TOWNSHIP TECH

Township Tech Sector Intelligence Report

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INTRODUCTION

Digital technologies have the potential to significantly improve the lives and livelihoods of South African individuals, families, entrepreneurs and communities at large. The past decade has seen the advent of new technologies like smart phones, secure payment devices and apps, which has revolutionised the way many South Africans communicate and transact.

The transformation brought about by the introduction of new technologies, is even more pronounced in South Africa's rural areas where the use of technology tends to "increase income opportunities" thereby "improving the chances of escaping unabated poverty" (Fourie, 2008).

In 2019, South African finance minister Tito Mboweni asserted that the improvement of South African lives in rural areas especially must be technologically driven to ensure that everyone is part of the fourth industrial revolution (Ngidi, 2019). It is thought that empowering and further bolstering the efforts of small business owners and entrepreneurs based in informal settlements or townships, is one of the primary methods of building a vibrant and revitalised township economy.

Additionally, the onset of the global Covid-19 pandemic in 2020 has industry experts agreeing that many sectors of the global economy have been catapulted into the future by at least five years. In addition to technologically driven empowerment, this forced leap into the future may also present plethora opportunities for entrepreneurs in South Africa's townships.

This report will contextualise the South African technology sector with a specific focus on its use by entrepreneurs in townships. The purpose of this report is to investigate the challenges and opportunities unique to this sector and will conclude with key lessons and recommendations for local stakeholders.

BACKGROUND

South Africa has one of the largest Information Communication Technology (ICT) markets on the continent of Africa. According to the International Trade Administration(2020), the country demonstrates technological leadership in the mobile software field, security software as well as electronic banking services. "As an increasingly important contributor to South Africa's Gross Domestic Product (GDP), the country's technology and electronics sector is both sophisticated and still developing" (International Trade Administration, 2020).

At the same time, Small, Medium and Micro Enterprises (SMMEs) have been widely regarded as one of the primary contributors to GDP and a critical driving force for economic growth and development in South Africa. In 2019, Business Unity South Africa (BUSA) maintained the SMME sector employs 47% of South Africa's workforce and contributes more than 20% to its GDP. This figure includes SMMEs operating in townships.

Given that improvement of South African lives in townships will likely be technologically driven (Ngidi, 2019) and that the Covid-19 pandemic has accelerated the adoption of technology as an enabler in society, it is useful to investigate how local role-players can further support or augment the service offerings of township-based entrepreneurs. This is especially important as these businesses "seem to be lagging behind in terms of digital technology adoption with most still confined to their traditional way of operating without incorporating technology" (Cant, Wiid and Hung, 2015).

For township entrepreneurs, the risks and rewards of the digital transformation (which entails future proofing a business through agility and focusing on the human experience) is well documented. With technology and data as the primary enablers, small business owners could harness their potential as "strategists and enablers of the complex systems that result from such a transformation" (Montse, 2020). Bvuma and Marnewick (2020) echoed this sentiment, saying, "township SMMEs can play a vital role in curbing the challenges that South Africa currently faces such as unemployment, poverty and inequality."

DEFINITION OF SMALL, MEDIUM AND MICRO ENTERPRISES IN TOWNSHIPS

Before providing an overview of the many factors influencing the use of technology by township-based entrepreneurs, it is useful to delineate a clear definition of the types of business referred to in this report. For the purposes of this report, we will employ Bvuma and Marnewick's (2020) definition of SMME's as "any small business, regardless of its registration under law or tax which includes any person conducting small business activities in any sector." This definition is derived in part from the South African Government Gazette (2019) which uses the number of employees, annual turnover and total gross asset value as proxies in its definition.

Bvuma and Marnewick (2020) further maintain that SMMEs operating in townships have unique attributes, such as their location where they operate, ICT infrastructure, access to digital technology, business classifications (that can be seen as informal businesses), personal attitudes or attributes of SMME owners or managers, and levels of digital skills or knowledge.

ENVIRONMENTAL SCANNING

South African township entrepreneurs are affected by a number of contextual factors, which has both strengthened and stymied their growth over time. The following Political, Economic, Social, Technological, (PEST) analysis provides an overview of the different macro-environmental factors affecting these small business owners, with a particular focus on businesses that employ forms of technology as part of their business model.

POLITICAL

The history of small businesses operating in a South African township dates back to a time when the country's black population was prohibited from owning businesses and faced prosecution for engaging in any business activity. According to a World Bank study, Economics of South African Townships, (2014) South Africa's townships contain nearly 40% of its urban population. These communities were intentionally developed on the periphery of the country's larger cities, separating them from the economic activity of city centres and resulting in what is known as South Africa's informal economic sector.

This historical background has a significant impact on how these small businesses operate in contemporary South Africa. Though its roots lie in operating "outside" the official and regulatory structures of the state, an awareness of the "centrality of informality in urban development processes is shaping the international development agenda" (Young, 2020).

A full understanding of the ways in which informal economic activity is governed is now pressingly urgent, with 11 of the 17 United Nations (UN) Sustainable Development Goals for 2030 (SDGs 2030) highlighting important implications for the governance of informality (UN Development Goals 2030).

The Global Entrepreneurship Monitor (2016) reports that while there are many actors in the tech entrepreneurship sector, the role of the government and its policies affects all entrepreneurial actors and components of the ecosystem. "The government's contribution is important because of its direct impact on the ecosystem through the creation of favourable terms and the provision of incentives for start-ups [...]Governments have furthermore played a leading role in successfully facilitating tech entrepreneurship ecosystems through their impact on all seven components of the ecosystem" (Global Entrepreneurship Monitor, 2016).

In 2019, the South African Government appointed a commission to focus on digital revolution in the small business space (Government Gazette, 2019). This commission will assist the state to taking advantage of the opportunities presented by the digital industrial revolution by identifying relevant policies, strategies and action plans that will help shape South Africa's bigger development agenda.

In the context of the ongoing digital revolution (circa 1980 -) the South African government's National Development Plan (2030) therefore also focuses on encouraging municipalities to be more direct in planning for future-oriented development of townships. This move is critical in addressing the shortage of both basic and sophisticated infrastructure and includes incubation facilities and hubs aimed at bolstering the use of technology as part of township-based small business models.

Over the course of the past decade in particular, a number of government-led initiatives have sought to bolster the work of township-based entrepreneurs over the past two decades. For example, in 2015, the Western Cape Government implemented focused business support services to the informal township sector in the Cape Town Metro area (there are approximately 33 'formal' townships in the province). The nature of the local government's services is described as 'non-financial' and include business advisory services, capacity building, incubation facilities and coaching (Western Cape Government, 2015).

Some of the programmes aimed at supporting Western Cape township-based entrepreneurs using technology as a key resource, include Jump – Digital Business Tookit (in partnership with Google), GoDigital Western Cape and Khayelitsha Bandwidth Barn (in collaboration with the Cape Innovation and Technology Initiative (CiTi).

Entrepreneurs using technology is a small but developing trend. The next section presents an overview of the economic forces at play for most township-based entrepreneurs.

ECONOMIC

At the heart of a township economy are people engaged in "buying, selling, producing, consuming and creating, within the township and beyond it (Philip, 2018). At the international level, more than two billion of the world's employed population over the age of 15 work in what is known as the informal economy (International Labor Organisation, 2019). In South Africa, a 2018 report by First National Bank (FNB) shows most township-based businesses operate in the six primary sectors of grocery stores, stores stocking fast-selling consumer goods, taverns, hair salons, micro-manufacturing, educational centres and motor and cellular repair services (Wessels, 2018). Serrano (2020) maintains that the majority of these enterprises are cash businesses that can make millions of rands in revenue.

According to Pernegger and Godehart (2007), at least one quarter (approximately 11, 6 million) of South Africa's population live in the 76 largest townships in the country. In 2018, the Sustainable Livelihoods Foundation (SLF) indicated that food and drink accounted for 54% of township businesses, services 34% and manufacturing just 2%. (Charman, Petersen, Duda, Davids and Simons, 2012) asserted that that there are well over 100 000 spaza shops across South Africa, making critical contributions to local food security, self-employment and community cohesion.

In the Western Cape, micro-enterprises is classified as survivalist or non-survivalist enterprises; the former does not employ anyone and examples of such enterprises include hawkers, vendors and spaza owners while the latter employ no more than four regular workers. According to a Western Cape Government report, "both these types of enterprises tend to form part of the informal economy. They typically do not pay any tax and are usually not registered. Very few small enterprises operate in the formal economy and have access to modern technology.

The majority of people operating small-scale, cash-based businesses are thus referred to as survivalist enterprises (Charman, et al. 2012). The informal economy includes business activities that are economic in nature, but which are not recorded in the national accounts.

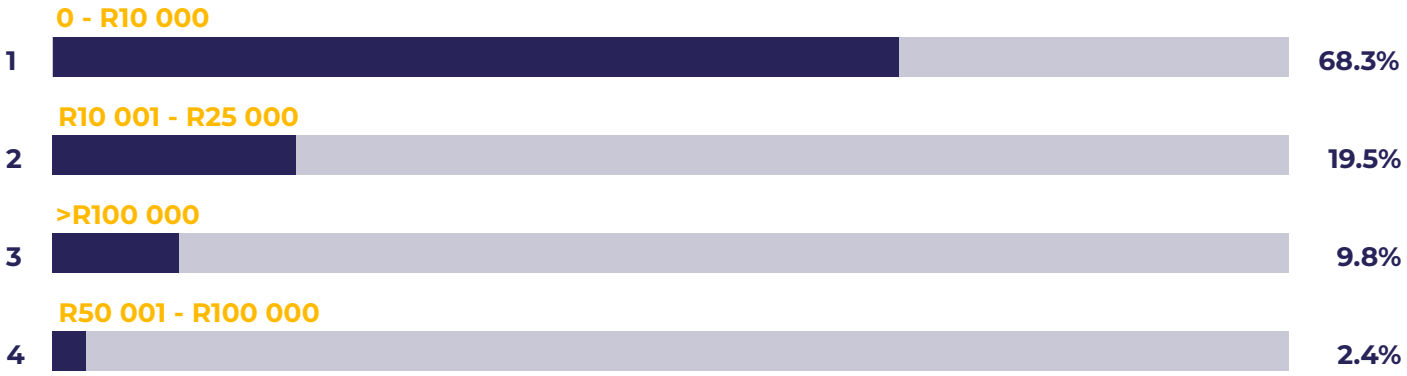
While an International Labour Organisation (ILO) (2016) revealed that the informal sector in South Africa is relatively small by international standards, a Western Cape government (2007) report indicated that there are more small businesses in the province's informal sector than in the rest of the country and that the sector was growing. Other key data from the Western Cape government indicated that:

- Black South Africans tend to dominate employment in the smallest firms, with 42, 5 per cent of individuals engaged in micro-enterprises being Black African.
- The bulk of micro-enterprise activity is concentrated within private households (31, 4%) and the wholesale & retail trade (26, 9%) sectors.

From a gender perspective, the profile of business owners tend to vary as both men and women run businesses that are based in townships. International trends show that this is on par. An International Labour Organisation (2018) report revealed that globally, informal employment is a greater source of employment for men (63%) than for women (58.1%). This is true for both the averages for emerging and developing countries and developed countries.

Profits for township-based entrepreneurs also tend to differ greatly and is dependent on a number of factors, including the type of business (i.e. demand) and sometimes something as capricious as the weather. Table 1 shows the average monthly turnover for township businesses based in the Western-Cape.

Table 1: Average monthly turnover for township-based businesses in the Western Cape (Source: CiTi, 2021).



Some specific examples helps to shed some light on the nature of businesses operating in townships. In a business profile case presented by Ncoliwe (2019), one business owner (Lucky), a male tailor has been operating from Khayelitsha Site C since 1998. He uses a Reconstruction and Development Programme (RDP) house and small shipping container and his highest level of education is Grade 11. This business's average monthly profit after expenses is between R3500 and R4000.

According to Ncoliwe (2019), another business owner, Lindiwe has been operating a fruit and vegetable vendor business from a pick-up truck in Khayelitsha Site C since 2004. Her highest level of education is Grade 4 and her business's average monthly profit after expenses is R2000.

Neither businesses use technology to help augment their offering or at the transaction level, however it appears there is a growing demand for the use of technology in some way by township-based businesses. This will be discussed in the next section.

TECHNOLOGICAL

"In the knowledge society, small businesses must develop competitive advantages based on an adequate and intensive use of information and communication technologies (ICTs), which is an essential element of success in today's market" (Sánchez, Martínez-Ruiz and Jiménez-Zarco, 2007).

Echoing this sentiment, Bvuma and Marnewick (2020) maintained that for "township businesses to participate fully in the economy, develop and grow, there is a need to have an in-depth understanding of the factors affecting their ICT adoption."

Some factors include a lack of business acumen, poor technological skills, lack of education and training, lack of ICT awareness, access to funding and the absence of infrastructure to support businesses technologically (Bvuma and Marnewick, 2020).

As can be concluded from the previous section, a number of township-based businesses face a number of basic challenges (e.g. a lack of assets), most of which will not change overnight with the adoption of technological infrastructure for their businesses. However, a clearly articulated digital adoption framework for township-based entrepreneurs, which includes a scope and specific insights into the types of infrastructure required to implement the use of technology successfully, could present a watershed moment for this sector.

Let us turn for a moment to the types of township-based business that do employ technology and what they use it for. Table 2 illustrates the type of information and communication technologies that township-based businesses use (Bvuma and Marnewick, 2020).

Table 2: Types of ICT's used by township-based businesses (Source: Bvuma and Marnewick, 2020:9)

Types of ITC's used	Reason for usage
Laptop	Typing and banking
Printer	Printing work documents
Cash Tills	Cashing in
Landline	Business calls from suppliers and customers, Used for banking
Internet	Access various websites, suppliers and purchasing stock
Wi-Fi	Accessing the Internet and downloading items
Social Media	Marketing, communication with customers and advertising
Mobile Applications	-
Scanner	Scanning supplier documents
Server	Back up information

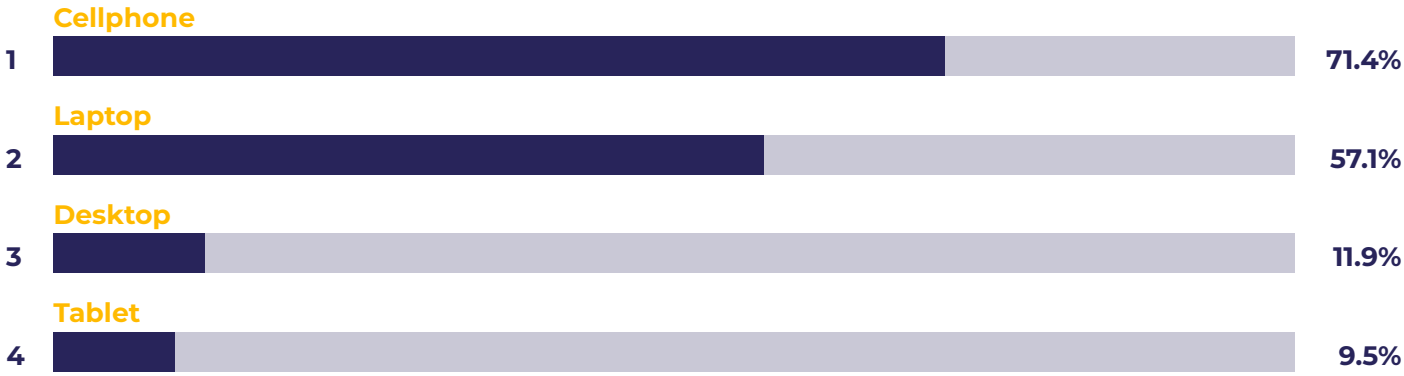
It is clear that in order for entrepreneurs to use digital technology in its many formats, basic and in many cases, a suite of relatively sophisticated infrastructure (e.g. broadband internet) is necessary to support its use.

As previously stated, the Western Cape government's directive to develop and support entrepreneurs in the province is well documented. Most of its programmes are described as non-financial offering business advisory services and incubation facilities. Emerging technologies in the South African township tech space are often derived from support in the form of innovation and/or tech hubs . One of the programmes

aimed at supporting Western Cape township-based entrepreneurs, is called Khayelitsha Bandwidth Barn – a key enabler of inclusive innovation, which "supports entrepreneurs in developing technology and business skills" (Gontsana, 2019). Khayelitsha-based businesses like 18 Gangster Museum, Discover iKasi and ABCD Concepts are all using this 'first-of-a-kind offering" in the township. Township Tech start-ups that are assisting entrepreneurs based in this space, include tech start-up 3DIMO, tech stokvel start-up Spoon Money and security system start-up, Jonga.

From a capability perspective, it appears a number of township entrepreneurs are harnessing the benefits of being connected to some forms of technology to augment their business's capacity. A recent survey by CiTi (2021) shows that close to 76% of respondents use some form of social media or an online presence to promote their businesses. The survey also revealed that many township entrepreneurs, who are tapping into technological infrastructure of some kind, are using their cellphones. Table 3 illustrates the devices used by local Western-Cape based township entrepreneurs.

Table 3: Devices used by Western Cape township entrepreneurs (Source: CiTi, 2021)



Some entrepreneurs have created apps, which they are hoping to expand in order to compete in global markets. This includes an app that creates a marketplace for car washes in townships, Phulukisa Healthcare, which is an app that allows people to keep a record of their condition for people who do not understand what medications they are using. Other examples include Gauteng-based Thrift online, which is a business that works with spaza shops to reinforce their collective buying power.

However, based on a recent survey by CiTi (2021), nearly half of a small sample of entrepreneurs did not employ local technological financial tools in their businesses. Technological tools that were sometimes employed include SendMoney (FNB) (33%), Yoco (16, 7%), Imali (Nedbank) (14, 3%), Snapscan (11, 9%), Ozow (7, 1%), Ukheshe (4, 8%) and Mama Money (2, 4%).

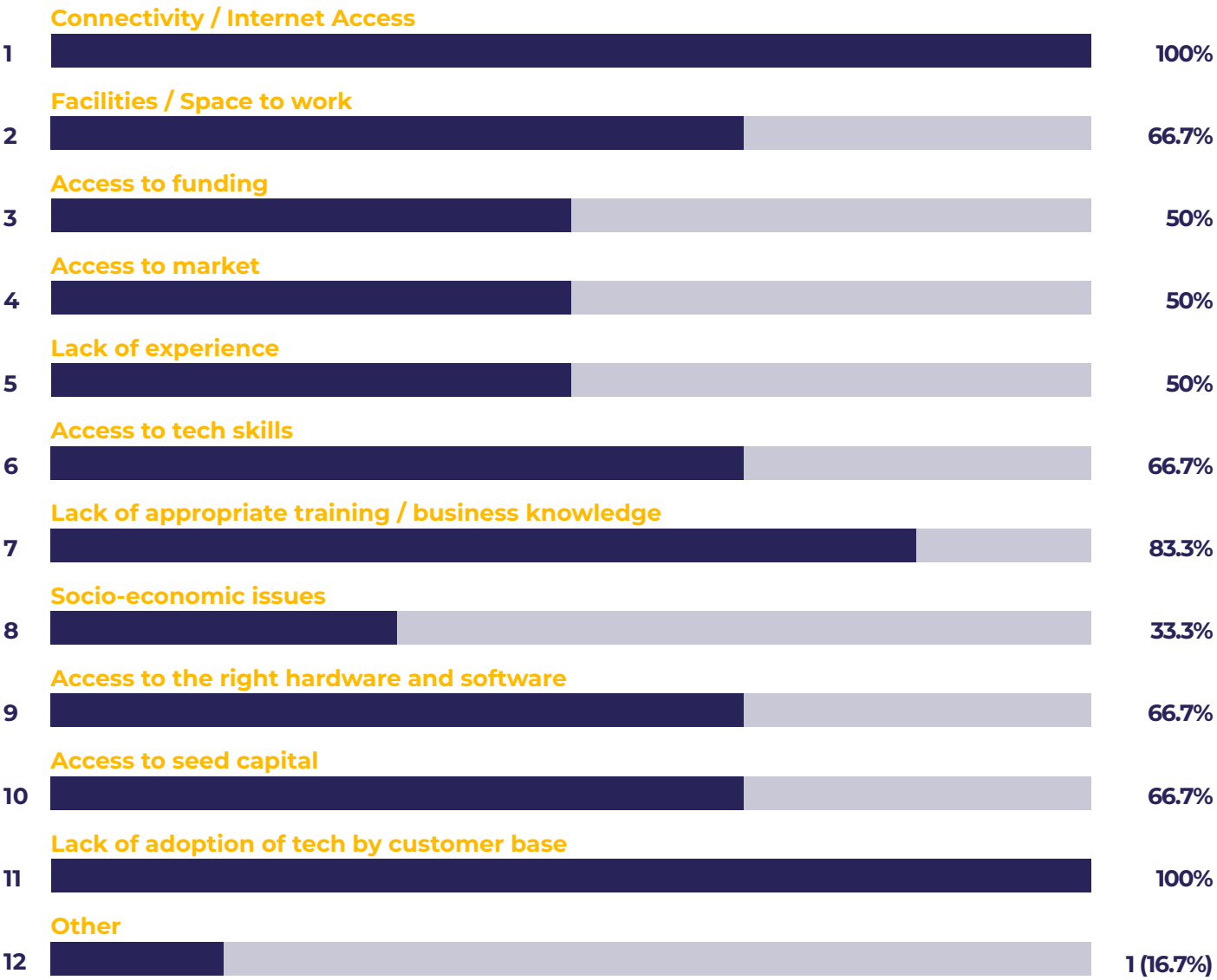
The Covid-19 pandemic seems to have had an adverse effect on small businesses but a World Economic Forum report recently stated that "tech infrastructure positioned to help small businesses adapt to new working models makes strategic sense as these businesses tend to be the main drivers of the economy in the 'new normal' (World Economic Forum, 2020).

In a global context, Deloitte's 2018 analysis in Connected Small Businesses in the United States found that digitally advanced small businesses have realised significant benefits in that they 1) earned two times as much revenue, 2) were almost three times as likely to be creating jobs than other (non-digital) businesses and 3) were at least three times more likely to have exported goods over the previous year. (Deloitte, 2018). This analysis further reveals that a combined effort between small businesses, policymakers and other stakeholders in the small business ecosystem is required to improve digital engagement. The key features of this ecosystem includes increasing awareness of digital opportunities, improving digital skills training, recognising that each business requires different digital journeys and preparing thoroughly to address the challenges preventing small businesses from thriving in the tech space.

CHALLENGES

According to the chairperson of the Township Entrepreneurship Alliance (TEA), Bulelani Balabala, "township set-ups, its content and the entrepreneurs behind them are often not equipped to compete with businesses outside townships. There are certain challenges they face that are completely different to the ordinary entrepreneur. These challenges are related to infrastructure, employment and barriers to entry in different markets" (Balabala, 2020). Table 4 illustrates the responses to the types of challenges tech township entrepreneurs face (CiTi, 2020)

Table 4: Types of challenges tech township entrepreneurs face (Source: CiTi, 2021)



Poor ICT infrastructure in townships may hinder the growth of SMMEs and add significant pressure in terms of the cost of running a successful business. According to the Global Entrepreneurship Monitor Report, infrastructure is an important factor to enable the development of SMMEs. Poor infrastructure can also inhibit successful adoption of ICT (Bvuma and Marnewick, 2020).

Innovation tech hubs, one of the primary responses to equipping township entrepreneurs with the skills and infrastructure required to operating using tech, also faces some challenges. Tech Hub survey (UK-SA Tech Hub Launch League) found that understaffing of technological hubs for small businesses is a key challenge. Other challenges included the fact that 90% of funding for hubs are derived from governmental funding, with only 27% coming from the private sector.

At the regulatory and policy level, there are other inhibiting factors for tech entrepreneurs that are worth noting. Young (2020) asserts that governments can, and do adopt policies that sometimes have a detrimental effect on informal economic activity. The repression of street vending in large parts of the Western Cape is one example. Complicating matters further, governing informal economic activity often involves unavoidable trade-offs including the fact that the informal market undermines the rule of law and state legitimacy and secondly, that informal economic activity provides competition for formal businesses (Young, 2020). This is especially evident in the Western Cape where contemporary by-laws affect informal traders negatively due to evictions and/or confiscations.

Another (more recent) threat to the opportunities for township entrepreneurs is the Covid-19 pandemic, which interrupted the township business supply chain, having small businesses close as a result of reduced spending and consumption. According to the Small Business Institute (2020), the impact of the pandemic was felt more acutely in the small business sector because of this sector's higher levels of vulnerability to shocks.

Another recent development that may affect this sector in the near future is the South African Revenue Services' (SARS) focus on expanding its tax base to the informal economy. One tax lawyer argued that the "biggest difficulty that no one really knows the value of this economy and what level of tax revenue could be generated from it" (Business Tech, 2021). Some estimate that it contributes billions to South Africa, making up 20% of jobs in the country.

In a general summary, key weaknesses and threats to successfully implementing a comprehensive tech-led overhaul in the township small business sector includes (but is not limited to):

- Poor basic infrastructure at the outset (e.g. electricity, business premises);
- Poor or no internet connectivity
- Poor knowledge of digital tools in the township business space;
- Adverse general socio-economic circumstances preventing ICT adoption;
- Lack of access to funding to augment businesses significantly;
- The impact of Covid-19; and
- Regulatory mechanisms that sometimes affect township traders adversely.

As part of the Western Cape Government DashTech projects, funded by the Department of Economic Development and Tourism to further stimulate and encourage growth in various tech sectors, the Township Tech project (managed by CiTi) delivered insights through various community engagements into the key challenges experienced by local entrepreneurs and business owners within Cape Town townships. These challenges includes:

- Lack of connectivity and access
- Existing services and support not reaching the people and the scale required on the ground to make the impact required
- General safety and security of consumers and businesses within the townships

To understand the broader issues around safety and security within the townships, we need to ask the question: how do we keep businesses and consumers safe while facing:

a. Extortion / protection fees and intimidation from organised crime and corrupt law enforcement
b. Ensuring successful prosecution and conviction through evidence to support law enforcement
c. Removing cash transactions to limit muggings or robberies around and on the premises of township businesses

These problem statements provide various entrepreneurial and partnership opportunities within the digital value chain as discussed in the next section

OPPORTUNITIES, LESSONS AND RECOMMENDATIONS

There are a number of exciting opportunities for township entrepreneurs wanting to use technological tools to draw more customers. The Newton Fund (South Africa) last year referred to a 'technopreneur' as a new age entrepreneur who makes use of technology to invent a new innovation and brings it to market.

Small businesses are an important part of achieving the UN's SDG's, as previously stated and thus one of the first elements that global governments are examining is policies and regulations currently governing these sectors. In South Africa, this action would include very specific deliberations about the township sector. In the current climate of the Covid-19 pandemic, analysts agree that while the informal economy has undoubtedly been significantly impacted by Covid-19, analysts agree that it is likely to bounce back relatively quickly or find ingenious ways to trade through Covid-19.

A number of international bodies agree (The World Bank and the International Labour Organisation) that small businesses have a remarkable ability to fuel economic growth and that though they are more vulnerable to economic shocks, they are also far more agile than larger businesses in adapting and innovating in changing circumstances. Since more than 60% of the world's population works in the informal economy, it makes sense that local actors looking to augment these businesses would consider strengthening their technological capacity.

Opportunities in this space include the creation of food markets (as an extension of a spaza) using tech payment options, laundry or tailor services that use an uber delivery-like app for customers to follow when their items will be ready for drop off and/or collection, pop-up entertainment stalls (like the old gaming shops) that downloads the latest games for kids to play online, fundraising initiatives that use crowdfunding for social/recreational initiatives like running and solar-powered phone chargers.
Specific technological South African innovations to watch are Selpal/FNB that uses software to connect local stores to their suppliers, the A2Pay start-up tailored for spaza owners by BFA Global and I Am Emerge, which created the Vuelka app to facilitate bulk purchases of goods sold by businesses in townships.

Understanding innovation as a systemic process puts emphases on its interactive character, the connections among actors involved in innovative activities and the complementarities that emerge between incremental, radical, technical and organisational innovations in the context in which they emerge. Innovation systems thus evolve as the result of different development trajectories and institutional evolution – with very specific local features and dynamics (De Beer, Fu and Wunsch-Vincent, 2013). Drawing from the multiple sources in this report, it is evident that the primary and strongest tool required to further bolster the work of township entrepreneurs through the introduction of technological tools is to build eco-systems (within township eco-systems) that supports that objective. Actions in support of broad-based and grassroots innovation and entrepreneurship can strongly sustain a process of inclusive growth. Deloitte (2018) posited that a combined effort between small businesses, policymakers and other stakeholders in the small business ecosystem is required to improve the digital engagement of small businesses. See Table 5 for an overview of the major actors within the South African small business ecosystem.

Table 5: The major actors in the South Africa small business ecosystem (2018) (Sources: Crunchbase, Expatica, SIMODISA, Silicon Cape, culturetrip, Coworker, South Africa Education, IT News Africa)

a.Startups that are founded after 2010 and have technology-related businesses

Source: Crunchbase, Expatica, ANDE-SIMODISA, Silicon Cape, CultureTrip, Coworker, South Africa Education, IT News Africa

Philip (2018) asserted that support eco-systems can be spatial or specific to clusters or township business value-chains. The focus of the eco-system must be on strengthening township businesses to the point where ICT adoption would be the next natural step that would help improve their returns, expand their businesses and innovate. Importantly, local players who intend wanting to make a difference in this space must recognize that the (eventual) tech-adoption strategies will differ across township business sectors, that it will never be a 'one-size fits all' strategy and according to the readiness level of individual (Western Cape township-based) businesses involved.

The primary tenets of building such eco-systems requires building partnerships, linkages and networks – not only with role-players in the township, but in the wider environment also (including local and social civic organisations such as churches, stokvel groups or community-based recreational organisations), to crowd in support of different kinds and to identify the assets on which the process can draw – including intangible assets like goodwill and experience.

According to an Endeavor Insight, 2018 report "Evaluation & Network Analysis of the Cape Town – Stellenbosch Tech Sector" Cape Town is arguably the most productive and impactful tech hub in sub-Saharan Africa. It has generated the continent's most highly valued tech company as well as other software businesses that have reached scale, exited for significant sums, or grown to become leading businesses on the continent. The report gave 4 clear recommendations to continue to build the successful ecosystem in Cape Town, these included: (1) a focus on building tech talent (2) help successful businesses grow (3) promote mentorship from successful scaled founders to new, promising founders (4) listen to fastest-growing founders on critical issues that inhibits growth.

One very significant and useful target would be to ensure that business development, marketing activities emphasise the benefits of collaborating with active innovations hub to raise their profile in communities, and a community of hubs could pitch to a large national corporation to run one multi-geographic programme to address the lack of investment from the private sector.

Other forms of support to innovation hubs, that would significantly support township entrepreneurs further still is to employ evaluation metrics that would ensure that the hubs are constantly monitoring their programme content, timing and delivery, that there is a monitoring and evaluation programme in place to measure the efficacy of the work of the hub.

Another important aspect of growing the ecosystem is to gain community and entrepreneur buy-in through showcasing the opportunities there are to be gained from considering technological support (at the outset, this includes exposure to networking, training about business strategy and access to information or news about the success of other entrepreneurs who were once in their shoes). Now, there are a myriad role-players working in the township space, all with the common objective of augmenting the work of the people running businesses in this sector but possibly, with different strategies.

These role-players include local community leaders, township entrepreneurs, city-based entrepreneurs, financial services companies like ABSA, First National Bank, Standard Bank, Sanlam, Santam, Nedbank, local government and collaborators (such as the Western Cape Government and other role-players), capacity building organisations, sustainability foundations, telecoms companies, cultural networks, academic institutions, digital technology stakeholders and other infrastructure-specific role-players.

The outcome of a recent 2021 hackathon and pitch competition (hosted by CiTi and DEDAT), focused on technologists, tech entrepreneurs and innovators based in the townships, provided a clear indication that young tech entrepreneurs are willing to collaborate to find solutions to the various challenges facing businesses and customers in the townships.

Recommendations for further investment in the sector include, but is not limited to:

- Funding of initiatives and activities to stimulate technology-based innovations for the township entrepreneurs
- Awareness of technology terminology to the wider community and education of available digital products / tech-enablement to township-based businesses
- Increased provision for tech hubs, incubators and entrepreneurial support structures serving the sector
- Continued monitoring and evaluation of entrepreneurial ventures and their growth and needs to scale
- Addressing connectivity, cost of data and access to technology infrastructure for entrepreneurs
- Addressing safety and security to support entrepreneurs and SMME's that provide products and services within the townships

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