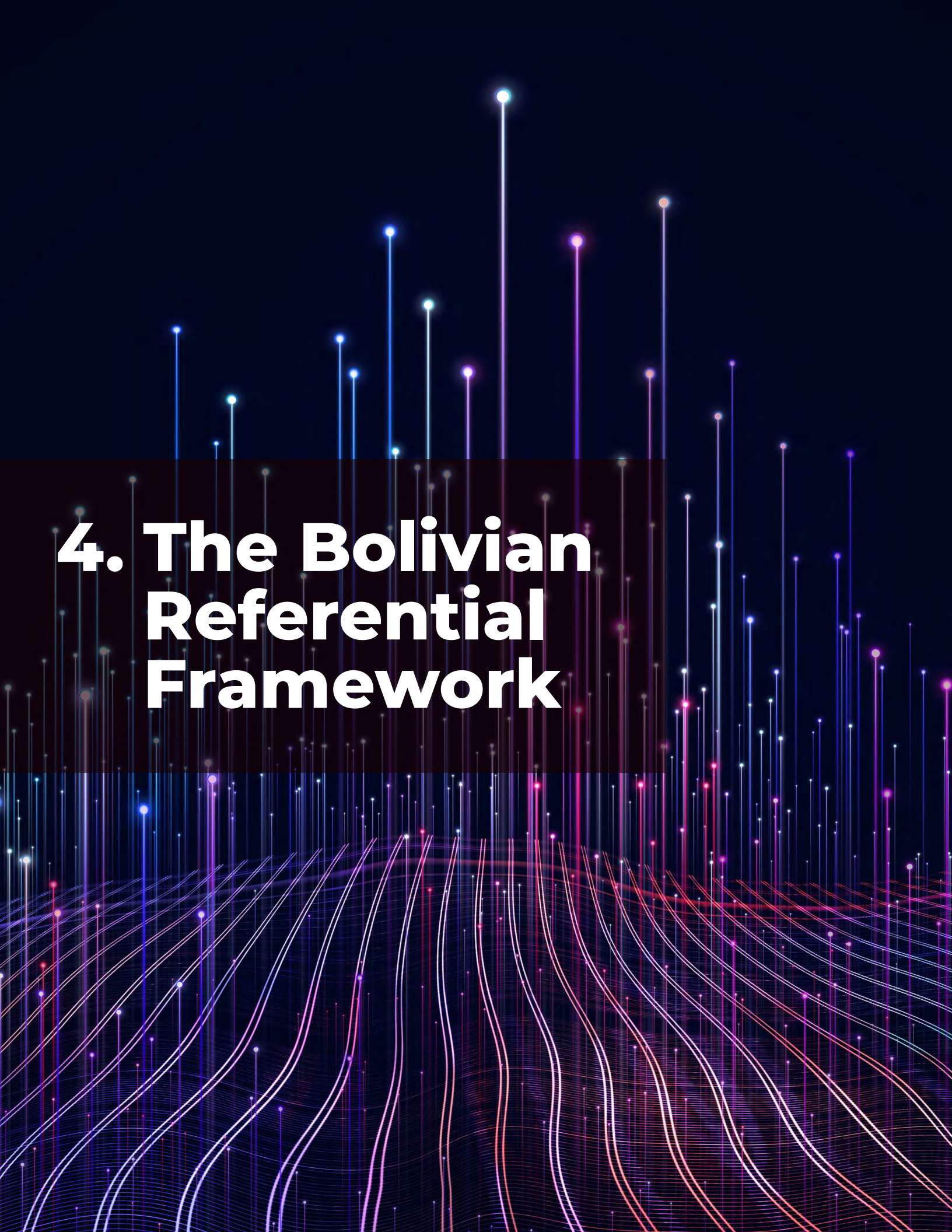
One of the main tasks was to identify new Startups (i.e., updating the sampling frame). To this end, we decided to use an enterprise's population of interest (exclusively partnerships) incorporated during 2020 and the first two months of 2021 – the outcome of this exercise had limited results; thus, we used the same sources as in the 2020 Mapeo along with some additional sources that arose during the research process. The new Startups completed a survey that allowed the incorporation of their information into the 2021 Mapping.

To gather qualitative aspects, we chose a group of the Ecosystem participants (considered experts) and held an in-depth interview.

The data gathered was processed according to its nature, either quantitative or qualitative.

The quantitative indicators were generated looking to provide continuity to those indicators generated during previous Mapping' researches, as well as to generate new ones that comply with certain international standards, so that the information from the Bolivian Digital Ecosystem can be incorporated into international statistics.

As to the qualitative data, we processed it using appropriate instruments and indicators for this type of information. To the extent possible, we tried to generate indicators that could be subject to future follow-ups and, by doing so, enrich the analysis and evaluation of the Bolivian Digital Ecosystem operation.



4. The Bolivian Referential Framework

After several efforts to find, create and nurture "unicorn" Startups, the worldwide Ecosystem's players concluded that the emergence of this kind of enterprise depends on the hosting market's conditions, i.e., the hosting country offering the resources and lodging the nurturing ecosystem.

World technological centers exert a force of attraction to resources and talents in such a way that makes the emergence of new development hubs extremely difficult, allowing the creation and nurturing of these longed-for ventures, even more so in countries with incipient or early developing ecosystems.

Thus, today the time has arrived to think differently and find ways to adapt to our reality, replicated endlessly in several countries, especially in our latitudes. Startups develop in milieus with less access to capital, less skilled human resources, and exposed to significant negative economic impacts from their lodging markets.

Under this reasoning, Alex Lazarow, in his article "Startups, It's Time to Think Like Camels - Not Unicorns,"[2] coined the concept of looking for "Camel" ventures due to the similarity Startups must have with these dromedaries, that is, to withstand the most extreme climatic situations on the planet. Startups must grow in an organic and balanced way instead of having exponential growth; they are intended to survive in the long term and must internalize several operations due to the Ecosystem limitations in which they operate. The birth of Startups in small markets, by definition, does not grant them enough means to grow; they are supposed to be born to be regional while they seek several markets where to sell.

Along these lines and with the experience of a successful venture, Manuel Laredo, CEO of Pisos Mamut, in his article "Doctor: I am a zebra," defines his Startup management as the happiness of being a zebra, which grows little by little, within its herd and interacting with its habitat. In his article, Laredo emphasizes the relevance of comprehending that it is crucial to encourage the zebras to grow and reproduce under the conditions and context of the Bolivian Ecosystem. Still, multiplying the impact, they are already producing intrinsically.

Regardless of any denomination given, we must understand that achieving a thriving Ecosystem is not the result of finding a "Unicorn," but instead relying on several Startups strengthened to confront its milieu limitations –motivated to achieve their exponential growth.

Let us characterize our Startups habitat based on the national economics metrics and compared globally.

From a broader perspective, three are the factors characterizing a country's conditions for developing Startups. From a narrow view, for technology-based Startups, the required conditions are competitiveness, innovation, and ease for doing business. Nevertheless, these are not all since counting on a platform – implying each country's investment in science and technology-- determines its capacity to innovate.

As to the classification of our position, we rely on the following data measuring our country's position over several countries; of which we obtained data for each measurement:

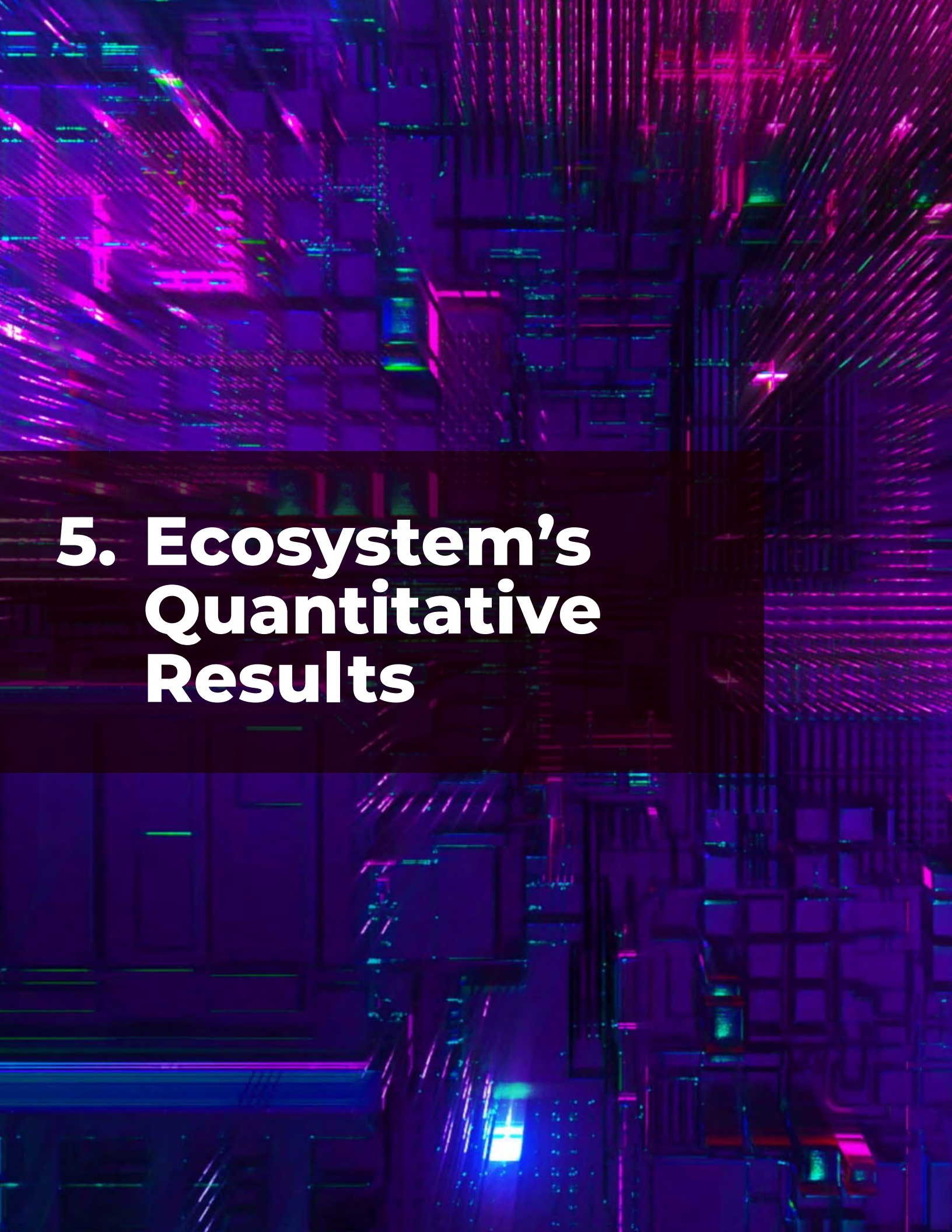
2 Alex Lazarow. Harvard Business Review. 2020. Available at: Startups, It's Time to Think Like Camels — Not Unicorns (hbr.org)

Indexes	2018	2019	2020
Competitivity [3]	105/140	107/141	N/D
Capacities for Innovating [3]	122/141	124/141	N/D
Innovation [4]	117/126	110/129	105/131

In general terms, Bolivia's positioning in the different range of indexes compared to most of the world's economies clearly shows the lack of an adequate ability to use its available resources to provide good levels of prosperity for its citizens.

3 World Economic Forum WEF "The Global Competitiveness Report 2019" - 2020 publication is a special edition on the economy's recovery after the worldwide sanitation emergency.

4 Cornell Sc Johnson College of Business, INSEAD, WIPO (2020), "Global Innovation Index 2020 – Who Will Finance Innovation



5. Ecosystem's Quantitative Results

5.1 Startup

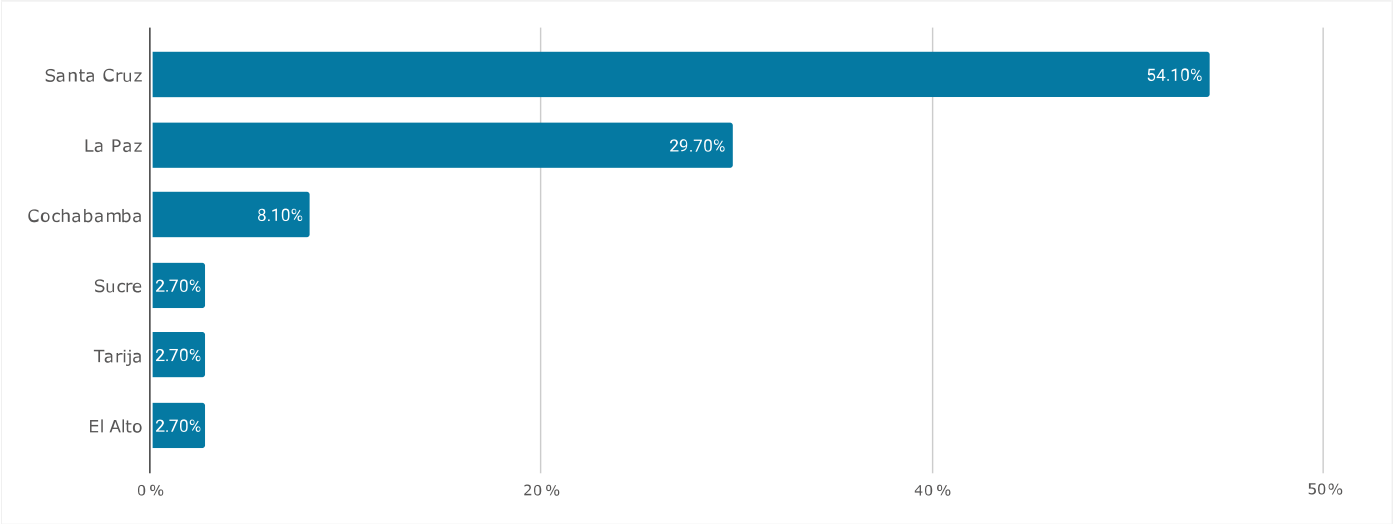
The research process results for 2021 (based on lists, web research, interviews, others) yielded the following:

Quantity of 2021 Startups

Startups identified in 2019	152
+ New identified Startups in 2020	67
- Non-Active Startups	-59
Identified Startups in 2020	160
+ New identified in 2021	50
- Inactive Startups	-55
Identified Startups in 2021	**155**

Comparing the 2021 results to those of the two previous years, we verify the number of active technology-based Startups remains stable. Nevertheless, the structure of Startups creation and disappearance is highly dynamic. In two years, 117 Startups have been created, representing 78% of active units to 2021; but, 114 Startups have ceased to operate, corresponding to 76% of the current year's operational units.

The below infographic shows the Startups distributed by cities.



5.2 2021 Digital Technology Ecosystem in Bolivia

In order to determine the Ecosystem's "installed capacity," we conducted a third exercise to quantify the number of existing participants, as shown in the following table.

Population aged between 18 and 44 years old (INE, Census 2012)	Number of Software Companies***	Number of Startups	Government Institutions with Direct Support (National, Local)
4,160,238	1,149	155	8

**Universities, institutes, and other training institutions were considered.*

*** Communities were not counted, neither their chapters by city.*

****Number of Software Companies based on data from Fundempresa (2019).*

As explained in the methodology, a detailed work was developed to characterize the projects that have a potential for disruption (under the parameters of our market), scalability through the use of information and communication technologies leading to qualification in this group to 100 Startups.

5.3 Ecosystem Evolution

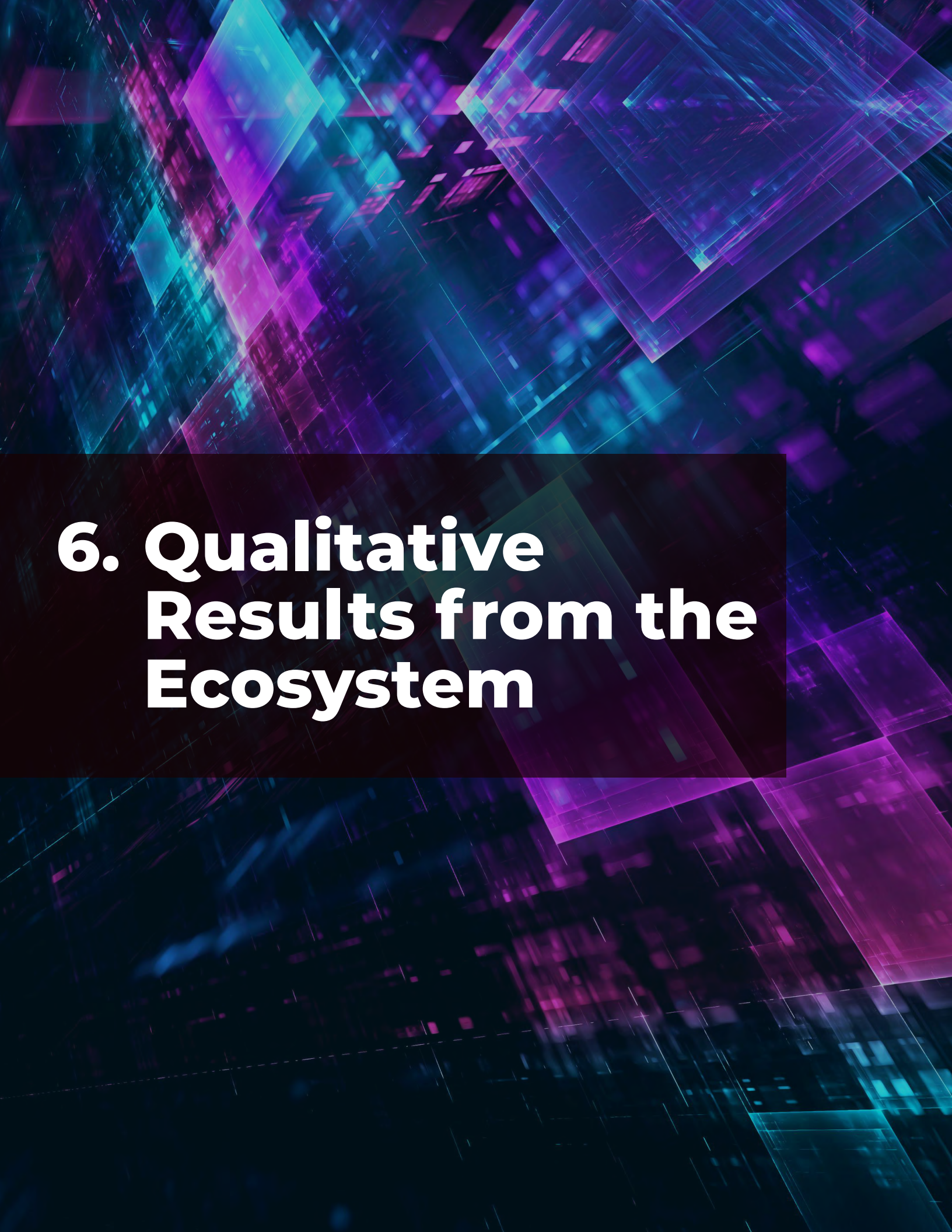
In quantitative terms, the Ecosystem players' evolution shows the following behavior.

Ecosystem Players	2019	2020	2021
Number of Startups	152	160	155
Direct Support Governmental Institutions (National, Local)	6	5	8
Academia	27	31	30
Communities, initiatives, and activities of digital technology. *	51	19	26
Supporting Institutions	15	57	40
Business Incubators	3	9	13
Business Accelerators	4	3	8
Investors	0	3	5

** In the 2019 ICT Mapping, communities were counted, including their chapters by city.*

Through three observations, we establish behavioral trends. From the result, we infer that the number of players is stable, with some exceptions; it aligns with the “organic” growth promoted by private participants.

As shown in the following research points --except for the incredible dynamics expected in the creation and disappearance of Startups-- stability is the trait of the Bolivian Digital Technology Ecosystem.



6. Qualitative Results from the Ecosystem

6.1 Startups Profile

The average age of the interviewed people is 35.5 years[5]. The range is between 21 and 64 years old; however, we can consider that the general distribution is between 21 and 45 years old, considering the higher values as outliers within the distribution.

Regarding the sex variable, 86.5% of respondents were male, and 13.5% were female. There were no differences in age between men and women.

On the other hand, there is an average number of 2.5 "co-founders" in each enterprising. Of these, one out of every three "co-founders" is a woman, and one person is over 30 years old.

The average number of people working in the 2020 Startups reached 4.57 members. By 2021 it increased to 6.03 people, and the expectations for 2022 are optimistic since the enterprising people are planning to earn an average of 13.57 Startup employees.

Startups Staff Composition

	Average
Co-founders	2.49
Women Co-founders*	0.32
Co-founders younger than 30 years**	0.73
2020 Team Size	4.57
2021 Team Size	6.03
2022 Projected Team Size	13.57

**Out of three co-founders, one is a woman (roughly).*

***Out of four co-founders, three are younger than 30 years old (roughly).*

In general terms, only 13% of the information and technology team is made up of women, and 20% of the entire management staff is female. In addition, 32.4% of those interviewed stated to have a program or standard promoting gender equality.

There is a high dispersion related to the training expertise of the interviewees. It is possible to highlight groups with training in Business Administration, Industrial and Commercial Engineering, a wide range of Engineering (communications, systems, mechanical, networks, financial, civil), and a few cases mentioned having technical skills in web development.

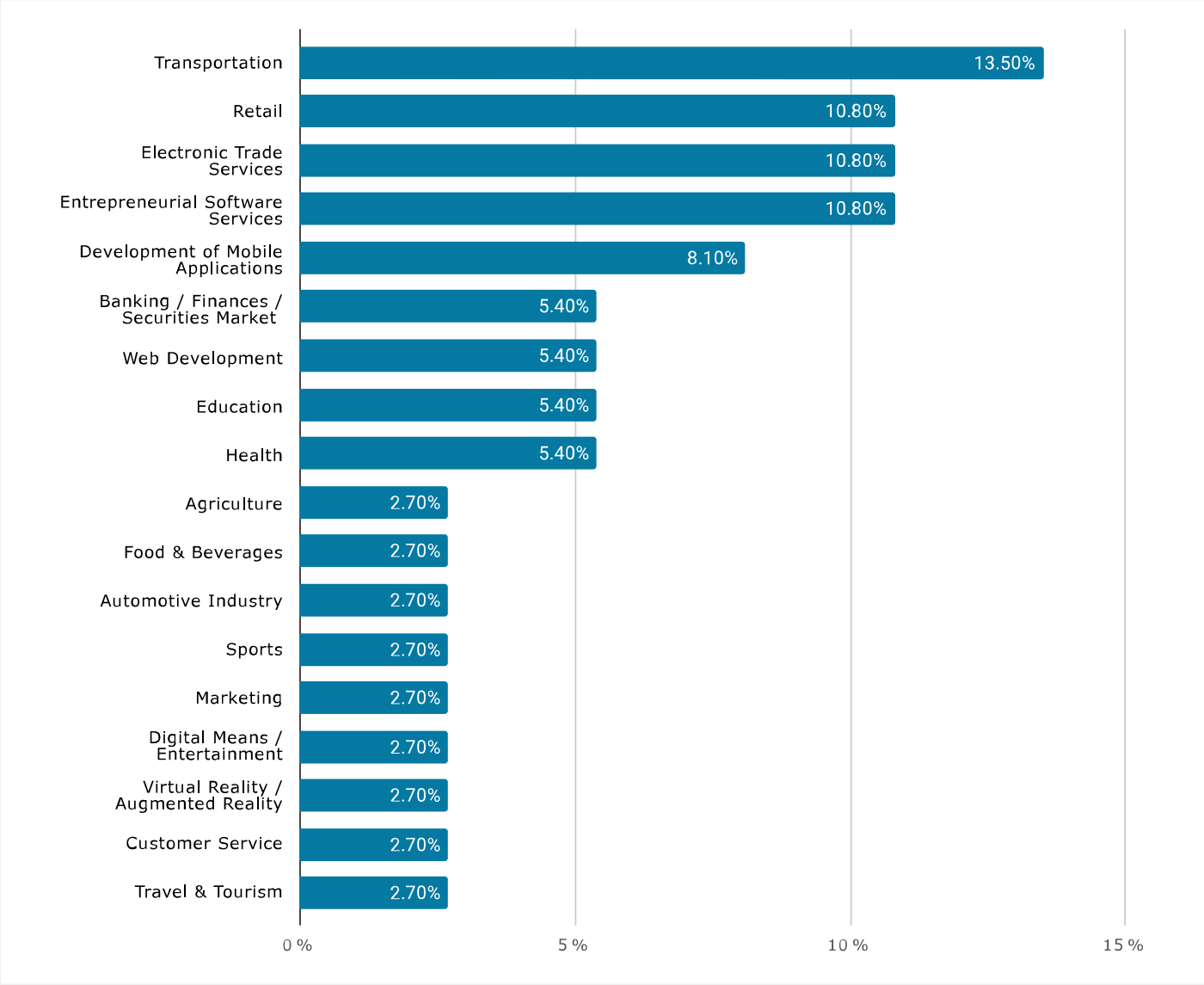
About eight out of 10 Startups encountered difficulties in hiring skilled labor and professionals with a specific profile, skills, and experience.

5 The confidence belt is between 32.6 and 38.5 years.

6.1.1 Sectors served by the Startups

The Startups serve a significant variety of sectors and industries –standing out transportation, retail, e-commerce services, and enterprise software development.

Sectors served by the Startups (Expanded Scale)



6.1.2 The Startups Classification

The Ecosystem entities' intention of the Ecosystem is to support Startups, that offer a specific product or service. Such an offer is conceivable thanks to the use of Information and Communication Technologies because the ICT allows them to scale up in an accelerated manner, and, consequently, generate employment and opportunities for the economy.

Enterprises using ICT in some measure of their processes --but not at the heart of the business- could be mistakenly considered startups. Accordingly, the Ecosystem entities would end up supporting initiatives that belong fundamentally to the traditional economy.

In this sense and to contribute to a collective understanding about the Ecosystem, we put forward a tool as a starting point, open to discussion and improvement, and whereby we could distinguish entrepreneurial units from startups, applying some more refined criteria than merely considering their time of existence:

- **How many years has your enterprise existed since it ceased to be just a project?**
- **How do or will your clients access your product or service?**
- **How do your current clients, or will your potential, make their payments?**
- **What function do information and communications technologies (ICTs) perform in supplying your product or service?**
- **To what extent is your venture generating technology for the provision of your product or delivery of your service? For example, the development of algorithms or your clientele service platforms, and so forth).**
- **For how long your enterprise has sufficient liquidity to continue operating for?**

The results from having applied the scoring design are as follows:

Startups Classification by their Score Calculation

	Percentage
Pure Startup (60 points & above)	18.9%
Typical Startup (45 to 59 points)	37.8%
Hybrid Startup (33 to 44 points)	21.6%
It does not qualify under any of the formulated criteria (0 to 32 points)	21.6%

The score result indicates that four out of five enterprising cases fully or moderately qualify as Startups.

Each category definition:

- **Hybrid Startup.** Enterprising using information and communications technologies (ICT) to a great extent for its processes, applying a business model partially differing from traditional ventures, and with the ability to scale up its sales.
- **Typical Startup.** Technology-based enterprising uses a business model that introduces a major improvement and has a high capacity to scale its sales nationally.
- **Pure Startup.** Technology-based enterprising using a business model different from traditional ventures and with a high capacity to scale up its sales across borders.

Furthermore, for the typification of the Startup, under our research's criteria[6] , we used the following variables as its structuring parameters:

- **What function do the information and communication technologies (ICTs) play in providing your product or service?) – Backbone.**
- **How does your enterprising differ from other traditional providers of the same product or service? - Business Model.**
- **To what extent can your enterprising continue growing indefinitely, or does it have certain limitations to make this possible? - The provision of our product or service can grow virtually indefinitely.**

The result indicates nearly 60% of the cases meet all three criteria, and there is a variation of combinations for two of the three parameters, as is shown below:

Startups Classification according to the criteria of Disruption, Technological Basis, and Scalability

	Proporción
One criterion. The supply of a product or service can grow in an indefinite way.	8.1%
Two criteria. The supply of a product or service can grow in an indefinite way + Business Model	13.5%
Two criteria. The supply of a product or service can grow in an indefinite way + ICT. The Backbone	8.1%
Two criteria. Business Model – ICTs. The Backbone	10.8%
Three Criteria	59.5%

6.1.3 The Function of Technology

For eight out of ten Startups, the information and communication technologies (ICTs) have become their business backbone, and for other Startups' 14% of the ICT it is helpful, although they could do without it.

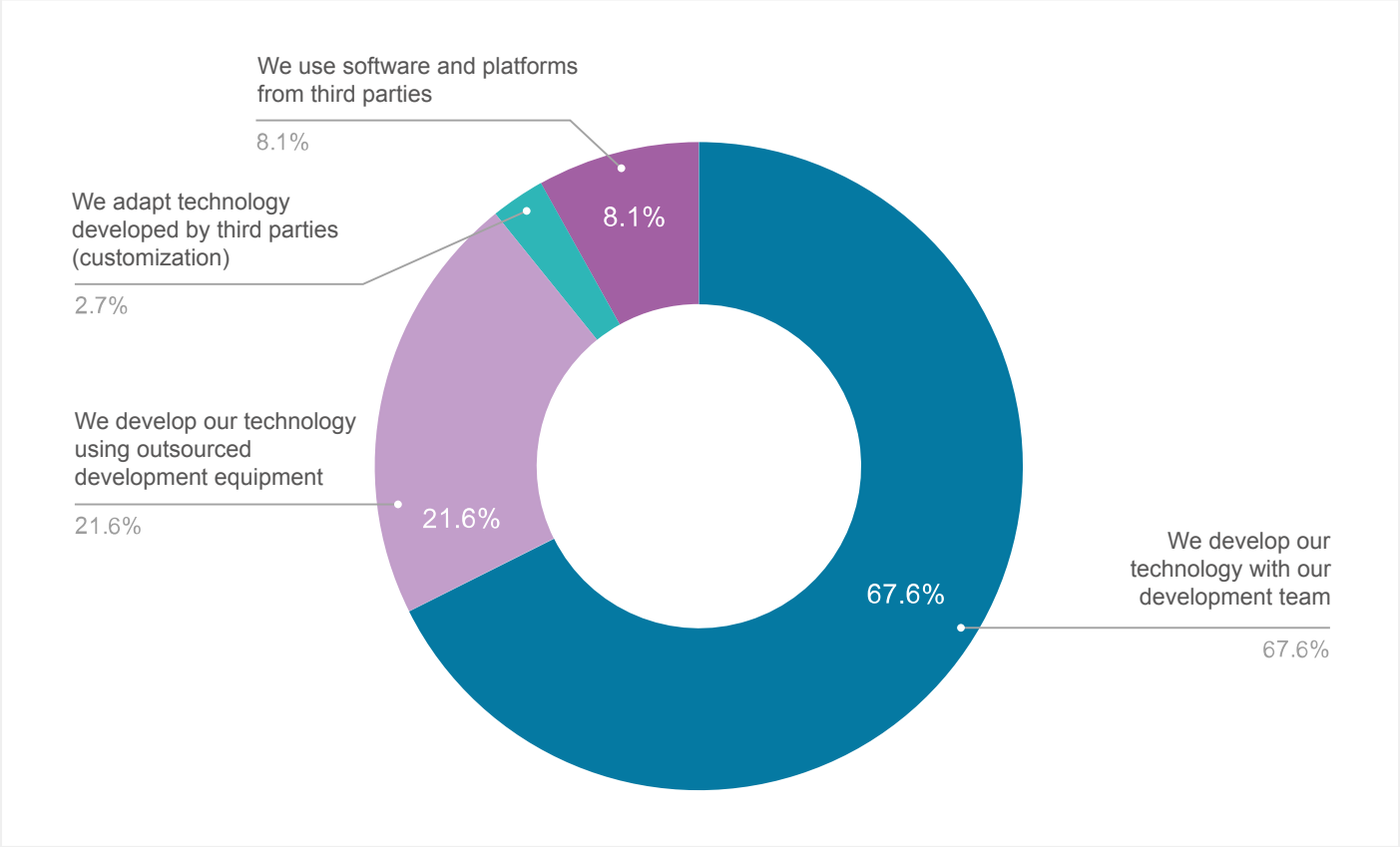
Only 8.1% consider them as an additional tool for their work development.

6 Disruptive technology-based ventures with the potential to scale their volume of operations and sales.

Perceptions about the Technology

	Percentage
TICs are the backbone of our enterprising; without them, we merely do not exist.	78.4%
TICs assist us in some processes; however, if we must, we could manage without them.	13.5%
TIC eases our operations; they are one more tool at our disposal.	8.1%

Regarding the generation of technology for providing their service or product, 67.6% of the interviewed Startups asserted having their development teams. The 21.6% of Startups highlighted they generate technology through service outsourcing.



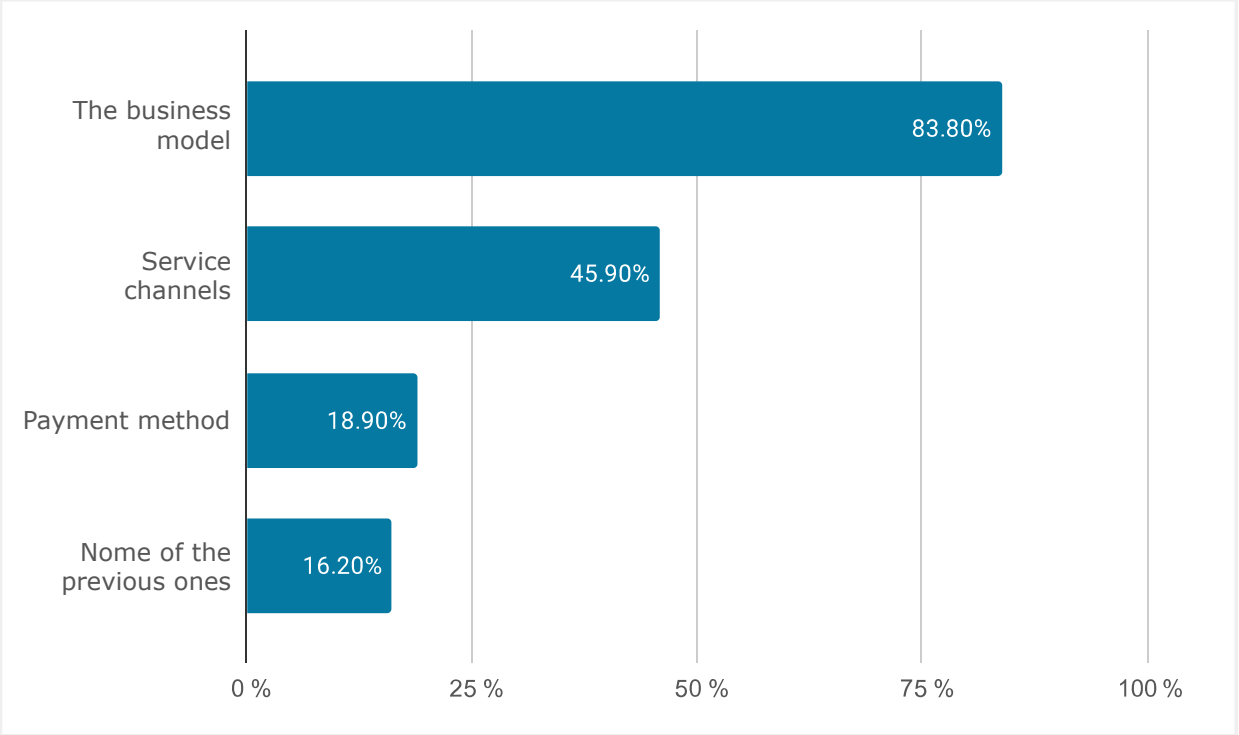
Finally, only 27% of the Startups stated their conceptual and technological development is registered as intellectual property at the National Intellectual Property Service (SENAPI) or other formal institution.

6.1.4 Elements differentiating the Products from the Services

According to the interviewees' answers, the main difference between their enterprising and other traditional suppliers of the same product or service lies in their business models (83.8%).

The following distinguishing element in the answers is the service channels (45.9%) and the payment method (18.9%).

Differentiating Elements



Startups state they mainly focus on:

- EEnterprises and institutions (B2B): 73.0%
- Consumers (B2C): 64.9; and,
- Governmental entities and institutions (B2G): 21.6.

The striking point is that two out of ten interviewees could not identify any of the elements under consultation.

Furthermore, 70% of the Startups asserted their clientele access their products or services exclusively through digital channels; and an additional 27.7% indicated they combine digital channels with the face-to-face modality.

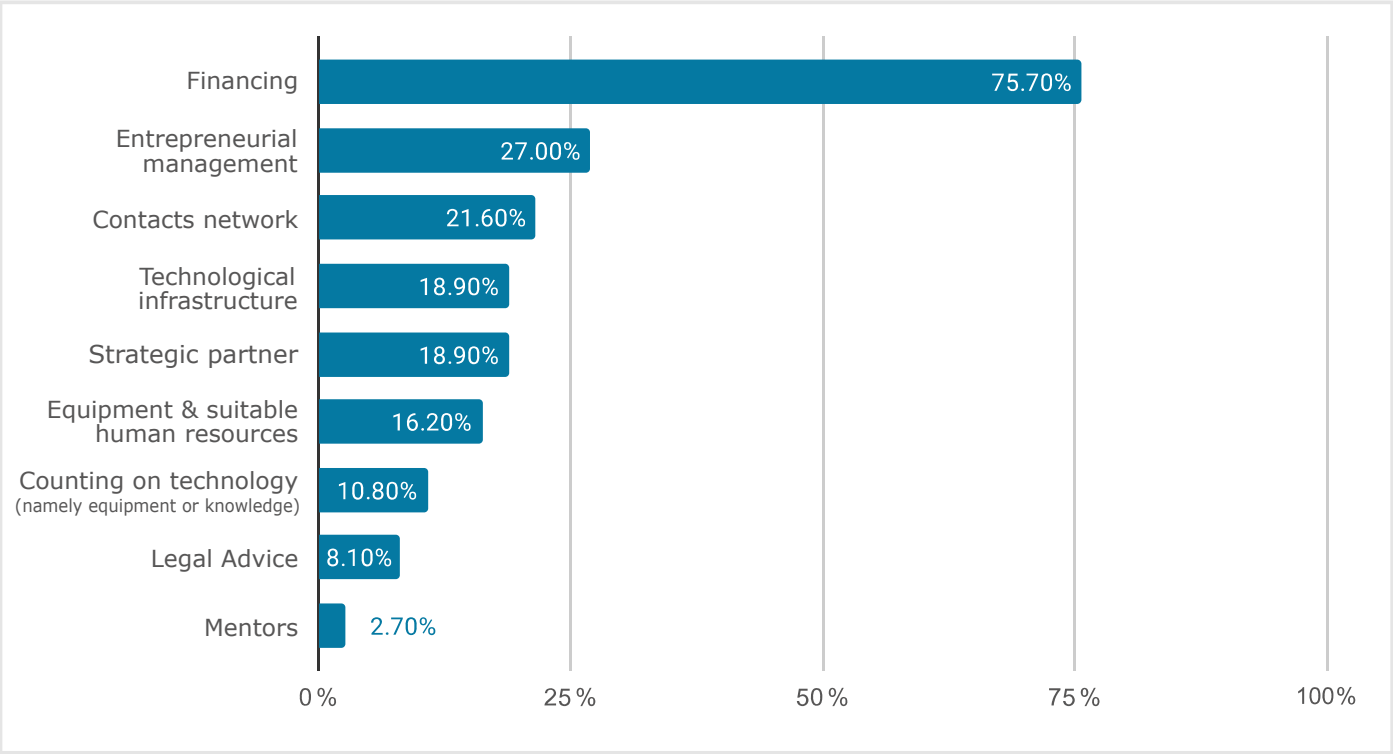
However, the Startups payment ratio is inversely proportional to how their clientele contacts them, i.e., 27% are paid only digitally, while 64.9% alternate electronic payments with cash payments.

6.1.5 Scalability Capacity & Factors

A total of 83.8% of Startups, under analysis, assert their product or service provider can grow permanently, and 35.2% believe they do not have any liquidity difficulty.

According to some of the interviewees' answers, the Startups' primary need is financing, whereas the rest show a strong dispersion.

The Primary Needs Startups require to be Scalable



The other striking point is that 54% of the Startups count only on the resources (liquidity) to operate the next 12 months.

Liquidity Time to operate

	Percentage by column
Indefinitely	18.9%
More than a year	16.2%
From 6 to 12 months	27.0%
From 3 to 6 months	18.9%
Less than three months	8.1%
At this moment, it is not clear to us	10.8%

6.1.6 Years of Digital Experience of a Startups

Regarding Startups' age, 67.6% have been operating less than two years and one out of 4 (24.3%) in the range of 2 to 5 years. Practically, 1 in 10 (8.1%) has been in business for more than five years.

83.8% of the Startup cases result from ideas or projects entertained for at least one year.

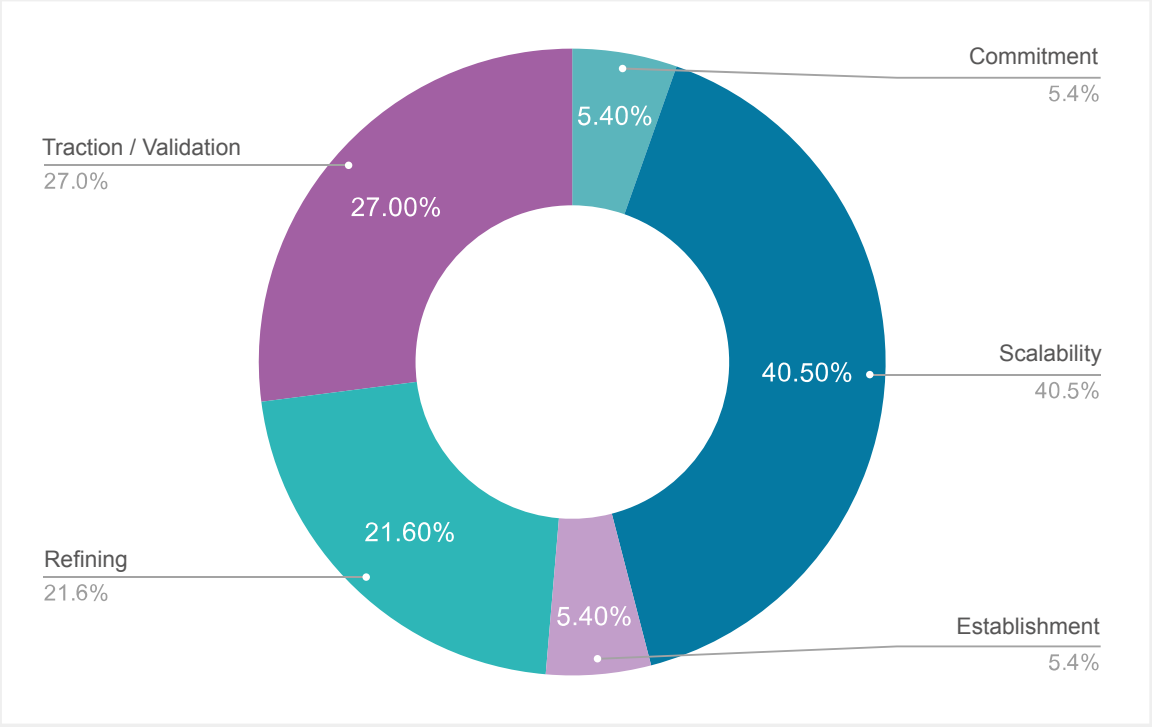
6.1.7 The Growing Cycle of Startups

The life cycle of Startups has the following stages:

- **Creation.** The enterprising is investigating its target audience and the potential adjustment of its product in the market. Likewise, the existing competitors and potential clientele. It has a promising idea of its business plan, mission, and future goals.
- **Commitment.** The Startup responds to a prototype. It has already developed the production process for its product or service. It has begun to organize its working team.
- **Traction / Validation.** The Startup›s first year of operation. It has started to promote its product or service and already has its first clients. Nevertheless, it is still making some adjustments to its product or service.
- **Refining.** The enterprising› second year is to receive and request feedback from its early users, who are the referential basis to continue refining its product or service. At the same time, it refines its process, making it more efficient.
- **Scaling.** The stage of scaling up the Startup›s clientele portfolio, its offerings, and the enterprise per se. It has begun to serve the set market for which the product or service was intended.

The Startups distribution status shows that a sizable proportion of them is in the scaling up stage (40.5%), out of which 27% is undergoing the traction or validation stage and 21.6% the refining stage. Moreover, the percentage for the creation and commitment stages is the same for all the Startups (5.4%).

Startups Status (Extended Scale)



The Startups' level of intellectual capital systematization was also analyzed. To this end, the documentation elaborated by the Startups was used as an indicator. Specifically, 83.8% of them have developed a business plan, followed by 54.1% with market studies and 51.4% with medium-term strategic plans.

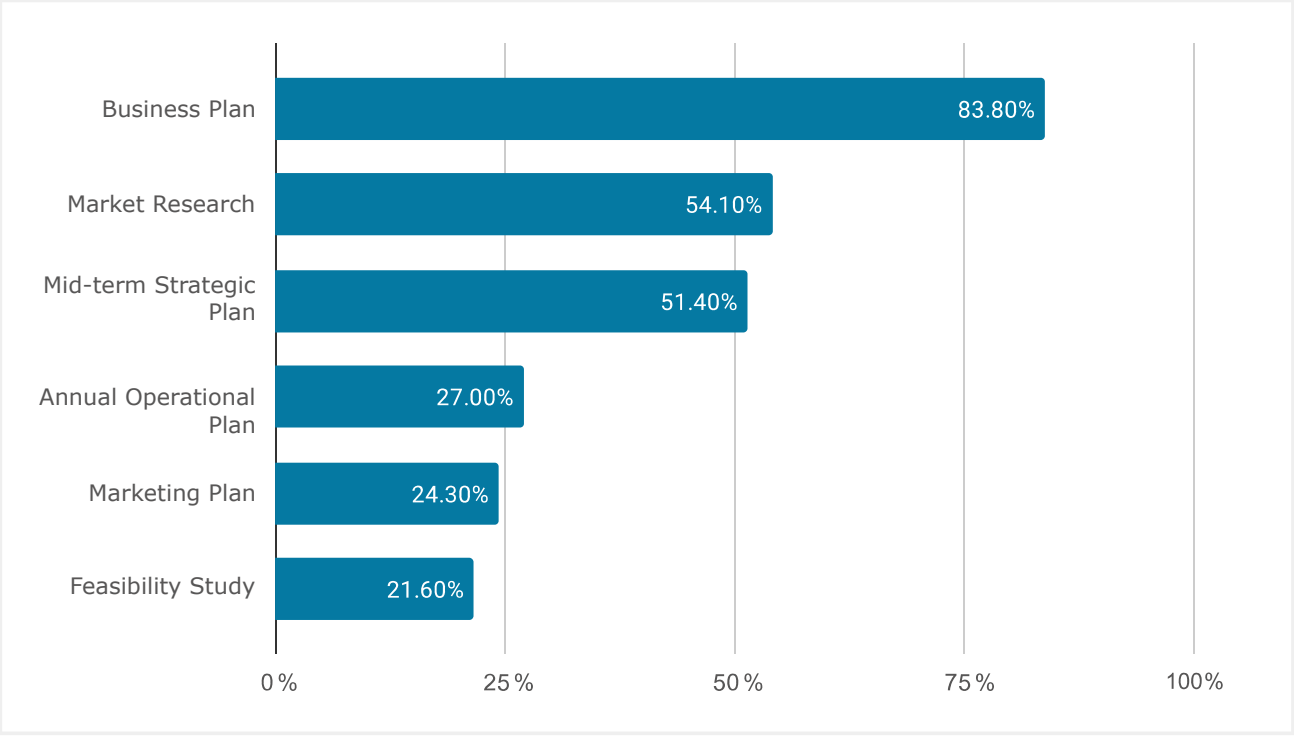
Their feasibility studies, annual operating plans, and marketing plans account for about 25% of the answers. The following table shows these results:

Documents formally elaborated for the enterprising development

	Percentage
Market Research	54.1%
Feasibility Study	21.6%
Business Plan	83.8%
Mid-term Strategic Plan	51.4%
Annual Operational Plan	27.0%
Marketing Plan	12.8%

The chart shows the ranking of documents prepared by the Startups according to the percentage indicated.

Documents formally elaborated for the Startups development



6.1.8 Startups Life Cycle - Causes for their decline and eventual disappearance

The fact that many Startups fail or fall by the wayside may be closely related to the weaknesses attributed to them by Ecosystem players. Such vulnerabilities can be classified into their founders' vulnerabilities, their projects' or work teams', the lack of access to financing, and various other factors, including lack of connections (networking), unrealistic expectations, and lack of seriousness and commitment.

Founders' vulnerabilities are mentioned often, specifically, the lack of knowledge and managerial skills. In addition, poor market sizing, poor market understanding, and problems in the business conceptualization.

These weaknesses translate into the difficulty of generating an attractive and highly scalable product, which reduces the interest of potential investors and financiers.

Distribution of the causes for the decline or the eventual disappearance

	Knowledge
1	Little knowledge on how to operate in the capacity of a Startup.
2	Lack of knowledge about the difference between an enterprise of the venture - Startup type and an SME
3	Lack of technical knowledge.
4	Lack of technical or technological knowledge.
5	Lack of enterprising basic knowledge.
6	Lack of previous direct experience in the field where the enterprise operates.
7	Little managerial knowledge about Startups.
8	Finances knowledge.
9	Little training.
10	Ignorant of business models, financing sources, and leveraging of resources.
11	Misunderstanding of what investment is.
12	Express the Startup information inappropriately.
13	Lack of technical knowledge.
	Comprehending the market
1	Definition of market
2	Lack of market.
3	Most of the cases were unable to identify a market where they could escalate considerably.
4	The goal market is limited to the national and local levels.
5	Reach the market (focus on the client) and the language.
6	Local market focus.
7	Lack of knowledge about the market.
8	They still need more technology and do more research.
9	Sales

	Financing
1	Access to financing and specializing entrepreneurial services
2	Access to investment
3	Little financing
4	Seed capital
5	Difficulty to access financing
6	Difficulty to access financing in the banking sector
9	Lack of resources
7	Financing
8	Entrepreneurial management and financing
	The Business Conceptualization
1	Scarcely developed vision
2	Find the solution
3	Focus on the problem
4	Business model
5	Business models and business skills
6	Little scalable capacity
7	Difficulty to generate traction
	Team
1	There is no team.
2	Conformation of teams and resources.
3	The team lacks capacities.
	No networking links
1	Lack of networking.
2	Difficulty to purchase specializing services in Startups.
3	No connections (they are alone).
	Other
1	Financial self-assessment.
2	Little use of financial and analytical tools.
3	Commitment; financing; managerial skills.
4	Communication – realistic expectations – genuine cooperation
5	Lack of information.
6	Database with a view into sustainable development.
7	They still need more research and technology.
8	Founders are engaged in other activities; thus, they do not participate fully, and their vision is restricted to "local."
9	Wrong legal and financial counseling.
10	Little sense of seriousness.
11	A superficial vision of the definition of generating impact.

6.1.9 Startups Scope

In terms of market aspirations, Startups seek to serve at least one city in Bolivia –however, they intend to reach the international market in the medium-term.

Results show that almost half of the Startups (45.9%) seek to serve our country in the medium term and project themselves internationally.

Mid-Term Service Projection

	Percentage
Bolivia and other countries	45.9%
Exclusively, other countries	2.7%
Bolivia exclusively	51.4%

6.1.10 Contest Participation & Opportunities

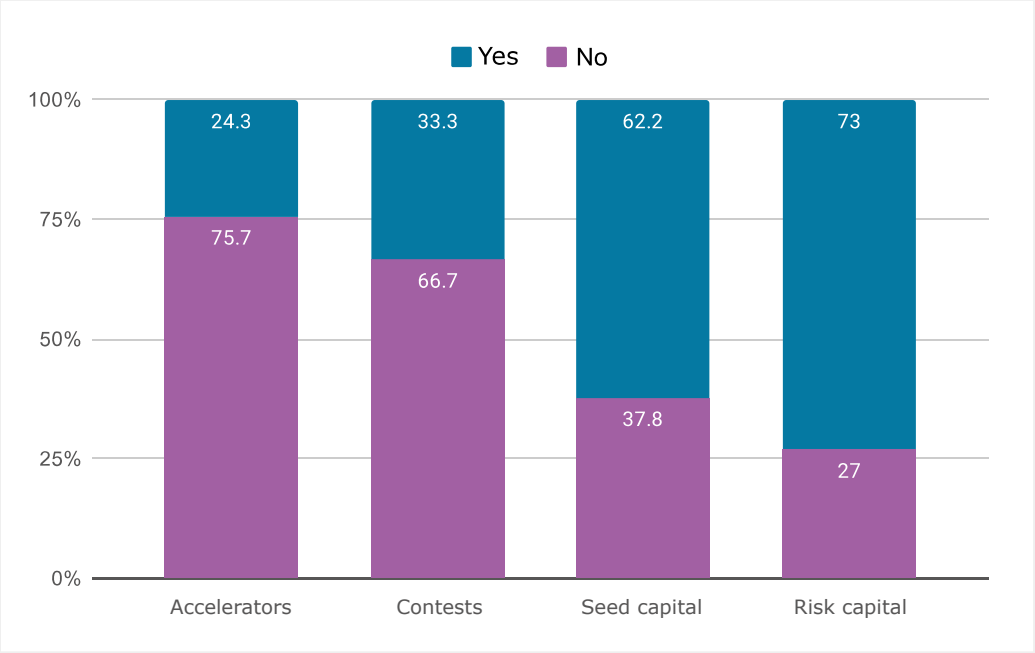
We conducted several consultations concerning the Startups' participation in enterprising contests, contacts with seed capital entities, venture capital enterprises, and business accelerators.

The results show that:

- 75.7% worked with business accelerators in some way.
- 66.7% participated in enterprising contests.
- 37.8% had contact with seed capital institutions in some way.
- 27.0% contacted venture capital institutions.

EThis first approach highlights the contents of the work with business accelerators. The participation and contact of almost all cases occurred in the same city where the Startup is headquartered. The following table shows the specific distribution of each variable of analysis:

Participating in activities with Coordinators



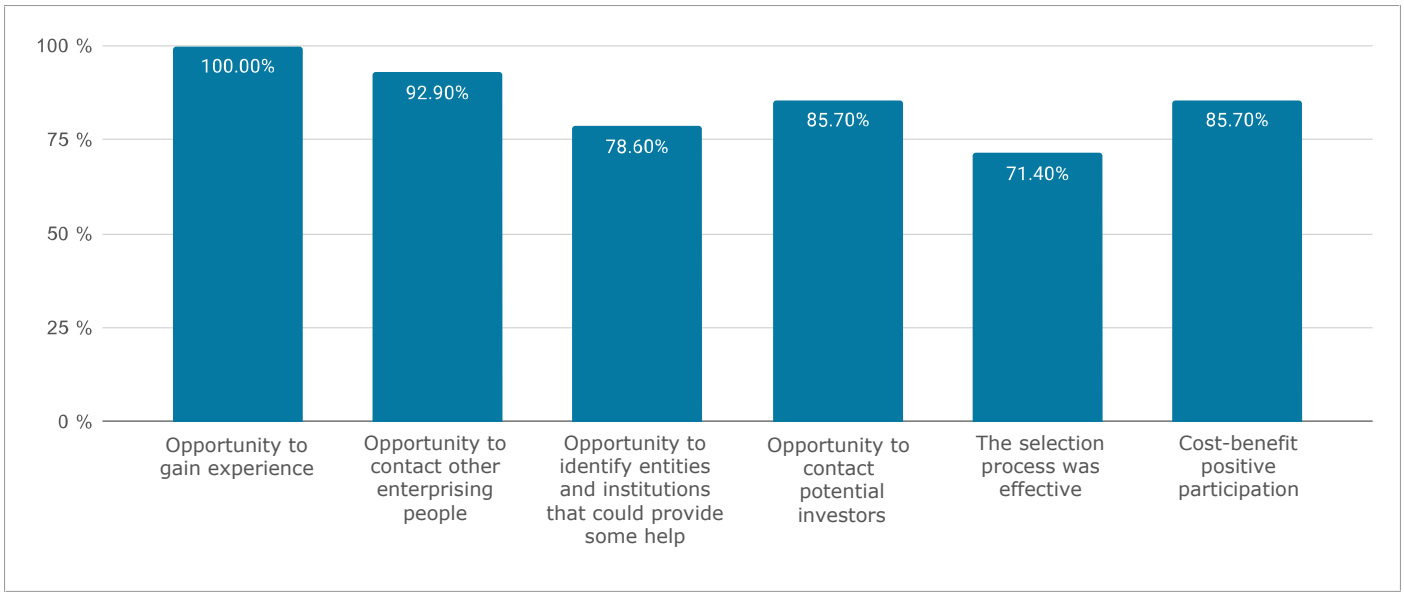
	Percentage
Participating in Enterprising Contests	
No	33.3%
Yes, in the same city where the headquarter office is located.	38.9%
Yes, in another city.	19.4%
Yes, in other country.	8.3%
Contact with seed-capital institutions	
No	62.2%
Yes, in the same city where the headquarter office is located.	24.3%
Yes, in another city.	8.1%
Yes, in other country.	5.4%
Contact with venture-capital institutions	
No	73.0%
Yes, in the same city where the headquarter office is located.	18.9%
Yes, in another city.	5.4%
Yes, in other country.	2.7%
Contact with enterprising business accelerators	
No	24.3%
Yes, in the same city where the headquarter office is located.	32.4%
Yes, in another city.	27.0%
Yes, in other country.	16.2%

Additionally, for each case's affirmative responses, we asked about learning opportunities, the contact with other entrepreneurs, identifying institutions that provide some help, the relationship with potential investors, the process effectiveness, and the cost-benefit ratio of the Startup participation or contact.

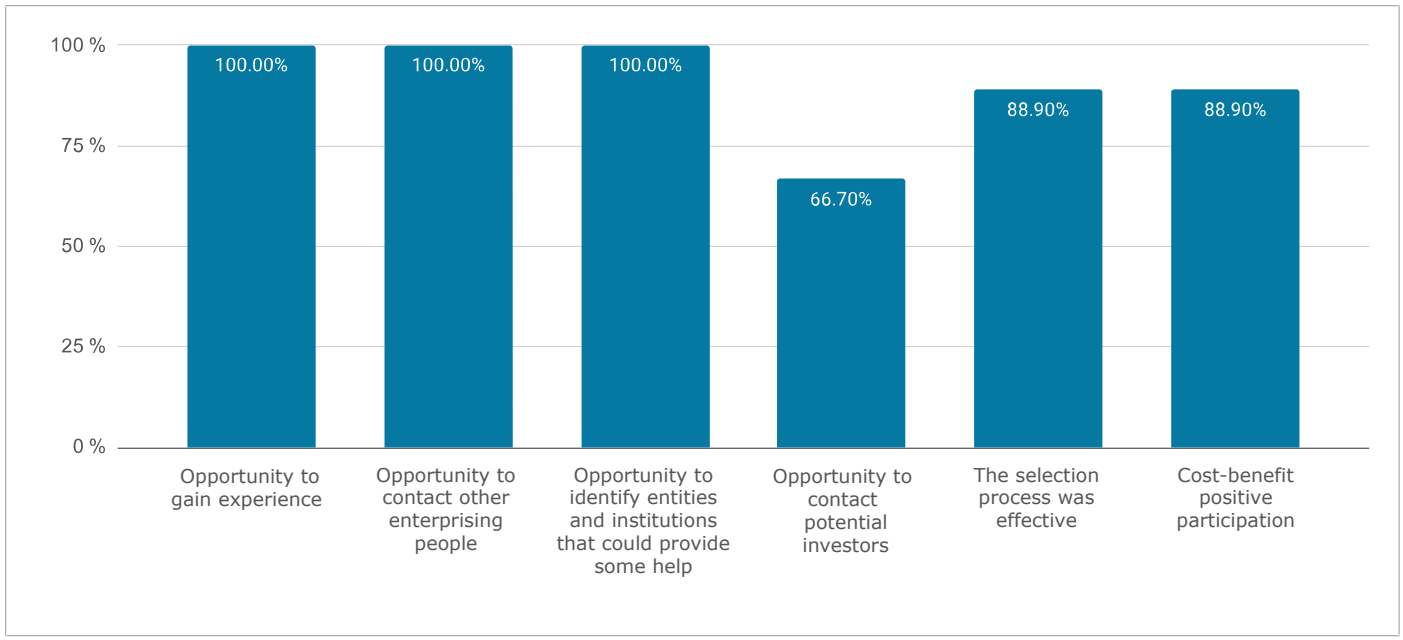
Results deriving from such consultations, although they have a minor statistical basis, they are highly positive as the following graphs present it:

Perceptions related to actions of contests participation & the contact with other institutions

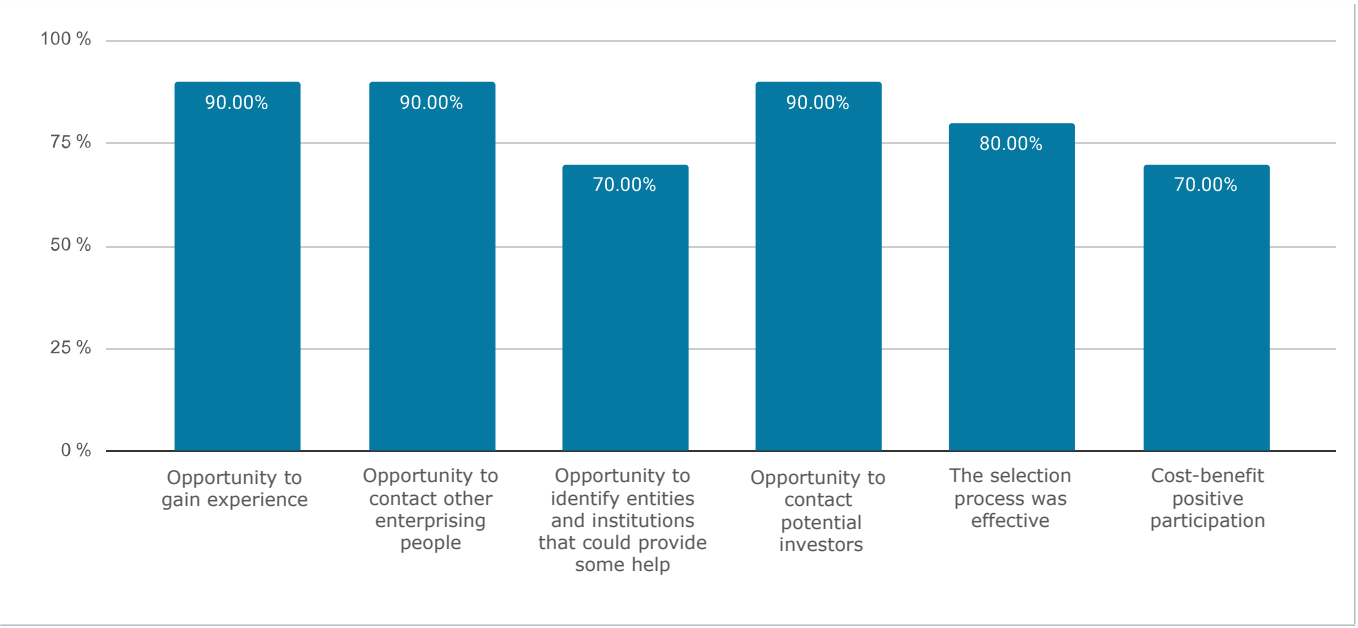
Participating in Contests



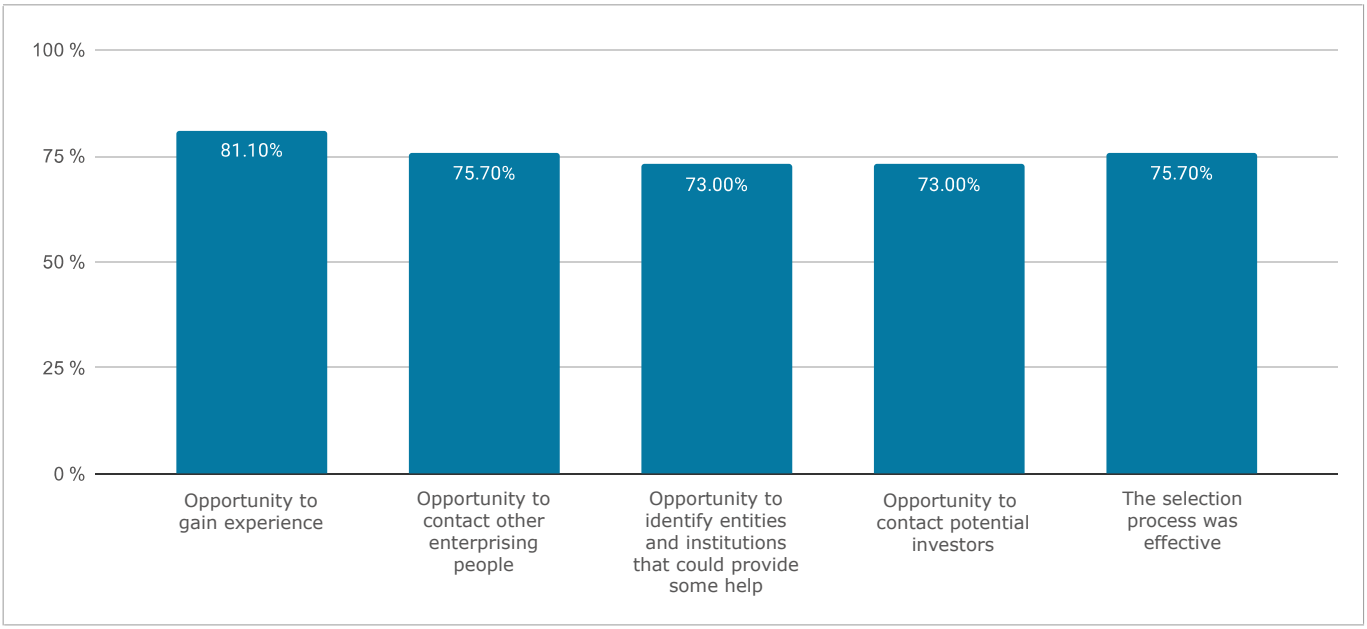
Contact with Seed-Capital Institutions



Contact with Venture-Capital Entities



Contact with Business Accelerators



Furthermore, 81.1% of interviewed Startups stated having contacted other similar entities to exchange knowledge, ideas and find a way to support each other mutually. At the same time, 65% mentioned having contacted already established enterprises to offer them they could invest in their enterprising as part of their strategy. Nonetheless, this datum does not concur with the opinion of the rest of the Ecosystem's players.

6.2 Eco-Friendly Startups

When asked whether a Startup helps solve an environmental problem, the answers were mostly negative, or that they do so partially.

The Environment

	Percentage
Yes, it is one of the main objectives of our enterprising.	12.2%
Yes, it is the outcome of the work done, but not the nuclear objective.	9.5%
Yes, it is complementary to our work. We seek to reduce our carbon footprint.	6.8%
Yes, partly, we could say that.	18.9%
No	52.6%

6.3 Challenges and Defiance for the Digital Startups in Rural Bolivia

In addition to the geographic scope, we evaluated whether the enterprising seeks, in some way, to promote development or create economic opportunities in rural areas, or to revalue places, ancestral knowledge, or to create connections between the rural area and the cities. Results show that seven out of ten cases (67.6%) had not considered any of these alternatives.

The principal condition Startups need to meet is to produce a significant impact on rural areas, in which development is linked to connectivity (around 70% of the answers) and, to a lesser extent, related to the education of the rural population (35%).

Promotion in rural areas

According to the Ecosystem participants, Startups are mainly an urban phenomenon. Thus, accordingly, we demanded the former what is needed to promote dynamization of Startups in rural areas --most of their answers pointed at:

- Better and widely available Internet connection.
- Education across the board, including digital skills development and financial literacy education.
- Financial inclusion.
- The State performance as such

Participants pointed at other aspects as well:

- Knowledge of specific demands
- Investigation of real market opportunities
- Place young people at the center of the matter because they are the ones who can generate, make visible, and disseminate local economic opportunities.
- Promote Agricultural Technology
- Foster the issue›s awareness, advocate with the cause, impact metrics.
- Initial investment
- Startups more coordination between rural and urban to solve issues.
- Count on tailored solutions, intuition, empowerment.
- Logistical services.
- Generate rural area promotion channels
- Utilizing funding incentives and generating and disseminating information about the area›s needs foster the liaison with the Government

(sometimes the only institution in rural areas).

- Startups born in rural areas: offering a new form of education combining with the local identity and connecting them with the world through the Internet, including digital skills. Schools are the communities› meeting point, regardless of the community members› age. Therefore, the knowledge introduced must encourage practical experimentation, curiosity, analysis, and connection to the outside world.
- Startups seeking to create initiatives in rural areas usually support an industry or identify social problems – in both cases, the piloting stage is a financial and specializing talent defiance. Accordingly, both the private and public sectors should develop Research & Development programs according to each region›s opportunities and deficiencies so the Startup teams could develop real and replicable solutions.»
- Startups should get to know more about rural areas› needs and opportunities. There are highly urban Startups, and rural Startups lack the tools and institutions to foster or encouraging rural entrepreneurship.
- Count on knowledge of the rural context; in other words, rural-customized solutions; strategic alliances along the value chain.
- Rely on linkages of enterprises operating or interacting with rural inhabitants who belong, for instance, to cooperatives or irrigation associations and the accompaniment to townships administration.
- Access to information and demand for services for the creation of Startups.

Many opinions have accounted for the difficulties. The so many obstacles in bringing the urban Startups' experience into the rural areas; hence, this challenge seems impossible to face without the political decision of the Bolivian State.

6.4 The COVID-19 in the Startups

The Startups 62.2% experienced their ability to generate cash flow affected during the pandemic. Nevertheless, data related to the impact perception shows a high degree of dispersion.

In short, 48.6% asserted their activities were harmed, while 45.9% experienced a positive impact and even a wonderful opportunity.

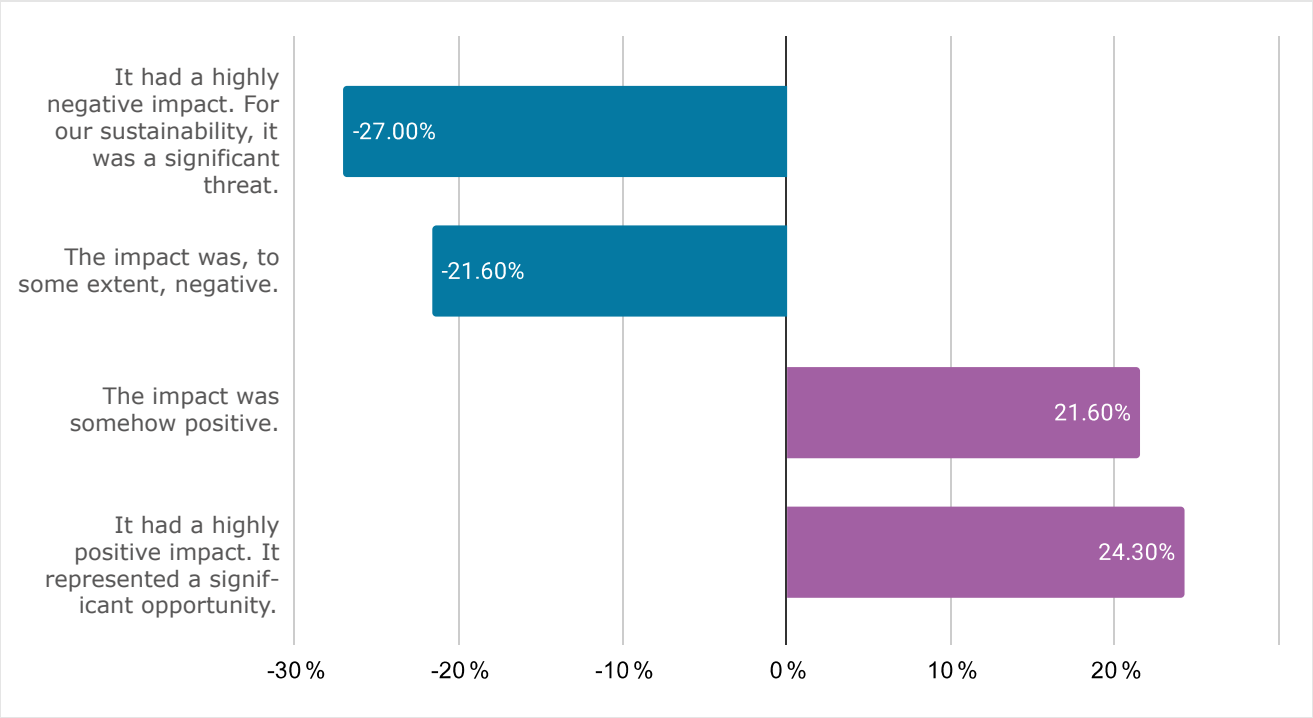
Those mentioning problems indicated said difficulties related to the generation of sales revenue (7 out of ten cases).

Finally, the Startups forced to reduce the number of employees reached 21.6% (ranging from 20% to 80% decrease).

The Pandemics Impact

	Percentage
It had a highly negative impact. For our sustainability, it was a significant threat.	27.0%
The impact was, to some extent, negative.	21.6%
No impact at all.	5.4%
The impact was somehow positive.	21.6%
It had a highly positive impact. It represented a significant opportunity.	24.3%

Impacto de la pandemia



7. The Social Capital of the Digital Technological Ecosystem

7.1 The Ecosystem's Coordination Actions

7.1.1 Players' Installed Capacity & Call

Seventy-four percent of the Ecosystem's institutions believe the number of Startups they currently serve could and should be higher. A much smaller 26% think they are close to the ideal number of Startups they had planned to attend. Moreover, not a single player considers they serve more Startups than they would like to attend.

Concisely, there is some idle capacity among the players, suggesting it is necessary to double their promotion and awareness efforts.

7.1.2 Entrepreneurs' Networks

One of the identified Startups' weaknesses by the Ecosystem participants is their inability to link up with other Startups and participants. Consequently, entrepreneurs' networks aim at playing an essential role in the Ecosystem.

100% of the six networks consulted claim to support all types of entrepreneurs, and not only Startups according to this research's definition.

As to the services they provide, they stand out the following:

- Pre-incubation accompaniment.
- Teaching, mentoring.
- Workshops, webinars, and training.
- Training in data management tools.
- Installation of capabilities for project self-management, including «emotional support sessions through face-to-face digital proximity, with a group methodology, applied to a mentoring program installing an agile toolbox for entrepreneurship management".

There are different routes to finance networks. Some obtain donations, and others charge membership fees. Also, they generate income by organizing events and even collect contributions from their founders.

In general, the affiliates' level of interest --measured through their participation in the organized events translates to more than 60%. Regardless of the number of these networks' members, the indicator is acceptable.

Regarding the Startups number affiliated with an entity, 50% of networks state not having enough information to determine whether more Startups could affiliate with their entity than the other 50% that believe they could be many more. Virtually all networks assert that Startups may interact within their entity exclusively through digital channels.

As to the coordination with other Ecosystem entities, two out of six do so.

Networks often point out the lack of guidance and capital, the ignorance of technology knowledge, and the absence of professional experts regarding the vulnerabilities identified in their members. One of the networks, collaborating exclusively with women, states: "There are still many women who cannot find where to develop their self-leadership; the reason several of their projects or ideas are frustrated. Not because they lack skills or abilities but owed to self-imposed limitations originated on beliefs imitated over and over in our society".

The success factors of a Startup, identified by the supporting networks, are the following:

- Self-sustainability
- Technological base
- Sound financial structure
- Flexibility and adaptability
- Selling know-how
- Agile know-how to evaluate and iterate a product or or the business model.

- Experienced founders.
- Leveraging current technology
- Commitment
- Well-conformed team
- Adequate business ideas
- Awareness of the milieu
- Building leadership up
- Technological entities
- Business incubators
- Seed capital
- Major players to support and foster Startups
- Encourage entrepreneurship by the academia and the government.
- Complementary organizations, in the different enterprising stages allowing the opening of specific collaboration channels.

Entrepreneurs' networks believe they could make themselves known more effectively if they could form alliances with private enterprises and the public sector or have more resources to grant scholarships to people lacking them but who do have capacity. Counting on additional resources would allow them to consolidate the structure and continuity of mentoring.

Finally, a single network reports that, among its affiliates, are Startups operating or working in rural areas. The answers to the question "what do Startups need to develop rural-impact Startups?" are similar amongst the Ecosystem players.

7.1.3 The Academia

Four academic institutions answered the questionnaire. They were consulted if the entrepreneurship aspects of the Bolivian legislation are incorporated in the teaching curriculum for undergraduate students at their universities. The table below shows the answers' frequency.

Bolivian Universities: Incorporation of specific topics in the Curriculum

	In some careers	In every career
Tax Legislation	4	0
Labor Legislation	3	1
Financial System	2	2
Stock Market	4	0

Similarly, they were asked whether enterprising skills are given emphasis in the teaching curriculum. The following table shows the answers' frequency:

Bolivian Universities: Incorporation of specific topics in the Curriculum

	In some careers	In every career
Statistics	2	2
Implementation of a market research for a product or service.	2	2
Development of a business feasibility study.	2	2
Development of a business plan.	2	2
Formulation of alternative business models for one same product or service.	2	2
Formulation of a business pitch or the concrete presentation of a business idea.	3	1

Three out of four universities have specific programs to train entrepreneurs; two have a particular program to train leaders.

All the universities conduct formal and systematic follow-ups to measure their graduates' success in finding a job or starting a business. The contact goes through the university's social responsibility channel, whereby they also provide refreshing courses. One university has a graduate follow-up department that periodically conducts surveys, including such aspects.

Three out of four universities are allied or keep contact with institutions promoting entrepreneurship. However, none provided further details on the nature of such alliances or relationships, their objectives, and achievements.

Three out of four universities consider themselves part of an enterprising Ecosystem, which adds value to their institutions. Also, they rate their trust in the Ecosystem's players as high or extremely high.

One university says to conduct surveys and programs, or other actions, to have alliances fostering entrepreneurship in rural areas –linkage resulting from their rural-located academic units.

7.1.4 The Function of Public Policies

The absence of central and regional government agencies slows down the process of the Bolivian Ecosystem consolidation by not offering incentives to entrepreneurs, which do not necessarily have to be fiscal or taxation incentives.

Once identified the need to diversify the financing sources, not only in quantity but also in opportunity, the State is best equipped to allocate resources that should be channeled to the various stages' enterprises must go through in their formation, development, and consolidation.

Yet most importantly, it is imperative the State issues public policies to facilitate the investment process. Currently, private funds struggle to implement exit mechanisms --as they are forced to remain shareholders with no option of reinvesting their resources in new startups.

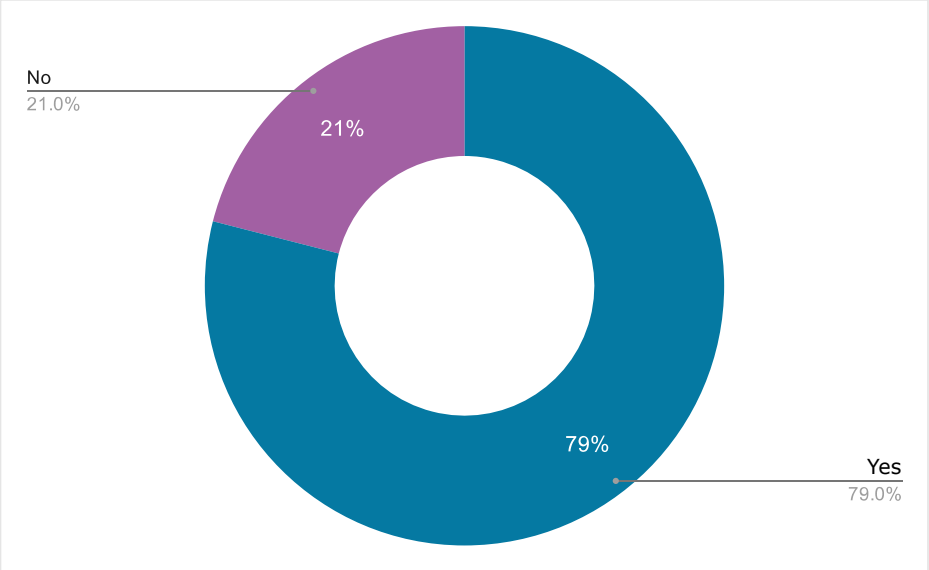
Likewise, it would be advantageous for enterprises exporting software or services to be treated differently from those only engaged in the domestic market.

In this context, we must insist on prioritizing and making structural changes in the technological industry field –that derive from the public sector's vision and lead to converting this industry into a primary development pillar.

7.2 Measuring the Index of Social Capital

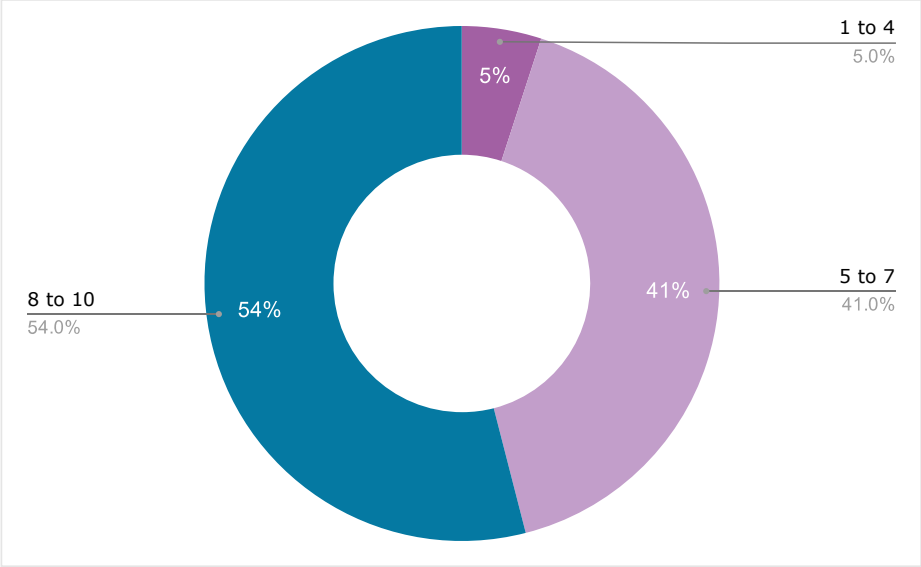
From all people and institutions that answered our questionnaires, there is a minority group that does not consider being part of the Ecosystem.

As an entity, ¿do you consider part of the Ecosystem?



Those who consider themselves part of the Ecosystem assert relying on a range of trust concerning the Ecosystem members. On a scale of 1 to 10, the average level of trust is 7.2; and the mode is eight.

Level of Trust. Scale from 1 to 10



In 2020 the level of trust was higher. The 1 to 4 rating went from 14% to 5%; the rating between 5 and 7 from 54% to 41%; and the one between 8 and 10 went from 32% to 54%.

Whether players consider that being part of the Ecosystem grants their entity more chance to achieve more than if they were on their own, the answers are 100% positive.

7.3 Factors Forwarding or Hindering the Ecosystem Development

7.3.1 The Startups Succeeding Factors

To the Startups consultation on what the success factors would be, the Ecosystem participants point out:

- Purpose
- Innovation
- Maturity in business management
- Strong networks and links (connections to grow).
- Ongoing evolution and innovation of their proposal value, risk management, and innovative technologies.
- A proper definition of the market and the business model from an adequate approach to solve the problem.
- Access to financing
- Count on a diverse team, however, sharing one same vision.
- Have a minimum viable product.
- Select a CEO, distinctive by their holistic leadership. Founders qualified with technological, financial, and commercial profiles
- Ecosystem
- A proper market research
- Market focus.
- Validate the problem in different scenarios, data quality for MVPs, business sense in tech entrepreneurs.
- A consolidated team.
- Effective prototype, design a product market fit.
- Rely on an expansion strategy.
- Full-time team, trained, committed, with experience in Startups and the ability to execute and raise capital.
- Low shareholder dilution.
- Visionary talent.
- Strong R&D strength.
- Regional outlook (Latam or the world), ability to escalating.

7.3.2 The Ecosystem's Weaknesses & Missing Entities

In line with the weaknesses of enterprising units, the Ecosystem's participants stress the need for more investors.

Grouped by topics, below the variety of opinions.

- Entities providing advice on finances and specializing entrepreneurship.
- Entities articulating the work and efforts of the Ecosystem›s participating entities because «there is duplication of plans, programs, and atomized projects, with no economic and social impact.»
- More investors (business angels and venture capital); investor networks, investment funds for startups; corporate venture, syndicated angel groups, business angels, and equity-free granting organizations.
- Business incubators and accelerators.
- Specialized services for Startups
- More articulation entities
- Business incubators should sophisticate content and broaden the Startups› preparation.
- Institutions providing R&D, applied research, and funding along the value chain.
- We need more entities generating awareness about the enterprising pipeline with greater chances of success.
- Promotion of contests and enterprises visibility

Elaborating on the State's role, many players think more public institutions should promote public policies to help Startups. In other words, public institutions should focus on Startups needs, and the State should enhance public investment and give more opportunities and special conditions. In this context, there should be linking entities with the Government, academia, and enterprises.

Likewise, we asked entities, "Which do you think is the Ecosystem's weakest link? Below, the most repeatedly answer:

- Investment and financing resources.
- Business incubators, financing alternatives for initial stages.
- Articulatory mechanisms amongst different players, including those linking academia – the private sector – the public sector. Also, to have the clear about the role and responsibilities of each one of them within the Digital Ecosyste.

Additionally, although with less emphasis:

- The State, public policies.
- Incubation and starting a business up.
- R&D.
- Raising awareness

7.3.3 Startups Vulnerabilities

On one side, Startups identify the scarcity of investment resources as the primary bottleneck; on the other side, the Ecosystem players express that most enterprises lack the conditions to be subject to investment.

In summary, principal vulnerabilities are not knowing the market or the client, not having technology knowledge, business models or financing sources, or leveraging resources.

Other pointed out vulnerabilities consist of:

- Definition and market sizing.
- Financial self-assessment.
- Managerial and commercial skills.
- Low use of financial and analytical instruments.
- Lack of basic enterprising knowledge.
- Lack of technical expertise.
- Lack of connections.
- Unrealistic expectations.
- Insufficient legal and financial advice.
- Little knowledge on how to operate as a Startup.
- Lack of focus, engagement, and commitment.
- Local vision.
- Not having a team.
- Low ability to escalating.

There is still a gap between the academia and the enterprise -- an aspect that merits both parties' joint work efforts to respond to the market challenges and demands at the "speed" required.

7.3.4 Boosting Actions for the Ecosystem Development

As mentioned earlier, collaboration is a crucial action to confide in a stable and effective Ecosystem. Therefore, creating mechanisms for interaction among its players can greatly facilitate collaboration.

Deploying a strategy to promote the Ecosystem and its coordinators can produce a multiplying effect on new entrepreneurs. At the same time, relying on a Mapeo, allowing entrepreneurs to surf the Ecosystem confidently, will optimize promotion activities.

Diagnosing the Ecosystem's functioning and measuring its impact facilitates feeding back the process, adjusting and deploying new strategies, and many more. More productive would be to measure the effect constantly than just once yearly.

As much as it is significant to interconnect the Ecosystem's players, it is invaluable to interconnect the Bolivian Ecosystem with other countries' ecosystems. Thus, it would be much easier to open the market for Startups and unfold the possibility to foreign startups and welcome their technology and good practices to Bolivia.

The ongoing promotion and boosting of international contests significantly impact the Startups density since they are a creative source of inspiration while giving enormous visibility to the Ecosystem.

8. Regional Referential Frame (Latam)

According to the 2020 Latin American Private Venture Capital Association Report (LAVCA), it is the second consecutive year the highly dynamic Latin American Information and Communication Technologies (ICT) has produced venture capital investments. Thanks to such investment agreements' record figures -around USD.4 billion-- mainly from Seed Capital and Early-Stage investments.

Past years of collaborative actions between the world and local players in leading markets, such as Brazil and Mexico, have made it possible to reach the preceding figures. With more advantages than any other sector, the dominant fields continue to be "Fintech," followed by initiatives in "e-Commerce" and "Proptech," not letting aside the growing sectors driven by the pandemic, namely "Healthtech" and "Edutech."

Our region's advances, specifically those mentioned, are the ones prompting for the second time to conduct a survey and presentation of the most relevant data on the region's ecosystems and technology-related enterprising activities.

We do not intend to furnish a comprehensive description of the analyzed ecosystems because such a representation can be the subject of a research study per se. Hence, its objective is to present a basic descriptive comparative framework that awakens Bolivian Ecosystem players' curiosity, so they tailor their drive looking outside our borders and tuning in to global trends.

8.1 Variables & Levelling Factors

To analyze Latin American ecosystems, we must identify the measuring variables and execute a "leveling" process that allows us to measure the results achieved –-by isolating the effect of the factors that make up the population size and the infrastructure conditions of each country, as shown below.

8.1.1 Variables

The variables used to measure the various countries' ecosystems are:

- Number of Startups.
- Complementary participants (Business Accelerators and Incubators and CoWorks).
- Invested amount.
- Transactions made (Investments).

8.1.2 Leveling Factors

As mentioned, factors facilitating the comparison among ecosystems and the intrinsic factors of each country are:

- Population between 18 and 44 years of age.
- Internet users.

8.2 Comparative Analysis (Intra-Region and Temporary (2020 – 2021))

8.2.1 Comparing Ecosystems based on Typifying Variables

Using both variables (18 to 44-years population & Internet users), below the related table:

Country	No. Tech Startup	Complementary Participating Networks	Invested Figure (in USD millions)	No. Transactions (Investments)	No. Enterprising Units by Network	Average Investment (in USD millions)
	15,885	162	2,385	282	98	8.46
	3,731	66	831	94	57	8.84
	2,204	24	222	26	92	8.54
	1,711	30	136	31	57	4.39
	1,593	30	469	35	53	13.40
	724	5	21	5	145	4.20
	285	4	N/D	N/D	N/D	N/D
	299	1	N/D	N/D	N/D	N/D

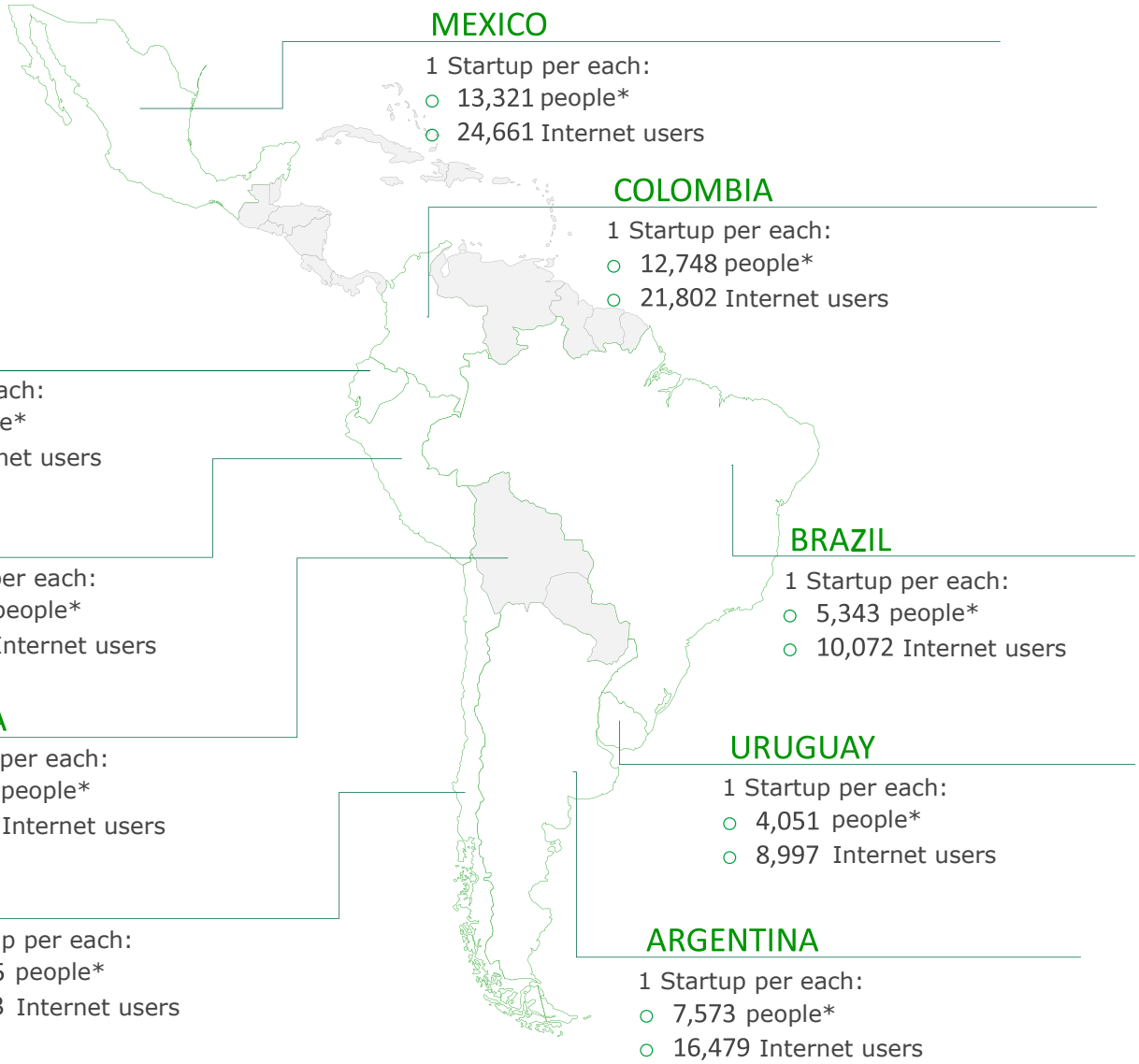
Source: Own elaboration based on information from LAVCA's Annual Review of The Investment in Latin America and Crunchbase - https://www.crunchbase.com

Undoubtedly, the most developed market and subsequently the largest ecosystem is the Brazilian market, lodging five times more technology startups than its immediate follower, Mexico. On this second-largest ecosystem, the decreasing distribution begins, keeping a constant graduality of the rest of technological ecosystems.

In addition to the apparent comparative size results, the most relevant aspects are linked to the productivity of some factors, highlighting, on one side Peru, capable of generating an averagely 145 startups per network and, and on the other, Colombia, with an average investment of USD.13 million in startups.

8.2.2 Comparing Ecosystems based on Levelling Factors

Once leveling factors are applied to the ecosystems productivity leveling factors, the following results are yielded:



* Population aged 18 - 44 years

Source: Own elaboration based on information of LAVCA's Annual Review of the Investment in Latin America, Crunchbase - https://www.crunchbase.com, Statista https://es.statista.com

The first striking fact is the productivity of the Uruguayan and Chilean ecosystems, achieving better results than the largest Ecosystems. Nevertheless, the Brazilian ecosystem performance must be emphatically stressed –that besides being the largest, it can be one of the most productive in the region.

8.2.3 Analysis of the Temporary Evolution of Leveling Factors

However, except for Bolivia's Ecosystem, all the other countries' ecosystem productivity factors have evolved --shown by the improved analyzed ratios and explained by the increased number of Startups, both based on the population and the internet coverage.

1 Number of Inhabitants per Startup

Country	2020	2021	Improvement / Decline
Mexico	19,722	13,321	32%
Brazil	7,400	5,343	28%
Argentina	10,636	7,573	29%
Colombia	19,998	12,748	36%
Peru	30,660	18,095	41%
Chile	5,960	4,285	28%
Ecuador	40,048	23,993	40%
Uruguay	5,721	4,051	29%
Bolivia	26,001	28,083	(8%)

Source: Own elaboration based on information of LAVCA's Annual Review of the Investment in Latin America, Crunchbase - https://www.crunchbase.com, Statista https://es.statista.com

1 Startup by the Number of Internet Users

Country	2020	2021	Improvement / Declination
Mexico	35,714	24,661	31%
Brazil	13,212	10,072	24%
Argentina	22,580	16,479	27%
Colombia	34,861	21,802	37%
Peru	57,007	27,486	52%
Chile	12,855	9,223	28%
Ecuador	71,429	35,684	50%
Uruguay	12,796	8,997	30%
Bolivia	46,875	35,105	24%

Source: Own elaboration based on information of LAVCA's Annual Review of the Investment in Latin America, Crunchbase - https://www.crunchbase.com, Statista https://es.statista.com

From this analytical approach, Peru and Ecuador's ecosystems stand out considerably compared to their peers due to the evolution speed between years.

In conclusion, Brazil is undoubtedly the most relevant example for Latin America; notwithstanding, institutional and population factors make this experience difficult to emulate.

To identify a successful case, i.e., a representative reference among the countries' ecosystems bordering Bolivia, we can locate a benchmark in Peru –due to the incredible speed of its productivity factors' evolution and the number of Startups generated. The task of the Bolivian Ecosystem players, who jointly can identify the good practices of productivity escalation, in number and size of their Startups, and work on them.

Finally, it is worth noting that all countries showing boosting and thriving ecosystems also rely on an organized and structured set of private sector institutions, driven and endorsed by supportive public policies.

9. Successful Cases

9.1 Startup IZI

www.izisoluciones.com

iZi is a friendly platform offering an ecosystem of digital solutions. To digitalize and manage small, medium, and large enterprises. The iZi solutions enable you to monitor, in real-time, your business from any device in addition to process data for decision making.

Team Members

- **Ignacio Orihuela** – CMO
- **Mauricio Barrera** – CEO
- **Ezael Bello** – CTO
- **Valentina Velarde** – CDO

Startup Information

- **Startup:** iZi Soluciones Digitales S.A
- **Creation Year:** 2017
- **Vertical:** ESAAS (Software as a Service)
- **Developed by:** iZi Soluciones Digitales S.A

Services

Electronic billing, online payments, inventories, production, orders, sales, clients, restaurants, and other

> *"We always trust our team's capacity to carry out a project, which has become the dream of us all. When we fail, we learn. Then, we adapt to the changes creating opportunities. The route is to go along with the other's idea, then persist to achieve the results, to guide our enterprise towards the overriding objectives.*
>
> – iZi

Financing Rounds	Pre-seed (2018)- Digital Ventures Chile/ Digital Seed component (2019)- Escalatec S.A Serie A (2021) – Escalatec S.A
National Geographic Coverage	Bolivia
Business Models	B2B
Scaling Models	Zi is a cloud platform, easy to access from any device, with Internet access. It is an all-in-one tool enabling you to manage and digitalize SME enterprises. It is adaptable to any business type from its spectrum of modules (billing, reports and data, inventories, orders, sales, payments, production, restaurants, accounting, and others). Additionally, the iZi platform is a friendly and accessible solution, and its onboarding process is fast and online 100%.
Staff Employed	Thirteen people
Acknowledgments	• La Paz Leader Entrepreneurial Prize – For the Best Services Microenterprise in 2018. • 3 Best Startups in Bolivia – at the International SeedStars World 2018 contest. • Outstanding Startup at the Digital Bank Latam Bolivia event held in Santa Cruz and La Paz cities in 2019. • Second place in the category of Start-up, under the Innovatic Fundetic Prize in February 2020.

2017 — **Foundation NouJau SRL & iZi product launching**
The first solution for issuing an invoice from a cellphone

2018 — **PreSeed Round**
First solution for invoice issuance & integrated online payments.

2019 — **Graduated from the First Program of Startups Acceleration in Bolivia (TRACK 8)**
Graduated from the Second Program of Startups Acceleration in Bolivia (Solydes)
New monetization channels through new products. Restructuration of internal processes and methodology to attract and process clients.

2020 — **Transformation of NouJau SRL into iZi Soluciones Digitales S.A**
Seed Round

2021 — **Series A Round**
Three hundred enterprises are using iZi. Working teams set up in Bolivia, Colombia & Spain.

Learned lessons

Lesson 1:
We need a multidisciplinary team and plenty of synergies to reach far.

Lesson 2:
We must think big but grow in an orderly manner.

9.2 Startup DRONTEC - CREOTEC

CREOTEC

creo-tec.com

We facilitate access to prostheses to all people who need them to improve their quality of life by generating solutions to manufacture low-cost upper limb prostheses with 3D printing.

Team Members

- **Antonio Riveros –** CEO
- **Rafael Riveros –** COO
- **Jezenia Hurtado –** Management
- **Josué Castillo –** CTO hardware
- **Rodrigo Goytia –** CTO Software
- **Mauricio De la Riva –** Community Manager
- **Alejandro Paredes –** Sales & Clients Service
- **Koryan Lee –** Specialist in Hyperrealist Prosthesis.
- **Rolando Valeriano –** Graphic Designer

Startup Information

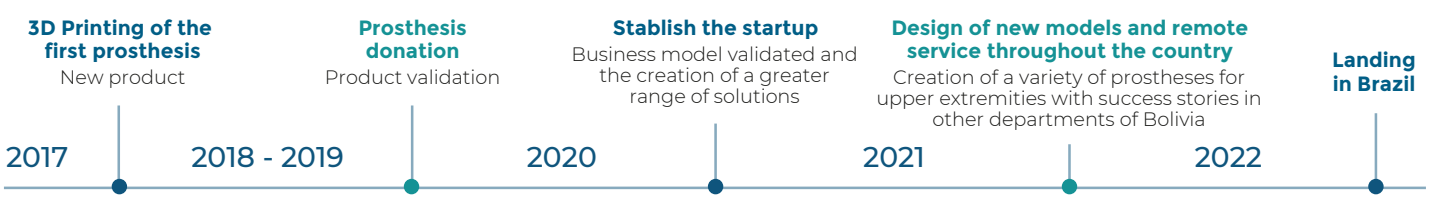
- **Startup Name:** Creotec SRL
- **Creation Year:** 2020
- **Reached points:** Fifty-seven delivered prostheses ,Today, we provide service to ten people per day
- **Vertical:** HealthTech

Services

- Cosmetic prosthesis
- Functional prosthesis
- Mixed prosthesis

> *When the vision and purpose are clear, obstacles are only part of the journey to walk.*
>
> – CREOTEC

National Geographic Coverage	We are present in La Paz, and we provide services in all of Bolivia.
International Geographic Coverage	Landing in Brazil is projected in 6 months.
Business Model	B2C 70% of sales. The end-user who can afford a prosthesis. B2B 10% of sales. Institutions are willing to donate prostheses to people who cannot afford one. B2G 20% in agreements with governmental entities.
Scaling Model	• Exponential through customized design automation. • Exponential through online, remote, and almost immediate prosthesis design platform.
Acknowledgments	• Program “NADA TE DETIENE.” First place among one hundred Startups in Bolivia. • TOYP La Paz, Antonio Riveros is an outstanding person in La Paz, under scientific and technological development. • First-place winners of Seed Stars Bolivia. • "Innovatic 2020" Prize, under the Startups category. • Several acknowledgments for the manufacture of MEDITEC emergency breathers. (2020) • Prize Kamai 2020 granted by the Confederation of Private Entrepreneurs. First place under the Innovation category. • Prizes "Latinoamérica Verde" The Second place under the Category of Human – Health Development. (2021) • International Scholarship PLEI 2021 Bolivia Emprende, Rafael Riveros was granted as the most outstanding entrepreneur of the Leadership, Entrepreneurship and Innovation Program PLEI



Learned lessons

Lesson 1: We learned that having the adaptability skill to change is as necessary as breathing.
Lesson 2: We learned that what you cannot improve what you cannot measure

9.3 Startup Mobi

mo-bi.com

Mobi is a clean energy Startup focused on manufacturing batteries and charging systems based on solar energy, used in electric vehicles and in-house manufactured and available through a mobile application.

Team Members

- **Ariel Revollo**
- **Juan Pablo Velasco**
- **Gustavo Pereyra**
- **Daniel Revollo**

Startup Information

- **Startup Name:** MOBI (EMOBER S.A.)
- **Creation Year:** 2020
- **Vertical:** Energía, manufactura y tecnología.
- **Developed by:** IN-HOUSE (Smart money pre-seed)
- **Financing Rounds:** Pre-seed (385K USD), Seed (750K Usd).

Servicios

Sharing mobility

Energy charge by swap

Operational hardware and software technology for sharing mobility

> *Success is not achieved by working 8 hours a day monotonously. Work culture must be prepared to adjust to the needs of challenge and objectives, balancing efficiency, and effectiveness at each stage.*
>
> – MOBI

National Geographic Coverage	Santa Cruz de la Sierra
International Geographic Coverage	Bolivia, EEUU, Mexico.
Business Model	B2C (Subscription and pay as you go.) B2B (Fleet selling).
Scaling Model	Subscription
Staff	39 Px
Acknowledgments	• Prize to the best mobility Startup in LATAM (Born to Global). • Finalists in Entrepreneur World. • Finalists in "Latinoamérica Verde".

2019

Foundation and prototypes
After achieving prototypes CK-1 (Electric Moped) and the mobile application, in its first version with operational dashboard, we established the partnership with the founders.

2020

Raise pre-seed capital
We received a capital investment for the MVP phase with a fleet of sixty Units + functional technology.

2021

Raise Seed capital
We received a capital investment for the efficiency phase to place four hundred vehicles in the market and a technology upgrade focused on efficiency.

2022

Raise Pre-Series A
We will start our verticals energy and manufacturing in the efficiency phase.

Learned lessons

Lesson 1:
An investable project is possible with a purpose that relies on the right timing and an excellent piloting execution.

Lesson 2:
Enterprises are made up of people, not technology; thus, let us use technology intelligently to exploit our human talents.

10. Conclusions

As an outcome of the findings of this 2021 Mapping of the Bolivian Digital Technology Ecosystem, we would like to highlight some reflections responding to the hypotheses that guided our research, concurrently while readers share their reflections.

About Startups' generation capacity and the ICT Ecosystem structure

After three thorough observations of the Bolivian Ecosystem, we can assert its stability characterizes it. It shows organic growth due to the installed capacity of its private players taking part in it. Albeit the Startups generation is highly dynamic, their hasty disappearance does not allow for expansion.

Although the Ecosystem players know they have the installed capacity to serve a more substantial number of Startups, the Bolivian Ecosystem does not alter the current capacity and the systemic conditions of the national market markedly.

With the challenge of objectively addressing the challenge of distinguishing Startups, we propose a classification tool, which can be improved on an annual basis.

The evidence obtained from the proposed tool application indicates there is a group of enterprises not meeting the conditions typifying a Startup.

The opportunity for improvement is, consequently, being able to shape the Ecosystem's processes conducive to create, identify and develop "proper" Startups that justify the effort made by the co-founders and everybody, natural and legal persons, who are committed to the Bolivian Digital Technology Ecosystem.

There are at least three sub-ecosystems, one in each department of the Bolivian backbone. According to our research, most Startups participate in the Ecosystems located in their city of origin.

Although conditions have changed due to the pandemics, and we see Startups participating in other origin cities' Ecosystems, it will be essential to disseminate the departmental Ecosystem's strengths so Startups can choose which one to join.

Concerning the level of coordination and complementarity of the Ecosystem's players

In Bolivia's bordering ecosystems, located in countries with emerging markets, outside large high-tech circuits, it is more reasonable to seek, create and nurture Startups that can adapt to crises, sustain themselves and develop in adverse conditions. Such Startups typify as having a balanced development, a medium and long-term vision, and a business model with a diversification of products and markets.

The ecosystems' purpose, particularly the Bolivian one, is not denying the possibility of finding or developing "unicorns." In the end, the boundaries of this industry are ideas and the willpower to turn them into realities. From a realistic vision of the Startups --their technological capabilities, human resources, economic and financial resources--, such enterprises can be lodged and developed with the ability to survive, develop, and operate within their respective milieus.

The shared vision expressed in the final Ecosystem's Startups product should align resources and, above all, resolutions. Emerging enterprises will walk their paths and go as far as their founders' willpower takes them. Supporting institutions, however, under the determined shared vision, will do their best to help them in their enterprising paths.

The regional technology Ecosystems experience shows that the most dynamic Startups were those able to achieve an important level of coordination between private and public players, those in which public policies fostered cooperation amongst all involved.

As in all economics' activities, technology is not an exception. Well-intentioned actions from private financial players must be catalyzed by solid support from the public institutions hosting it. Albeit this is a truism, it must be present in the collective ideal.

In the recent past, the public, national and local spheres implemented exercises to boost technology around creative industries. It is essential to foster similar initiatives that can make the virtuous circles of public-private alliances roll.

Another positive feature within the Bolivian Ecosystem itself is the degree of trust showing a favorable ongoing evolution

The first measurement of social capital, whose primary variable was the trust level, has incremented positively in its second and third measurements. In effect, the Ecosystem's players declare to have more trust in their peers.

Regarding the Startups relationship with supporting entities and their services

As for the Startups' perception of the services received from the Ecosystem institutions, they think they are an opportunity for learning and networking with their peers.

Deepening in the overall reflection, even if the perception of the cost-benefit of event participation is valued positively, is the lowest qualifying factor. Thus, it is worth wondering whether the players' perception of such value accounts for their expectations, or not, concerning such events.

Another feature derived from this reflection is that technological Startups have not yet demonstrated their ability to "mingle" with other Startups motivated by their efforts. The research evidence suggests players are accustomed to operating within their respective means; however, the role of the Ecosystem entities contributes to mitigating this weakness.

The research evidence shows that Startups' perception of the enterprising process participation –spontaneously articulated amongst the Ecosystem's entities- is not a route to obtaining financing for their plans.

Because access to financing is Startups' most pressing need, concurrent with the assessments of institutions, a dialectic effect has been generated between the following ideas. On one end, have many investors before developing more investable Startups; on the other, have more investable Startups before encouraging new investors. The way out of these dilemmas is evident and straightforward to express. Still, it is a complex challenge consisting in taking steps in both directions simultaneously. Firstly, we should begin with more attractive Startups featured with high scalability potential.

Some final remarks on Startups

A promising feature of Startups lodged in the Bolivian Ecosystem is their last year's development, along with their prospects for the coming years. This generation of more jobs is producing job opportunities in a non-traditional productive sector for Bolivia.

The chance of generating more employment in this economic sector opens new opportunities mainly for young people; however, there is still a need to count on more coordination between academia and the industry to maximize the opportunities for people involved in this sector.

In contrast, gender equality still is one of the main opportunities for improvement.

As for opportunities, the Research identified that neither Startups nor the Ecosystem's players had identified the possibility of coordinating the urban with the rural area – as the chance to rescue and take advantage of the territory's unique characteristics of the Ecosystem's location. Similarly, few Startups have identified geographical challenges as a source of business opportunities.

There are balanced perceptions regarding the health emergency impact caused by the COVID - 19 despite the accelerated technology adoption process. Startups consulted stated not having been affected by a trickle-down economy.

Ultimately, apropos of the challenges or defiance related to digital entrepreneurship in rural Bolivia

National and local governments must strengthen their investment in connectivity and technology given here is a significant

group of young people that is widely opened to technology, innovation and entrepreneurship and can develop initiatives to energize and strengthen the economies of rural areas.

It is also necessary to focus the work of the Bolivian Digital Ecosystem players, especially the State's performance, **on improving connectivity, developing inclusive educational programs in digital skills and access to digital tools and equipment, which will facilitate the creation of digital-based enterprises.**

In conclusion, it is advisable public and private players, involved in promoting technology as a means of economic development, **generate spaces for the coordination, exchange, and transfer of knowledge of urban Startups with the potentialities rural areas can offer.**

MAPEO TIC BOLIVIA

MAPPING OF THE DIGITAL TECHNOLOGY ECOSYSTEM IN BOLIVIA

2021

FUNDA·PRÓ
FUNDACIÓN PARA LA PRODUCCIÓN

FUNDACIÓN SOLYDES

FUNDACIÓN EMPRENDER FUTURO

BIM
Asset Management

ICCO COOPERACIÓN

www.mapeoticbolivia.org