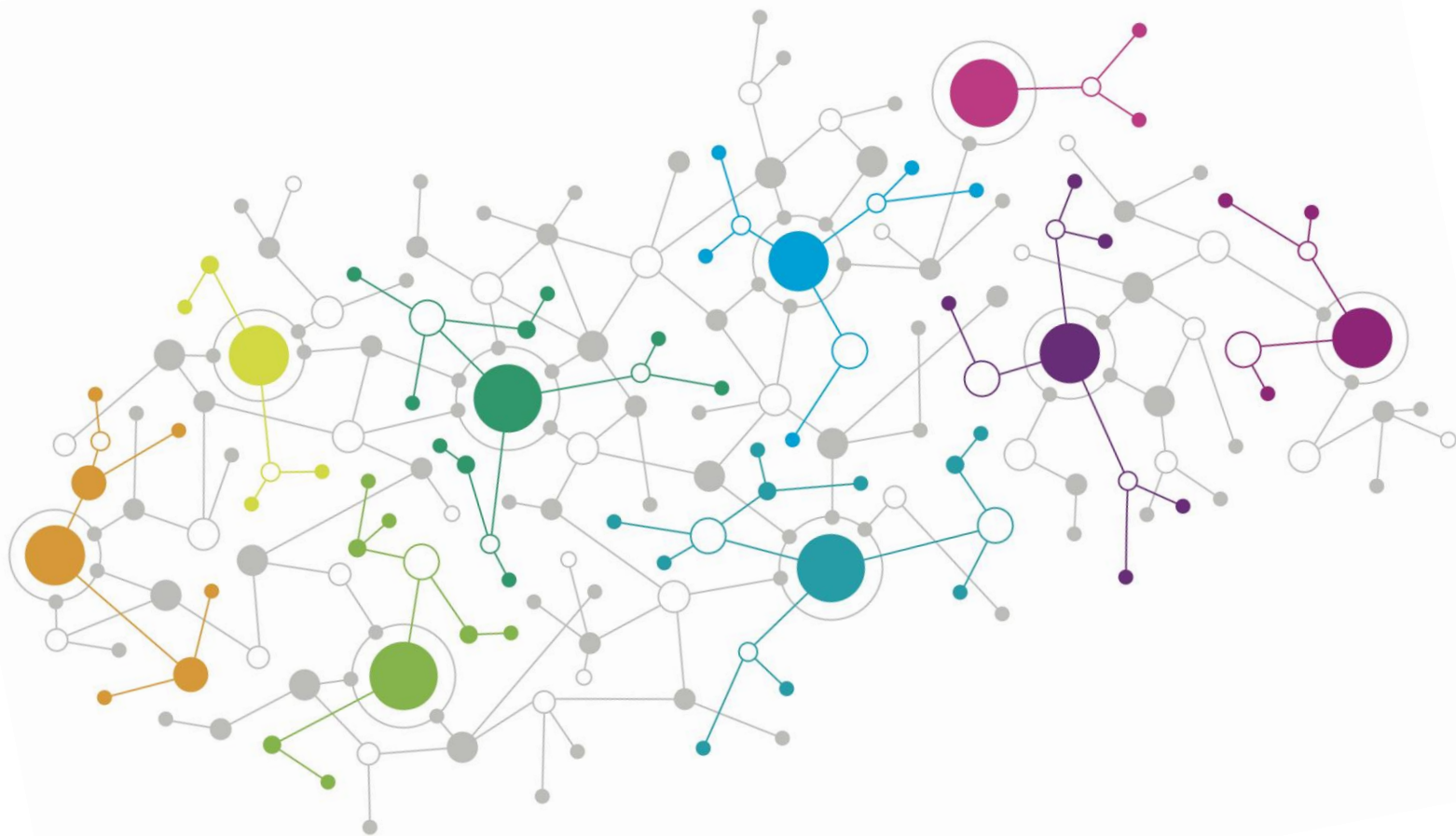


TECH ENTREPRENEURSHIP ECOSYSTEM IN ZAMBIA

A network analysis of institutions supporting entrepreneurship



ZAMBIA
DEVELOPMENT
AGENCY



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EXECUTIVE SUMMARY

Entrepreneurship support institutions are facing challenges in the way they provide assistance to entrepreneurs. Many are not able to meet the growing expectations and needs of entrepreneurs. Navigating through an ecosystem of unconnected organizations can be complex and discouraging. In the long run, it is likely to take multiple institutions to achieve start-up success: from idea to growth to internationalization. Building skills, cultivating entrepreneurial behaviour, providing funding support and access to networks are some of the core components for start-up success and cannot be provided by one institution alone.

Entrepreneurial ecosystems emerge as the result of a multitude of entities and actors interacting in highly complex and idiosyncratic ways. Implementing and accelerating entrepreneurship ecosystems is central to unleashing the potential of young entrepreneurs.

Ecosystems can be studied through a variety of approaches. This report uses ITC's methodology to capture the characteristics and connections of the institutions active in the entrepreneurship ecosystem in Zambia, with a special focus on tech sector. The objective of this report is to provide an accurate description of Zambia's tech entrepreneurship ecosystem of institutions, identify gaps, overlaps and provide recommendations.

This is achieved through a comprehensive analysis, which starts with an initial mapping of the overall ecosystem and aims to gauge the types of support provided by institutions to entrepreneurs at different stages of the business lifecycle. Secondly, delving deeper, a network analysis is conducted to observe the types of linkages or collaborations that occur between various organizations in the entrepreneurship ecosystem. This network analysis does not only show the connections between actors but can also identify which institutions are highly connected. Finally, complementing the institutional perspective, entrepreneurs or the "users" of the ecosystem are asked to share their insights.

Current ecosystem

While the number of institutions providing support services to entrepreneurs is growing in Zambia, collaboration and alignment between these institutions remains a challenge. With a network density of 0.373 out of 1 – with 1 representing the maximum number of connections within a network achieved – the Zambian ecosystem is still at an early stage of maturity.

This report finds that most of the support institutions in the ecosystem provide support to entrepreneurs at idea and early stages. At these stages, business training and coaching opportunities to build skills and knowledge of entrepreneurs are widely available. However, the report identifies a gap in the provision of soft and technical skills that are crucial for start-ups when managing and growing effectively their business. Training opportunities focused on building skills in areas such as business traction, pitching, team and financial management are very limited, even if they are key factors in attracting investors.

Mentoring programmes also emerge as key services provided by several support institutions. Mentorship is crucial for aspiring and young entrepreneurs, as it ensures knowledge and experience transfers from one person to another through personal interaction over time. However, these programmes encounter limitations and gaps in Zambia, including the lack of pre-match training and coaching opportunities to build entrepreneurs' skills on how to work appropriately and effectively with their mentor, and the lack of international mentors.

The report also highlights the lack of services offered by entrepreneurship support institutions to grow businesses beyond the domestic market and to move start-ups to the growth and maturity stages. The ecosystem is currently focused on supporting start-ups to develop their activity in the local market. Support to access international markets remain very limited, hindering start-ups from gaining access to additional clients and from growing through alternative markets.

In regards to financial support, Zambian entrepreneurs suffer from poor connections to funding opportunities and investor networks. Access to finance remains one of the biggest challenges at all stages of development, from starting a business to driving growth and expanding existing businesses.

Next steps for the ecosystem

Based on Start-up commons ecosystem categories, Zambia is currently placed at the first stage of maturity, called “(A): Awakening & Manifesto”. According to this stage, Zambia has increasingly embraced start-up culture, development and understanding. In addition, an initial mind-set towards creating start-up ecosystem is starting to form. There is interest in global megatrends and changes taking place in innovation, entrepreneurship and start-up developments.

Zambia’s ecosystem is therefore at a critical stage of development. To move to the next stage, “(B): Mapped & Vision”, support institutions and other actors in the ecosystem need to seek strategies, policies, new support functions and services in order to grow business creation via entrepreneurship and innovative SMEs. This will mean fully developing and embracing entrepreneurial culture, start-up development and start-up ecosystem knowledge among local key stakeholders for common understanding and alignment. Further, building a shared vision and development roadmap for the Zambian ecosystem will be essential.

Improving common understanding and alignment of support institutions will require each of them to clarify their respective role and unique value proposition in the ecosystem. Overlaps in the supply of support services from these institutions should be avoided as much as possible and entrepreneurs should have a clearer understanding of what service by which institution is available.

Some key services, such as soft skills training, prototyping, market information and linkage to international markets will need to be further developed and structured to meet entrepreneur’s needs. In addition, more services focusing on supporting entrepreneurs to move to the later and growth stages are needed.

Limitations of the analysis

The analysis provided in this report reflects the findings of desk research and interviews. Some institutions, currently present in the ecosystem might not be represented in this analysis given the characteristics of their mandate (not including entrepreneurship support) or the sporadic character of their interactions in the network. In addition, this report has focused only on Zambian support institutions. Therefore, support initiatives from ITC and other international development agencies have not been captured. The interview questions were based on ITC’s Network Analysis methodology designed specifically to understand the interactions of support institutions. Therefore, questions were less focused on the particular situation of start-ups or entrepreneurs. The information gathered on the entrepreneur’s perspective represents, via a focus group approach, a small subset of the ecosystem’s entrepreneurs and therefore further analysis might be needed to provide a statistically significant assessment of the entrepreneur’s journey. This report is a snapshot of the situation in 2020 and therefore might not be representative of past or future interactions.

INTRODUCTION

There is a positive feedback loop among innovation, entrepreneurship, and economic development. New and growing businesses represent the primary sources of job creation and innovative activity in an economy, two factors that generally result in improved standards of living for all. New technologies and digital transformation in particular have the potential to support private sector development and employment growth. As such, tech entrepreneurship plays a key role in driving the economic growth of a country. Linking traditional industries with the tech sector creates new opportunities for innovation, enhanced productivity, business growth and job creation.

However, it is important to understand that the potential impact of tech entrepreneurship and innovation depends on their level of accessibility. For entrepreneurs to bring new ideas to life, they need access to education and a level playing field on which to compete. In this regard, the role of support institutions is to create conditions that allow more entrepreneurs to start businesses by building skills, generating access to finance as well as to international markets and networks, so that businesses can grow. Economic growth suffers when entrepreneurial activity is unevenly spread across socio-economical, demographic, and/or geographic dimensions. Under the right conditions, entrepreneurs have an incredible power: they help regional areas prosper economically, and they serve society through engineering innovative solutions to problems and challenges.

According to World Bank's data, Zambia has experienced an average annual economic growth of 5.5 % over the last 10 years. This strong growth was driven mainly by massive public investment in infrastructure, construction, communications and transport, and agriculture diversification. As a matter of fact, the public sector has played a leading role in the rapid growth of the Zambian economy in the recent years at the expense of the private sector, which remains largely informal. This economic growth has not necessarily translated into an improvement in the living standards and employment of the Zambian population, especially the youth, and several challenges remain, including persistent poverty, inequality, low employment creation and systemic youth unemployment.

Zambia's population is predominantly young and is growing fast, with a high birth rate. 35 % of the population is aged between 15 and 35, and 21 % are between 15 and 25 years old. Unemployment remains high among this population group: while the total unemployment rate was at 13.2 % in 2019, it mainly affects the young Zambians, with a youth unemployment rate (15-25 years old) pointing at 16 %.

Yet, in spite of the difficulties encountered in finding employment, a survey carried out by the Global Entrepreneurship Monitor (GEM) in 2014 found that most young Zambians have positive entrepreneurial attitudes and perceptions and are keen to take the path of entrepreneurship. Moreover, the survey found that over 41 % of the adult population was involved in business activity. Zambia therefore has a large pool of potential young entrepreneurs coupled with a stock of entrepreneurial dynamism that the country could tap into to increase its economic and social development.

Indeed, entrepreneurship can be a major engine of economic growth and job creation when it is supported effectively and thrives in an enabling environment. Studies and research consistently link entrepreneurship with job creation, GDP growth, innovation and long-term productivity increases. However, businesses must be able to grow and prosper in order to have this positive feedback loop on the economy. In Zambia, despite a high level of entrepreneurial activity, the failure rate among both new and established businesses is very high and the number of established business owners remains low.

This high rate of business discontinuance reflects the many challenges and lack of support received by the young Zambian entrepreneurs from the government and the private sector. While the government should be in the forefront in building an environment that nurture and sustain entrepreneurship, the private and non-profit sector should play a key role in providing support services to entrepreneurs to increase their capacities and their resilience.

Zambia is now increasingly improving its support to entrepreneurs. At the public policy level, the Government of Zambia, with youth unemployment as one of its main economic challenge, has given increasingly attention on promoting entrepreneurship to foster economic opportunities and support young people. The National Youth Policy (NYP), launched in 2015 and currently being revised, explicitly establishes entrepreneurship

development as a solution to the youth unemployment issue. Some of the key priorities of the NYP include promoting entrepreneurial education and skills training, promoting the use of ICT, and establishing and supporting business and technological hub/incubators. As a result, the Zambian business environment is gradually improving, as evidenced by the World Bank's Doing Business 2019 ranking in which Zambia ranks 85th out of 190 economies in the world, up from 111th in 2015.

At the private and non-profit sector level, a growing number of institutions providing business support services in the tech sector are emerging. Business support institutions are catalysts for job creation and economic growth when performing in a conducive ecosystem of support institutions. In isolation, each institution can make a small contribution to support entrepreneurship, but its action alone is insufficient to sustain it. Together, however, these institutions can boost entrepreneurship and economic growth by being collectively accountable for exponentially increasing job and economic opportunities for youth.

Despite the current improvement in tech start-up support in Zambia, several obstacles to entrepreneurship development and start-up creation remain: access to capital, awareness about available business support services, soft skills training, linkages to investors and international markets, and coordination and partnership among support institutions.

To support Zambia's efforts in improving entrepreneurship and creating an environment in which start-ups can thrive, this report provides an analysis of the Zambian tech entrepreneurship ecosystem with a specific focus on the interaction among tech ecosystem actors and gaps in services in supporting entrepreneurs.

This analysis is presented in three perspectives:

Perspective 1: Service mapping and gap analysis. Key findings regarding the services offered in the ecosystem based on the interviews conducted with relevant local institutions.

Perspective 2: Network analysis. Assessment of how the institutions within the entrepreneurship ecosystem in Zambia interact using network analysis techniques.

Perspective 3: User experience analysis. Insights from entrepreneurs in terms of navigating the entrepreneurship ecosystem.

Finally, the report provides key recommendations for the improvement of the ecosystem.

1. ECOSYSTEM MAPPING

Defining entrepreneurship support ecosystems

In the context of this report, an entrepreneurship support ecosystem is a collaborative arrangement through which institutions that support entrepreneurs combine their resources, capabilities, and products to offer a coherent, entrepreneur-oriented solution.

When they work, ecosystems allow institutions to create value that no single one of them could have created alone. Well-managed ecosystems improve the management of critical interdependencies to increase benefits or reduce costs.

Zambia's tech entrepreneurship support ecosystem

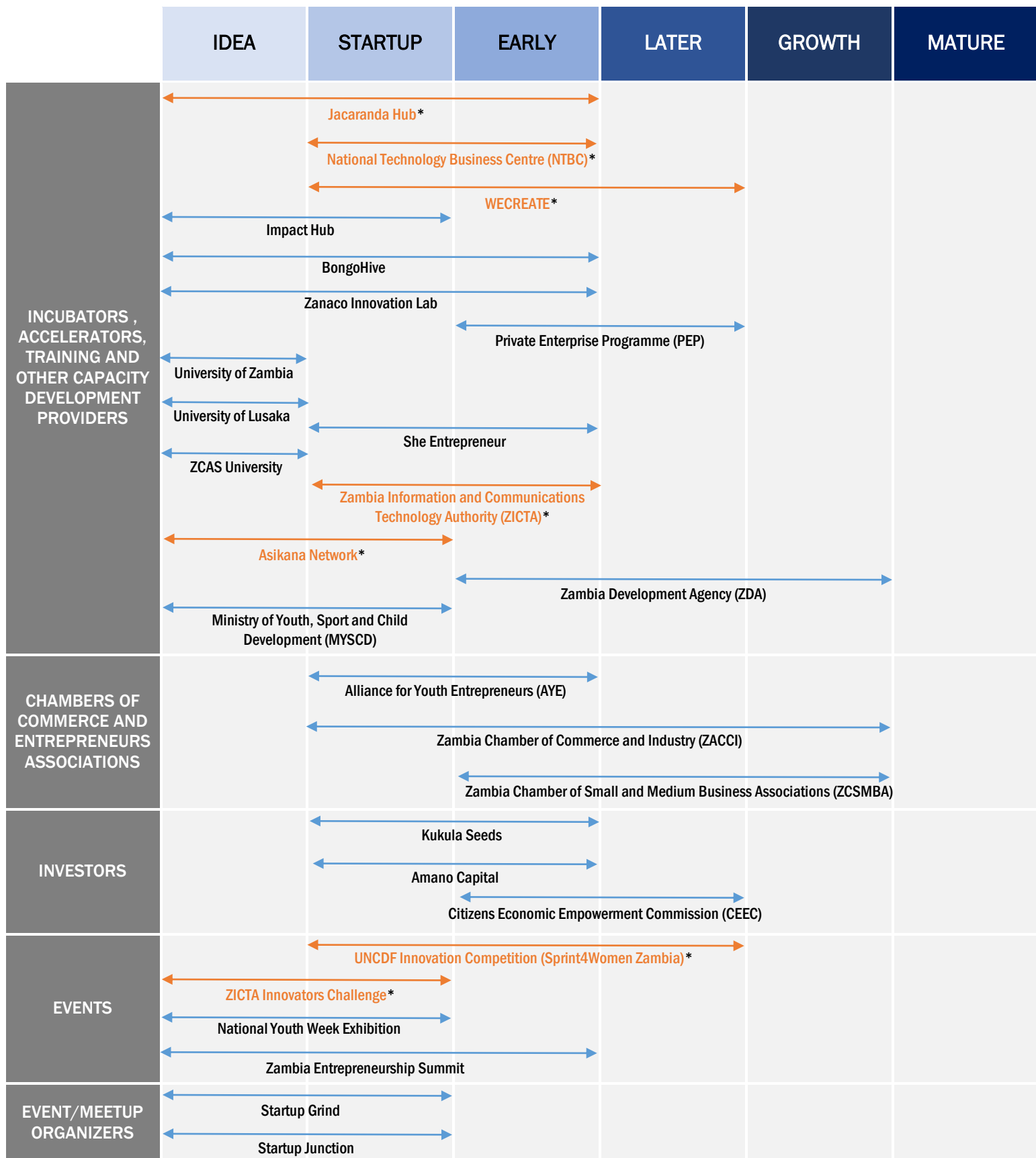
Entrepreneurship is increasingly seen as a key area for Zambia's economic and social development. Given the high youth unemployment rate and the persistent poverty among young Zambians, the Government is increasing its focus on promoting entrepreneurs. The number of institutions supporting entrepreneurs in the IT sector is growing, however they still tend to work in silos and collaboration is not seen as a priority yet, especially when competing for funds. This is reflected in the low number of events that can bring these institutions together to offer a coordinated and effective support to entrepreneurs.

At the time of this report, the tech entrepreneurship ecosystem in Zambia consists mainly of incubators and government agencies and focuses largely in supporting entrepreneurs who are at the idea to early stage. Business training and coaching opportunities to build skills and knowledge of entrepreneurs are widely available. However, the quality of the training content is not assessed or standardized and the offering of these opportunities is not structured enough and presents some inefficiencies due to lack of coordination. Moreover, the offering of services to support start-ups to grow and mature into small and medium-sized enterprises (SMEs) is lacking.

Both the public and the private sector are the driving forces behind initiatives to support entrepreneurship. However, the connections between the public and private initiatives remain weak and do not translate into effective partnerships between the actors. In addition, the number of support institutions providing financing opportunities to entrepreneurs remains very limited.

Figure 1 below provides an overview of the range of institutions active in the Zambian entrepreneurship support ecosystem at various stages of the lifecycle of a business. See Technical Annex for a list of definitions of entrepreneurship support institutions.

Figure 1: Tech ecosystem actors by category and business stage



* Institutions that are purely focusing on tech are highlighted in orange.

Note: This figure has been developed based on desk research and therefore may entail omissions in the coverage of the active institutions.

IDENTIFIED GAPS

Soft skills training

Training and coaching opportunities to build soft skills and knowledge such as pitching, getting commercial traction, managing a team, management reporting and planning and budgeting financial resources is limited in the current entrepreneurship support offer in Zambia. Skills and knowledge on such areas is crucial especially when approaching local and international investors.

Start-ups must be able to pitch their business and back it up with solid business and financial models to attract external funding. While basic entrepreneurship and business training opportunities are offered by many institutions in the ecosystem, only a few of them provide services aimed at improving the soft skills of entrepreneurs that are necessary to approach, convince and collaborate with the right investors.

Support for mentees

Mentoring ensures that knowledge, experience, and hard-won insight transfers from one person to another through personal interaction over time. Practical advice from experienced entrepreneurs or industry experts can have a direct, positive impact on the growth of new businesses. Several mentoring programmes are currently provided by entrepreneurship support institutions in Zambia. However, they tend to encounter limitations in pairing relevant and committed mentors with aspiring entrepreneurs, and entrepreneurs rarely manage to take full advantage of these programmes. This gap in mentoring services in the ecosystem is partly due to the lack of pre-match training and coaching opportunities to build entrepreneurs' skills on how to work appropriately and effectively with mentors (such as managing mentor and mentee expectations, communication and relationship-building skills, identifying and managing ethical issues in the mentoring relationship; see box below), and vice versa. Indeed, the success of mentoring programmes depends largely on the effectiveness of the relationship mentor-mentee and their capacity to work successfully together.

Moreover, most of entrepreneurship support programmes currently active in Zambia are limited to local mentoring networks and programmes and lack access to international ones. International mentors can bring additional value by sharing their international experience and broadening the entrepreneur's vision and perspectives on challenges and opportunities that transcend local barriers. Entrepreneurship support institutions could tap into international mentoring networks through collaborations with incubators and accelerators in other countries in the region or beyond. Zambian entrepreneurs can also seek mentoring support through web-based programmes such as MicroMentor and VC4A, which are online mentoring platform that connects entrepreneurs with skilled business mentors in Africa (VC4A) and around the globe.

Mentoring in Entrepreneurship Ecosystems

Mentoring has become an essential factor in entrepreneurial success because mentors can help entrepreneurs overcome setbacks they commonly face in the early stages of their entrepreneurial ventures.

However, whether these one-to-one linkages are valuable for a young entrepreneur depends particularly on the mentor's experience and his or her capacity to coach and support the mentee. Therefore, well-designed formal mentoring programmes provide mentoring guidelines to assist the mentor and the mentee in their collaboration, monitor and evaluate the relationship and also provide mentor training.

Practical tips for implementation

- Place emphasis on a rigorous mentor recruitment process. Ensure to build a network of mentors with real-life business experience and/or industry knowledge.
- Set guidelines for both mentors and mentees to assure quality and ensure that expectations are clear.
- Provide training to mentors periodically to update their mentoring capacities.
- Deliberate matching of mentors and mentees is critical to have meaningful results.
- Show recognition to mentors through networking events and other activities of the institution to keep them motivated and engaged.
- Allocate appropriate human resources from the institution to manage the mentoring intervention.

Source: Youth Business International (2016) "Supporting Young Entrepreneurs: What Works? An Evidence and Learning Review from the YBI Network".

Linkages to international markets

Entrepreneurs in the tech sector get support primarily at the idea and early stage but there is no or little ongoing support offered at later stages to move businesses to the growth and maturity phases. Similarly, there is a large gap in the services offered by entrepreneurship support institutions to grow businesses beyond the domestic market and attract foreign buyers. This lack of support and international linkages greatly diminishes the possibilities of entrepreneurs to continue growing and expanding their business.

Indeed, expanding into international markets is an effective way and an important step for new start-ups to sustain and mature into SMEs. It allows them to engage with new global customers, improve the competitiveness of their products and services, and boost their business growth.

Currently, support in accessing international markets is offered predominantly by the Zambia Chamber of Commerce (ZACCI), the Ministry of Commerce Trade and Industry (MCTI) and its agency, the Zambia Development Agency (ZDA). However, these services are offered to a broad range of businesses from entrepreneurs to larger enterprises, thereby having limited targeted offering to the specific needs of young entrepreneurs and their new start-ups. Most support is ad-hoc and not part of tailored enterprise growth plan focused on innovation.

There is also a lack of ecosystem-wide events that could help start-ups to attract international attention and attendees, thereby fostering global exchanges and networks. It is important for entrepreneurs to have more opportunities to showcase their products and services to attract international buyers and investors.

Connections to investor networks

Poor connections to funding opportunities and investors is a major gap in the Zambian tech ecosystem and an obstacle to entrepreneurs. Indeed, funding remains one of the biggest challenges at all stages of development, from starting a business to driving growth and expanding existing businesses.

Investors are essential to entrepreneurs to help them find the resources they need to grow their enterprise and create jobs in Zambia. Some initiatives aiming at establishing angel business network and crowdfunding platform are emerging in the country at the time of this report, but these initiatives remain limited and funding opportunities are still scarce. Only a few support institutions offer venture capital funds and seed capital funds, and family and relatives still remain the main source of financial support for aspiring entrepreneurs.

The tech ecosystem needs more initiatives to link entrepreneurs with investors and to help start-ups grow. Events and competitions can also play a role in providing opportunities by offering seed funding as a prize given to entrepreneurs. However, these programmes need post-funding support such as mentoring or training to follow-up with entrepreneurs and ensure productive use of funding received.

Barriers to access to finance are not only of market nature, but also involve limited understanding of the credit market (e.g. loan application process, interest rates, time value of money, etc.). Some entrepreneurship support institutions offer training and coaching opportunities to build financial literacy skills of young entrepreneurs. However, these services should be extended as the interviewed sample of institutions and entrepreneurs identified lack of skills in managing financial resources as one of the major challenge facing young entrepreneurs.

Events and pitching competitions

Events and business competitions are lacking in the tech entrepreneurship ecosystem in Zambia. The network analysis of the tech ecosystem identified four ecosystem-wide event: the UNCD Innovation Competition (Sprint4Women Zambia) whose first edition took place recently, the ZICTA Innovators Challenge, the National Youth Week Exhibition and the Zambia Entrepreneurship Summit.

As previously mentioned, events are important for fostering international connection and attracting attention, but they can also be key connectors in the local network of entrepreneurship support institutions by bringing all the tech ecosystem together. For entrepreneurs, events and competitions represent an opportunity to network with peers and industry leaders, build their knowledge and exchange experiences. Pitching competitions and events such as Demo Days also cultivate investment opportunities for start-ups and bring in active investors in the tech sector.

Best practices for Events and competitions

Diversify the Judging Panel

Start-ups will likely pitch to diverse groups throughout their journey. That's why it is important to convene judges representing a variety of segments: funders seeking a well-aligned investment opportunity, potential business partners looking for a start-up to help them solve a problem, possible customers of the product or service, technical leads who can question and support the science. The multi-audience pitch model teaches teams to strategically explain their company's value proposition to a mix of critical players they will encounter throughout their start-up process.

Allocate Prizes Wisely

Cash prizes are valuable for start-ups. However, it is good practice to align awards with key start-up milestones, creating criteria for how the money and resources will be deployed - for example, paying rent for laboratory tests. Designing awards to offer multiple facets of support is beneficial for both the innovators and the award provider.

Provide Value for Everyone Involved

It is important to build in pre-competition networking events for key players involved with the event – and in the ecosystem. This allows the group to engage with different people who may not always have the opportunity to connect. This is positive for attendees who feel like they receive a value-add for their time commitment to the competition. In addition, pitch competitions can be used as a learning opportunity. For example, when inviting entrepreneurs who secured funding to share their “behind the scenes” experience.

Follow up

Many start-ups may leave a pitch competition thinking “Now what?”. That question has more urgency among teams who did not win a prize. Organizers can help teams to develop a post pitch competition action plan. This includes coaching start-ups to put requests in their pitch that go beyond money and provide regular progress reports to be shared with the ecosystem. Success stories spark interest from a potential business partners or investors, even if the team does not make it to the podium.

University-led initiatives

Instilling the entrepreneurial spirit from an early age, especially at school level, contributes to the growth of creative individuals. Introducing entrepreneurship training at an early age and embedding it within the school curriculum can help to build a young population that is equipped to think outside the box. Entrepreneurship education is a lifelong learning process, starting as early as elementary school and progressing through all levels of education.

The interviews highlighted a limited availability of business skills training programmes offered at the school and university level in Zambia, as well as a lack of linkages with entrepreneurship support institutions. Every year, more than 8,000 Zambian students, including some in sciences, technology, engineering and mathematics (STEM), graduate from tertiary school and enter the labour market looking for a job. It represents an enormous pool of potential entrepreneurs, however the lack of entrepreneurship education, including programmes for the provision of technology skills, offered within the Zambian education system hampers this potential. A gap remains therefore in Zambia's formal education system to contribute to building the entrepreneurship mind-set, developing the entrepreneurship skills and fostering the creation of quality start-ups.

Fab Lab for prototyping

Despite the presence of two American Corners equipped with a 3D printer, there is currently no Fabrication Laboratory (Fab Lab) available for entrepreneurs in Zambia to help them fabricate, prototype and develop their products. This adversely affects the capacity of start-ups to manufacture finished and marketable product with high value and therefore hinders their growth.

Fab Lab can play a key role in a tech ecosystem in helping boost innovation and entrepreneurship. It provides a space to entrepreneurs and innovators with a set of digital fabrication machines and tools, such as laser

cutter, 3D printers and 3D scanners, for creating and prototyping innovative products. Prototyping is a crucial step in the design process to achieve the final product that can be then marketed.

Fab Lab and Sandboxes in Tech Entrepreneurship Ecosystems

Fab Labs

Fab Labs (Digital Fabrication Laboratories) are dedicated places for people and entrepreneurs to turn their ideas into new products and prototypes by giving them access to a range of advanced digital manufacturing technology and tools. They serve as technical prototyping platform for innovation and invention, providing stimulus for local entrepreneurship. Fab Labs typically include:

- A laser cutter that makes 2D and 3D structures;
- A 3D printer;
- A CNC milling machine for casting;
- A wood router for building furniture and housing;
- A suite of electronic components and programming tools for low-cost, high-speed microcontrollers and on-site rapid circuit prototyping.

In addition to digital tools, Fab Labs also provide training, learning and mentoring opportunities through the Fab Lab Network, gathering 1,750 Fab Labs in more than 100 countries, which connects aspiring and established entrepreneurs with a global community of educators, technologists, researchers, engineers and innovators across the world.

Source: <https://fabfoundation.org/getting-started/>

Sandboxes

Based on the same idea as the Fab Labs but with a special focus on the tech sector, Sandboxes provide entrepreneurs and start-ups with virtual environments they can use to build, test, and deploy software without impacting live sites or programs. By providing an isolated and safe environment, Sandboxes allow software developers to train in new skills and practice without risk to actual products, enabling the development and testing of new IT solutions. Partnering with private companies providing sandboxes, such as Cisco (link below), can be an opportunity for support institutions to improve their services to tech entrepreneurs.

Source: <https://developer.cisco.com/site/sandbox/>

IDENTIFIED OVERLAPS

Presence of several capacity development providers at the idea and early stage

Several actors fall into the category of "Capacity Development Providers". They offer entrepreneurship support programs, including business training, mentoring and monitoring to aspiring and new entrepreneurs. Given the Zambian context, characterized by a large number of aspiring and potential entrepreneurs but also a high rate of business failure and discontinuance, it is legitimate to prioritize idea and early stage support interventions. The pipeline of start-ups is still low when compared to its potential and therefore, efforts to recruit entrepreneurs and build business skills are critical at this stage.

However, the concentration of support interventions at the idea and early stage is suboptimal for two main reasons. First, although there is a relatively wide range of capacity development providers that offer support services to young entrepreneurs at idea and early stage, these support services are not necessarily available or beneficial to entrepreneurs due to lack of information, lack of coordination among institutions, and low capacity and capability among some of them to provide effective support. Second, the support provided at early stage needs to be balanced with a gradual increase in programmes to support start-up growth. Institutions interviewed invest most of their efforts in early stage support, leaving advanced entrepreneurs unsupported.

Entrepreneurship training programmes

According to the interviewed sample of institutions and entrepreneurs, there are duplications in training supply. The table on the following page shows the different services provided by the support institutions in the tech ecosystem. It can be seen that the majority of institutions provides basic business training to build skills on topics such as leadership, management and entrepreneurship. In contrast, the availability of training on technical skills (programming, coding, data analysing) and soft skills (communication, team management, financial management, problem-solving, confidence-building, etc.) is very limited. Moreover, the large majority of institutions provide mainly incubation services while they offer only a narrow range of acceleration services, reflecting the concentration of support interventions at idea and early stage and the lack of programmes to support start-up at growth and later stages.

The particular focus on business training in the ecosystem and the lack of specialization of its actors has led to inefficiencies in regards to the training offer. The main issues can be summarized as follows:

1. Entrepreneurs get trained on the same topic by several institutions. This is due to the lack of data sharing between the institutions. There is no common database to know which entrepreneurs have been trained under which institution or domain. If institutions were to put structured incubator programmes in place, there would be lower rotation of entrepreneurs seeking support from multiple institutions.
2. Training quality and curricula are not standardized. Therefore, training quality varies within the same subject. Role clarity of institutions in the ecosystem and further specialization of institutions in certain domains would contribute to increased training quality

Figure 2: List of services by institutions in the tech ecosystem

| Institutions | INCUBATION | | | | | ACCELERATION | | | | | | |
|--|-------------------|-----------|---------------------------|---|------------|--------------|-------------|------------------------------|--------------------|-----------------------|---|-------------------|
| | Business Training | Mentoring | Technical Training (STEM) | Soft Skills (i.e.: communication, leadership) | Co-working | Funding | Prototyping | Entrepreneurship Event/Talks | Market Information | Linkages to Investors | Business Support (i.e.: Recruiting, Legal advice) | Trade Fairs / B2B |
| Jacaranda Hub | ✓ | ✓ | ✓ | | | | | ✓ | | ✓ | ✓ | |
| National Technology and Business Centre | | | ✓ | | | | | | | | | |
| Zanaco Innovation Lab | | | | | | ✓ | | | | | | |
| Asikana Network | | | ✓ | | | | | | | | | |
| She entrepreneurs | ✓ | | | | | | | | | | | |
| We Create | ✓ | ✓ | ✓ | | ✓ | ✓ | | ✓ | | ✓ | ✓ | ✓ |
| Impact Hub | ✓ | | | | ✓ | | | | | | | |
| Bongohive Innovation Hub | ✓ | ✓ | | ✓ | ✓ | ✓* | | ✓ | | ✓ | | |
| Private Enterprise Programme | ✓ | | | | | ✓** | | | | ✓ | | |
| Start-up Grind | | | | | | | | ✓ | | | | |
| Start-up Junction | | | | | | | | ✓ | | | | |
| Kukula Capital | | | | | | ✓ | | | | | | |
| Citizens Economic Empowerment Commission | | | | | | ✓ | | | | | | |
| Amano Capital | ✓ | | | | | | | | | ✓ | | |
| ZICTA | ✓ | ✓ | ✓ | ✓ | | ✓ | | ✓ | | ✓ | | |
| Zambia Development Agency | ✓ | | | | | ✓ | | | | ✓ | | ✓ |
| Zambia Chamber of Commerce Trade and Industry | ✓ | ✓ | | | | | | | | | | ✓ |
| Ministry of Youth, Sport and Child Development | | | | | | | | ✓ | | | | |
| Zambia Chambers of Small and Medium Businesses Association | | | | | | | | | | | | ✓ |
| Alliance of Youth Entrepreneurs | ✓ | | | | ✓ | | | | | | | |

*To be implemented during 2020.

**Project ended in 2019, transition to second phase during 2020.

2. NETWORK ANALYSIS

The following section summarizes the findings of the network analysis as well as the conclusions drawn about the community within the Zambian tech entrepreneurial ecosystem. The analysis provides insights on density, betweenness centrality and three types of network connections: information sharing, funding and, service provision collaborations.

ITC's Network Analysis methodology

ITC's Network Analysis methodology aims to capture interactions, trends and patterns in collaborations among institutions. The results presented in this section are based on three pillars of analysis:



Desk research

Preliminary research to understand the landscape of institutions in the country and their offerings. Research on specific studies and reports in the field of entrepreneurship support and start-ups development in the country. Research to validate findings.



Entrepreneurship support institutions

Personal interviews to understand the role of the institution in the ecosystem, its contributions, perspectives and specific collaborations within the network.



Entrepreneurs

Personal interviews to validate the institution's offering and to understand the entrepreneur's journey in the ecosystem.

In order to represent and visually capture the interactions and linkages among the interviewed institutions, this section of the report provides qualitative and quantitative insights supported by a network analysis software.

The following section provides answers to two key questions:

1. **What are the main connections in the network?** The analysis explores how the landscape of institutions interact with each other, which are the most connected institutions, with who are they connecting and why are they connecting. The aim of this analysis is to understand what stimulates collaboration or what might be preventing it and therefore, what can be done to continue strengthening the ecosystem.
2. **What are the different types of connections?** To respond to this question, ITC's network analysis focuses on three key factors of collaboration: information, funding collaborations and service delivery. In the case of information exchanges, the analysis looks into aspects such as sharing of database of entrepreneurs, events information or market intelligence. Regarding financial exchanges, the analysis focuses on the exchanges of funds between institutions. This would be the case of institutions providing financial support for events to other institutions or logistics support. Finally, service delivery collaboration involves support for trainings, such as training material and training staff and collaboration for the organization of events and competitions.

ECOSYSTEM NETWORK ANALYSIS

The information below summarizes key features of the network:

| INSTITUTIONS CONNECTING IN THE NETWORK | |
|--|-------------------------------|
| 4 | Ministry/Government body |
| 4 | Incubator |
| 3 | Chamber |
| 3 | Academia |
| 3 | Accelerator |
| 3 | Investor |
| 2 | Event/Meetup organizer |
| 2 | Event |
| 2 | Development Capacity Provider |
| 1 | Entrepreneurs Association |

Incubators are the most predominant institution type in Zambia. With accelerators and other development capacity providers (training providers), they are institutions actively targeting young entrepreneurs reaching them through trainings and programmes that are oriented towards entrepreneurship or technical skills. However, incubators and accelerators don't play the same role in the ecosystem (see graph below).

Government bodies and agencies have a significant presence in the network as well. The network analysis highlights 4 government bodies, including one ministry and 3 agencies, who are focused on youth development, entrepreneurship and business development.

The network analysis identifies a very limited number of events (2) and institutions providing funding opportunities (3) to entrepreneurs. The scarcity of these important players in the ecosystem represents one of the main challenge faced by Zambian entrepreneurs.

The categorization of incubators and accelerator is described in the graph below.



| CONNECTIONS IN THE NETWORK | |
|---|--|
| - 70 Information sharing | Connections on information sharing are most common among actors. Though it indicates some intention to collaborate, stronger connections such as service delivery collaborations or especially funding are less predominant. It is common for institutions in the network to operate in silos due to overlapping roles or poor strategic clarity in the institution. |
| - 60 Services + Information Sharing | |
| - 1 Funding | |
| The three different types of connections studied are represented with colour codes and total numbers on the left. The report considers that where there are service collaborations, information sharing is implied. | |

NETWORK DENSITY

Measured using the ties between actors, which represent interactions within the ecosystem, the study establishes that connections within the ecosystem are not at their full potential. Indeed, the density of the Zambian network, which describes the portion of the potential connections in the network that are actual connections, is relatively low. Comparing the number of actual connections to the number of potential connections, Zambia remains at the lowest end, scoring 0.373 (1 being the highest possible density number, and 0 the lowest). Looking at 'well' connected actors (defined as catering for more than five connections), the network remains loose. This lack of interaction leads to three challenges.

1. **Early stage focus:** For entrepreneurs to thrive, it is necessary to provide a stimulating environment by ensuring access to support services throughout all the stages of growth and development of a

young business. Most of the players focus mainly on training, coaching, mentoring, and community building, often across different sectors. There are few institutions offering a unique expertise so entrepreneurs can differentiate between institutions (and chose the one that fits better their business) but also so actors in the ecosystem can refer entrepreneurs to.

2. **Limited specialization:** Specialization and the subsequent emergence of specialized clusters are seen as a maturity indicator for ecosystems. Clusters might be tailored to specific industries (e.g. health, agriculture, and education), technologies (e.g. biotech, AI) or areas of interest (e.g. art, social entrepreneurship).
3. **Growth ceiling:** As a result of the lack of specialization and focus on early stage support. Entrepreneurs are lacking guidance to take their start-ups to the next level. Services such as support to leverage on technology to scale up, access to markets, certifications and international standards are currently missing.

INSTITUTION CENTRALITY

Institution nodes are ranked according to betweenness centrality. This type of centrality measures how many times a node (institution) acts as a gateway in the network. The higher the betweenness centrality of an institution, the more paths run through that entity to connect two other actors. When an institution has a high betweenness centrality, and therefore a bigger node size in the map, it means that a node is a key bridge or facilitator between different actors.

Overall, it measures how often an institution appears on shortest paths between nodes in the network. Institutions with high betweenness may have considerable influence within the network by virtue of their control over information passed between others. They are also the ones whose removal from the network will most disrupt communications between other institutions because they lie on the largest number of paths taken by messages.

This report has also evaluated degree centrality, defined as the number of links upon a node (i.e., the number of ties that a node has). This indicates which institutions have built a bigger network for themselves but does not provide insights on their work as ecosystem builders.

Figure 3 on next page shows the overall network of institutions supporting entrepreneurs in Zambia. The size of the nodes (institutions) correspond to their betweenness centrality score (the higher the node, the higher the betweenness centrality).

Overall Network

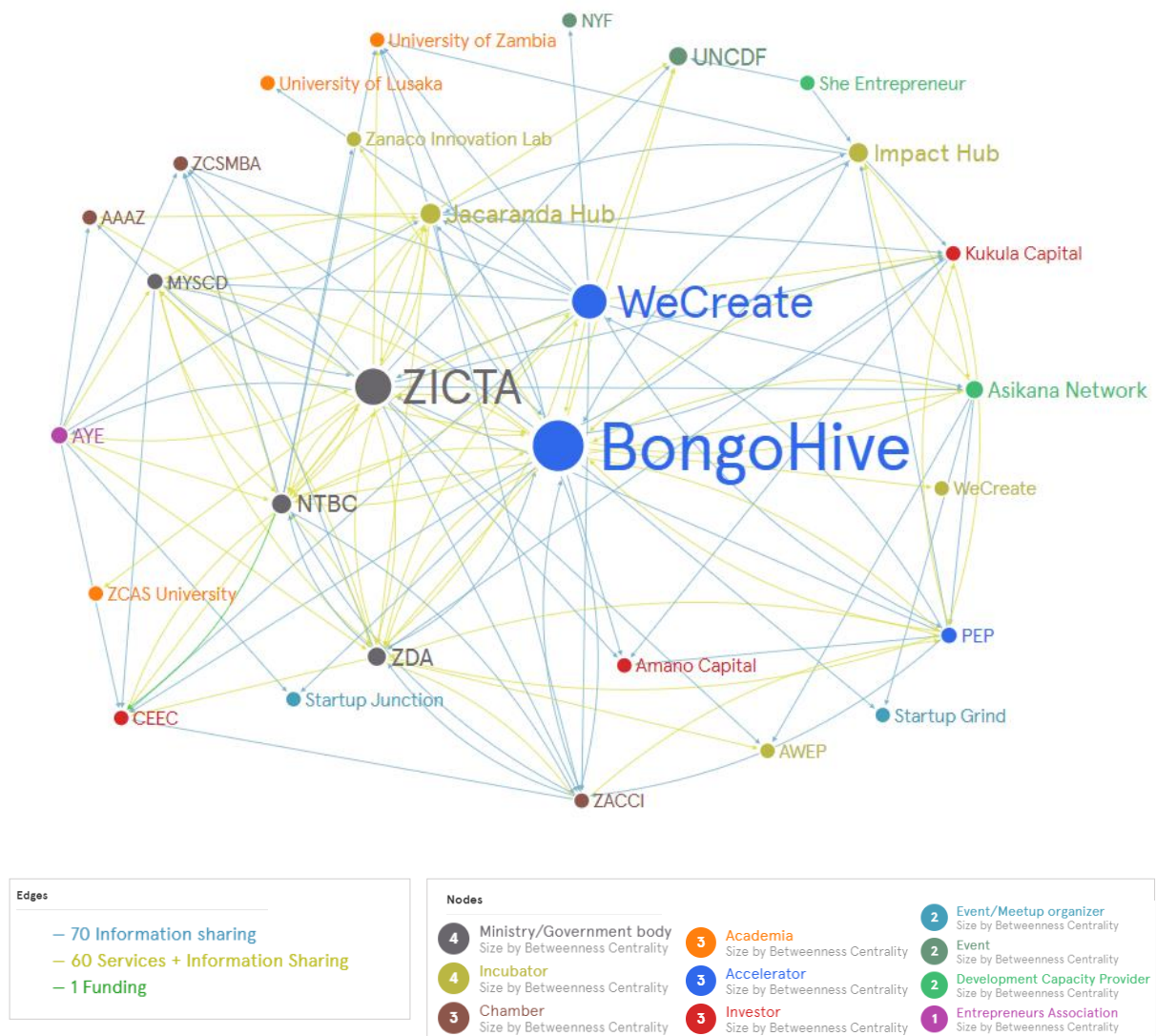


Figure 3: Zambia's Tech Ecosystem Network

Deeper analysis of Figure 3 indicates that creating additional connections could significantly increase the overall density and centrality scores. Possibilities for growth in the network can be as follows:

Potential connections

Table 1 provides an overview of institutions acting as bridges to expand and strengthen the ecosystem network (ranked by betweenness centrality). This indicates that when connecting to these institutions, actors will potentially improve their reach to less connected actors in the ecosystem. If a new or existing actor connects and collaborates with BongoHive, ZICTA, WeCreate or Jacaranda Hub, connections to small scale or recent actors in the ecosystem have the potential to improve.

Table 2 provides a ranked list of institutions with a strong individual network (degree centrality). These institutions have a large network as a result of a successful positioning. When connecting with them, actors might be able to increase visibility and access new opportunities. However, when compared to Table 1 they might not necessarily provide support to reach new or emerging actors (less connected) in the ecosystem.

| Overview of Actors by Betweenness Centrality | <i>(High bridging capabilities)</i> |
|---|-------------------------------------|
| BongoHive | 103.92 |
| ZICTA | 64.94 |
| WeCreate | 59.15 |
| Jacaranda Hub | 16.17 |

Table 1: Raking by betweenness centrality

| Overview of Actors by Degree Centrality | <i>(Strong individual network)</i> |
|--|------------------------------------|
| BongoHive | 31 |
| ZICTA | 25 |
| NTBC | 21 |
| ZDA | 21 |

Table 2: Raking by degree centrality

In addition, when looking at the distribution of the results (see Annex II) only a few institutions are ecosystem connectors (high betweenness centrality), namely BongoHive, ZICTA and WeCreate. There is a considerable gap between these top most connected institutions and the rest, with BongoHive being by far the main connector. This indicates that a small set of institutions leads the support and connectivity of the entrepreneurs through the ecosystem. Institutions who are not part of this small set, have the potential to increase its presence in the ecosystem by:

- Increasing the overall number of connections by sharing information with other actors, proposing collaborations to deliver joint services and supporting other institutions to deliver on their mandate.
- Identifying key partnerships to play a bigger role in the ecosystem. Look for actors not yet included in the network (national and international) and bring them in through collaborations and information sharing.

This can only be achieved if institutions offer a unique value to entrepreneurs and institutions and move from the current services overlapping situation.

Access the interactive Network map [here](#). Or scanning the following code:

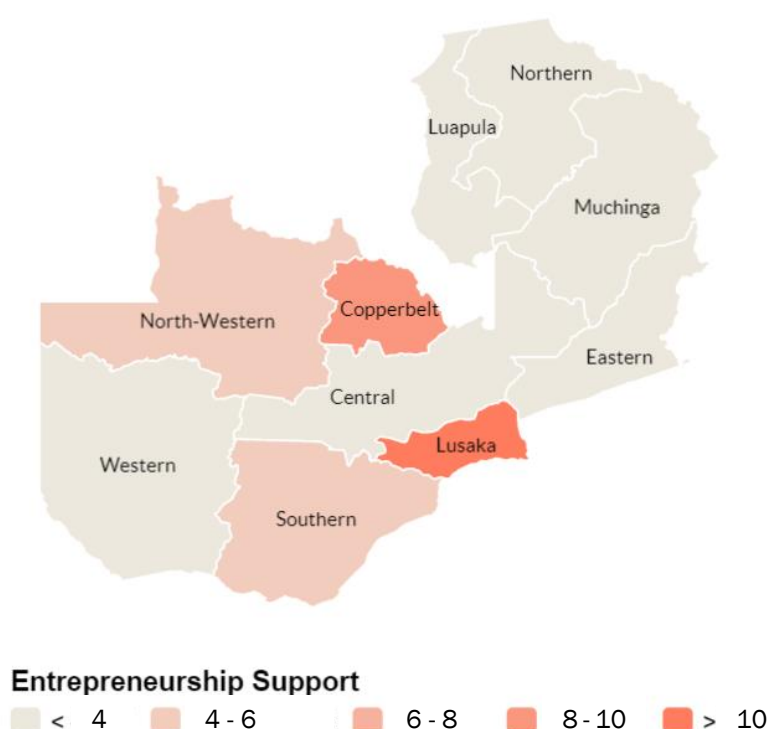


1. What are the main connections in the network?

Poor regional reach

The large majority of institutions supporting tech entrepreneurs in Zambia are located in the capital Lusaka and have no or very limited potential to reach entrepreneurs in other regions of the country. While some of these institutions have undertaken initiatives to reach rural entrepreneurs and those based in other regions through online training and mentoring programs and e-platforms, online solutions remain a challenge due to network connectivity and lack of engagement. Expansion to the regions is mainly done through regional representatives, key focal points, schools and universities or regional chambers of commerce rather than an established physical office. Only government bodies systematically have regional offices.

Figure 4: Regional presence of institutions supporting entrepreneurs in Zambia

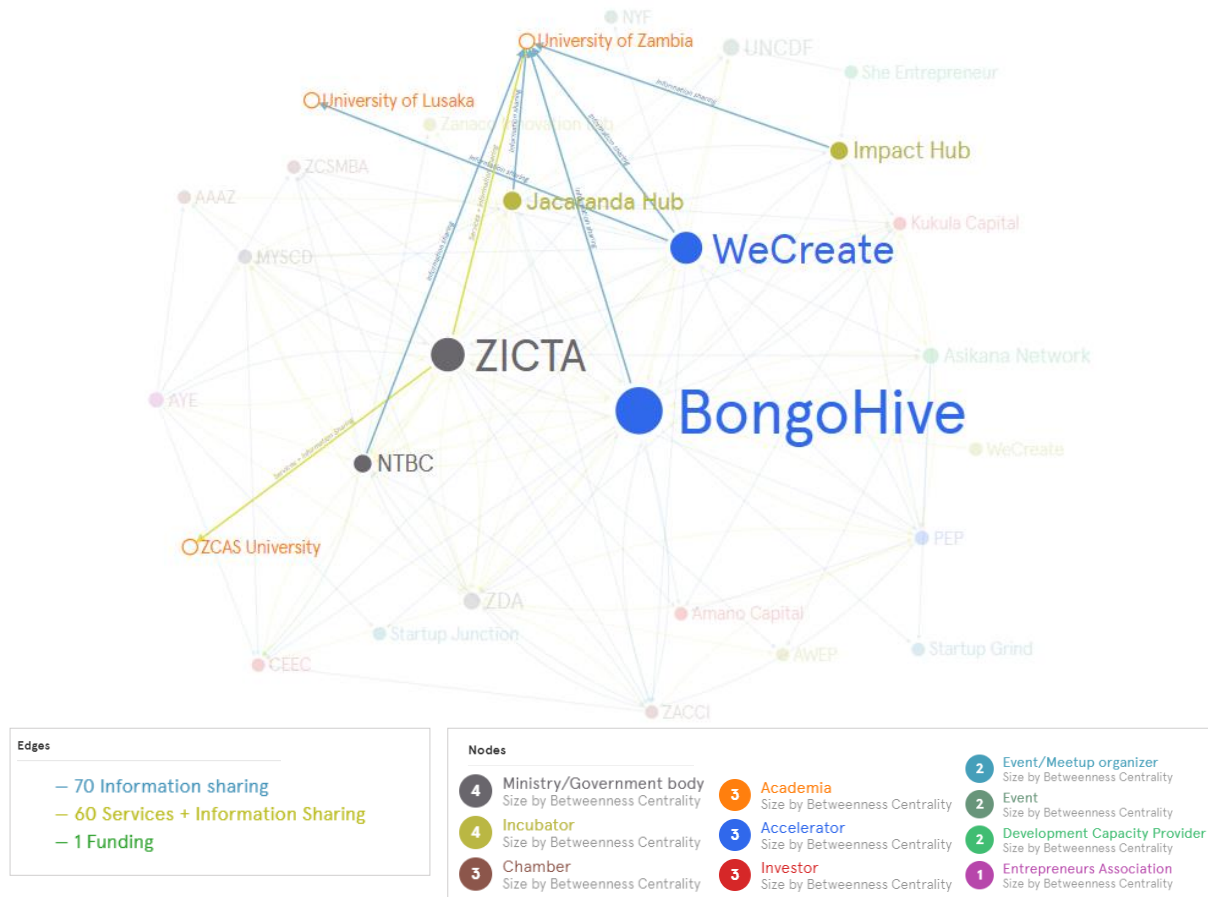


Limited connections with academia

The network analysis highlights a strong lack of connections between Zambian universities and entrepreneurship support institutions. While Zambia is still working towards recruiting entrepreneurs, this lack of connections and collaboration is detrimental to raising awareness and attracting students to entrepreneurship. Indeed, partnerships to raise awareness among students are crucial and, in this regard, several areas of collaboration are still unexplored.

The University of Zambia is the most connected academic institution in the network as partner for information sharing and service delivery, followed by University of Lusaka and ZCAS University. According to the interviewed sample of institutions, the role of these universities in the ecosystem focuses primarily on supporting entrepreneurship talks and sometimes sharing their professors and experts with support institutions to provide training and mentoring. However, academia institutions don't lead specific initiatives and leverage on their own networks and research and innovation capabilities to support entrepreneurship.

Figure 5: Zambia's Tech Ecosystem with focus on academia



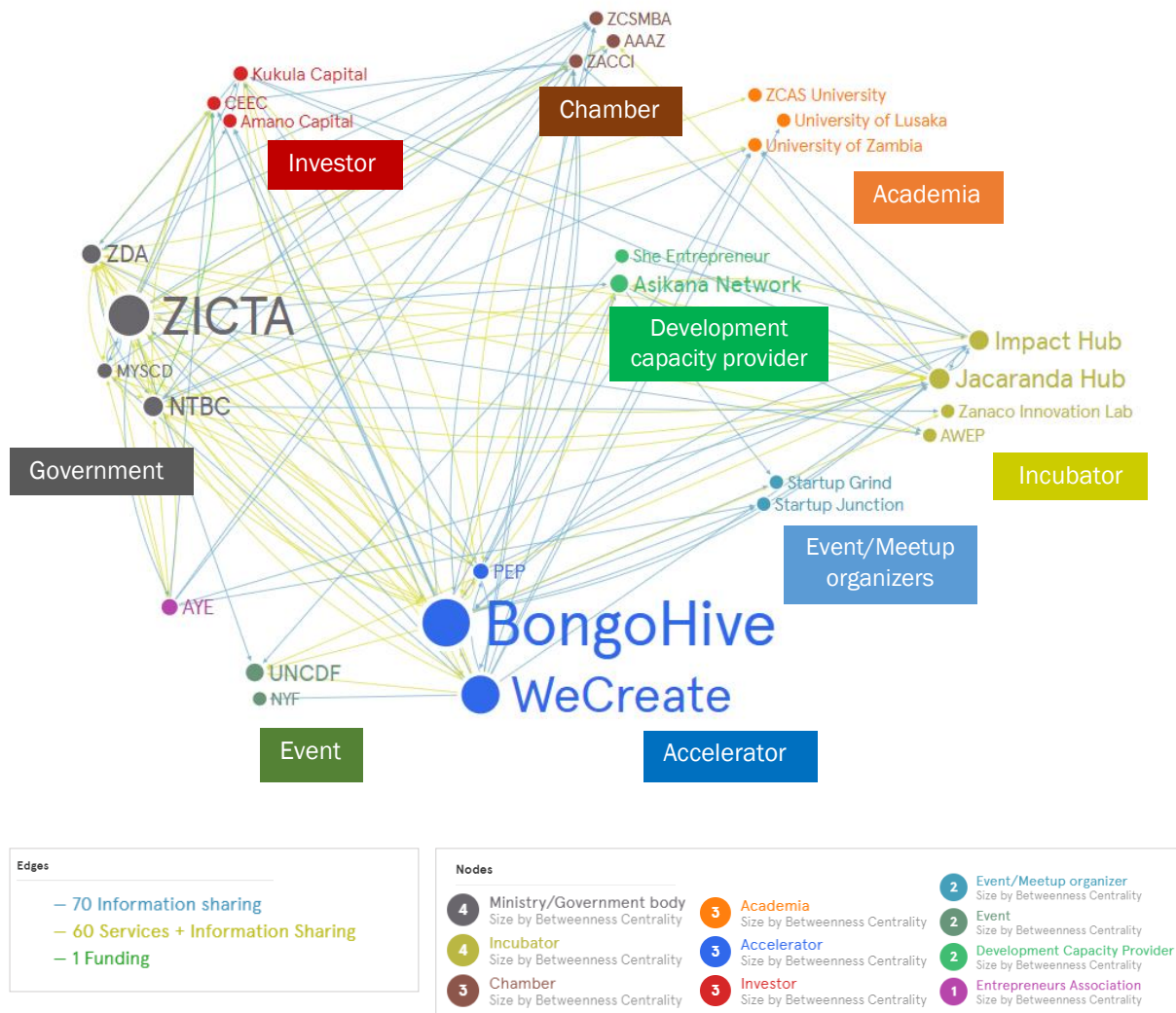
Separation between government and private-led initiatives

The network analysis and interviews with sample institutions identified two different dynamics in the entrepreneurship support network: the initiatives led by the government and those led by the private sector.

The initiatives led by the government are growing and the presence of several government agencies in the tech ecosystem, such as ZICTA and NTBC, reflects the increased attention and recognition from the government to support entrepreneurship in the tech sector. Some of these initiatives include enhancing entrepreneurship education and skills development, promoting awareness, facilitating technology acquisition and transfer, marketing technology and promoting innovation.

However, the network analysis reveals a lack of connections between the government and private led initiatives. Government agencies are primarily connected to each other before being connected to private sector institutions in the network. Several entrepreneurship support institutions have no connection with the government. Moreover, most of the connections between government bodies and private institutions are information sharing and don't involve formal partnerships. This is identified as a gap in the ecosystem. For an ecosystem to effectively support entrepreneurs and reach its full potential, all actors need to work in synergy and pool their efforts.

Figure 6: Zambia's Tech Ecosystem by type of institution



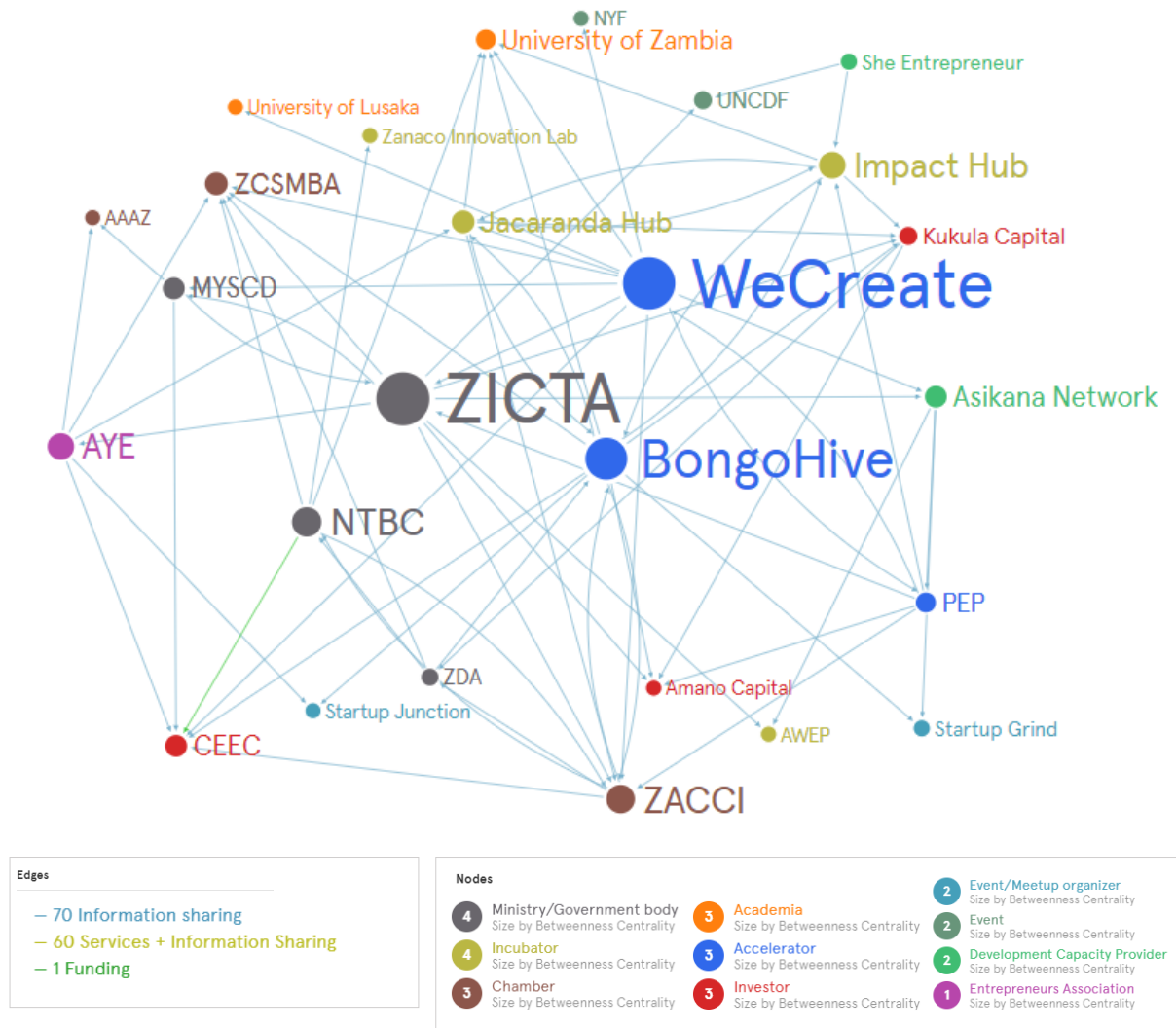
2. What are the different types of connections?

The following analysis looks at the characteristics of the linkages (edges) connecting each institution (node). This report has looked at three key interactions between institutions:

- Information exchanges:** exchanges such as database of entrepreneurs, referrals, events participation or market intelligence.
- Service delivery collaboration:** support for trainings, such as training material, training staff and events coordination.
- Financial collaboration:** exchanges of funds happening between institutions (not funds given to entrepreneurs). This is the case for institutions offering financial support for events to other institutions or logistics support.

Information Exchanges

Figure 7: Network by information exchanges



Information silos

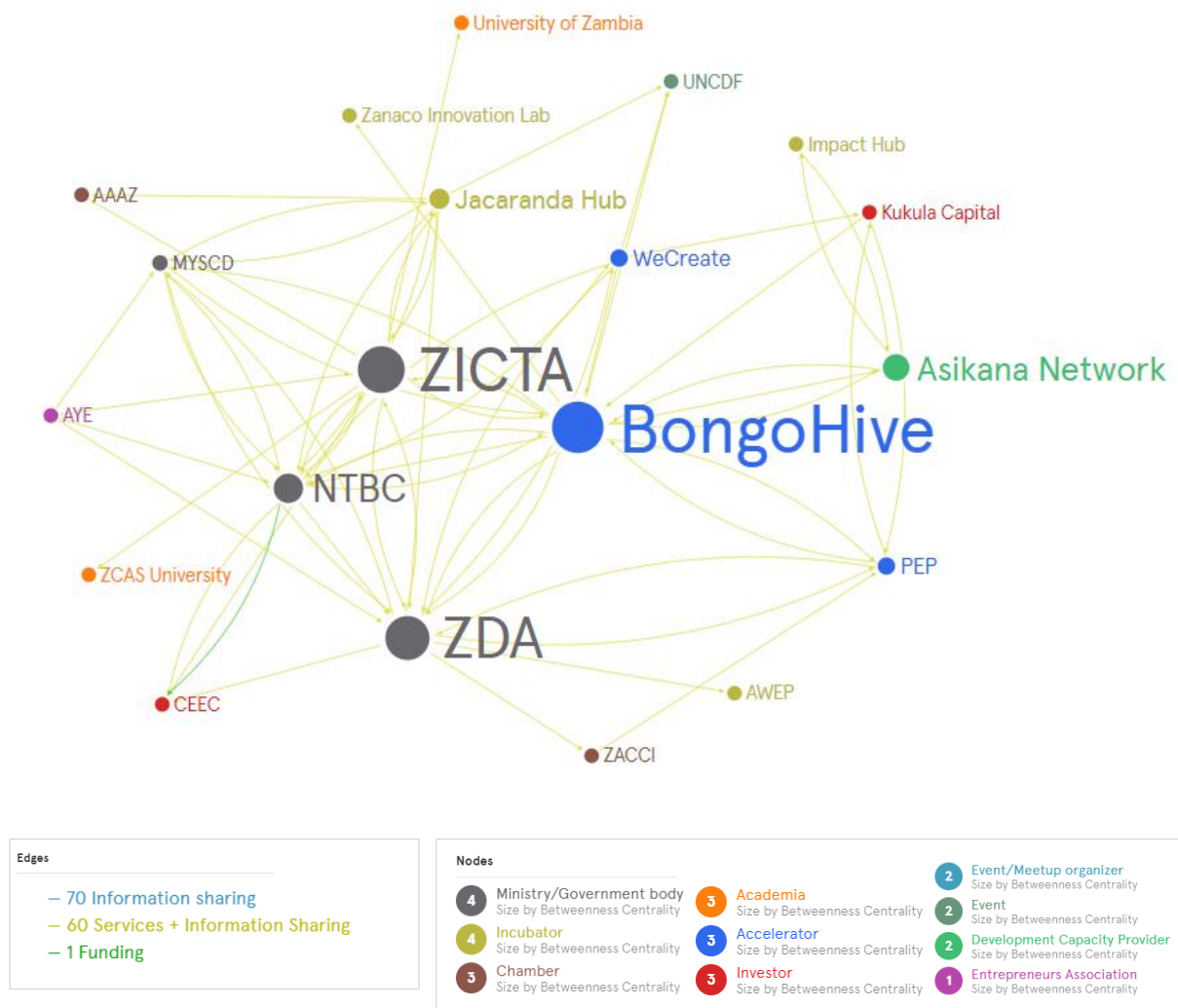
Information sharing has been captured in the report as one of the main linkages between actors. However, when compared to the number of connections on service delivery, it is evident that most information connections do not translate into effective partnerships. Exchanges relate to updates on events and specific initiatives but not so much on working together to deliver value. The analysis indicates that out of the 131 connections captured, 53% related only to information sharing and 45% to value creation through service delivery collaborations.

Despite information exchanges happening, there are no formal objectives for collaboration on, for example, sharing database of entrepreneurs, training beneficiaries or supported ventures. This leads to inconsistencies between journeys of different entrepreneurs (presenting the same needs and getting different support) and inefficiencies related to resources (human and financial) spent.

The Zambian tech entrepreneurship ecosystem currently lacks entrepreneurs associations that could take leadership in enforcing information sharing and dialogue between actors, as well as communicating directly with government and support institutions about what is valued and needed in the network.

Service provision collaborations

Figure 8: Network by service provision collaborations



Training, space provision and (small) events driving collaboration

Most collaborations among institutions can be linked to business training delivery and space provision. For example, ZDA and ZICTA rely on several other institutions in the network to provide their training and workshops. Institutions such as BongoHive and Impact Hub occasionally provide free space on their premises to their counterparts. Some institutions also collaborate in organizing and hosting events, but these are generally small events (such as award ceremonies, pitching competitions) that do not engage the ecosystem as a whole.

Even if there is some collaboration in the ecosystem, the network of entrepreneurship support institutions is not interconnected yet. Except for the five best connected institutions, the rest collaborate through a one-on-one relationship, not connecting with more than four institutions.

Moreover, collaboration is often hampered due to lack of clarity and lack of knowledge regarding the offering of other institutions. It often leads to overlapping and duplication in service offer.

Absence of direct funding connections

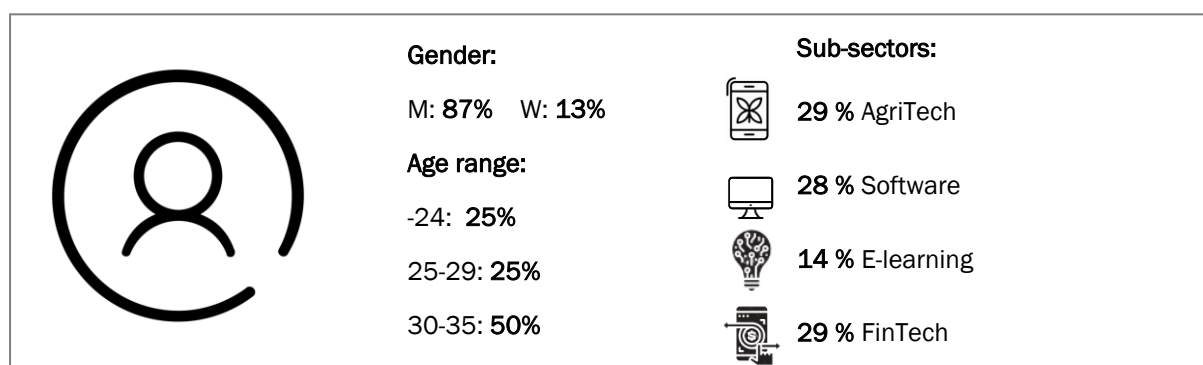
Funding connections are seriously lacking in the Zambian tech ecosystem. This is a common factor in early stage ecosystems, as institutions are still constrained by limited financial resources and are competing for funds. However, it also reflects the informal character of the interactions in the network and the absence of partnerships planning and strategy between support institutions. Financial collaborations between institutions is usually a good indicator of connectedness and trust among those actors.

However, it should be noted that only direct funding from one institution to another have been considered in this network analysis. Indeed, some institutions in the network provide indirect funds support on an irregular basis through logistics support, such as space and equipment, and award sponsorship. The various government bodies also provide direct funding to each other, such as NTBC and CEEC.

3. USER EXPERIENCE ANALYSIS

Analysing the entrepreneurship ecosystem of a country requires not only the insights of its institutional actors but also that of the entrepreneurs or “users”. Interviews were conducted with a selected group of young entrepreneurs in the tech sector to complement the above network analysis. This section provides an overview of the user experience in terms of support received, by which institutions, and what is next in their entrepreneurial journey.

The following box presents the profile of the young entrepreneurs interviewed. All of them have a business in the tech sector.



Based on the insights gathered from the entrepreneur interviews, the following key trends can be outlined regarding the user experience in the Zambian entrepreneurship ecosystem.

Seeking support from leading institutions

As part of the user experience analysis, entrepreneurs were asked to identify the key institutions they had connections with (information sharing and/or services). Corroborating the finding of the network analysis in the previous section, BongoHive (mentioned by 100 % of entrepreneurs), Jacaranda Hub (75%) and ZICTA (75%) appear to be the leading institutions. The ecosystem-wide event Innovators Challenge (mentioned by 63 % of entrepreneurs) organized by ZICTA has certainly contributed to its recognition among young entrepreneurs.

Moreover, 88% of interviewed entrepreneurs reported having received support services (such as mentorship, training and coaching programmes, co-working space, etc.) from BongoHive, 75% from Jacaranda Hub, and 50% from ZICTA.

Building knowledge through training and mentoring programmes

According to the entrepreneurs, building their skills and knowledge to pursue the entrepreneurship path was facilitated through on field business training programmes organized by incubators and accelerators such as Jacaranda Hub and BongoHive, and government agencies such as NTBC and ZICTA. However, several entrepreneurs regretted that training were limited to theoretical and basic business skills development and that technical and soft skills were not further developed. They also pointed out the lack of support beyond training programmes such as linkages to investors, business support (HR recruiting, legal advice, accountability coaching) and market information, corroborating the findings of the ecosystem analysis in the first section and the gap between availability of incubation services offer and accelerator services offer.

In addition to training, several entrepreneurs were able to take advantage of mentoring programmes offered mainly by BongoHive and Jacaranda Hub to build their entrepreneurial knowledge. While most of them claimed to have had a good experience with their mentors, a few entrepreneurs highlighted shortcomings in the delivery of these programmes, including lack of skilled and international mentors, lack of support outside Lusaka (poor regional outreach), and mismatching. In this regard, they further stressed the importance of e-platforms such as VC4A which help entrepreneurs to connect with the right mentors for their business. Finally, entrepreneurs also deplored the lack of pre-match training to learn how to work successfully with their mentor.

Events for building connections and levelling up

All entrepreneurs highlighted the importance and benefits of participating in events bringing together actors in the tech sector, such as the Developer Conference of Zambia (DevCon) and the Zambia E-commerce Expo & Conference (ZEEC). The entrepreneurs indicated that these events are smaller than the ones mapped in this report in terms of attendance and funding opportunities, however they are still very useful for developing skills, improving knowledge and building important connections between actors in the ecosystem. Some entrepreneurs further emphasized the importance of better supporting these existing events to improve entrepreneurs' platforms, rather than financing the creation of new events from scratch.

In addition, they expressed the need for more pitching competitions and entrepreneur' challenges in order to be better prepared to approach and convince investors.

Government procurement opportunities and limited access to international market

Young entrepreneurs indicated that government tenders remain a crucial component for the proper conduct and survival of Zambian start-ups in the tech sector. The government still plays a vital role in supporting entrepreneurs by buying their products and services. However, the entrepreneurs pointed out some important shortcomings in the procurement system, including lack of clarity, high costs to apply to a tender, and length of process.

Young entrepreneurs also indicated that they find it difficult to connect to buyers and access relevant market information. Market access support, especially international one, remains a very limited offer in the ecosystem. Only ZACCI and ZDA offer currently such services.

For most entrepreneurs interviewed, expanding beyond national borders is not in their plans given the complexity of the process and the difficulties already encountered in establishing a solid foothold in the local market. They prefer to focus fully on building a strong buyers base in the local market before turning to international markets. Some entrepreneurs also mentioned financial and legal requirements as significant barriers to accessing international markets. Moreover, they indicated that they would face issues regarding financial regulation, as PayPal in Zambia is limited to sending funds and does not allow for receipt of international payment into a Zambian registered account.

Accessing finance remains a challenge

Young entrepreneurs identified access to finance as one of the main obstacles they face on the entrepreneurship path. They indicated that financing options and opportunities for entrepreneurs remain very limited. It is to be expected that in nascent entrepreneurship support ecosystems such as the one in Zambia, the primary source of funding for most entrepreneurs are still personal savings and funds from family and friends.

Some entrepreneurs identified the lack of training opportunities and programmes to build pitching skills as a barrier to accessing finance. They indicated that many young entrepreneurs are denied funding by investors and financial institutions, because they don't know how to successfully pitch their idea and present a robust business plan. They expressed the need to receive more feedback on the strengths and weaknesses of their business from investors when they are turned down for funding. It is important for them to better understand the areas that need to be improved in their business plan in order to be successful in receiving funding in their next attempts.

4. RECOMMENDATIONS

Based on the service mapping, identified gaps and overlaps, network analysis and user experience analysis, this section summarizes the key high-level recommendations to support the growth and success of the Zambian tech entrepreneurship ecosystem. These recommendations are intended as guidance to the local ecosystem actors.

Including tech as a cross-cutting sector

New and advanced technologies blur sector boundaries as they are enablers to reach and influence nearly any sector of the economy. These enabling and cross cutting technologies are critical across all sectors in improving productivity and developing new products and services that boost business and economic growth. For example, ICT can play a key role in raising agricultural productivity, improving health and related services, promoting good governance in the public sector, improving the efficiency and quality of education at all levels and, of course, improving communications and connections between people.

Given these characteristics, it is important to consider tech sector not as a specific, separate sector, but as a cross cutting technology sector to invest in to ensure that all sectors can benefit from the advantages technology start-ups and companies can bring. Linking traditional industries with the ICT sector would create new opportunities to innovate, improve productivity and boost business growth. In this regard, ICT infrastructure and IT training programmes should be made available to the widest possible range of entrepreneurs in all sectors and the use and application of technology to business ideas should be promoted and instilled from the early stage.

Spreading tech to other sectors: Uber and Ulendo Taxi

An increasing number of start-ups are moving beyond purely focussing on the tech sector by applying technology to existing non-tech industries and new categories of market. By doing so, they create new tech jobs in traditional sectors and participate in their growth.

One of the best example of a start-up company developing cross-cutting technologies is Uber and its subsidiary Uber Eats. The company created a mobile app for people to get a taxi and pay for the ride, while the application Uber Eats allows people to order from a wide array of restaurants and have food delivered quickly. Overall, Uber has contributed to the creation of thousands of jobs in the transportation and food-delivery sectors.

Some Zambian start-ups have been inspired by these examples and have been developing similar technologies. This the case of Ulendo Taxi, a start-up who launched in 2017 a ride hailing mobile app that has created more than 300 jobs for Zambian drivers in Lusaka. Zazu is also a good example of a successful Zambian start-up that has developed tech solutions for other traditional sectors. The fintech start-up has developed a money management mobile app, as well as an app for teaching people how financial services work and who are providing them.

Improving access to information through an online platform

Supporting and promoting effectively entrepreneurship requires a cohesive network of support institutions that provide complementary services to entrepreneurs. It requires institutions to structure and coordinate their exchanges, and entrepreneurs to have a good knowledge of the institutions in the ecosystem and the specific services that each one provides. To achieve this, good access to information is crucial for both support institutions and entrepreneurs.

The previous sections in this report highlighted the lack of consolidated information sharing between the actors of the ecosystem, leading to lack of clarity and knowledge on the services offer, and gaps and overlaps in this offer. In order to increase the cohesion of the network and enhance entrepreneurs' user experience, access to information needs to be improved. It could be done through an online collaborative and connecting platform bringing together all the actors of the ecosystem and fostering information and resources flows among them, as well as identifying and communicating about the various events and available support services in the Zambian tech ecosystem.

Such platform should be inspired by existing ones like the global innovation platform 4 Years from Now (4YFN) or the recently established platform Digital Africa for African entrepreneurs. These platforms act as network, resource centre for support institutions and entrepreneurs, and community. They offer valuable information and unique connecting initiatives to entrepreneurs.

Gathering data about the start-up scene: Startup Estonia

Startup Estonia is another good example of an online platform gathering data and resources on the country's entrepreneurship ecosystem, and supporting start-ups through easy access to information. It is a governmental initiative working on partnering with and uniting the best of start-ups, incubators, accelerators, private and public sector in order to strengthen the Estonian entrepreneurship ecosystem.

Through its partnerships with 110 entrepreneurship support institutions in Estonia, the platform compiles an overview of the different business service providers in and around the Estonian start-up ecosystem to make the navigation of the Estonian start-up scene as easy as possible for the entrepreneurs. The platform also provides an Estonian Start-up Database gathering data on more than 1000 start-ups established in the country to facilitate identification and access to information on Estonian start-ups for the support institutions and investors.

Source: <https://startupestonia.ee/>

Giving greater attention to accessing international markets

While government procurement and domestic opportunities are still an important component of the business plan for Zambian start-ups, it is also critical for them to start thinking beyond the domestic market and be prepared from the outset to approach neighbouring countries and beyond to sustain and grow their business.

As part of their training programmes, institutions should include specific support for the expansion and adaptation of start-ups to international markets. This support can include connecting entrepreneurs with international mentors, providing information on international and export requirements, and supporting the adaptation of products and business plan for international markets. When supporting young entrepreneurs to target international markets, having access to market information is also critical. In this regard, entrepreneurship support institutions should leverage trade and market related information available at ZDA as well as tap into publicly available online resources from International Organizations such as ITC, UNCTAD and WTO.

Entrepreneurship support institutions, including ZACCI, and government agencies such as ZDA and ZICTA should also further facilitate the participation of start-ups in regional and international trade shows and business-to-business meetings to showcase their products and find new buyers.

Supporting access to new markets: Access2Europe

Access2Europe is a market access project created by four European entrepreneurship support institutions: CUBE (Germany), Peninsula (Spain), the French-German Chamber of Commerce (France) and Tehnopol (Estonia). The project aims to help European start-ups expand and scale up in other EU countries' markets and access new international customers at an earlier stage by bridging key tech ecosystems. It offers crucial opportunities for start-ups to connect with new potential clients and business partners.

The project is composed of three customized programmes for start-ups to accelerate their entry into European markets:

- Support & Match incubation programme: This 3-months incubation programme includes free co-working spaces, coaching sessions on pitch delivery and cultural differences of the local ecosystem, and matchmaking with local corporates, investors (VCs, business angels) and funding authorities.
- Market Discovery Tours: A 3-days tour to discover the local startup ecosystem and meet important stakeholders such as potential customers, corporates, VCs, incubators & accelerators and public administration.
- Access Academy: A platform offering online trainings covering different aspects interesting for a prospective market entry like taxation, social security, hiring process, IP legislations

Source: <https://access2europe.org/>

Building entrepreneurial mind-sets and supporting from early age

Having an entrepreneurial mind-set is essential for entrepreneurs and start-ups to succeed and thrive. Similarly, for young people to take up the entrepreneurship path and thrive, the general attitudes and values of entrepreneurship culture is important and need to be cultivated and nurtured from an early age. These entrepreneurial attitudes can take the form of having a high tolerance of risk, rewards for success but also acceptance of failure, space for creativity and recognition of persistence.

A good starting point to build mind-sets and promote an entrepreneurial spirit is to integrate entrepreneurship education in the school curriculum. Currently, academic institutions in Zambia are not sufficiently involved in the promotion and support of entrepreneurship. However, they could play a key role in developing entrepreneurship in the tech sector through entrepreneurial education, early training programmes to prepare students to be successful entrepreneurs, connecting students with entrepreneurs and promoting start-up internships for students. Universities can also act as bridges that directly link education and entrepreneurship by training and incubating their innovative students in specialized structures to turn their ideas into a business (see box below).

Furthermore, Zambian academic institutions also remain poorly connected in the tech entrepreneurship ecosystem and the network of support institutions. As a result, many partnership opportunities with these institutions that could foster innovation and entrepreneurship remain unexplored. For example, support institutions could conduct awareness campaigns and provide mentoring and training programmes within schools and universities, while the later could channel their students aspiring to become entrepreneurs to these support institutions in order to facilitate the creation of start-ups.

Building and nurturing tech entrepreneurs: Makerere University

Established in 1922, Makerere University is Uganda's largest tertiary school, with over 35,000 students in 2018. In 1997, the University established the Makerere University Business School (MUBS), which focuses on providing Business and Management education and includes a Faculty of Computing and Informatics. The aim of MUBS is to promote entrepreneurship and leadership in Uganda and provides students with academic and training programmes to build their business skills.

In addition to MUBS, Makerere University opened in 2010 the College of Computing and Information Sciences (CoCIS), which is dedicated to provide computing and ICT training, and set up in 2011, with the support of Microsoft Corporation, an innovation and incubation centre to nurture innovative students and young entrepreneurs. The Makerere Innovative and Incubation Centre (MIIC) offers an incubation programme, including skills training, business coaching and provision of dedicated office space to help young entrepreneurs transform their ideas into successful business.

Through its entrepreneurship education programmes and its Innovation and Incubation Centre, Makerere University is recognized as playing a key role in developing and supporting entrepreneurship in Uganda.

Source : MUBS, <https://mubs.ac.ug/> and MIIC, <https://miichub.com/>

Making small events bigger

Events and competitions are key elements in a thriving ecosystem to foster connections, collaborations and information exchange between entrepreneurs and support institutions on the one hand, and institutions among themselves on the other, therefore playing as key connectors for entrepreneurship support.

A critical part of a sustainable start-up environment is to have activities and events that engage the entire entrepreneurial community and foster discussion and initiatives around entrepreneurship. Moreover, events are able to connect start-ups with funding opportunities and other resources they need to excel. They create synergies with the hosts and participants and encourage a sense of community.

Even though some events and competitions in the tech sector are occurring in Zambia, most of them are still small in terms of size and attendance and do not yet play this role as key connectors in the ecosystem. However, the idea and topics behind these events are relevant and have the potential to make them grow. Rather than putting efforts into setting up new events from scratch, Zambia should put more resources into

these small events and promote them more effectively so that they gain visibility and succeed in mobilizing all actors in the ecosystem as well as potential investors.

More support institutions should also be engaged in the organization and development of existing events and competitions such as UNCDF Innovation Competition and ZICTA Innovators Challenge. It would foster collaboration with other institutions in the network and build trust and support mutual interests among actors in the ecosystem.

Increasing funding opportunities and building skills to attract investors

A thriving entrepreneurial ecosystem requires easy and widespread access to financial support for entrepreneurs. For young entrepreneurs to realise the true potential of their business ideas and thrive, it is very important to set up financial institutions and mechanisms that can provide them with capital to support their project and activities. Funding by traditional financial institutions such as banks remains essential, but alternative financing solutions can also play a key role in promoting and supporting entrepreneurship.

These alternative financing solutions are currently lacking in Zambia, despite some initiatives to set up crowdfunding platforms, angel investor networks and venture capitals. A study from Kukula Capital and the National Advisory Board on Impact Investing (NABII) identified a clear gap between the desired amount of impact capital requested by for-profit impact enterprises in the private sector and the supply of impact capital provided by investors.

Recently, Zambia has started to think about alternative financing solutions and some support institutions have taken the initiative to start working on the creation of a first Zambian business angel network to support early-stage entrepreneurs. In this process, they are collaborating with the African Business Angel Network (ABAN)¹, an association providing support to angel investing network across Africa to maximise their impact. However, these initiatives undertaken to improve access to finance need to be strengthened. Crowdfunding platforms and effective business angel networks can increase available funding amount at early stage and thus improve crucial support to entrepreneurs in setting up and growing a business. Access to investor networks would also be facilitated by the creation of platforms linking directly investors to entrepreneurs and making it easier for businesses to communicate their value proposition to investors.

In addition, investors and other financial institutions can play a key role in improving the business and soft skills of entrepreneurs who seek their services by giving them expert feedback on their business model and on their pitching skills, and by providing them with advice on how to improve their ideas and increase their chances of convincing an investor. They should also take the initiative to constantly channel entrepreneurs who come to them without the required business skills and business model to institutions supporting entrepreneurs. It requires investors and support institutions to strengthen their collaboration and develop partnerships for the exchange of information.

Finally, all these initiatives should be accompanied by financial literacy training for entrepreneurs. This refers to the education and understanding of various financial areas including topics related to managing personal finance, money and investing. This training should focus on the ability to manage personal finance in an efficient manner, and include the knowledge of making appropriate decisions about personal finance such as investing, insurance, real estate, budgeting, retirement and tax planning. Financial literacy helps entrepreneurs to become more self-sufficient so that they can achieve financial stability. It changes the behaviours and attitudes of entrepreneurs about money and increases the likelihood of obtaining funding from investors.

¹ <https://abanangels.org/>

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ANNEX I: INSTITUTIONS MAPPED

Incubators, accelerators and other capacity development providers

Jacaranda Hub

Jacaranda Hub is a non-profit organization that aims at developing young people in ICT and entrepreneurship through innovation hubs and the provision of collective services, infrastructure, and specialized tools and equipment. It runs three programmes that are dedicated to support young people to have the right facilities, knowledge and mentorship.

Jacaranda Hub also produces a monthly business publication, the StartUp Journal, focusing on the Zambian and African start-up ecosystem in a bid to impart readers with knowledge and the capability to run and grow successful enterprises.

<https://jacarandahub.net/>

Impact Hub Lusaka

Launched in 2013, Impact Hub Lusaka is an organization part of the global Impact Hub network. It offers co-working space, event space, networking, consultancy and business development training. Impact Hub Lusaka presents itself as a catalyst to foster social innovation and create impact with an entrepreneurial mindset.

<https://lusaka.impacthub.net/>

BongoHive

BongoHive is Zambia's first technology and innovation hub. Established in 2011 in Lusaka with the goal to unleash the untapped potential of young people through entrepreneurship, it assists scalable start-ups of any background by enhancing skills, accelerating growth, strengthening networks, increasing collaboration, providing a forum for ideas exchange and reducing the barriers to entrepreneurship.

BongoHive provides a wide range of start-up/entrepreneurship programmes, tech programmes, workshops and events all focused on making Zambia Africa's next hotbed of innovation.

<https://bongohive.co.zm/>

Private Enterprise Programme (PEP)

The Private Enterprise Programme-Zambia (PEPZ) is a project launched in 2014 and funded by the UK Government's Department for International Development (DFID) through the UK Aid programme. PEPZ aims to build and strengthen the capacity of Zambian micro, small and medium enterprises (MSMEs) in the private sector to create jobs and contribute to the diversification of the economy

PEPZ works in partnership with the Zambian private sector to support profitable business growth across four focus sectors: food and agriculture, mining and mining supplies, tourism and hospitality and business services for investment and growth. PEPZ aims to achieve its goals through an integrated approach, including business linkages, business development services, business plan competition and an accelerator fund providing a combination of finance and technical support to businesses.

<https://pepzambia.com/>

Asikana Network

Asikana Network is an organisation that seeks to increase the meaningful participation of women and girls in technology. It provides free training in marketable ICT skills, exposure to emerging technologies,

mentorship, networking and career progression opportunities. Asikana Network works primarily with three target groups – girls in high school, in college and young professionals.

<https://asikananetwork.org/>

WeCreate Zambia

The Women's Entrepreneurial Center of Resources, Education, Access, and Training for Economic Empowerment (WECREATE) Zambia serves as an entrepreneurial community center for women interested in starting or expanding an existing business. The WECREATE Project is specifically designed to advance gender equality in entrepreneurship through a portfolio of programs, tools, and events created to address barriers faced by women seeking to start and grow their businesses

The Center provides mentoring, business connections, specialized training, connections to the community, co-working space, incubation space, media attention, access to markets and capital along with the technical tools and resources necessary for taking any business to the next level.

<http://zambia.wecreatecenter.com/>

She Entrepreneur

She Entrepreneur is a non-profit organization enhancing women livelihoods through a focus on entrepreneurship, work readiness and financial literacy.

National Technology and Business Centre (NTBC)

The National Technology and Business Centre (NTBC) is a government agency providing technology transfer and commercialization services in order to turn innovations and ideas into wealth. Its mission is “to effectively promote innovations, commercialize and transfer technologies in order to unlock Zambia competitiveness and deliver social economic value”.

NTBC's services are inclined to providing consultancy in the areas of utilisation of new technology and promoting businesses development through the utilisation of expired patents. They include: providing business development support; fostering technology transfer; facilitating commercialization of innovative local products; technology audit and validation; providing technology information; and giving advice on intellectual property protection and utilisation.

<http://ntbc.co.zm/>

Zambia Development Agency (ZDA)

The Zambia Development Agency (ZDA) was established in 2006 by an Act of Parliament and became operational in January 2007 after the amalgamation of five statutory bodies that hitherto operated independently to foster economic growth and development by promoting trade and investment through an efficient, effective and coordinated private sector led economic development strategy.

The Act gives powers to the ZDA in key areas of trade development, investment promotion, enterprise restructuring, development of green fields' projects, small and enterprise development, trade and industry fund management, and contributing to skills training development.

<http://www.zda.org.zm/>

Ministry of Youth, Sport and Child Development (MYSCD)

The Ministry of Youth, Sport and Child Development draws its mandate from the Government Gazette Notice Number 836 of 2016, which outlines its portfolio functions. These functions are child development and policy, co-ordination of sports organisations and youth organisations, sports development and policy, street children, and youth entrepreneurship, policy and skills development.

Its mission is “To effectively promote, coordinate and monitor child, youth and sports development in order to contribute to sustainable socio-economic development for the benefit of the people of Zambia”.

<https://www.myscd.gov.zm/>

Zambia Information and Communications Technology Authority (ZICTA)

The Zambia Information and Communications Technology Authority (ZICTA) is an ICT Regulatory body responsible for regulating the ICT Sector in Zambia. It falls under the Ministry of Transport, Works, Supply and Communications and derives its mandate from the three Acts, the Postal Services Act No. 22 of 2009, Electronic Communications and Transactions Act No. 21 and the Information and Communications Technologies (ICT) Act No. 15 of 2009 to regulate ICTs, postal and courier services in Zambia.

ZICTA regulates all electronic communication products and services in the country, facilitates access to Information Communication Technologies (ICT), protects the rights and interests of service providers and consumers, regulates tariffs in the ICT, and carries out research and development

<https://www.zicta.zm/>

Chambers of commerce and entrepreneurs associations

Zambia Chamber of Commerce and Industry (ZACCI)

Established in 1933 and registered in 1990 with the mandate of advocating for a business environment that promotes business growth, the Zambia Chamber of Commerce and Industry (ZACCI) is the umbrella organization representing businesses across the country and across all sectors of the economy

ZACCI's mission is to promote and develop productive economic activities including trade, commerce and industry. ZACCI lobbies and speaks on behalf of the business community and acts as a link between the private sector and Government in Zambia. Through its membership it represents several thousands of businesses in the country and represents a network of companies of all sizes and sectors.

<http://zambiachamber.org/>

Zambia Chamber of Small and Medium Business Associations (ZCSMBA)

The Zambia Chamber of Small and Medium Business Associations (ZCSMBA) is a private sector national body representing the interests of micro, small and medium enterprises (MSMEs) in Zambia.

ZCSMBA's mandate is to promote the sustainable growth and profitability of MSMEs through lobbying and advocacy for a supportive business environment and by facilitating demand-driven business development services.

<http://www.zcsmba.org/>

Alliance of Youth Entrepreneurs (AYE)

The Alliance for Youth Entrepreneurs (AYE) is a youth organization which was founded by and for youths with diverse business concepts and driven by innovation and cooperative leveraging.

The Alliance is certified with the National Youth Development Council. It stands out to be an information bureau and a platform for business-oriented youths (start-ups and ongoing concerns) to access developmental business resources. The organization provides co-working spaces and business development services.

Investors

Kukula Capital

Kukula Capital is a leading venture finance and private equity firm in Zambia. The company operates under two main business areas: Fund Management and Advisory. It acts as fund manager to its two venture funds: Kukula Fund I and Kukula Seed Fund. Through the funds, Kukula Capital invests in Zambian growth companies with capital and expertise.

Kukula Capital is a Joint Venture between Danish and Zambian partners and was founded in 2009. The company is regulated by the Securities and Exchange Commission of Zambia.

<https://kukulacapital.com/>

Amano Capital

Amano Capital is a financial advisory firm headquartered in Lusaka. The firm provides advisory services specializing in incubation, mentoring, and monitoring businesses. The firm provides fundamental, strategic, and operational improvements to small, and medium enterprises.

Amano Capital is a driving catalyst in creating an efficient platform for foreign and domestic investment to find fast-pace disruptive start-ups and scalable medium scale companies in the SME sector.

<https://www.amanocapital.com/>

Citizens Economic Empowerment Commission

The CEEC was established by the Zambian Government through an act of Parliament Act No. 9 of 2006 with a mandate to implement various economic empowerment.

CEEC is a body corporate that promotes the economic empowerment of targeted citizens, citizen empowered companies, citizen influenced and citizen owned companies through ownership of productive assets, skills development, access to finance, preferential procurement and fostering business and entrepreneurial culture in order to reduce socio-economic inequalities.

<https://www.ceec.org.zm/>

Event/Meetup organizers

Startup Junction

Startup Junction brings together the members of the start-up community in Zambia through events, entrepreneur meetups, projects, mentorship programmes and consultancy encouraging people to co-create, co-work and co-succeed.

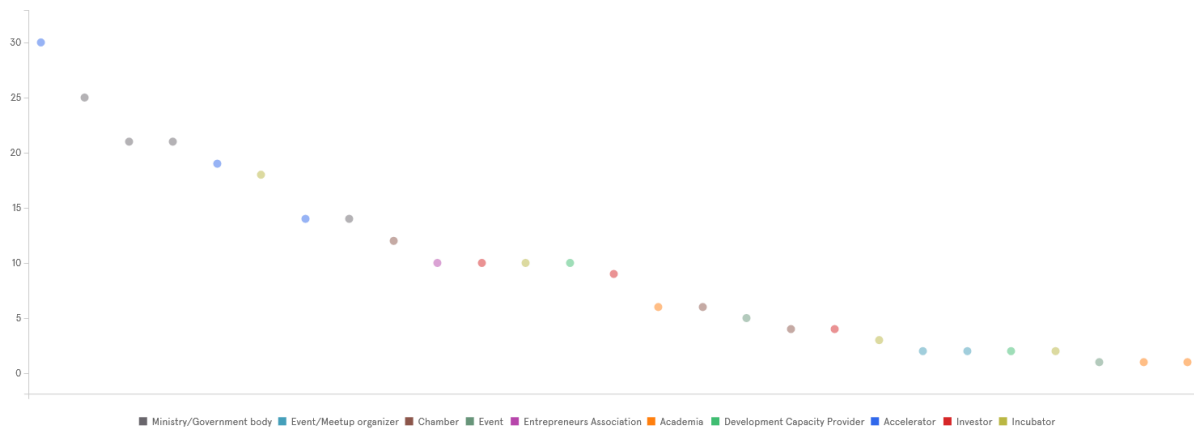
Startup Grind Lusaka

Startup Grind is a global start-up community powered by Google for Entrepreneurs and designed to educate, inspire, and connect entrepreneurs. The chapter in Lusaka hosts monthly start-up events bringing together the Zambian entrepreneurs' community.

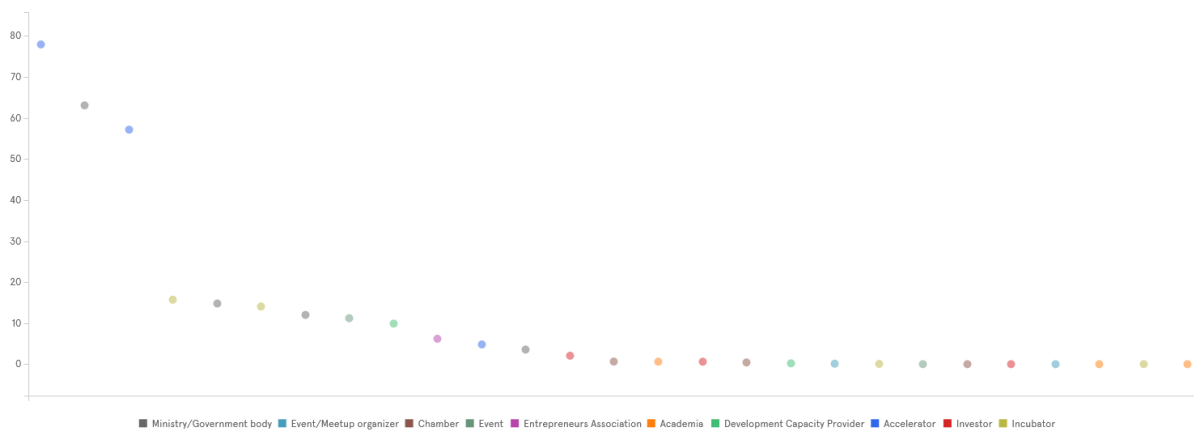
<https://www.startupgrind.com/lusaka/>

ANNEX II: ADDITIONAL NETWORK DATA

Distribution of nodes by Degree Centrality:



Distribution of nodes by Betweenness Centrality:



Access the interactive Network map [here](#). Or scanning the following code:

ANNEX III: TECHNICAL ANNEX

Defining the institutions within the entrepreneurship ecosystem

Incubators

- Primarily focuses on helping early stage start-ups become viable and scalable
- Provides an array of support services and infrastructure through a systematic process
- Quality controlled intake of start-ups with regular time bound exits
- Program duration generally between 1 year and 3 years

Accelerators

- Can support early and growth stage start-ups
- Often invests financially in the start-ups
- Fixed-term, cohort-based program that catalyses start-up growth through intensive mentoring, networking, and educational services
- Quality controlled, often highly competitive, intake of start-ups with regular time bound exits
- Program duration generally between 1 week and 6 months

Young entrepreneur associations

- Volunteer-driven non-profit organizations promoting youth entrepreneurship
- Provides networking and peer-to-peer exchange opportunities
- Lobbying and providing recommendations to policymakers on issues related to youth entrepreneurship

Youth chambers of commerce

- Membership organization for young entrepreneurs to have a voice and address specific concerns of youth-owned enterprises
- Often provides business development services to young entrepreneurs

Co-working spaces

- A business services provision model that involves individuals working independently or collaboratively in shared office space

Venture capitalists

- A venture capitalist is an investor who either provides capital to start-up ventures or supports small companies that wish to expand but do not have access to equities markets.

Angel investors

- Angel investors are also called informal investors, angel funders, private investors, seed investors or business angels. These are affluent individuals who inject capital for start-ups in exchange for ownership equity or convertible debt.

Events and business competition organizers

- Pitching competition, bootcamps, business plan competitions, hackathons, B2B events, fairs and exhibitions are all different types of events and competitions for young entrepreneurs to ideate and scale up. Example events/competitions include Startup Weekend and Seedstars.

Defining the stages of entrepreneurship

Idea Stage

The business idea requires testing and research is conducted to determine whether it is worth pursuing.

Start-up Stage

The business entity is established legally and the focus lies on developing the products/services, adjusting the business model and understanding the customer's expectations.

Early Stage

The business is generating revenue and adding new customers, with a focus on reaching breakeven cash flow and further fine-tuning the business model.

Later

The business has demonstrated viability, with a well-known product/service and strong market presence.

Growth

The business is thriving and established in the industry and focuses on expansion, particularly into new markets.

Mature

The business is on top of its industry, often with two choices, either push for further expansion or exit the business.

ITC Network Analysis Methodology

Questions to Institutions

Ecosystem roles and linkages

1. Who are your main target beneficiaries for the services you offer?
2. What's the average age of the entrepreneurs your organization support?
3. Which business lifecycle stage does your organization target (e.g. incubation support, business acceleration support, export support)?
4. How many businesses are you working with? How many graduates (if incubator programme)?
5. What services do you offer?
6. If you provide training, how did you design the training content? How much do you focus on technical skills vs. soft skills? Do you evaluate the satisfaction of entrepreneurs after the trainings?
7. What sectors do you cover? What sub-sectors (STEM, AI, IoT, etc.)?
8. What geographic regions inside your country do you work with?
9. Where are your office locations?
10. Do you have specific projects/initiatives to support tech entrepreneurship? What is your specific approach (financing/training/coaching/mentoring/investments/incentives)?
11. Do you have specific projects/initiatives to support women in tech? What is your specific approach (financing/training/coaching/mentoring/investments/incentives)?
12. Do you have a focus on international markets? Who do you partner with for delivery?
13. Do you have links with Academia? If so, with who and what is the nature of the partnership?
14. Do you organize events for entrepreneurs? If so, who do you partner with? How do you follow-up after the events?

15. Who provides your funding? Do entrepreneurs/clients need to pay a fee for their services?
16. Do you have a strategy? If yes, who do you have to ask for permission to change your strategy?
17. Is there any other institution providing services similar to yours?
18. Of the following organisations, who do you have formal connections with?
19. Considering this list, is there any other organisations that you give funding, information or coordinate for service delivery that is not on this list? Are you aware of any incubators/accelerators or other entities that support entrepreneurship for tech entities in Zambia?
20. Considering the network as a whole, do you sense any overall trends in the way it operates? (should be free text but if prompting necessary: eg more or less silos with groups of institutions becoming more or less apparent, more or less concentration of power in a single institution etc)

Ecosystem Actors

21. From your perspective, which are the most relevant actors in the local entrepreneurial ecosystem in terms of influencing entrepreneurial success in a significant way? What do they do?
22. From your perspective, who are the key actors providing support to tech entrepreneurs? Who are the key actors providing support to women in tech? What has worked? What could be improved?
23. Do you think there are important players or services missing in the entrepreneurial ecosystem?
24. In your experience, which are the main barriers to effective interaction between actors in the local entrepreneurship ecosystem?
25. To what extent do the players/actors in the ecosystem endeavour to synergise/combine efforts (rather than duplicate the efforts) to build a robust ecosystem that effectively promotes entrepreneurship?
26. What are the main positive attributes of the ecosystem?
27. What are some of the success factors/challenges that you can point to in your role in the ecosystem?
28. Are there any strategies for mitigating the risks/challenges associated with your role in the ecosystem?
29. Are you aware of any tech enterprises that are providing products/services for export?
30. What support services would you like to also provide for tech entrepreneurs?
31. What funding models do you think could be most effective in supporting tech entrepreneurs?

Questions to Entrepreneurs

Out of the following institutions (entrepreneurship support organizations in the sample):

1. Which ones have you heard of?
2. Which ones do you contact weekly / several times per year / annually?
3. What is the nature of the connection? What do you receive from them? What do you give in return?
4. Which 3 have the most impact on the success of your business? Why?
5. Which 5 would you consider the most trustworthy and efficient? Why?

Of even more value is an informal discussion about the ways in which the network supports and constrains business. To get the conversation started you could pose a business challenge, and ask the network user:

- who they would approach for help
- how they would interact with the support network to resolve the problem.

Examples of possible business challenges are:

1. You have a new business idea and want to test its viability. What are the steps involved in moving from idea stage to start-up stage? How do you test the viability of your business idea? How and from whom do you attract initial funding to turn your idea into reality?

2. You are beginning to receive enquiries from potential customers from around the world and you would like to internationalize your business activities. What would be your internationalization strategy? Who can support you in following this strategy?
3. You would like to build your knowledge about latest technologies relevant to your business sector. How do you ensure that your business is keeping up with current trends and technologies? Where do you get this information and access training opportunities?



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The International Trade Centre (ITC) is the joint agency of the World Trade Organization and the United Nations.