Pathways to Digital Work

A Strategy Primer for South Africa's Digital Economy

Compiled by Genesis Analytics for *South Africa in the Digital Age* in partnership with the Gordon Institute of Business Science and the Pathways for Prosperity Commission on Technology and Inclusive Development

Foreword

2019 was the year of hype around the fourth industrial revolution (4IR) in South Africa. There has been much talk of the potential for new technology as a "silver bullet" solution for South Africa's development challenges. But people have found it difficult to reconcile this rhetoric with the very real challenges in South Africa – intermittent power supply, a poorly performing education system, and the reality that many South Africans are unable to access economic opportunities at all.

In reality, despite these challenges, South Africa is already embracing digital and other technologies to create positive change in a number of areas. But this remains nascent and vulnerable, and has not scaled to the extent needed to change the course of the country's development path. Most importantly, many of these areas remain inaccessible to the majority of South Africans.

The truth is that new technologies hold real opportunities to unlock value when applied in the right context in South Africa. But this is not a silver bullet. There is significant work to be done to ensure that these opportunities are enabled and scaled in an inclusive manner.

Firstly, we need to achieve universal digital inclusion so that all South Africans can access economic opportunities in the digital economy. Secondly, we need to solve our human capital challenges so that South Africans are adequately equipped to participate in the digital economy. Thirdly, we need the right kind of government support to enable the rapid growth of an inclusive digital economy. And lastly, we need an innovative business sector that can translate new technologies into digital business models, and export these into the region and globally.

The *South Africa in the Digital Age* process has helped South Africa surface the key opportunities enabled by the 4IR, and the imperatives we need to get right for these opportunities to be realised. The strategy could not have come at a better time to focus conversations on what really matters – job creation, in particular low-skilled jobs. It is a piece of work whose time has come.

Mteto Nyati
Chair of the South Africa in the Digital Age Advisory Board

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Executive summary

What are the income-generating opportunities for South Africans in the digital revolution? The South Africa in the Digital Age (SADA) initiative is dedicated to answering this question. Here we summarise our findings on *where* those opportunities are, as well as *how* to realise them. We map out the pathways for the country to create income-generating work in the digital age, detailing the practical actions required.

SADA is complementary to, yet distinct from, other important national technology initiatives. SADA is focused exclusively on income-generating work, not on the many other issues raised by digital change. Secondly, we consider a broader range of digital opportunities than those specifically related to the Fourth Industrial Revolution, such as artificial intelligence. For example, we find very large work opportunities in areas of digital where human interaction plays the star role, with support from AI tools. And above all, our report has a practical slant: we have identified where South Africans are already finding digital work and incomes, and how to scale those opportunities to the point that there are positive impacts on our current state of unemployment.

For the digital revolution to make a dent in our unemployment, it has to provide work for a wide range of skills, with a particular focus on lower-skilled South Africans. Further, the digital revolution has to offer real opportunities for South Africans living in a wide range of places and situations, particularly for those living in our country's townships and villages. Therefore the theme of inclusion runs through the opportunities we have identified. As we discuss below, there are powerful levers for digital inclusion: they are well-known, but have to be acted upon with new resolve. An inclusive digital economy may well, however, look different from our current mental models. For example, we use the language of 'work and income' rather than 'jobs or employment' due to the inescapable reality that in the digital world many people earn sustainable incomes outside of traditional jobs. Social protection remains essential, but the forms of protection may need to change to accommodate new ways of working.

The most promising digital pathways for South Africa are those that would disappoint ideologues of all persuasions. Globally, non-state businesses have led at finding, executing and - particularly - scaling digital opportunities. This has been true even in China, with its massive and sophisticated state-owned business sector. South Africa will be no different. But market fundamentalists should not gloat. Scratch the surface of all leading digital sectors, from the United States to India, and one finds that the state plays an essential, ongoing and massive role in creating the conditions for digital businesses to thrive. This too, will be no different in South Africa; hence the prominence in these recommendations on levers of change and inclusion that the state can pull best of all.

The three main opportunities for creating digital work

Pathway 1: Exporting globally-traded services at scale

During the last fifty years, successful developing countries progressed by linking their domestic labour forces to sources of large and growing global demand, usually many times larger than their own domestic economies. Classically, the global demand in question was for physical products such as natural resources, food or, above all, manufactured goods. Large numbers of workers were absorbed into producing these products, and in so doing created conditions for overall economic and job growth in the country.

As automation spreads, the digital revolution will close off some of these trade-driven pathways to prosperity. On the other hand, **trade in digitised services is exploding**, far outstripping growth in other traded products. Delivering many of those services are real human beings, living in countries like ours. Therefore the pivotal question is: what sort of digitally-traded services are we South Africans best positioned to provide at scale to the world?

SADA believes that the answer is the category of activities known as **global business services (GBS)**. GBS encompasses call centre work, coding, other ICT services, finance, accounting and legal support, and could be expanded to include new services such as tutoring and long-distance care. A quarter million South Africans already work in GBS, more than double the number employed in the automotive sector. Of these, some **50 000 already service off-shore demand**, a number growing by the extraordinary rate of **24% a year**, which makes GBS exports one of the fastest growing job categories in South Africa.

Working closely with the Department of Trade and Industry and the industry body BPESA, SADA has established that with the right policy and business environment, another 100 000 GBS export jobs can be added by the end of 2023. Five GBS growth levers have been identified - expansion in target source markets where more demand can be captured, reshoring work done offshore for South Africans companies, growing 'shared services' niches, developing ICT/digital outsourcing, and growing new types of personalised services. If these levers can be activated *at speed*, the 2023 target is achievable. If the levers can be activated *at scale*, an even larger prize awaits. SADA estimates that **500 000 GBS export jobs could be generated by 2030** if a national programme encompassing training, financial and other support commensurate to the opportunity is sustained. It should be noted that countries such as India and the Philippines have achieved these growth rates with the right sector support strategies.

South Africa's competitive advantage lies in **the interpersonal and linguistic capabilities of our people**. For the most part, these are not elite jobs. In terms of qualifications, a South African matric is sufficient. But these matrics do need to acquire additional skills. Smart and effective training at scale, such as that provided by organisations like Harambee, is the key enabler of inclusion, and of growth. Another is affordable access to both mobile and fixed data. Location matters: providing such connectivity to townships and villages can enable South Africans to participate in the global digital economy without having to get onto a minibus or suburban train to go across town.

Pathway 2: Unlocking demand for low-skilled labour through digital platforms

The digital economy not only provides opportunities in the tradable sector; it also creates new jobs and incomes at scale in the domestic economy. Many of these jobs have fairly low skills thresholds. The main driver is the rise of digital platforms. Whilst global platforms such as Uber, Airbnb and Amazon are the most prominent, **there are upwards of 90 digital platforms operating in the real economy in South Africa** (i.e., facilitating the exchange of tangible goods, services and labour). At least half of these have been developed locally.

Digital platforms are rewiring entire sectors of the domestic economy. Platforms make it much easier for buyers to interact directly with sellers and make pricing more transparent and competitive. Customer rating mechanisms build credibility in ways that do not require the supplier to have a brand. In this way, platforms tend to improve service delivery. All this has two important outcomes. Sellers are now instantaneously connected to customers who would otherwise not have heard of them: informal enterprises can now operate well beyond their immediate location and known circle. Secondly, platforms unlock latent demand for a host of services, including for low-skilled services where the majority of South Africans look to earn an income.

In this way digital **platforms create new incomes and work opportunities**. Taxi services provide an example. SADA estimates that more than 20,000 South Africans now earn a living through e-hailing services, an industry that was barely visible six years ago. The overall effect has been to more than double taxi services jobs in the country. Other platforms also create opportunity. Airbnb directly and indirectly generates the equivalent of 22,000 income opportunities on an ongoing basis. On-demand cleaning service platforms such as SweepSouth have created 3,000 income opportunities for previously unemployed and underemployed individuals in a year alone.

SADA has identified four areas of high potential for low-skilled jobs through these platforms: blue-collar task matching; transport and logistics; food and its delivery; and tourism. In all these areas, the platform approach brings in new players at often lower prices, disrupting the business models of incumbent operators. These platform business models often don't fit easily into regulations created for the legacy business models. Together, this creates the potential for conflict and stagnation. **It is critical that legacy forms of business and regulation not throttle a large and dynamic source of future jobs.**

This does not mean, however, that protection is unimportant. **Responsive, appropriate regulation is the key**. Competition amongst platforms is critical for ensuring that the service providers working through platforms get a good deal. Successful platforms can gain considerable market power which should not be used to exclude up-and-coming competitors or work to the disadvantage of either suppliers or customers.

SADA has identified **levers to ensure that the platform economy is inclusive**. Affordable data access is a must-have as it is throughout the digital space. Specific to platforms, upskilling of supply-side participants and providing financial services to them would greatly expand the circle of beneficiaries.

Fourth, the **design of the platforms has a great bearing on their impact**. The market for digital platforms in South Africa is still immature, mainly because it caters for middle- and upper-income consumers. In order to achieve significant scale, platforms will have to develop business models that are relevant to low-income consumers. And the best platforms would allow their participants to graduate over time to higher-value forms of income generation.

Pathway 3: Establishing South Africa as a frontier technology hub

The digital platforms pathway illustrates how consumer-facing industries are being reconfigured. We should expect that primary industries such as mining and agriculture, and many business-to-business industries, will be similarly transformed.

Who is driving these changes? The short answer is businesses: digitally-enabled firms are reshaping markets, determining customer experiences and capturing significant value. It is not irrelevant where these businesses are based. Yes, if South Africa is to gain the full benefit of the digital revolution, we should welcome global players and encourage them to locate value-adding activities in South Africa. Any attempt to dig a digital moat around our relatively small market would do more harm than good. But it is also critical for South Africa to **build its own digital businesses** - and to do so at a far larger scale. Through

such businesses, South Africa can digitally shape and contribute, not only absorb and receive. South African businesses, and their owners and tech mavens, add far more than a welcome tax base. Evidence shows that when digital businesses are developed here, they tend to locate their back offices and key activities here, creating opportunities for a wide range of skills. Their presence has a powerful spillover effect, encouraging further innovation, beneficial competition and yet more start-ups.

South Africa's goal should therefore be **to become a digital frontier**: a vibrant digital economy in which large numbers of firms translate global technology into new business applications; and in which firms can rapidly scale into regional and global markets from their South African base.

Where should South Africa play? We know from other countries that focus is important to maximise the benefits of government and industry support. SADA has identified the principles for making this important determination. The first is that *success should be rewarded* as current success is the best predictor of future success. Related to that, *policy priorities should be set collaboratively* between the government and market players, as is done in countries like India. The most important principle is that *our challenges are our assets*, those areas of need where new solutions are generated. In short, SADA espouses the Armstrong principle, named after Prof Brian Armstrong of Wits University: *support for digital businesses should focus on areas of emphasised demand that are also regionally or globally scalable*. Real-life examples include security and safety solutions for mines and other production facilities; and disease burden management. There can be many more.

How do we build a digital frontier economy? Digital businesses are a subset of all businesses, and in a sense all businesses are becoming digital. Therefore the general business environment needs to be healthy, reward risk-taking and innovation, and allow firms to respond flexibly to fast-changing markets. Importantly, the environment needs to support rapid scaling as that is critical for competing effectively. Scaling is facilitated by high demand, a large supply of risk capital, and plentiful skills and inputs.

South Africa has some existing advantages: sophisticated schools of engineering have been the seedbeds of digital entrepreneurship internationally, and South Africa has a number of those, which are key national assets. A well-developed financial system and private-equity industry are also pluses. However, when we compare ourselves to countries such as Indonesia, Kenya, Israel and India, **the number of new digital firms, whether start-ups or rapid scalers, is very low.**

To remedy that, concerted action is required. This document contains the main ingredients of such a plan:

- **A deliberate policy of digital demand creation**, through universal digital inclusion, digital-friendly government procurement and opening corporate digital procurement to new South African providers.
- **Address the large gap in early-stage funding for digital businesses** through a variety of measures.
- **Addressing the high-level skills gap**: better schooling and expanded faculties of engineering and computer science are long-term solutions. In the meanwhile, rapid granting of work permits are critical, for both technical and entrepreneurial skills.
- **New forums for joint goal-setting and rapid problem-solving for industry and government**, such as those in leading peers like India.

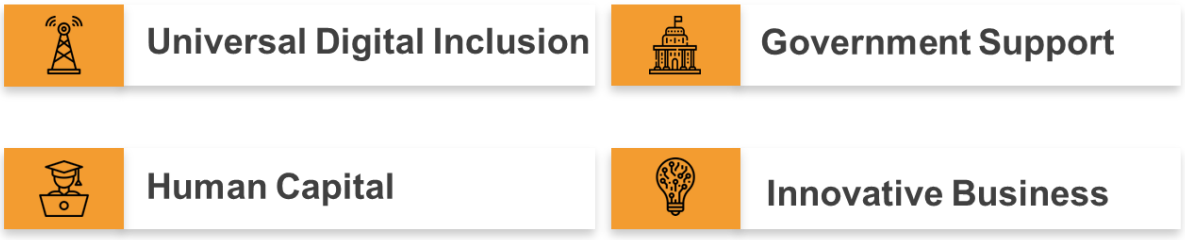
With respect to the last point, SADA has paid close attention to the productive relationship between India's IT sector and its government. Through a well-resourced industry body, NASSCOM, and expert counterparts in government, India has progressively focused on frontier opportunities in which it could develop and then leverage domestic skills in the international market. **It is exciting to report that South Africa is developing similar forms of cooperation**. The success in GBS exports is the result of a productive and

longstanding partnership between DTI and government; other departments such as the recently combined Department of Communications and Digital Technology and the recently renamed Department of Science and Innovation (DSI) are working effectively with business and other stakeholders; and the Public-Private Growth Initiative (PPGI) is an active forum for problem-solving.

To summarise, whilst South Africa has some key elements in place for being a digital frontier economy, a deliberate **national initiative on the digital frontier** could dramatically increase activity.

The imperatives for achieving prosperity

Four imperatives are critical for realising these three pathways to digital jobs and incomes for South Africans.



Imperative 1: Universal digital inclusion as a right

SADA believes that South Africa should commit to universal digital inclusion. Digital inclusion needs to be established and entrenched as a social-economic right, not just for the advantage of individuals, but to secure a stable and sustainable national economy. This is the route to becoming a digitally-empowered nation.

Universal digital inclusion is not just about affordable data access, but extends to enabling meaningful participation in both the digital economy and society. With the objective of achieving digital access, usage and impact, SADA has identified a number of practical steps.

- Access requires more affordable small-bundle data packages and more affordable smartphones. **The steep price curve in mobile data tariffs** needs to be addressed urgently by mobile network operators.
- SADA supports government's proposed **Wholesale Open Access Network** (WOAN) as well as regulatory measures to compel operators to offer services on an efficient wholesale basis. The spectrum not allocated to the WOAN needs to be made available to the market as a matter of urgency.
- Government should **provide tablets to all secondary school learners**, which it could do for approximately 1% of the annual budget of the Department of Basic Education and Training. This alone would address the massive digital divide with respect to large-screen devices.
- Social and structural barriers to effective use have to be addressed. Government could **include digital usage as a requirement across all basic education curricula**.
- Government should **shift service delivery to online platforms**, encouraging more widespread usage of digital technologies. It could also take a strategic decision to develop a digital small business sector, which would create a larger pool of digitally literate small business proprietors and employees.

- Government should launch initiatives to address **the critical issue of language in digital content** so that those not proficient in English are not locked out of the digital economy.

Imperative 2: Human capital development

Developing South Africa's human capital for the digital age is a fundamental requirement for an inclusive and vibrant digital economy. South Africa's education ecosystem has to be able to supply a steady pipeline of candidates with the skills necessary to develop and use technology in order for opportunities in the digital economy to be developed to scale.

These skills range by opportunity, some are technology skills while others simply relate to digital literacy or the ability to work digitally. SADA has identified the practical steps required to build this capacity inclusively.

- In the short-term, the country needs to address **the shortage of critical skills** by improving the work visa application process, keeping the list of critical skills updated and relevant for the digital economy, and addressing the departure of skilled talent from South Africa.
- As part of the solution, government will need to **channel its skills development budget into areas of the economy where it will have the most impact**. This will require improving the Sector Education and Training (SETA) model, which focuses on training outputs rather than outcomes. It should allocate funding based on the likelihood of a candidate obtaining a job, rather than simply providing skills relevant to that sector.
- Further, the private sector needs to **institutionalise digital skills development** by mainstreaming work readiness and on-the-job training for entry-level candidates and developing industry-wide mechanisms for digital re- and up-skilling of existing employees.
- Above all, government needs to develop **a more agile accreditation framework** that takes into account the increased availability of deinstitutionalised education, including education that is delivered digitally, so that these forms of learning are recognised and funded.

Imperative 3: Government support

Policymakers, regulators and other government agencies have a critical role to play in **developing an enabling environment** that will bring the digital economy to scale. As in India and other countries that are rapidly developing their digital economies, the South African government has the opportunity to adopt **an 'entrepreneurial state' approach** by continuing to invest in and support the scaling of key sectors in the digital economy.

This includes government in its role as the regulator of business and labour markets, as an enabler of innovation through policy, and as a purchaser of digital business services. The role of government as a provider and regulator of human development services and digital infrastructure are addressed in those respective sections. SADA has identified the practical steps required to achieve this entrepreneurial state approach.

- The new forms of work emerging in the digital economy are challenging conventional views of employment and the labour market regulation that governs fair pay and work conditions. There is currently no consensus globally on how new forms of digital work, such as gig workers, should be classified and what forms of protection to afford them. South Africa needs to develop a **forward-looking regulatory regime** that takes a call on these distinctions to provide business certainty and provide protection to gig workers where necessary.
- Government will need to address **the regulatory bottlenecks** limiting the ability to scale digital businesses. South Africa's regulatory architecture has been slow to adapt to new digital ways of

doing business which has led to bottlenecks to scale. Regulators also need to give adequate input to new and emerging digital players in addition to traditional industry groupings when updating regulatory frameworks. This includes South Africa's **competition framework** which needs to grapple with the new competition dynamics emerging in the digital economy.

- South Africa's ability to scale digital work will be heavily influenced by the country's global attractiveness. For many opportunities to scale, South Africa requires **empowered public/private teams** that can work together to market South Africa abroad and manage investment incentives. Competitive and sufficiently broad incentives remains mission-critical for developing a global-scale export industry.
- Government needs to establish a cross-cutting **digital innovation team** within government with a clear mandate to set strategic directions, co-ordinate among government departments, and play an oversight role in implementing national development plans relating to the digital economy.
- The digitisation of key government services, beyond the improvement in public service delivery, constitutes a **significant source of domestic demand for digital and ICT services**. Government should identify social/public digitisation opportunities, together with an effective procurement mechanism consistent with best practice, to position government as a purchaser of digital business.

Imperative 4: Innovative business

For innovation to occur and digital opportunities to be realised, South Africa's private sector must be well positioned to create and apply innovation processes and technologies. The drivers of an innovative business sector include the availability of innovation finance and non-financial innovation support, the effectiveness of the start-up ecosystem and business appetite for collaboration, the innovative capabilities of entrepreneurs and corporates; and the role of ecosystem coordinators.

SADA has identified the practical steps required to address the current gaps among these drivers in South Africa's innovation ecosystem.

- South Africa needs to **unlock the demand for digital innovation in corporation**s, which still have a legacy preference for purchasing from large suppliers rather than smaller start-ups. This can be achieved by utilising the BBBEE codes, which already create an incentive for enterprise development, in conjunction with social partnerships that open South African corporates to business from domestically-based start-ups and small digital business.
- **Equity funding models need to be reassessed** in order to accommodate the under-served need for seed capital and early stage funding for innovation. Government and the private sector therefore need to develop a combined early-stage capital provision strategy while the DSI's programme of grant support is expanded dramatically.
- It is further essential to **identify South Africa's competitive advantages in digital** and to **penetrate key offshore market**s in those areas where South Africa is well placed to compete globally. This can be supported greatly by the **scaling of ecosystem coordinators** who play a critical role in bringing together the stakeholder needed for global digital opportunities to be realised. For example, South Africa would benefit from the creation of **Centres of Excellence in its priority areas of competitiveness** that bring together academic institutions conducting research on the potential and application of the technology, start-ups who are using the technology to develop commercial solutions, large enterprises that need these commercial solutions for improving their business models, and government stakeholders to provide funding and alleviate regulatory bottlenecks.

Actions required to close the readiness gaps

SADA has identified the **large amount of work that remains to be done** to realise and scale the opportunities presented to South Africa in the digital age. This section summarises the identified actions for each imperative into three timeframes: quick wins which can be achieved in the next year, medium-term priorities which require action over the next three years, and long-term investments that require effort over the next five years.

Given the breadth of work that remains, **prioritising effort and resources will be crucial**. In the diagram below, we identify the top five priorities that have the greatest potential to move the needle in developing South Africa's digital economy in each timeframe.

Quick wins

1. Address the steep mobile data pricing curve;
2. Channel government budget for education and training into areas in which jobs are in demand;
3. Unlock corporates as a source of demand for digitisation;
4. Establish a digital innovation team in government; and
5. Identify South Africa's areas of competitiveness in digital.

Medium-term priorities

1. Develop industry-wide methods for reskilling;
2. Address regulatory barriers that are creating bottlenecks in the scaling of a digital economy;
3. Position government as a strategic digital purchaser;
4. Shift government service delivery to online platforms;
5. Develop an early-stage capital provision strategy.

Long-term investments

1. Penetrate key offshore markets;
2. Modernise South Africa's accreditation system;
3. Scale the set of ecosystem facilitators;
4. Update South Africa's labour laws to reflect the realities of the digital age; and
5. Establish digital access as a socio-economic right.

Introduction

South Africa cannot lose any more time in preparing for the extraordinary opportunities and risks presented by the digital age. While digital and other technological innovation brings significant risk, particularly in displacing labour in traditional sources of employment, it also offers new opportunities for creating work at scale in a digital economy.

Identifying and capturing these opportunities is paramount because many of the traditional pathways to employment growth are starting to taper off. In particular, the massive shift of manufacturing activity from the developed to the developing world in the late twentieth century allowed a number of countries in South-East Asia to leverage low labour costs to rapidly expand job opportunities. With automation becoming commonplace in many manufacturing value chains, low labour costs are no longer a major advantage and entering global value chains in manufacturing may not provide countries like South Africa with the desired job creation impact.

As such, South Africa's ability to charter new job creation pathways in an increasingly digital world will determine the country's collective prosperity as a nation. In addition to creating new forms of work, having these work opportunities open to as many South Africans as possible will be critical to this trajectory creating inclusive outcomes.

South Africa in the Digital Age (SADA) is an urgent multi-stakeholder initiative to identify these opportunities and the imperatives for realising and scaling them. It is a partnership between Genesis Analytics, the Gordon School of Business Science, and the Pathways for Prosperity Commission on Technology and Inclusive Development, with input from a broad range of stakeholders across the country including government, the private sector, and civil society.

The SADA process began with an opportunity assessment to identify concrete areas where digital and other technologies can give rise to scalable work opportunities for a broad range of South Africans. This was followed by a digital readiness assessment to consider what enablers needed to be in place for these opportunities to be realised and scaled, and diagnose the state of these enablers in South Africa today. This early work of the initiative identified that there were already many parts of the South African economy that were making use of digital opportunities to create and grow income-generating work for South Africans, but that these areas were nascent and struggling to scale.

In particular, there were clear areas of concrete opportunities and associated imperatives which merited close attention. To address this, SADA convened a series of national dialogues to bring together stakeholders with the creativity to imagine a future where a large number of South Africans can find meaningful work in the digital economy, and practical experience to identify the concrete actions needed to make this a reality. There were six dialogues convened to cover the areas of opportunity and the imperatives, with participation from a broad mix of stakeholders drawn from government, the private sector and civil society.

This paper is the outcome of this process. It sets out three pathways for South Africa to achieve inclusive growth in the digital age, and details four imperatives that the country will need to get right for these pathways to successfully be journeyed. It is a strategy primer because it sets the blueprint for further national dialogue and strategising as a country. The paper is structured into three sections:

Part A: South Africa's Pathways to Inclusive Growth details the three areas where SADA has identified nascent work-creating activity that has significant potential to scale. *Part B: The Imperatives for Achieving Prosperity* sets out key areas for actions in order for these pathways to be realised across four imperatives:

universal digital inclusion, human capital, government support, and innovative business. *Part C: Actions to Close South Africa's Readiness Gaps* indicates the timeframe in which these actions need to be taken, and by whom, to provide a sense of quick wins, medium-term priorities, and long-term investments.

OPPORTUNITIES

Globally-traded services

Labour-absorbing platforms

Frontier technology hub

IMPERATIVES

- Universal Digital Inclusion
- Government Support
- Human Capital
- Innovative Business

PART A

SOUTH AFRICA'S PATHWAYS TO INCLUSIVE GROWTH

Pathway 1: Exporting globally-traded services at scale

Improvements in the affordability and capabilities of information and communication technology (ICT) are supporting an enormous expansion in the trade of services globally. Although this currently constitutes about one quarter[a] of global trade [1], it is growing quickly at a faster rate than manufacturing, mining or agricultural exports [2]. This has been driven by the fact that services constitute the majority of value addition in most developed economies, and a significant number of developing economies [3]. As companies in these markets look to keep costs low and improve productivity, outsourcing functions like customer support, finance and accounting, legal, or digital services to offshore markets with a cost advantage has become an imperative.

The experience of countries like India and the Philippines has shown that capturing this demand for global business services can stimulate serious scale, and achieve a commensurate growth in employment creation and export earnings. The Philippines' BPO sector grew threefold in ten years, contributing one-third of the country's export earnings and employing 1.3 million people by capturing about 15% of the global demand for BPO services [4]. India's export IT and BPO sectors are still growing at around 8% per year, contributing over one-quarter of the country's export earnings and employing over 4 million people [5]. As all sectors undergo digital transformation, the demand for outsourced digital services in particular will increase – digital services already constitutes 24% of India's IT and BPO outsourcing revenue [5].

Going forward, the expansion of globally-traded services is likely to increase as new technologies develop and ICT improves. Improvements in high-bandwidth internet, telepresence, virtual and augmented reality technologies, and telerobotics are already broadening the range of globally-traded services as tasks which were proximity-based can now be provided remotely [6]. This is also giving rise to new forms of globally-traded services that move beyond business services into personalised and social services in the education, healthcare and lifestyle sectors.

This boom in demand for globally-traded services represents a real opportunity for South Africa to scale work opportunities in a way that is open to as many South Africans as possible. In both India and the Philippines, the scaling of global business services has been a positive driver of inclusion and female empowerment [7]. This strategy primer sets out a clear path for South Africa achieving scale and inclusion in its own right.

South Africa's winning aspiration

South Africa already has a small but fast-growing global business services (GBS) sector that currently employs 255,604 people [8]. The recent growth of the sector has been supported by a partnership between the sector's industry association Business Process Enabling South Africa (BPESA), the Harambee Youth Employment Accelerator, and the Department of Trade and Industry (dti). The partnership has resulted in improved global marketing efforts, a revised incentive scheme from the dti to support export-oriented job creation, and an improved pipeline of young talent into the sector. This has culminated in a five year growth strategy with a target of an additional 50,000 export jobs created between 2019 and 2023.

a The true value of services' share of exports is likely higher as services account for a significant share of manufacturing exports. Estimates suggest that services may account for up to half of global trade when measured by value addition. [6]

Only about one quarter of the sector's current total job creation is from the offshore market [8], and in 2017 78% of these jobs were for business from the UK where the sector has historically focused [9]. As such, there is enormous potential to scale the sector by expanding and tapping into new sources of demand globally. The 50,000 additional jobs committed in the sector's growth strategy is in-line with the sector's current growth trajectory, and in the first two quarters of 2019 an additional 8,712 jobs have already been created [10]. As such, the targeted 50,000 new jobs are "bankable", and this strategy's ambition is to double this target to 100,000 cumulative net new jobs within five years.

This represents a significant scaling of the sector that will require the realisation of additional concrete opportunities. These include expanding the market share of South Africa's BPO services in current target source markets like North America and Australia, developing shared service capabilities in the niche areas where South Africa has a competitive advantage, and evolving the sector into digital and ICT outsourcing services. The size of these opportunities in the short-medium term will be limited by serious scale constraints that need to be addressed before further scaling can take place. As such, 100,000 net new jobs in five years represents the sector's "yellow" or interim target of what is possible in the medium term.

Moving beyond five years, this scale potential can increase considerably. This strategy's ambition is to grow the number of cumulative net new jobs from globally-traded services to 500,000 over an eleven year period (2019-2030). Achieving this growth assumes that there will be reputational gains from the first five years of scaling as South Africa establishes its track record in source markets and develops a better reputation for larger outsourcing operations. It will also require the sector to innovate into new areas of globally-traded services to keep pace with changing demand and take advantage of new sources of global demand in personalised and social services. Meeting this target will benefit from work that is currently outsourced from South Africa to other markets being "reshored" by South African corporates.

Achieving the scale envisaged over this 11 year period will also require the sector to access new capacity more inclusively. With scale comes the possibility of locating outsourcing centres directly in low-income communities where their employees typically travel from, rather than in business centres. There is also the possibility of expanding outsourcing activities beyond the major economic hubs into tier II and III cities where unutilised capacity currently exists. In addition, virtual outsourcing models that allow employees to work from home, or via strategically located community centres, through the development of digital platforms can enable scale and support inclusion. If all of these possibilities can be actualised, the generation of 500,000 cumulative net new jobs represents the sector's long-term "green" target.

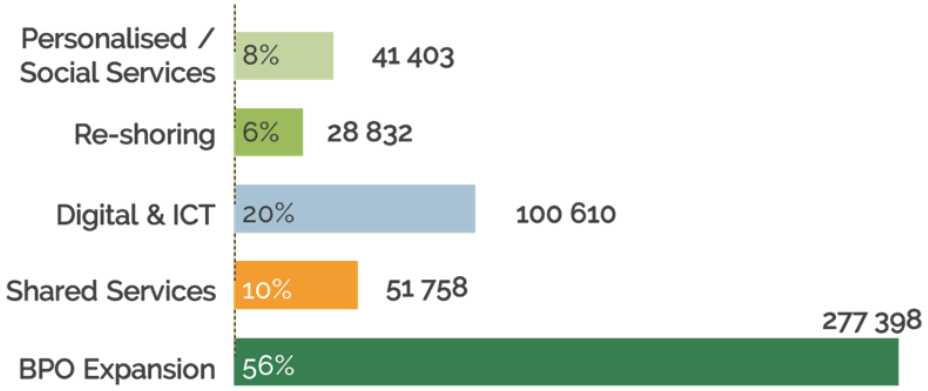
Figure 1: Job creation projections over yellow and green target periods

Note: the 47,000 jobs that have accumulated in the base year are carried through to the five and eleven year targets
Source: Data and calculations made by Genesis Analytics, BPESA and Harambee Youth Employment Accelerator, 2019

Where South Africa can succeed

In order for South Africa to achieve this, it is critical to identify and capture concrete sources of demand which can support this. There are five key opportunities identified here where South Africa is well positioned to do this. The Figure below shows the distribution of expected job creation across each opportunity which is elaborated on in the following sub-sections.

Figure 2: Distribution of possible jobs created across opportunity areas



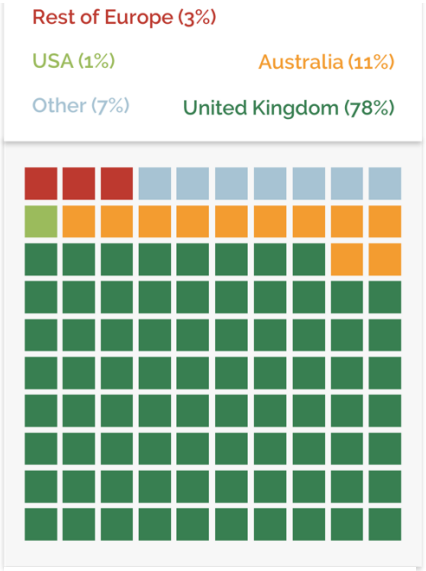
Source: Data and calculations made by Genesis Analytics, BPESA and Harambee Youth Employment Accelerator, 2019

BPO expansion in target source markets

The majority of South Africa's GBS activity caters to a single source market – the UK. In 2017, only 22% of the headcount from offshore work was made up of work from other source markets [9]. There is enormous potential for South Africa to expand its market share of outsourced services from markets in North America (the USA and Canada) and Australia as more companies are looking for a viable alternative to India and the Philippines. As English-speaking markets, South Africa has a natural advantage in providing high-quality, empathic English-speaking talent with strong cultural ties and favourable accents for these source markets [9].

The GBS sector is also currently providing a smaller share of offshore services to the rest of Europe and the Asia Pacific region which represent additional markets for growth. In the longer term, there is potential for South Africa to expand its footprint into the rest of Africa, a geography that will increase in importance as the demand for business services in economies transitioning away from agriculture increases.

Figure 3: Current GBS source market split by headcount, 2017



Source: Everest Group, "South Africa's BPO industry - Pivoted for the next generation of service delivery," 2018

Development of niche shared services

In addition to the contact centre work that makes up the majority of the current offshore activity within the GBS sector, South Africa is well-positioned to develop niche areas of shared services that can be exported. This can take the form of captive shared service centres that global companies set up in a particular location to service the various components of the business across multiple locations (e.g. a shared legal processing hub for a global law firm). It can also take the form of a third party company that provides outsourcing services in a particular area of specialisation (e.g. legal process outsourcing).

In either case, South Africa has existing capabilities in a number of areas that make it well suited for providing these shared services. There are already shared service centres in South Africa set up for legal processes, customer lifecycle management/support and knowledge services, and South Africa's strong capabilities in finance and accounting and human resources provide a concrete opportunity going forward. This mix of niche shared services are particularly strong across a number of industry verticals where South Africa has good capabilities: insurance, telcos, financial services, and healthcare. The sector is currently in the process of developing a clear shared services value proposition which can be used to market South Africa as a competitive location for delivering these services.

Reshoring of domestic activity

There are a significant number of South African corporates who, like companies anywhere in the world, outsource some of their non-core functions to offshore locations. This represents a lost opportunity for the domestic business service outsourcing sector to capture this demand. Much of this offshored work is in areas where South Africa's GBS sector has yet to develop a compelling value proposition - shared

services and digital/ICT outsourcing. These functions are currently being outsourced to locations like India where there is a clear cost advantage and the capabilities to provide scaled solutions.

Bringing this offshored work back to South Africa constitutes a significant opportunity for growing domestic job creation, and should be thought of as a form of export revenue. It would make sense for this to start in the area that South Africa is closer to developing – shared services – moving into digital/ICT functions like testing, data services, and analytics as local capabilities develop.

Corporates in South Africa have to make a number of strategic decisions about how to outsource and where to locate their operations – choosing between local and offshore locations, and choosing the location for shared service centres that service multiple markets. Having an appropriate incentive framework in place to encourage these corporates to choose to locate or relocate their functions in South Africa can influence this decision-making process. The dti's current incentive scheme for GBS does not cover jobs created by reshoring outsourced work. These incentives do not necessarily need to be financial – these decision-making processes could be influenced by changes to South Africa's BBBEE framework to recognise work that is located or relocated in South Africa as part of the scoring system.

Development of digital/ICT outsourcing

In addition to BPO services, the need for digital transformation across all industries and organisations has given rise to the next wave of outsourcing in ICT and digital services. Traditional ICT outsourcing locations like India have made a large push to capture the rising demand for services associated with digital transformation across multiple industries including data services, analytics, AI, cloud computing, cyber security, and others [11]. Other emerging locations like Egypt have managed to quickly develop capabilities in ICT outsourcing by capturing the significant demand in Arabic-speaking markets [12].

South Africa has a well-developed domestic ICT sector. A number of the large global tech companies have set up subsidiaries in South Africa – including Microsoft, Google, Oracle, IBM, Intel, SAP, Dell, Amazon Web Services, and others – and South Africa is seen as a regional hub and supply base for neighbouring countries [13]. However, the sector has not pivoted to significantly tap into global sources of demand for ICT and digital services. This represents an enormous opportunity for scale if South Africa can carve out niche service areas to compete with established digital outsourcing locations like India or Egypt.

There are already areas where South African companies are doing this. One example is technical support where contact centre agents provide troubleshooting support to users of software applications. South Africa's strong capabilities in contact centre support and good English-speaking talent suggest that this is an area for strong potential growth. Another area that South Africa could realistically scale within the next five years is testing. This function - requiring multiple people to test software, applications or websites to find bugs or errors and ensure that it is fit for use - can easily be crowdsourced[b] and does not require deep tech skills. Moving beyond the five year timeframe, South Africa may be able to scale capabilities in a range of other exportable services like the data storage, cleaning, and labelling required for analytics; and AI applications, data analytics, cyber security, and cloud engineering.

b A sourcing model for obtaining inputs to a process from a large and relatively open group of internet users. This could take the form of outsourcing to individuals outside an organisation, or internal crowdsourcing from within an organisation's globally-distributed workforce.

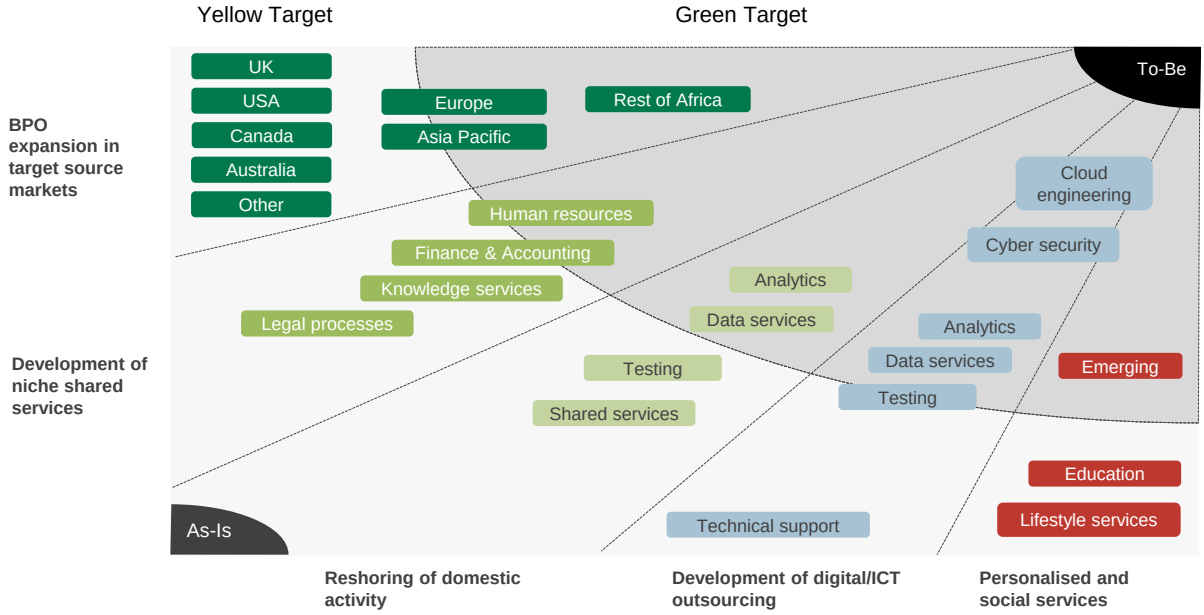
Personalised and social services

In addition to the business services discussed above, there are also a set of personalised and social services being traded globally. While business services tend to be provided through a business-to-business model, personalised and social services which are typically proximity-based are now being delivered virtually, often in business-to-consumer or freelancer-to-consumer models using digital platforms.

There are already companies in South Africa that provide lifestyle services such as virtual assistants and concierge services, both to businesses and directly to individuals. There are also companies that have set up centres for English tutors to provide virtual tutoring services to students in China, as well as a number of global platforms that allow South African individuals to provide tutoring and other educational services virtually to clients in offshore markets. Going forward, there may be a number of emerging areas where these kinds of personalised and social services are delivered virtually.

The figure below summarises the five areas and details the specific opportunities within each area.

Figure 4: Areas for expanding globally-traded services in South Africa

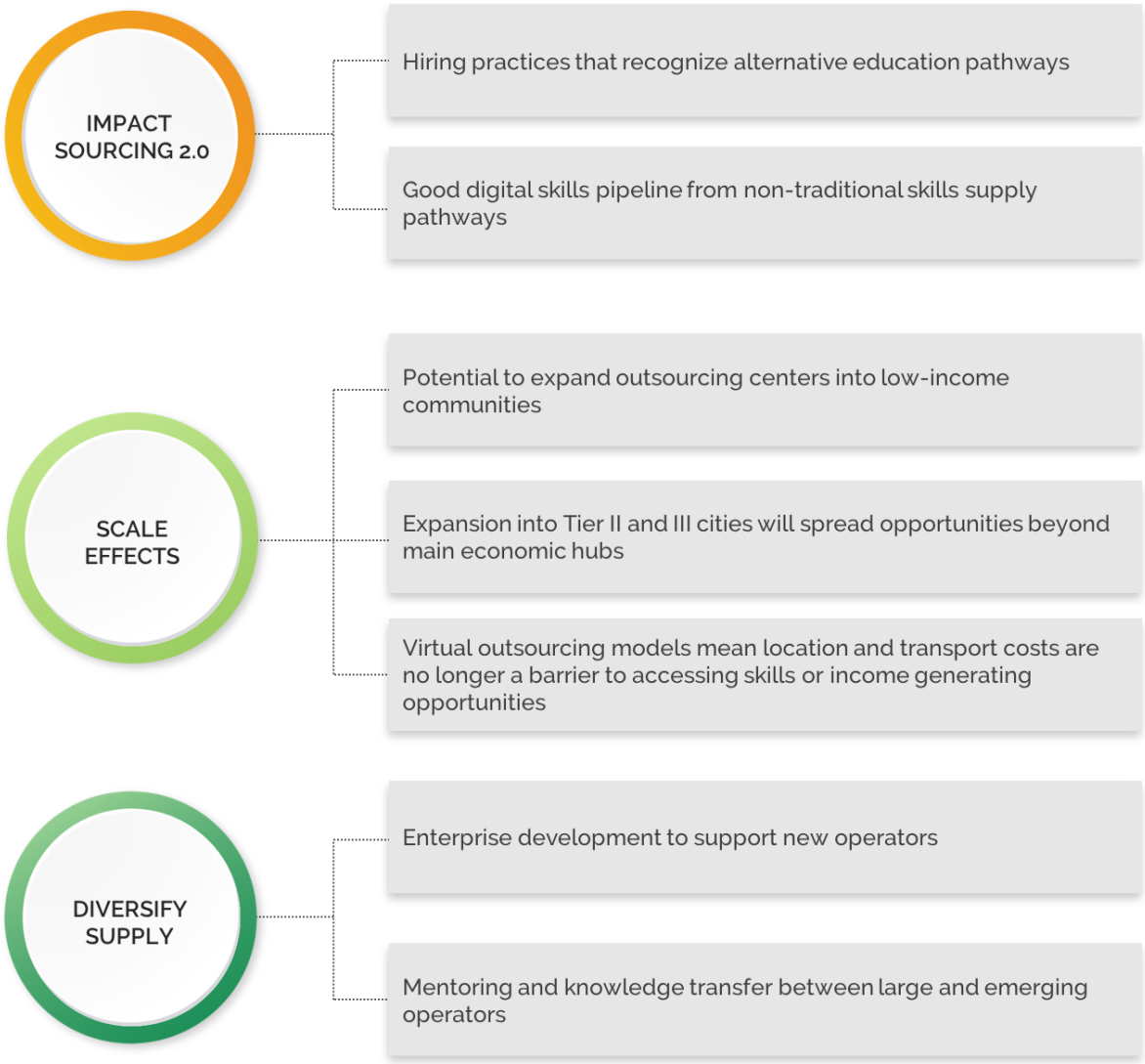


Source: developed by Genesis Analytics, BPESA, Harambee Youth Employment Accelerator and Knowledge Executive, 2019

Mechanisms for inclusion

Although a significant scaling of employment will have an impact on inclusion by virtue of more people earning an income, it will not necessarily address the many barriers to accessing these job opportunities. These include educational attainment and access to upskilling opportunities, the readiness of young candidates in particular for the world of work in order to retain a job, and the location of where these jobs are created. All of these factors have strong intersectionality with race and gender in South Africa [14]. As such, specific mechanisms for inclusion are critical to opening these job opportunities more broadly, and will become a commercial imperative for scaling in order to access new capacity on the supply side.

Figure 5: Mechanisms for inclusion in scaling globally-traded services



Source: developed by Genesis Analytics, BPESA, Harambee Youth Employment Accelerator and Knowledge Executive, 2019

The GBS sector in South Africa already has inclusive hiring and impact sourcing initiatives in place. The practice involves GBS operators connecting high-potential, disadvantaged youth to available jobs in the sector which they otherwise would not have had access to. In 2017, 25-30% of the jobs in the export GBS sector were filled through inclusive hiring [9]. This practice has now been included in the dti's incentive scheme for the sector with a target of 20% of all new jobs created being filled through inclusive hiring.

Scaling impact sourcing and inclusive hiring so that a greater share of jobs are filled through these initiatives will require a strong digital skills pipeline that diversifies beyond traditional education pathways. These traditional pathways – such as attending a Model C high school and acquiring a bachelor's degree – are not open to the majority of young South Africans, and so scaling will require young talent to be sourced from alternative pathways [14]. The work that Harambee Youth Employment Accelerator is doing through its own contact centre academy and in partnering with alternative skills providers like WeThinkCode and Explore Data Science Academy is notable in this regard. Scaling will also require a

culture shift within GBS operators to recognise these alternative education pathways and the importance of providing entry-level candidates with work readiness and on-the-job training.

The second mechanism for inclusion relates to the **geographic impact of scale effects**. Currently jobs in the GBS sector are largely concentrated in South Africa's major Tier I cities of Cape Town, Johannesburg and Durban – only 4% of export GBS jobs in 2017 where located in other locations, mainly Tshwane and Pietermaritzburg [9]. In addition, even within these Tier I cities, the location of GBS jobs are largely found in business centres in affluent areas where employees have to travel from lower-income areas to access jobs. One of the key reasons for this is that South Africa's fixed line infrastructure (fibre or ADSL) is highly concentrated in affluent areas and business centres and does not cover low-income communities [14]. As GBS operators require quality and affordable high-bandwidth connections, the potential to set up GBS centres directly in low-income areas has not been realised.

Addressing this geographic concentration of job creation will become a commercial as much as an inclusion imperative as the GBS sector scales. Operators will need to expand delivery locations into low-income communities so that additional capacity can be readily accessed and to reduce transport costs. Once available capacity in Tier I cities is exhausted and salaries rise as a result, operators will have to look to expanding into Tier II and III cities to access additional capacity and keep staffing costs down. Eventually a migration to virtual outsourcing and gig economy models where employees or freelance agents can work from home or from strategically located community centres will be required to be competitive. These models are already taking off in other markets and can significantly reduce the operational costs for GBS operators who no longer require fixed infrastructure in the form of delivery centres, but rather specialise in developing digital platform capabilities to source, upskill and manage virtual agents. [c]

Lastly, **diversifying the supply of globally-traded services** should be an imperative so that inclusion is not just driven by job creation, but also a diversified supply chain. As the sector scales, it will be important to encourage the emergence and growth of new GBS operators. This can be facilitated through enterprise development support provided to new operators, particularly those setting up delivery centres in low-income communities and in Tier II and III cities. It can also be facilitated through mentoring and knowledge transfer between large and established operators and small emerging operators. This can be encouraged by non-monetary incentives, such as the BBBEE codes which already recognise enterprise development activities within its scoring framework.

Imperatives for realising the pathway

In Part B of the primer, we discuss in detail the actions required to realise the three pathways to prosperity that are identified in this strategy primer. Below we provide a summary of the actions that are most relevant to this pathway of exporting globally-traded services at scale.

c For example, in the customer support space see the Solv platform developed by Concentrix to provide customer query resolution among a decentralised network of approved virtual agents (https://www.solvnow.com/). Another example in the digital/ICT outsourcing space is the Topcoder platform maintained by Wipro which crowdsources sets of coding micro-tasks through paid challenges (https://www.topcoder.com/)

Quick wins – actions in the next year:

- **Improve efficiency of South Africa's work visa process:** South Africa already has a framework for allowing critical skills in shortage to be brought in from foreign nationals. However the process is inefficient and needs to be improved so that companies investing in South Africa can address skills shortages quickly.

- **Update the relevance of the critical skills list:** the work visa process for critical skills in shortage mentioned above is linked to the critical skills list which is currently outdated and not driven by industry. This needs to be rectified by updating the list with industry consultation on an ongoing basis.
- **Re-channel budgeted government funds behind jobs in demand:** the Sectoral Education and Training Authorities must re-channel skills development funds for training that is most likely to fill jobs in demand, rather than any training related to the sector.
- **Empower public private teams:** industry associations and the dti's agencies responsible for managing investment incentives and marketing South Africa as an investment destination abroad need to be empowered with rapid approval capabilities for work visas and deals to improve the pace at which global companies relocate work to South Africa in the digital economy.
- **Continue competitive and sufficiently broad incentives:** the dti already provides a successful incentive scheme for the job creation in the GBS sector. Going forward, this scheme will need to be adapted to ensure it remains relevant and can support emerging opportunities like getting South African corporates to reshore outsourced work to South Africa.

Medium-term priorities – actions over the next three years:

- **Develop sector-specific charters for FDI:** while it is important that global business service companies comply with domestic requirements and contribute to the transformation of the sector, the development of sector-specific charters for FDI with dispensation for global companies on BBBEE and other requirements will improve the rate at which these operators consider scaling their South Africa operations.
- **Develop industry-wide mechanisms for reskilling:** there needs to be an industry-wide and cross-sector mechanism developed for carrying out the widespread digital re-skilling South Africa requires, such as digital platforms that collect, curate and provide learning material on future skills needed.

Long-term investments – actions over the next five years:

- **Penetrate key off-shore markets:** South Africa needs concerted and consistent investment in off-shore market development, including efforts to understand market purchase decision points better; missions to key markets and customers; and visits by key customers to South Africa.
- **Mainstream work readiness and on the job training in the private sector:** The private sector in South Africa needs to address the reality that building a scalable digital skills pipeline will take time and that candidates will not always have experience and the ability to "hit the ground running". Industry therefore needs to develop the capabilities to properly on-board and develop candidates that are entering a new job field for the first time.

Pathway 2: Unlocking demand for low-skilled labour through digital platforms

Digital platforms are providing a new form of market structure which destroys many of the economic barriers preventing markets from functioning optimally, and generating inclusive outcomes. Digital platforms remove information asymmetries by aggregating demand and supply, making buyers and sellers visible to one another and standardising prices. This makes locating customers or service providers quicker and easier with fewer transaction costs. Digital platforms also generate trust and credibility by screening buyers and sellers, and through crowdsourced rating mechanisms. This is transforming the generation of trust in markets from personal face-to-face interactions to decentralised and virtual systems. Lastly, digital platforms can greatly improve service delivery through more efficient payment transactions and personalised services. This allows buyers to get better service for less, and for sellers to spend more time on value-creating tasks.

All of these effects result in improvements in efficiency and reductions in cost, with two important outcomes. The first is connecting sellers to new customers or suppliers. This is particularly important for informal enterprises which can typically only access resources and market participants in their immediate location. The second is unlocking latent demand for a broad suite of services, including low-skilled services where the majority of South Africans look to earn an income. By unlocking latent demand for these services, the market opportunity for suppliers of these services increases. This means more South Africans can earn an income by providing these low-skilled services.

For example, South Africa's metered taxi industry has traditionally been small. Metered taxis were comparatively expensive, difficult to find, and of varying quality. As such, there was relatively low demand for metered taxi services, and in 2006 only about eight thousand people were earning an income from metered taxi services [15]. With the introduction of e-hailing platforms like Uber, the cost of using metered taxi services reduced drastically[d] alongside an improvement in convenience and quality. As such, more South Africans are now demanding metered taxi services through e-hailing platforms, and there are over 20,000 people earning an income driving through e-hailing platforms[e].

In the future, these platforms are likely to become the commonplace way of consuming and providing a broad range of services because of these efficiency and cost reduction effects. As digital platforms emerge across multiple sectors, supporting them to scale constitutes a real opportunity for connecting many South Africans to income-generating work in low-skill services. This strategy primer sets out the areas where this has potential, and the priorities for ensuring that these opportunities are inclusive and not exploitative.

South Africa's winning aspiration

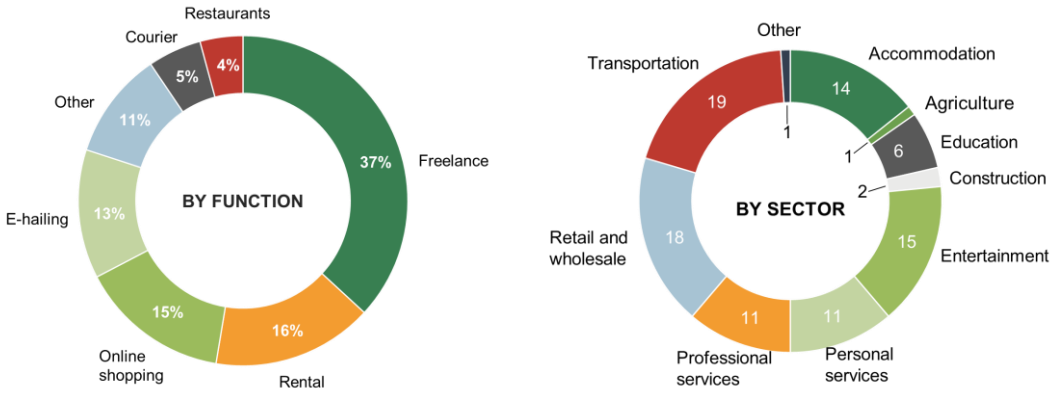
There are upwards of 90 digital platforms operating in the real economy in South Africa (i.e. facilitating the exchange of tangible goods, services and labour rather than the provision of financial service), and at least half of these are local platforms that have been developed from South Africa [16]. The figures below show

d In South Africa, Uber fares were found to be almost 265% lower than metered taxi fares offered by incumbent service providers [40]

e Based on inputs from e-hailing platforms in the SADA dialogue "unlocking demand for low-skilled labour through digital platforms"

the spread of these platforms across function and sector, demonstrating that digital platforms have already emerged in a number of key areas.

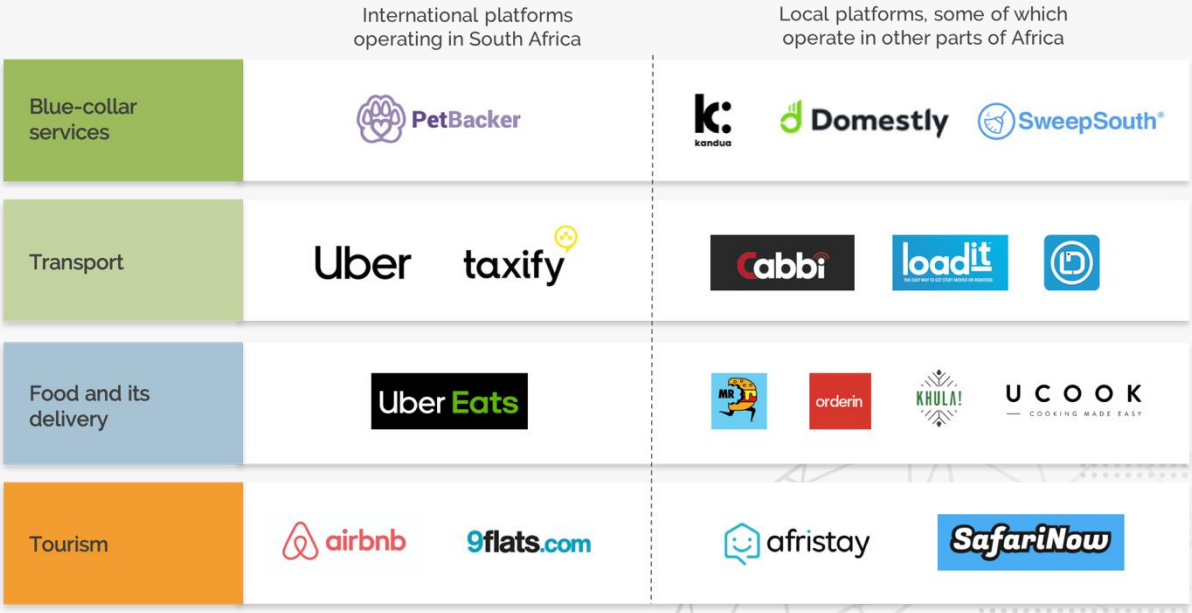
Figure 6: Digital platform distribution by function (%) and by sector (count)



Source: Insight2Impact Africa's digital platform database, 2019

Many of these platforms have business models which require participation of low-skilled labour, and so have the potential to unlock latent demand for low-skilled goods and services. Some of the main areas where this potential is being realised are blue-collar services, transport, food and delivery, and tourism. A selection of local and international platforms operating in South Africa in these areas is shown below.

Figure 7: Selection of digital platforms with potential to unlock demand for low-skilled labour



Source: Genesis Analytics research, 2019

Despite the number of platforms that have emerged, most of these remain nascent. The efficiency and cost reduction effects of demand and supply matching have not been extended to a number of low-skill service sectors, and even where it has the platforms that are active have not yet scaled significantly. In particular, strong competition between digital platforms operating in a particular sector has yet to form,

as is the case in markets like India where platforms are achieving significant scale. This is reflective of the fact that the market for digital platforms in South Africa has yet to mature.

This is partly because digital platforms in South Africa largely cater to the relatively affluent middle class consumer market. As such, these platforms are only providing services to a small portion of consumers and will struggle to scale significantly, especially if they have to share this consumer segment with other competing platforms. To achieve serious scale domestically in a competitive environment, digital platforms will have to develop business models that are relevant for low-income consumers.

Given that digital platforms reduce costs through efficiency effects, this is a real opportunity in South Africa. In particular, for digital platforms to be developed across a range of service sectors and skill levels, and for these platforms to scale significantly by tapping in to currently underserved consumer segments. This is an opportunity for expanding access to income-generating work for many South Africans, particularly those that may otherwise be locked out of opportunities in the digital economy.

For these opportunities to be realised inclusively, and not contribute to exploitation, there will have to be adequate competition between platforms rather than one dominant platform. This will be important because it prevents a race to the bottom on earnings and ensures that supply-side participants are adequately protected and upskilled. The nature of platform businesses are different to conventional businesses because they facilitate transactions between buyers and sellers, rather than having customers themselves. As such, supply-side participants are as important to platforms business models in a competitive environment as demand-side participants since they can also choose to take their business to another platform. Furthermore, platforms in a competitive environment have a commercial incentive to upskill their supply-side partners to improve the customer experience of their demand-side partners.

Where South Africa can succeed

In order for South Africa to support the emergence and scaling of multiple digital platforms, it is important to first identify where these platforms have the potential to scale, what their business models look like, and their impact on increasing low-skill income generating opportunities. Four areas of high potential are identified here.

Blue collar task matching

A large number of South Africans seek and earn income in a range of "blue collar" work such as domestic services, gardening, painting, maintenance, and electrical and plumbing work. Much of this work has relatively low barriers to entry (it is low- but not no-skill work), and is informal and part time or ad hoc. As a result this work can be precarious and uncertain, and a number of constraints contribute to inefficient matching of available supply to demand. There are high costs of work and worker searching, a reliance on referrals, and often both customers and providers are unable to verify the credibility of work-seekers and employers.

Task matching platforms reduce many of these frictions and information asymmetries in low-skill labour markets by creating trust and providing a single platform for workers/businesses to list their services and search for customers/employers who require their services. Many of these platforms have a screening functionality that provides background and verification checks on all job-seekers while customers and employers have to register to use the platform using verifiable details. These platforms often have central

rating systems for both supply and demand-side participants. A number of these platforms also provide supply-side participants with training to improve their technical skills and customer service levels.

Domestic services are an area where labour-matching platforms have created direct labour and short-term job opportunities. On-demand cleaning service platforms such as Domestly and SweepSouth have created 600 and 3,000 income opportunities for previously unemployed & underemployed individuals in one year, respectively [17]. The ease of searching, increase in trust, and convenience of on-demand services when using these digital platforms has the potential to unlock latent demand among customers that would not previously choose to use domestic cleaning services.

The installation, repairs and maintenance market is another area where the gains from digital platforms hold great potential. Low-skilled artisans providing painting, plumbing, electrical and related services often sit outside hardware stores hoping to find customers. Digital platforms like Kandua are now aggregating the supply of these services by vetting and onboarding artisans to their platforms, and matching them to demand in areas where they work and for tasks that they are adequately experienced to perform. Kandua has over 4,000 active artisans on their platform[f].

Task matching platforms without an industry focus are also creating a market-place for low-skilled labour, and may stimulate similar income generating opportunities. The Clockwork app markets itself as a blue-collar labour matching platform which provides consumers with access to a variety of low-skill service providers covering promotions, cleaning, landscaping, restaurants/hospitality, events, and building/construction. The platform vets and scores service providers and provides customers with a list of possible job-seekers who are most appropriate for the task based on an assessment of task requirements and the service provider's capabilities.

Transport and logistics

For people seeking transport services, e-hailing platforms offer services at a lower cost to traditional metered taxi providers and offer similar efficiency gains as the task matching platforms described above. In the product market, the cost-effectiveness of e-commerce and ease of ordering on these platforms is quickly being recognised by consumers and seeing rapid growth in demand. Both of these platform types have the potential to create significant low-skill earning opportunities from the demand for logistics and transport services at the front-end of these supply chains. In addition, e-commerce platforms are creating further opportunities for income generation at the back-end of the supply chain for small scale producers and entrepreneurs who have the opportunity to access new markets.

The impact of e-hailing platforms unlocking latent demand for metered taxi services has already been described in the introduction to this section. In addition to e-hailing, digital platforms have the same potential in a range of other transport-related logistics functions. Platforms like LoadIt and Droppa aggregate and match supply and demand for the transport of furniture and large goods. Platforms such as Picup and WumDrop offer a range of courier and delivery services by matching customers, drivers and delivery hubs together. In the case of Picup, the model includes crowd-sourced hubs which allows companies with unused floor space to act as a delivery hub where connected drivers drop off and collect goods from.

As well as the latent demand unlocked through cheaper and more convenient transport services, the increasing popularity of e-commerce is providing additional demand for these services as well. Digital platforms can offer products at reduced costs as they leverage economies of scale and avoid fixed costs

f Based on inputs from digital platforms in the SADA dialogue "unlocking demand for low-skilled labour through digital platforms"

such as store rental. In South Africa consumer demand on these platforms is rising at an estimated rate of 20-35%, far quicker than traditional retail [18] . Digital commerce platforms like Superbalist, Takealot, Zando, Yuppichef, and the many start-up stores that offer online shopping and delivery services will continue growing quickly and may become important employment creators in their own right. Low-skill workers are being demanded in fulfilment centres, to transport goods from warehouses to depots, and to deliver goods to customers.

Food and its delivery

Door-to-door delivery services in the online food market are providing opportunities for low-skilled drivers to earn income on platforms that link available drivers to restaurant food deliveries. These include UberEats, Mr D, Order In, and Appetite which connect restaurants offering take-away orders with independent drivers to customers wanting food delivered to them. Online food ordering and delivery in South Africa is catching up quickly to more mature markets like the US with a 64% increase in food delivery projected through to 2023 [19]. Mr D, South Africa's largest food delivery platform by customer numbers, saw a 210% growth in 2017 alone [20]. In 2019, the platform saw a threefold rise in the number of driver partners to 3,000 in one year [19]. Using the same ratio of downloads to drivers, Uber Eats likely has approximately 1,200 drivers.

In the same way as e-hailing platforms are unlocking latent demand for taxi services, online food ordering platforms appear to be having the same effect on restaurant orders. While eating out at a restaurant is usually considered to be an expensive and irregular affair, the potential for digital platforms to make ordering out easier and cheaper could unlock latent demand for online food ordering and delivery services. Although this may not be happening in South Africa yet – UberEats charges up to 30% of the meal price as its fee, which restaurants often get back through higher prices [19] – evidence from India suggests that this occurs when the market matures and there is more competition[g].

In addition to food ordering and delivery, digital platforms are also supporting income generation at the level of food production. The Khula app provides smallholders farmers and drivers in South Africa with access to warehouse management facilities and on-selling of farm products to consumers through an e-commerce platform. This provides consumers who demand and value foods organically grown by small-scale businesses with an efficient way to access them. Income opportunities are supported for smallholder farmers who can scale their operations above subsistence and sell surpluses through the digitally-enabled shared cold chain. Although this is not directly creating low-skill labour opportunities, it has the potential to support income generation in the farming sector. With an estimated 4 million smallholder farmers – of which 160,000 produce goods for sale – the scale of this opportunity could be significant. While the bulk of digital platforms cater to individuals and consumers in urban centres, platforms like Khula that provide rural entrepreneurs with access to new markets may offset this metro-centricity by extending income creating opportunities beyond city borders.

Tourism

The tourism sector is also evidencing the gains of unlocking latent demand from digital platforms. Airbnb has significantly reduced the cost of accommodation services in South Africa by allowing home owners to rent rooms within their homes to tourist. A one-night stay at a hotel in Johannesburg starts from about R1,200, while Airbnb offers accommodation for as little as R250 per night[h] . This has resulted in more people

g Based on input from digital platforms interviewed by Genesis Analytics in India, September 2019
h Based on a web search for available properties in Johannesburg using Airbnb and Trivago, a hotel listing platform, in 2019.

being able to afford travel to and within South Africa. This has created significant direct and indirect income opportunities: from June 2017 to June 2018, Airbnb directly and indirectly generated an estimated R8.7bn in economic impact- equivalent to 22,000 income opportunities in a single year [21].

Although most of the people benefiting from this revenue are homeowners, Airbnb is a particularly interesting example because of the value-added services offered to the tourists using the platform. Tourists are able to book "experiences" on the platform where there is a growing community of entrepreneurs and informal tour operators who serve as tour guides and offer other tourism and leisure activities, often within their own homes. This has particular application for low-skilled individuals that can access income-generating opportunities through the platform without having to be homeowners. With 95% of hosts recommending local businesses to their guests, the income opportunities that arise because of Airbnb are expected to continue to see a steady increase as the addressable tourism market increases [21].

Mechanisms for inclusion

For the scaling of these platforms to generate additional income-generating opportunities, it will be important that they do not just facilitate "churn" in informal labour markets. Put differently, if all the existing suppliers and consumers of a low-skill service just migrate to a digital platform, no additional income generation will necessarily be created. As such, the income generation impact must be created by the unlocking of latent demand. In other words, that the efficiency and cost benefits of consuming low-skills services through a digital platform are enough to merit consuming more of these services, and so providing more income earning opportunities to suppliers.

Although this has an indirect impact on inclusion by virtue of more people earning income, it is critical to consider how these opportunities can be open to a broader variety of South Africans - particularly those who may otherwise be locked out of opportunities in the digital economy – and to improve the standard of life and career prospects of those accessing the opportunities.

A number of platforms are recognising the importance of **upskilling supply-side participants** with training in a variety of forms. In more mature markets like India, skills development has become a core business of digital platforms because of the higher rates of inter-platform competition. As such, upskilling supply-side participants to improve their technical and soft skills has become a commercial imperative to improve the customer experience and satisfaction among the platform's customers. Since most of these supply-side participants have limited face-to-face interaction with the platforms after being on-boarded, the platform's app becomes the primary channel of communication and delivering training content. Some of the platforms have "gamified" training content to make it more appealing and relevant to supply-side participants.[i]

In South Africa, digital platforms are following suit and providing platform participants with access to training that they would not usually have access to as part of their work. This training is provided in three important areas. Firstly, technical training on the hard skills needed to provide quality services. For example, SweepSouth provides training to the domestic workers on their platform who require it, from cleaning processes to tech management [22]. Secondly, soft skills training to improve suppliers engagement with customers. For example, Kandua is currently considering how to deliver soft skills training on communication, work ethic, and problem solving which have been identified as the biggest obstacles to artisans successfully accessing work opportunities.[j] Lastly, platforms are delivering enterprise development training to help prospective supply-side participants set themselves up as self-employed business owners.

i Based on input from digital platforms interviewed by Genesis Analytics in India, September 2019
j Based on inputs from digital platforms in the SADA dialogue "unlocking demand for low-skilled labour through digital platforms"

For example, Airbnb has introduced the Africa Academy to upskill entrepreneurs in rural and under-resourced communities to become hosts or create tourism experiences [23].

The second mechanism for inclusion is the potential to provide supply-side participants with **access to a range of financial services and benefits**. Because digital platforms typically collect funds from customers and distribute payments to suppliers, they have a wealth of earnings data on supply-side participants and the ability to execute automatic collections, which make them appealing partners for a variety of financial service providers. For example, the blue collar task matching platform UrbanClap in India has partnered with a non-bank financial institution to provide credit services to its participants, based on credit scores from their earnings data.[k] In another example, Ghanaian e-hailing platform Dropping has partnered with People's Pension Trust to provide pension products for its drivers [24].

Some of the platforms in South Africa are currently providing these benefits. For example, Uber in South Africa provides all drivers with free emergency medical insurance through Chubb when they are on trips, and has negotiated affordable vehicle cover for its partners with MiWay, VUM insurance and Oaksure[l]. SweepSouth provides its platform participants with life and disability insurance at no additional cost through a partnership with the fintech Simply [25]. Droppa provides embedded insurance against loss or damage to goods for the customers using its platform, which minimises the personal liability of the couriers providing the delivery services [25]. The expansion of credit and pension or savings products in South Africa has great potential as financial service providers look to find ways of accessing electronic earnings data from informal sector participants [26].

Lastly, accessing income opportunities through digital platforms can enable participants to **graduate to higher-value forms of income generation**. This mostly pertains to e-hailing and delivery platforms where there is a distinction between the owners of vehicles and their drivers. Although Uber does not release this data, Uber drivers in South Africa have asserted that the majority of drivers do not own their cars, having to split their revenue with the vehicle owner or lease the vehicle to earn their income [27]. Although there are asset financing companies with dedicated products for e-hailing, approved vehicles for Uber remain expensive in South Africa and many drivers report not being eligible for accessing these credit agreements [27].

A potential enabler of drivers being able to own their own vehicles and earn more revenue could be from fintech lenders and asset financiers that provide cheaper financing and use alternative credit scoring methods [28]. For example, Uber in Kenya has partnered with Jumo, a fintech company, to offer Jumo Drive. The digital vehicle finance product allows Uber drivers to access financing for their own vehicles using driver behavioural data from their Uber accounts to generate a scorecard [29].

Imperatives for realising the pathway

In Part B of the primer, we discuss in detail the actions required to realise the three pathways to prosperity that are identified in this strategy primer. Below we provide a summary of the actions that are most relevant to this pathway of unlocking demand for low-skilled labour through digital platforms.

k Based on input from digital platforms interviewed by Genesis Analytics in India, September 2019
l Based on information available on Uber's website: https://www.uber.com/za/en/drive/

Quick wins – actions over the next year:

- **Expedite the WOAN policy and spectrum allocation:** the government's current plans for implementing the wireless open access network and spectrum allocation need to be expedited to improve the cost structures of mobile network operators.
- **Address steep price curve of mobile data tariffs:** in order to address the high cost of mobile data when consumed in small amounts, the Independent Communications Authority must work with MNO providers to review their tariff plans and reduce the steepness of their price curves.

Medium-term priorities – actions over the next three years:

- **Address regulatory bottlenecks to the scaling of digital business:** sector regulators need to reconsider their regulatory frameworks in light of digital business models, and provide adequate input for new and emerging digital players in addition to traditional industry groupings.

Long-term investments – actions over the next five years:

- **Modernise South Africa's labour laws for the digital age:** the Department of Employment and Labour should consider how new forms of work that arise from opportunities in the digital economy are challenging conventional views of employment and fair pay and work conditions.
- **Update South Africa's competition framework:** South Africa's Competition Commission should consider embarking on a process to establish how the principles behind South Africa's competition policy framework translate into the digital age, and identify new areas of priority.
- **Establish digital access as a socio-economic right:** to recognise the foundational role that digital access plays in realising digital economic opportunities inclusively, the country should consider whether digital access now constitutes a socio-economic right in South Africa.

Pathway 3: Establishing South Africa as a frontier technology hub for the region

Digital technologies are rewiring entire industries and economies. Media, banking, postal services, retail and telephony are being upended by entrants with far lower costs. This process is likely to accelerate and spread. The reason is that digital technologies are changing the deep forces that determine industrial structure: transaction costs, how information is generated and shared, how production occurs, how products get from producers to consumers, and how risk is managed. Hence the striking fact that even seemingly 'physical' industries such as tourism, food and transport have been disrupted by the power of digital technology. We should expect that largely untouched sectors such as mining, agriculture, and manufacturing (in South Africa) will in the next decade be profoundly impacted by these technologies.

This primer repeatedly points out that government is a critical facilitator and regulator of this process. But it is also true that in every digitising society the vast bulk of applied innovation, design, scaling and delivery in digital technology happens in business firms. Business firms are reshaping markets, determining customer and provider experiences, and capturing significant value. In this way digital firms have become critical custodians of opportunity for both business activity and individual lives. It is therefore a matter of social and national importance that South Africa be the home to as many of these firms as possible, whether locally or foreign-owned.

This section is therefore dedicated to the imperative of establishing South Africa as a digital frontier: a vibrant digital economy in which large numbers of firms translate global technology into new business models and applications, and which enables those firms to rapidly scale into regional and even global markets from their South African base.

South Africa's winning aspiration

Whilst the new global giants have indisputable heft, it is an error to believe that the global firms will be the only winners. Their business models often favour standardised, global offerings driven from a centralised decision-making structure based, for example, in Silicon Valley. For all the scale benefits of this approach, it creates opportunities for other firms. As the venture capitalist Kai-Fu Lee has pointed out, "every divergence between Chinese user preferences and a global product became an opening that local competitors could attack." [30] Substitute 'African' or 'developing world' for 'Chinese', and that encapsulates the digital frontier opportunity for countries like South Africa.

Powerful companies and business models have already emerged in countries as diverse as Indonesia, Nigeria, Kenya, Brazil and South Africa, growing from national to regional and even global markets. But this is not a matter of cultivating one or two national champions. The fluid and unpredictable nature of digital innovation demands an ecosystem in which many opportunities are pursued; and where many firms, each with its own approach, cluster around each opportunity. What Lee points out has been the case in China, and what is also observable in Kenya, Israel, India and Indonesia, will be true for South Africa: we will need many firms, furiously competing, with high rates of attrition and recombination through corporate action, and with significant spill-overs amongst them. Because spill-over amongst firms – of skills, knowledge, market access and even capital – is an engine of success, large numbers are critical. This is why the presence of firms is more important than whether they are domestically or foreign owned. To maximise

learning and robustness, it is also critical to have diverse types of firms, in terms of size, country of origin, affiliation to multinationals or lack thereof, technology choice and route to market.

South Africa has several powerful advantages in positioning itself as a digital frontier economy of this kind. The most important of those are its dynamic schools of engineering. The engineering faculties of the Universities of the Witwatersrand, Pretoria, Cape Town and Stellenbosch, for example, have spawned numerous technology start-ups, often in close physical proximity. This is not surprising, as first-rank engineering schools have been critical to the most successful centres of high-innovation entrepreneurship. The United States, India and China are examples. Another asset is South Africa's well-run programme of government support for innovation under the Department of Science and Innovation, including programmes of financial support for innovation and the CSIR. Finally, South Africa's well-developed private equity capabilities provide expansion support for technology companies that are at or close to profitability.

Yet compared to countries with comparable levels of development or size of economy, South Africa has a small number of digital start-ups – far smaller than the vibrant sector required for our ambitions as a nation. And this is the case at a time when cloud computing and other digital services make it easier for new firms to enter markets. How do we turn this around? We first consider the areas in which South Africa can succeed, before turning to areas of intervention.

Where South Africa can succeed

Because of the intensity of global digital competition, and the likely need for significant public and industry-level efforts, it is good for South Africa to be focused. Of course, business activities *outside* the chosen focus areas can reveal new and large opportunities. Therefore preferences should not be absolute, and most policy measures should be agnostic as to sub-sector or technology choice. Nonetheless, some measures can only be provided within select domains, as real resources have to be committed. An emerging digital giant such as India has prospered by focusing government and corporate capabilities in key areas, often coordinated by the powerful industry body NASSCOM (National Association of Software and Service Companies). In this way India has grown global pre-eminence in critical areas such as the application of artificial intelligence and the internet of things in domains like agriculture, industrial and retail automation, healthcare and education.

In deciding where to focus, the following principles are proposed.

First, *reward success*: invest in those areas where firms are growing and successfully entering new markets; conversely, areas that stagnate should not receive special support. Discipline in this respect is essential.

Second, *set priorities collaboratively*. In India, focus areas were decided in close collaboration with industry as represented by NASSCOM. Given the fast pace of change, focus areas should not be defined too narrowly: it is reasonable to select personalised cross-border services; but not an instance of that offered by one firm only.

Third, in B2B application, *mostly focus on applications in particular domains (sectors)*. It is difficult for domestic firms to be world-beaters in general purpose technologies that apply to all sectors. Those tend to be driven by very large countries and very large corporations with far larger R&D spend. South Africa has a far higher likelihood of success in digital applications in particular industry domains or 'verticals', such as mining, retail, security – and indeed has exceeded global performance in such settings. For example, South African technology company Stone 3's machine-learning-driven plant safety systems (which service production facilities around the world) achieve success rates some 25% better than global best performance.

Fourth, *our challenges are our assets*. South Africa has both sophisticated capabilities and some acute challenges, ranging from infectious disease management, to water scarcity, to non-traditional skills acquisition. The solutions to all these challenges potentially have a strong digital component. If we can develop the right products and approaches for South Africa, we can help solve similar challenges that are faced by many other societies in the region and internationally. This regional opportunity is particularly compelling given the formation of the African Continental Free Trade Area (AfCFTA) which will see tariff liberalisation across a broad set of African countries. As South Africa takes the Chair role of the African Union in 2020, there is a prime opportunity to propel the AfCFTA into operation to realise this gain.

In short, we propose that the country apply the Armstrong Principle, named after Prof Brian Armstrong of Wits Business School: ***digital support should prioritise areas of emphasised demand in South Africa that are also regionally or globally scalable***. In our view these areas present extraordinary opportunities.

Mechanisms for progress and inclusion

One of the reasons why it is so critical for a vibrant start-up ecosystem to be developed is to tackle the issue of incumbency in South Africa. The entrenchment of incumbent providers accounts for the current high cost of digital services and a concentrated distribution of wealth from digital business. Consider the key ingredients for a digital start-up that will scale into success: the entrepreneur; capital that is willing to take the risk; inputs – of which the most critical by far is skilled employees; and sufficient demand. In each of these four areas, there is significant work for South Africa in order for these components to be inclusive.

South African digital businesses will only succeed in favourable conditions of high domestic demand for those services. Under such conditions competitors will crowd in, bringing the dynamic benefits of rivalry. Therefore South Africa needs to formulate a deliberate policy of digital demand creation. As with so many aspects of this primer, this will require concerted action between government and business.

Many promising digital applications are business-to-consumer. South African households of all income levels are therefore a critical source of demand for new business models. At slightly more than 50%, South Africa's internet usage is amongst the highest in Africa, but significantly lower than many other countries. And, as discussed in the primer, the quality of Internet usage is low: universal access and meaningful use are high priorities. If South Africa can be a leader in terms of universal digital inclusion, its people will be able to access new digital economic opportunities and its firms will be far better placed to be pioneers in the development of services for developing world consumers and citizens.

As part of the SADA research, the Indian digital business creation ecosystem was investigated in situ. This brought to the surface critical gaps in South Africa's start-up environment. These insights correlated with inputs from South African entrepreneurs. Principally amongst those are:

- Poor early-stage financing for new digital businesses,
- Limited availability of high-level technical digital skills critical for product development,
- A lack of coordinated development of the ecosystems in which new business will thrive and scale.

In addition to addressing early-stage financing for South African entrepreneurs, the availability of high-level technical expertise is a powerful business and social multiplier and therefore should be directly maximised. In the short and medium term, it means establishing a clear and simple work permit facility for firms to bring such skills into the country, as they are virtually always additive. Further, it means that leading engineering faculties need to be provided the support to operate at the global technology frontier, and to increase the throughput of graduates and post-graduates at that level.

With respect to the third gap, ecosystem development, the role of NASSCOM in India provides a salient example. NASSCOM does the following:

- Plays a co-ordinating role between academic institutions conducting research on the potential and application of the technology, start-ups who are using the technology to develop commercial solutions, large enterprises that need these commercial solutions for improving their business models, and government stakeholders to provide funding and alleviate regulatory bottlenecks;
- Engages with government at federal and state level to provide industry input on the drafting of regulation, design of incentives and other support, and implementation of policies impacting the tech sector;
- Markets Indian tech start-ups and corporates in key offshore markets, including connecting with potential clients and funders;
- Identifies future skills requirements among India's tech sector, and works with industry to develop mechanisms for digital re-skilling;
- Conducts research and knowledge dissemination relating to economic and industry trends, sources of demand, the impact of future technologies, etc.
- Promotes the transformation of India's tech sector including gender inclusion, employment creation, and rural economy development.

The clear role of NASSCOM in developing a vibrant and more inclusive digital ecosystem in India suggests that South Africa would benefit from a similarly capacitated industry association or similar body playing this role.

Imperatives for realising the pathway

In Part B of the primer, we discuss in detail the actions required to realise the three pathways to prosperity that are identified in this strategy primer. Below we provide a summary of the actions that are most relevant to this pathway of establishing South Africa as a frontier technology hub for the region.

Quick wins – actions over the next year:

- **Establish a digital innovation team in government:** the President should consider establishing a cross-cutting team providing strategic leadership, co-ordination across government departments, and executive oversight for developing South Africa's digital economy.
- **Unlock corporates as a source of demand for digital innovation:** a combined social partnership and BBBEE code-driven approach to open South African corporates to business from domestically-based start-ups and small digital businesses must be created.
- **Identify South Africa's areas of competitive advantage in digital:** South Africa will have to identify niche areas of technology application that the country is well-positioned to provide, that solves local challenges and can be exported regionally and globally.

Medium-term priorities – actions over the next three years:

- **Position government as a strategic digital purchaser:** National, provincial and local government should prioritise the digitization of socially-important services, such as education and healthcare, with South African-based suppliers contracted to stimulate the development of digital firms.
- **Establish Centres of Excellence in priority areas:** after identifying South Africa's areas of competitive advantage in digital, the government in co-ordination with industry should establish centres of excellence in these priority areas. These centres would bring together academic institutions conducting research on the potential and application of the technology, start-ups who

are using the technology to develop commercial solutions, large enterprises that need these commercial solutions for improving their business models, and government stakeholders to provide funding and alleviate regulatory bottlenecks.

- **Develop an early-stage capital provision strategy:** government, the industry and the financial sector should jointly formulate an early-stage capital provision strategy to address the concentration of funding in the expansion and scaling funding stages.

Long-term investments – actions over the next five years:

- **Develop a digital services small business sector:** the digitalisation of government and large-business organisations and processes, and the sincere external sourcing of supply chains for such services from small businesses, would promote the development of a digital services small business sector in South Africa. This would create a pool of more digitally literate small business proprietors and employees (in South Africa often perceived to be the least "tech-savvy" sector of the economy). The flow-through effect of digital literacy into the communities in which the small businesses are rooted would be considerable.
- **Scale the set of ecosystem facilitators:** a broader set of ecosystem facilitators need to be encouraged, and funding models from industry or government devised to support those that succeed, to coordinate stakeholders around the realisation of digital economic opportunities.

PART B

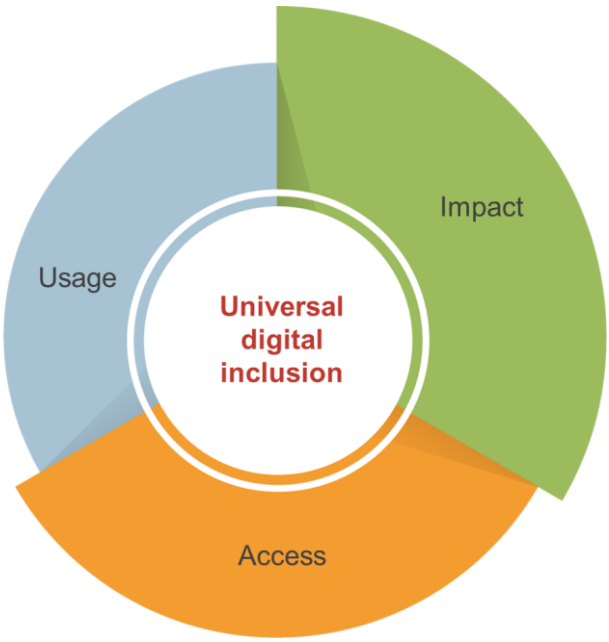
THE IMPERATIVES FOR ACHIEVING PROSPERITY

Imperative 1: Universal digital inclusion

South Africa's transition to a digitally empowered nation will not succeed if it remains the preserve of a select few empowered digerati. It would be both unattainable in terms of not harnessing the full potential of South African human capital, as well as unsustainable due to amplification of socio-economic fault-lines already visible in deteriorating social cohesion.

Universal Digital Inclusion is thus truly the first imperative. We have chosen the word *inclusion* deliberately. As can be seen from Figure 8, "access" is only the first step of the journey to meaningful participation in the digital economy and society. Critically, access needs to be followed by usage, and usage needs to be directed towards delivering positive individual and societal impacts.

Figure 8: Framework for Universal Digital Inclusion



The challenge of universal access

Access is often seen as the end-goal of digital inclusion strategies. However, it could more accurately be considered to be the entry-level condition for digital inclusion. And for people to have *access* to the digital economy and society, digital access needs to be both *available* and *affordable*.

In the SADA Digital Readiness Assessment, we explore how network *availability* in South Africa, whilst not yet truly universal, is not the primary challenge relating to access. Fibre coverage, though still modest, is growing rapidly (1.6m homes passed by September 2019). [31] Conversely, ADSL coverage has declined slightly to approximately less than two million homes as Telkom proceeds with ADSL to fibre conversion and copper decommissioning[m], and fibre is set to overtake ADSL as the dominant form of fixed data connection to the home. In the South African context, however, wireless coverage is the more universal mode of data access, and 3G population coverage in 2019 stands at 99.5%, with 4G coverage at 76.7%.

[m] Based on information provided by Telkom

[32] Although 3G performance is not comparable to fibre or high-end ADSL performance, it is arguable that 3G availability meets the condition of availability of access to the internet.

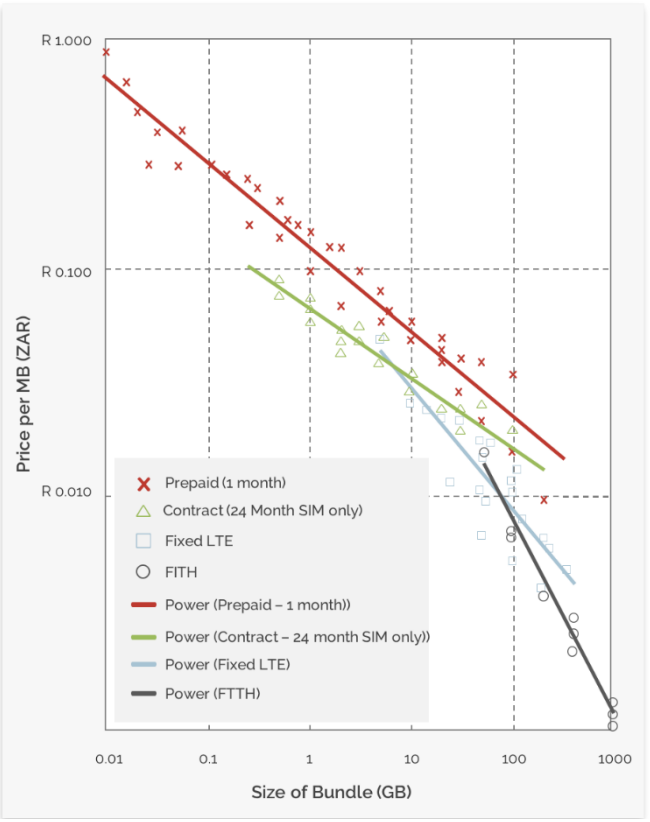
Smart-phone availability, on the other hand (smart-phones being the primary device by which people access the internet), is a somewhat bigger challenge, with smart-phone penetration at 81.7% in 2019, up from 74% in 2018. One of the main causes of this deficit is the high price of smart-phones.

Which brings us to the second necessary condition for access, namely *affordability*. This has been the subject of considerable debate recently, where it is argued that South African mobile data prices are considerably higher than global peer countries and are "anti-poor". Across all data plans (bundle sizes and contract types, i.e. pre-paid, contract, fixed wireless) and networks, Figure 9 suggests that the former argument is not always true. Data prices in the region of 0.1 US cent per MB could not be considered to be expensive by any reasonable benchmark.

However, what is also evident from Figure 9 is that the slope of the price curves is too steep: entry level, small-size prepaid bundles – precisely those which economically-challenged groups depend on for access – are two or more orders of magnitude more expensive per MB than large, contract plans. Prices of more than 50 South African cents per MB are indeed expensive by any norm. So it is indeed true to say South Africa's price structure for mobile data is anti-poor. Affordability is thus a bigger constraint on access than availability. This has been the subject of the Competition Commission's recent Data Services Market Enquiry, the findings of which are discussed later in this section.

The final material condition which enables access to the internet is the availability of enabling ecosystems, specifically electricity. In 2018 84.7% of South African homes had access to an electricity connection. [33] This remains a significant inhibitor of access to digital infrastructure.

Figure 9: Data Prices in South Africa



Source: Company Websites, September 2018, June 2019, Author's analysis.

Towards universal access

Several interventions have been announced by Government to improve both availability and affordability of digital access. These include, firstly, the establishment of the Wholesale Open Access Network (WOAN), and related measures to compel incumbent operators to offer services on an efficient wholesale basis. Notwithstanding ongoing debate about the merit and viability of the WOAN, its role in catalysing the establishment of an effective and efficient wholesale market for mobile data services in South Africa should stimulate progress towards more affordable small-bundle pre-paid services. (The role of the WOAN in

stimulating final closure of the 3G coverage gap to 100%, or accelerating the closure of the 4G coverage gap, is much more contestable).

Address steep price curve of mobile data tariffs. Secondly, mobile service providers need to review their tariff plans and reduce the steepness of the price curves in Figure 9. The argument that these plans carry high initiation costs is tenuous given the zero-touch nature of pre-paid top-ups. The Competition Commission has laid out several interventions with a view to substantially reducing data pricing, especially for more entry level plans, which operators need to address.

Expedite spectrum allocation. Thirdly, the spectrum not allocated to the WOAN needs to be made available to the rest of the market urgently. Spectrum constraints increase the cost structure of mobile operators and trap capital in inefficient capacity upgrades. Note, however, that our view is that release of spectrum is a separate issue from the preceding two interventions and should not be used as a delaying tactic to implement those.

Provide tablets to secondary learners across South Africa. Fourthly, large-screen devices represent a particular challenge for universal access. One intervention to be explored could be the more radical provision of tablets to secondary learners in South Africa. Consider for example that there are approximately 5.6 million secondary school learners in South Africa. If each one of these was to be given a tablet, costing say R2000, the total cost of such a programme would be approximately R11 billion. This seems like a lot – but consider the total annual budget for the Department of Basic Education, including the nine provincial departments of education, is R281 billion for 2019/20. [34] So a programme like this could be deployed for approximately 1% of the overall education budget over a 4 year term. The total cost would be less than half the *increase* in the budget from 2018/19 to 2019/20.

Establish digital access as a socio-economic right. Finally, a similarly controversial possibility is to make digital access a basic human right. On the one hand this would elevate the discourse and would presumably focus public sector attention on the issue. On the other hand such a proclamation would be somewhat hollow without accompanying obligations on identified parties to deliver such access, and the legal and financial implications of such an obligation to prove would be very challenging. But this debate should be encouraged.

The challenge of usage

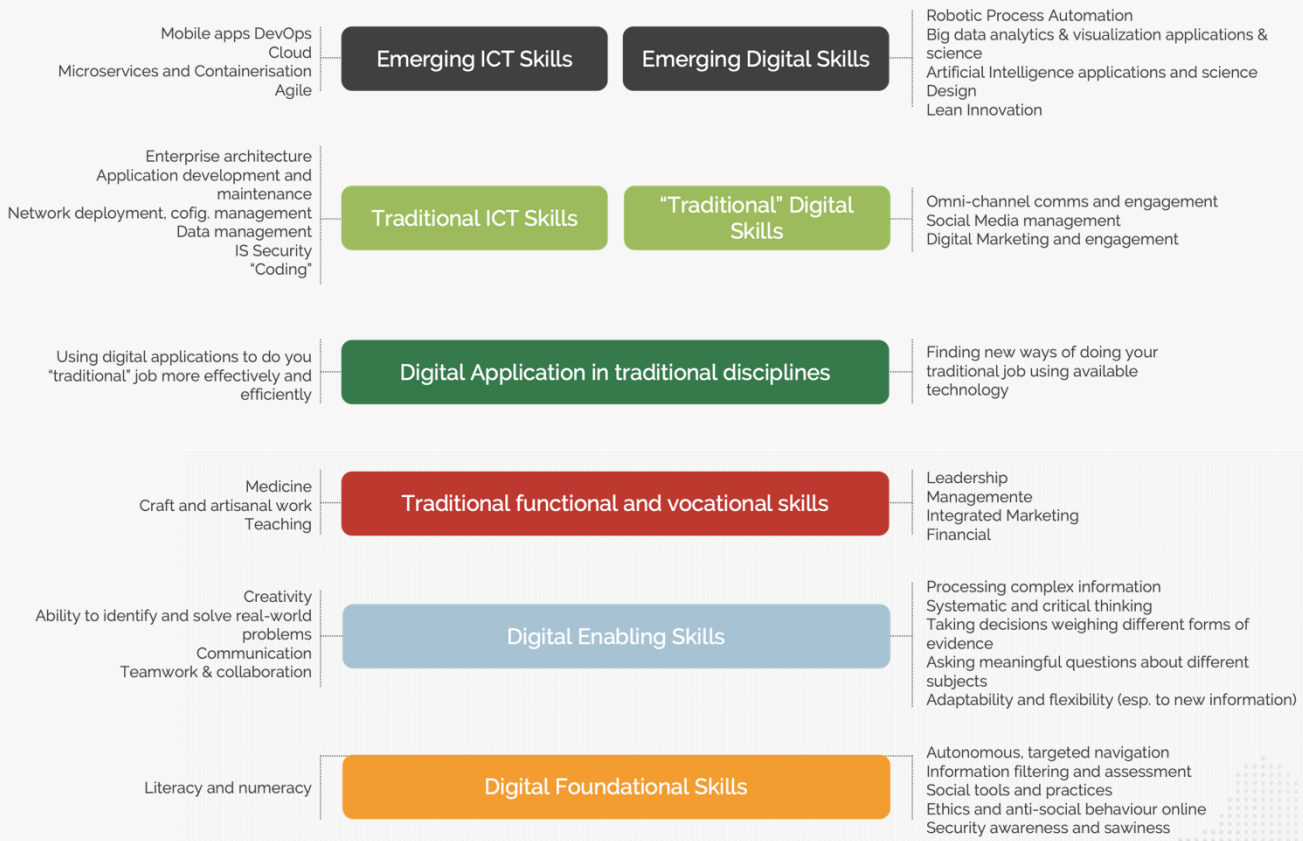
Providing universal access is not enough: access has to translate to usage for inclusion to be possible. Usage depends on two main drivers, namely User Readiness and Service Relevance (also referred to as perceived user benefit). Both of these drivers are significant challenges in South Africa.

User readiness is related to the *ability* of the user to participate and use the devices and services, and their *appetite* or willingness to use the devices and services. Ability, in turn, relates to so-called digital literacy and foundational competences (autonomous targeted navigation, device and service familiarity, literacy and language proficiency, numeracy, online social enculturation… See Figure 10). Appetite or willingness is influenced by socio-cultural factors (relating, for example, to age and gender), individual motivation factors, and – very importantly – the perceived benefit that will be derived from the use of the service.

Which leads to the second driver of usage, namely service relevance. Provision of stock trading applications in unlikely to stimulate usage in poor rural communities (at least not yet). Transport applications, basic payment services, educational and entertainment services might. Services need to be relevant to the pressing challenges, needs and wants of the communities to which they are offered.

And at the nexus between ability and relevance lies language: currently >99% of internet content is in non-African languages. Yet the English proficiency in many digitally excluded groups is challenged. This represents a significant challenge with regard to improving usage.

Figure 10: Framework for Digital Skills Development



Source: Brian Armstrong, Wits Business School 2019

Towards unfettered usage

Social and structural interventions to enhance usage are more complex than for access, and appear to be more out of reach. However there are some places to start. At the heart of usage lies skills; not the ability to code, or to use modern data science applications. Skills for a digital age can be considered in the framework outlined in Figure 10. The critical skills to focus on for unfettered access at a universal level are overwhelmingly the foundational digital skills. So what's to be done here?

Include digital usage across all basic education curricula. Firstly, the basic education system has an unavoidable obligation to better equip our youths with the literacy and numeracy skills which underpin confident and competent elementary participation in digital society. This suggests significant interventions in the basic education system.

Shift government service delivery to online platforms. Secondly, government has the opportunity to lead parts of society towards greater usage of digital services by progressively shifting service delivery to online platforms, including for example the delivery of social welfare payments and services. Not only would this promote greater digital literacy, it would have the added benefit of improving the efficiency and effectiveness of government services so delivered.

Develop a digital services small business sector. Thirdly, the digitalisation of government and large-business organisations and processes, and the sincere external sourcing of supply chains for such services from small businesses, would promote the development of a digital services small business sector in South Africa. This would create a pool of more digitally literate small business proprietors and employees (in South Africa often perceived to be the least "tech-savvy" sector of the economy). The flow-through effect of digital literacy into the communities in which the small businesses are rooted would be considerable.

Address the issue of language in digital content. Finally, the issue of language needs to be addressed, the solution to which involves a multi-pronged approach including:

- The development and widespread application of improved translation technologies which are effective in South African languages;
- Dramatically increasing the creation of local-language content. We need to (somehow) mandate, incentivise, fund or otherwise stimulate the creation of sufficient content in South African languages to provide a critical mass of relevant services;
- We need to equip our people with the elementary language skills to not be disempowered in a (primarily English) cyberspace, whilst being acutely sensitive to language as a central driver of identity and culture.

For all three of these, significant policy interventions would be necessary.

The challenge of impact and benefit

The final stage of achieving digital inclusion requires access and usage to be able to translate into individual, and collective, positive impact or benefit. Impact is often defined in four broad positive inter-related areas: economic impact, relating to employment and income; social impact, relating to the benefits of access to economic and social networks and participation in social or economic communities; cultural impact, especially relating to improvements to knowledge, education and skills; and institutional impact, relating to improved engagement with government and state institutions, access to services like healthcare, and participation in democratic processes.

Ultimately these benefits, if they manifest widely enough and at sufficient scale, should lead to the ultimate social objectives of reducing poverty and inequality and enhancing social cohesion, and economic benefits of stimulating growth. It is this that underpins the importance of universal digital inclusion: there is a clear line of sight between digital inclusion and the ultimate social and economic outcomes for which we strive.

It is important also to recognise that technological change and unequal digital inclusion can lead to negative impacts, which need to be minimised and mitigated. These include, for example, de-socialisation, exaggerated stratification and potential exclusion; potential for manipulation and abuse of less tech-savvy citizens; and greater polarisation and amplification of fault-lines in society.

Towards pervasive positive impact at scale

Impact, like access and usage, can be actively fostered and there are several enabling conditions which can be identified. Usage can be more impactful if it is promoted and manifests in constructive *usage ecosystems*. For example, usage within a context where government itself, firstly technologically transforms its own operations and service delivery, and secondly uses this platform to foster beneficial usage by and in society. For example, technological transformation of the public healthcare system will drive improved healthcare outcomes but can also promote greater digital participation by consumers of the healthcare system.

Establish open ecosystem participation. Usage ecosystems can be promoted by the conscious and deliberate adoption of open API architectures, enabling complementary innovations and services to be made available to the supply- and demand-side participants in the ecosystem. The standards, use of APIs and ecosystem participation rules can be voluntary and spontaneous by both public and private sectors, or they can be more deliberately fostered through industry associations, regulators, or public policy.

Build soft digital infrastructure. Another enabler of beneficial usage is the establishment and availability of so-called "*soft infrastructure*". This includes, for example, personal identity verification platforms, payments platforms tailored to the financial practices and capacities of the relevant groups, security and trust-enhancing platforms, digital document authentication services, etc. Again, both private and public sector have a role to play here: the private sector, to develop and operate the platforms and services providing these soft- infrastructures; and the public sector, firstly to set the tone by adopting these soft-infrastructures for their own use; secondly mandating them for delivery of government services ecosystems; and thirdly to provide regulatory oversight and/or stimulus as may be required.

Establish principles for digital service regulation. A third enabling condition of beneficial usage, which is also important in minimising the potential negative impacts, is a coherent and finely balanced *regulatory and legal framework for digital services*. This includes, arguably most urgently and importantly, effective oversight of POPI/GDPR related regulations. But there are other important areas also: the debate around the fine balance between content freedom/neutrality versus oversight, censorship and control needs to find expression in constantly refined practices for organisations playing in the digital content economy. A similar issue is the balance between innovation and freedom, versus trust in, and in extreme cases regulation of, the algorithms at the heart of many digital platforms. How do we make sure that human biases are not replicated – or even worse, amplified – in digital systems? And ultimately, as AI becomes more pervasively embedded in all branches of social and economic activity, how do we ensure it remains unfailingly focused on positive human outcomes? Simply put, what policy, regulation and best-practice do we need to foster to ensure that a technology-neutrality departure point leads to a tech-positive outcome when assessed in human-centric terms.

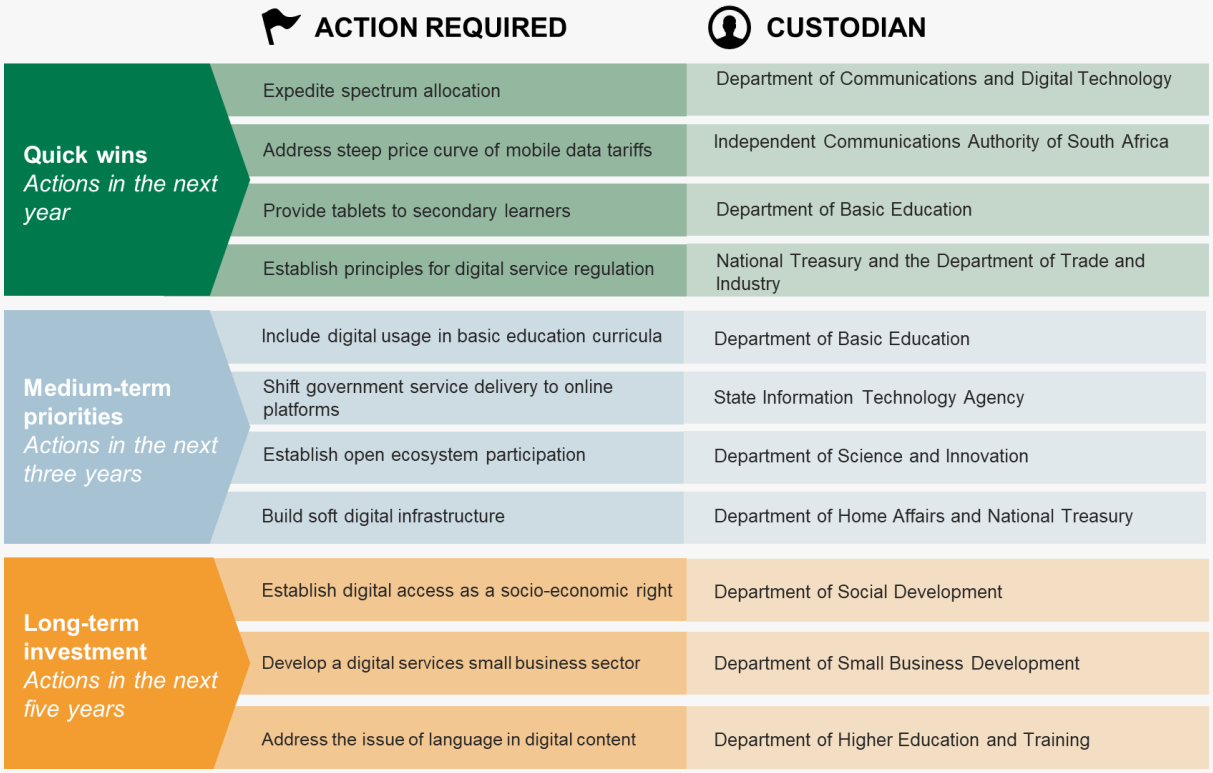
Finally, usage will more often lead to beneficial impact when the people who are using the services have the *skills*, experience and insight to leverage the available services for their own benefit. This brings us back to the skills point raised in the previous sub-section, but includes now also an emphasis on fostering digital enabling skills, digital specific skills and ICT specific skills. This issue is covered in more detail in the next section on Imperative 2: Human Capital.

Timeframes and stakeholders

The diagram below summarises the actions required to achieve universal digital inclusion into three timeframes: quick wins (actions in the next year), medium-term priorities (actions over the next three years),

and long-term investments (actions over the next five years). A stakeholder that can act as the custodian for implementing the action is also identified.

Figure 11: Actions, timeframes and custodians for achieving universal digital inclusion

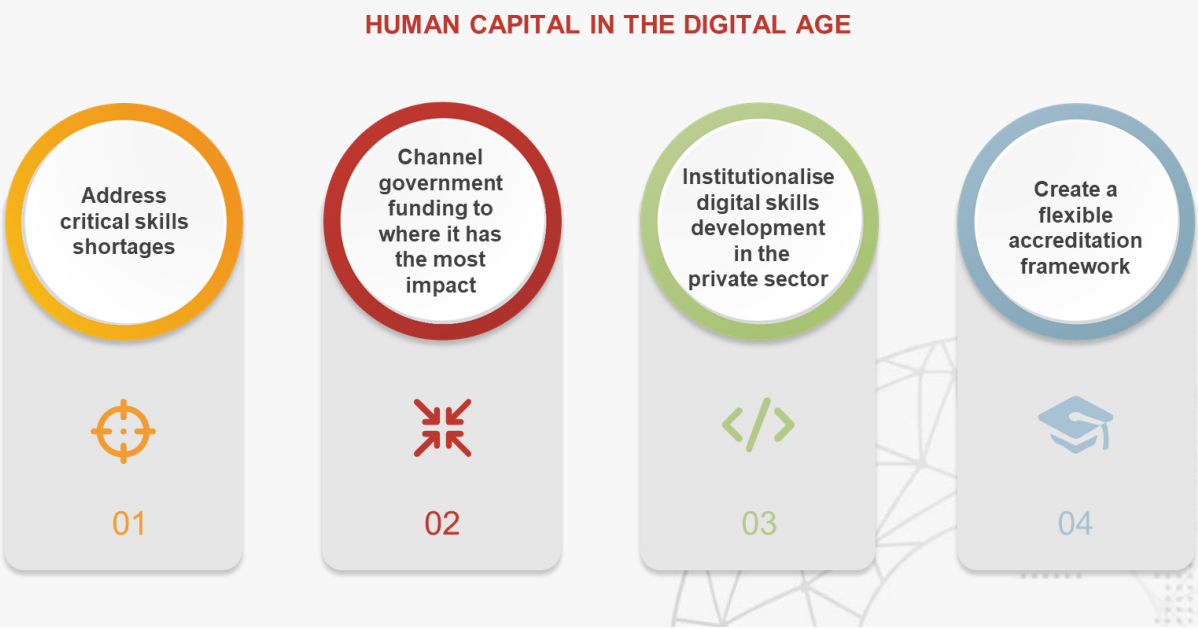


Imperative 2: Human capital

South Africa's education ecosystem will have to supply a steady pipeline of candidates with skills that allow them to develop, utilise and complement technology in order for digital economic opportunities to scale. The specific skills required range by opportunity – some are technology skills while others simply relate to digital literacy or the ability to work digitally. The private sector has a key role to play ensuring that entry-level candidates are adequately prepared for the world of work, and re-skilling employees who need to adapt to the changing requirements of a digital workplace.

The SADA Digital Readiness Assessment provides a diagnosis of the state of this ecosystem in South Africa and identifies the critical gaps that need to be addressed. This strategy primer focuses on how to close those gaps, and identifies four areas of action that South Africa should implement to successfully develop its human capital for the digital age. These are shown in the diagram below and elaborated on in this section.

Figure 12: Four areas for action to develop human capital in the digital age



Address critical skills shortages

Improve the efficiency of South Africa's work visa process. South Africa has a critical skills gap that needs to be addressed in the short term before longer-term solutions start to yield results. Until South Africa is able to develop a strong skills pipeline of its own, filling these skills gaps with foreign talent while ensuring that skills transfer is taking place can be facilitated by the following actions. South Africa does provide work visas for foreigners with critical skills (as identified on the Department of Home Affairs' critical skills list). However, the efficiency of the work visa application process needs to be improved so that companies do not wait lengthy periods before being able to fill skills gaps. The majority of skilled migrants interviewed by the Human Sciences Research Council in 2016 described the process of being hired by a

South African firm as, "problematic, cumbersome and difficult" in part due to long, complex and expensive processes required for critical skills permit applications [30].

Update the relevance of the critical skills list. The critical skills list mentioned above needs to be urgently updated on an ongoing basis, in conjunction with industry, so that it remains relevant. The Department of Home Affairs released the draft of a revised critical skills list in 2019 which is in abeyance after receiving criticisms from the private sector. A new list is currently being compiled by the Department of Higher Education and Training in conjunction with the Department of Trade and Industry and Department of Employment and Labour which is aimed for implementation in March 2020 [31]. These departments need to develop a more efficient mechanisms of collecting input from industry to update and revise the critical skills list on a more regular basis.

Address the departure of skilled talent from South Africa. South Africa's critical skills gap is at risk of widening – as much as half of new graduates and established professionals want to work overseas to seek new opportunity abroad [32]. South Africa ranks 75 out of 125 countries in its ability to retain talent in the WEF's Global Competitiveness Index [33]. While countries like Vietnam, India and China are actively seeking to recruit people from their diasporas, strategies that create incentives for South Africa expatriates and graduates to return home from overseas are not in place.

Channel government funding to where it has the most impact

Re-channel budgeted government funds behind jobs in demand in each sector. South Africa has a comprehensive system for funding continuous skills development in place over and above tertiary education institutions like universities and technical and vocational colleges. The Sector Education and Training Authorities (SETAs) in various sectors receive skills development levies from the private sector to fund training of employees and unemployed candidates on approved learnerships. While this funding is significant, it is not prioritised on training that is needed to fill demand gaps in industry and that is most likely to lead to jobs. Currently SETA funding can be applied for by companies paying skills development levies provided the learnership content is accredited, among other considerations. However it is not prioritised for skills development that is focused on skills identified by the industry as being in high demand. This should be urgently rectified so that available resources are prioritised for training that is likely to fill a current need, rather than any training which is related to the sector.

Change the way government funds for skills in demand are managed going forward. The SETA model mentioned above allocates funds for training on the basis of output – i.e. learners who get trained – as opposed to outcome. The latter considers whether training provided has actually helped a candidate acquire a job, rather than simply whether they acquire skills. Changing to an outcomes approach will help to prioritise skills development where it is most likely to lead to job creation. The Department of Higher Education and Training and SETAs need to identify the best model for achieving this approach.

Institutionalise digital skills development in the private sector

Mainstream work readiness and on the job training. A key issue with scaling digital opportunities is the fact that newly trained candidates are not "work ready", and that companies do not have the capacity to

provide them with significant onboarding training.[n] This includes soft skill training that prepares candidates for the world of work, and practical on the job training. The private sector in South Africa needs to address the reality that building a scalable digital skills pipeline will take time and that candidates will not always have experience and the ability to "hit the ground running". Industry therefore needs to develop the capabilities to properly on-board and develop candidates that are entering a new job field for the first time. The training that organisations like Harambee Youth Employment Accelerator provide to candidates placed in the GBS sector, for example, leads to improved retention and performance, and so provides real commercial value to employers.[o] This needs to become the practice of companies in the private sector, or a collaborative industry-wide initiative, to ensure that capacity can be scaled.

Develop industry-wide mechanisms for digital re-skilling. The South African economy will need to continuously evolve its digital capabilities through re- and up-skilling of people who are already employed but need to be prepared for the changing nature of work. This should start with industry associations conducting an audit of the future skills required in their sector. For example, BPESA has already conducted this exercise for the GBS sector, and has put a digital skills strategy in place. Next, there needs to be an industry-wide and cross-sector mechanisms developed for carrying out this widespread re-skilling. For example, India's NASSCOM conducted a scoping of future skill requirements in India's BPO and ICT/digital sectors and then developed a future skills digital platform to provide training content on the technologies and tasks that were identified. The platform is run by the edtech company Edcast and uses an AI engine to collect open content and curate material based on the technologies and skills required. The platform is now being incorporated into the learning and development processes of many of NASSCOM's member firms and will also be made available to individuals wishing to up-skill themselves in these areas [34].

Create an agile accreditation framework

Modernise South Africa's accreditation system. Like most countries, South Africa has a centralised system in place to quality assure learning through accreditation which is managed by the South African National Qualifications Authority through the National Qualifications Framework. This system has been slow to adapt to the rapid changes in the way learning is taking place.[p] In particular, the development of a de-institutionalised education environment including digitally-delivered education, and the demand for providing credit for learning achieved at alternative training institutions or through work and life experience or self-directed study [35]. As a result, innovative approaches to skills development such as mass online open courses, short courses delivered online, or digital badges are not included in South Africa's National Qualification Framework. This means that these channels for skills development cannot be funded through SETA funding or recognised as part of the BBBEE scorecard on skills development.

As accreditors are grappling with how to address the rapid changes in the way learning is occurring, a potential solution is the recognition of micro credentials within the qualification framework. Micro credentials are the recognition of learning which is typically delivered in a short and online format. A framework which enables this learning would have to recognise credentials that are granular, stackable, and most importantly that are demand-led so that they lead to jobs [36].

In the US, progress towards such a framework has been made with the introduction of a collaborative Connecting Credentials Framework that "identifies the competencies underpinning credentials, education programmes and work, establishing common language and delineating levels of proficiency to describe what people who have mastered these competencies know and are able to do". This allows for the

n Based on inputs from participants in the SADA dialogue "Developing human capital for the digital age"
o Based on inputs from participants in the SADA dialogue "Capturing an increasing share of the demand for globally-traded services"
p Based on inputs from participants in the SADA dialogue "Developing human capital for the digital age"

recognition of credit for work-based learning, creating and mapping stackable credentials, and make explicit the employability skills found in courses and programs [37]. The framework was the outcome of a national dialogue convened by the Lumina Foundation, American Council on Education, and over 40 other co-sponsors.

Timeframes and stakeholders

The diagram below summarises the actions required to build human capital in the digital age into three timeframes: quick wins (actions in the next year), medium-term priorities (actions over the next three years), and long-term investments (actions over the next five years). A stakeholder that can act as the custodian for implementing the action is also identified.

Figure 13: Actions, timeframes and custodians for building human capital in the digital age

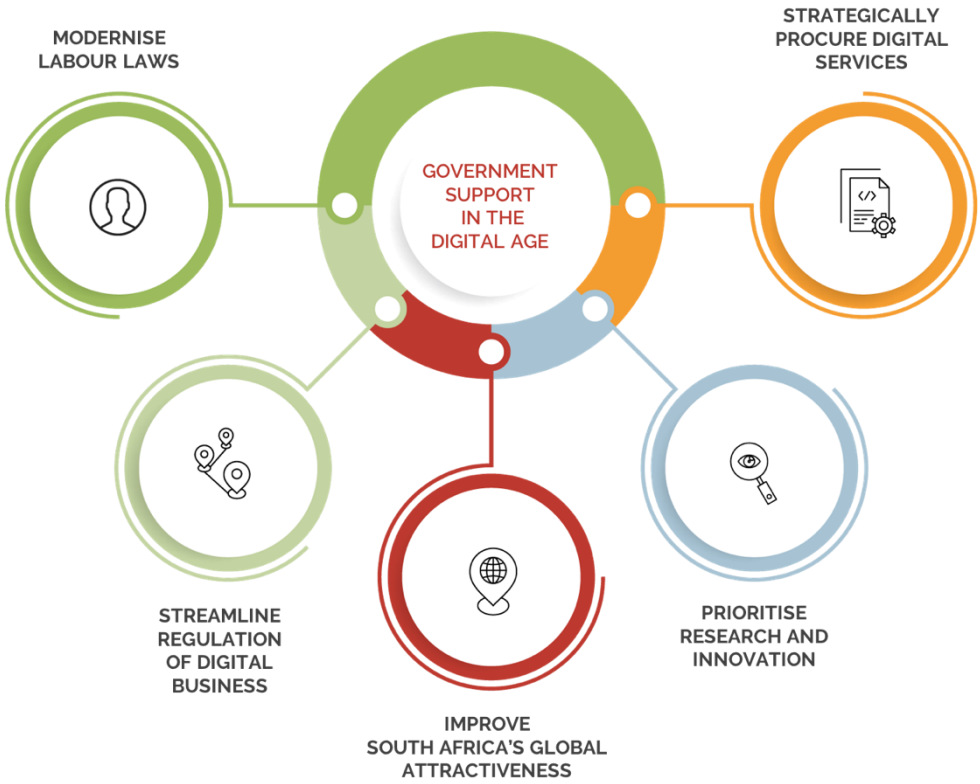
	ACTION REQUIRED	CUSTODIAN
Quick wins *Actions in the next year*	Improve efficiency of South Africa's work visa process	Department of Home Affairs
	Re-channel budgeted government funds behind jobs in demand	Department of Higher Education and Training and SETAs
	Update the relevance of the critical skills list	Department of Home Affairs and Department of Higher Education and Training
Medium-term priorities *Actions in the next three years*	Address the departure of skilled talent	Department of Home Affairs
	Change the way government funds for skills in demand are managed	Department of Higher Education and Training and SETAs
	Develop industry-wide mechanisms for reskilling	Business Process Enabling South Africa
Long-term investment *Actions in the next five years*	Mainstream work readiness and on the job training in the private sector	Business Process Enabling South Africa
	Modernise South Africa's accreditation system	South African Qualifications Authority

Imperative 3: Government support

Policymakers, regulators and other government agencies have a critical role to play in creating an enabling environment for digital economic opportunities to scale. This includes government in its role as regulator of business and labour markets, as an enabler of innovation through policy at all levels of government, and as purchaser of business services. The role of government as a provider and regulator of human development services and digital infrastructure are addressed in those respective sections.

In learning from markets like India that are successfully scaling the digital economy, the role of the government in supporting this development was critical. The South African government has the opportunity to follow this "entrepreneurial state" approach by continuing to invest in and support the scaling of key sectors in the digital economy. This strategy primer focuses on five areas for action that will facilitate this.

Figure 14: Five areas for action to develop government support in the digital age



Modernise labour laws

Modernise South Africa's labour laws for the digital age. The new forms of work that arise from opportunities in the digital economy are challenging conventional views of employment, and the labour market regulation that governs fair pay and work conditions. Since the rise of gig work is relatively new, there is no commonly-agreed regulatory best practice. Despite a large number of legal challenges between platform participants, the platforms and civil interest groups around the world, there is no consensus on whether platform participants should be treated as employees, self-employed, or a new class of "iworkers". This choice is important because it determines which aspects of labour market regulation should apply to platform participants.

South Africa has made important gains in protecting the right to fair pay, humane work conditions, employment benefits, and collective bargaining. Companies in the digital economy, such as digital platforms, that employ gig work business models have come under criticism for exploiting their contractors by side-lining these regulations.[q] Already, legal challenges in South Africa have highlighted the current lack of clarity and need for new regulatory frameworks. In 2017, the CCMA issued a ruling in favour of seven Uber drivers who had been deactivated from the platform, taking the decision that the drivers were employees as defined by the Labour Relations Act. In 2018, however, the Labour Court overturned the ruling, arguing that the drivers failed to establish that they were employees of Uber [38].

Developing a forward-looking and flexible regulatory framework which takes a call on these distinctions is important to create business certainty and trust if digital commerce platforms are going to scale in South Africa. However, it is not clear what the right call to make is. The State of California in the US recently passed a bill which requires digital platforms like Uber to treat its drivers as employees if the platform exerts control over how they perform their tasks or if their work is part of the company's regular business [39]. If a blanket ruling like this was passed in South Africa, however, it could significantly hamper the development of digital platforms before they are able to scale.

As discussed in Part A of this strategy primer, the significant scaling of labour-absorbing digital platforms across multiple sectors is where the major income-generating opportunity lies. Also discussed in Part A was the importance of encouraging high rates of competition between these platforms as a mechanism for improving supply-side participant outcomes and benefits. Inappropriate labour regulation has the potential to kill the emergence of this competition. The Department of Labour and Employment should therefore convene a national dialogue to identify the best way of promoting this scaling and competition, while protecting supply-side participants from exploitation, to establish whether and how South Africa's labour regulation framework should be updated.

Streamline regulation of digital business

Address regulatory bottlenecks to the scaling of digital business. South Africa's sectoral regulatory frameworks have been slow to adapt to the rapid pace of innovation in business models. This change in the way business is being conducted leads to regulatory bottlenecks to scale when the regulatory frameworks are not updated to recognise these new ways of doing business. For example, e-hailing platforms in South Africa have been constrained by the requirement that drivers carrying passengers for commercial purposes need to have a special driving licence. These licences are issued by provincial authorities and there has been a large backlog in the issuing of these licences as the popularity of earning an income through driving on e-hailing platforms has increased. In addition, the recent amendment to the Land Transport Act requires all e-hailing platforms to remove drivers from their platform that do not have this licence.

The e-hailing industry in India experienced a similar issue when e-hailing platforms began to scale. Commercial drivers were also required to acquire a specific driving licence, and there were major bottlenecks to meeting the demand for these licences. Through collaboration between the industry and state authorities, this requirement for a commercial driving licence was removed and e-hailing platforms were able to accept drivers with an ordinary driving licence. This was due to the government's recognition of the importance of the e-hailing sector to job creation in India. The Department of Transport in South

q Based on inputs from participants in the SADA dialogue "Social inclusion and inequality in the digital age"

Africa should consider a similar repeal of the commercial driving licence requirement to facilitate the scaling of e-hailing in South Africa.

In other cases, regulators respond to innovative digital business models too quickly or in an inhibitory rather than enabling manner. For example, the Department of Tourism is considering an amendment to the Tourism Act which will put a restriction on short-term rentals. This will have large consequences for digital accommodation sharing platforms, such as Airbnb, and can stifle the growth of that sector with potentially negative implications for South Africa's tourism sector. In these cases, the need for considered industry and stakeholder consultation is clear, with adequate input given to new and emerging digital players rather than traditional industry groupings.

Update South Africa's competition framework for the digital age. South Africa has a comprehensive competition policy framework in place to address the large market concentration issues in the South African economy created during apartheid, but still felt today. Historically, digital platforms have not explicitly been addressed in the competition policy framework until recently. Parliament has elected to amend the Competition Act including provisions made with respect to buyer power under the abuse of dominance provisions. Amendments to the provisions include digital platforms or "online intermediation services" as a designated sector. Therefore, provisions now include prohibiting a dominant buyer in a designated sector i.e. online intermediation services, from requiring or imposing unfair prices or trading conditions on small and medium businesses and firms controlled/owned by historically disadvantaged persons.

Updating a competition policy framework for the digital age is difficult. For example, digital platforms can scale very quickly and it is difficult to assess the basis for this to establish if anti-competitive practices are at play. Implications of concentration in these markets is a concern that has been addressed by various jurisdictions (including Australia, U.S, UK and the EU). For example, the approach in the UK is the establishment of taskforce to assess the country's competition policy in light of digital business, and come up with recommendations for new policy guidelines. The EU focuses on the opacity of platform services which might lend itself to an abuse of bargaining power and does this by addressing all such platform services (and not limited to SMEs as is the case in South Africa).

In the case of South Africa, the provisional list of unfair trading conditions in Online Intermediation Services serves as a step towards addressing potential anti-competitive practices in this particular sector. It largely addresses concerns regarding the incentive and ability for platform services to exclude competition. However, further considerations should include (i) separate regulations set for all firms considered as intermediation platforms, and (ii) embarking on a similar process as the UK to establish how the principles behind South Africa's competition policy framework translate into the digital age, and identify new areas of priority.

Improve South Africa's global attractiveness

Empower public private teams. Industry associations and the dti's agencies responsible for managing investment incentives and marketing South Africa as an investment destination abroad need to be empowered to collaborate better. For example, InvestSA already assists BPESA to provide global BPO operators setting up a delivery centre in South Africa with work visas through the One Stop Shop. However, the visas still have to be approved and processed through the Department of Home Affairs which takes time, and InvestSA has no mandate to negotiate deals with potential investors regarding local and provincial government incentives or concessions. InvestSA should be provided with rapid approval

capabilities for work visas and deals to improve the pace at which global companies relocate work to South Africa in the digital economy. This was a key strategy of India when it scaled its BPO and digital/ICT sector.

Continue competitive and sufficiently broad incentives. The dti already provides a successful incentive scheme for job creation in the GBS sector. Going forward, this scheme will need to be adapted to ensure it remains relevant and can support emerging opportunities like getting South African corporates to reshore outsourced work to South Africa. Countries like India have also offered compelling tax incentives in special economic zones focused on IT services exports. While South Africa does have a Special Economic Zone framework, these are largely focused on trade in goods and there is a need to develop specific export zones to encourage service exports. This can include working with other non-financial incentive frameworks, such as the BBBEE codes, to include new job creation and reshoring as part of the scorecard.

Develop sector-specific charters for FDI. Since a large portion of the demand for globally-traded services is captured by global companies, a key strategy for South Africa needs to be encouraging these companies to shift work to South Africa as a delivery location. Feedback from these global companies is that South Africa's BBBEE framework requires global companies to divulge a portion of their ownership to local interests to be BBBEE compliant and access the dti's incentive scheme. This has been a major limitation to scale. While it is important that these companies comply with domestic requirements and contribute to the transformation of the sector, the development of sector-specific charters for FDI with dispensation for global companies will improve the rate at which these operators consider scaling their South Africa operations.

Prioritise digital research and innovation

Establish a cross-cutting digital innovation team in government. There is a clear need for an intra-governmental team with the mandate to set strategic directions, co-ordinate among government departments, and play an oversight role in implementing national development plans relating to the digital economy. In India, the National Institution for Transforming India Policy Commission (NITI Aayog) plays this role and has been instrumental in India's progression into a digital economy. NITI serves as a forward-looking policy think tank for the government, and chaired by the Prime Minister has a direct line into India's political executive office. Among other things, NITI established the Atal Innovation Mission initiative to promote innovation and entrepreneurship in India, and has recently developed India's National AI Strategy. NITI acts as a think tank for the government, developing and testing concepts for promoting innovation and then handing them over to relevant ministries to implement.

Currently, there is no clear home for such a team in South Africa. There are a number of line ministries which play in integral part in one or more aspects of South Africa's plans for the developing the digital economy. These include the Department of Science and Innovation, Department of Higher Education and Training, Department of Communications and Digital Technology, Department of Trade and Industry, and National Treasury. In addition, the Presidency plays a critical strategic direction-setting and oversight function, but does not have the capacity for execution. As such, there is no clear agency responsible for playing the critical role of realising South Africa's digital economy development plans, with adequate focus and capacity to do so given the importance of these plans to South Africa's collective prosperity.

The President should consider establishing a team, either within one of the line ministries or a cross-cutting team across the various ministries, to play this role in South Africa. Oversight could be provided by the President's project management office focused on youth employment creation which already has a digital focus. The Presidency and the dti are currently in the process of developing and executing a series of national masterplans for strategic sectors. These masterplans play a similar role to the one described above,

bringing together critical government ministries, industry and labour into various structures (an industry reference group, working groups, and an executive oversight committee) to develop and execute the masterplans for the sector's development. The digital economy masterplan should be prioritised and include provisions for such as cross-cutting digital economy team in government.

Strategically procure digital services

Position government as a strategic digital purchaser. Progressive government digital spend can reshape the South African digital sector by enabling firms to build capabilities that address our social needs and that are scalable cross-border. For example, the demand for digitally-enhanced public services in healthcare and education in South Africa will not be significantly different to that of neighbouring countries in the region. A government procurement initiative would have to navigate South Africa's complex, highly-scrutinised and politically sensitive public procurement process. An exciting possibility is prioritising the digitisation of socially important services, with South Africa-based suppliers to be contracted. A first step is the identification of such social/public digitisation opportunities, together with an effective procurement mechanism consistent with best practice.

Timeframes and stakeholders

The diagram below summarises the actions required for government support in the digital age into three timeframes: quick wins (actions in the next year), medium-term priorities (actions over the next three years), and long-term investments (actions over the next five years). A stakeholder that can act as the custodian for implementing the action is also identified.

Figure 15: Actions, timeframes and custodians for government support in the digital age

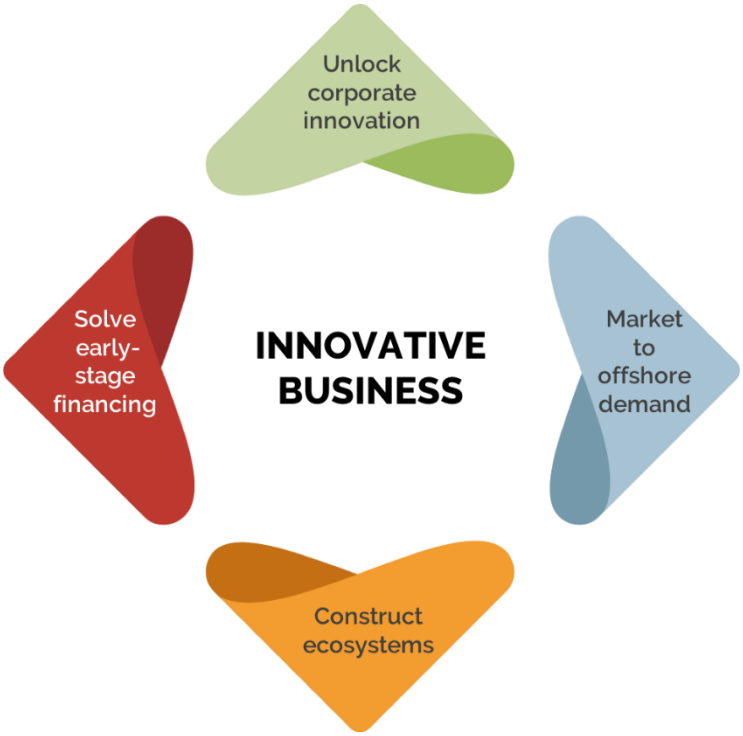
	ACTION REQUIRED	CUSTODIAN
Quick wins *Actions in the next year*	Empower public private teams	Department of Trade and Industry
	Continue competitive and sufficiently broad incentives	National Treasury, Department of Trade and Industry and Department of Science and Innovation
	Establish a digital innovation team in government	The Presidency
Medium-term priorities *Actions in the next three years*	Address regulatory bottlenecks to the scaling of digital business	National Treasury, Department of Trade and Industry and Department of Science and Innovation
	Develop sector-specific charters for FDI	Department of Trade and Industry
	Position government as a strategic digital purchaser	The Presidency
Long-term investment *Actions in the next five years*	Modernise South Africa's labour laws for the digital age	Department of Employment and Labour
	Update South Africa's competition framework	Competition Commission of South Africa

Imperative 4: Innovative business

For innovation to occur and digital opportunities to be realised, South Africa's private sector must be well positioned to create and apply innovation processes and technologies. The SADA Digital Readiness Assessment reviewed the state of innovative business by considering the availability of innovation finance and non-financial innovation support, the effectiveness of the start-up ecosystem and business appetite for collaboration, the innovative capabilities of entrepreneurs and corporates; and finally, technology access and use.

The gaps identified in the readiness assessment are addressed in four areas of action, as shown in the diagram below.

Figure 16: Four areas of action to grow innovative business



Unlock corporate innovation

Unlock corporates as a source of demand for digital innovation. South African corporates are undergoing large-scale digitisation processes, many with significant design-thinking and machine/deep learning elements. This is an opportunity for corporates to rethink their relationship with the ecosystem of IT and digital suppliers in South Africa, including the large global providers, mid-sized solutions providers and niche domestic players. But, as the market observer Shane Radford has pointed out, there is a considerable barrier to corporates buying from start-ups and new firms. For reasons of habit, perceived risk and ease, corporate procurement functions have a legacy preference for purchasing from other large entities. An additional lever is needed to change these patterns of ingrained behaviour.

In this primer we raise two possibilities. Firstly, large businesses should commit through social partnership to help develop a South African supplier base. For example, as reported elsewhere in the primer, large corporates may as social partners to government make a collective undertaking to reshore certain forms of IT spend where local capabilities have been proven.

But in those cases where the corporate would need to change how it procures and integrates digital services for start-ups and other domestic firms to gain access, more will be required. It turns out that South Africa does have meaningful incentives for changing corporate behaviour embodied in the BBBBEE Codes. BBBEE compliance spend in enterprise development and related areas can be up to 5% of pre-tax profit. Therefore, a second and complementary suggestion is that the Codes be used to open the corporate sector to smaller and start-up digital providers. This need not depart from the original purpose of the Codes: inclusion measures discussed in this primer, such as impact sourcing, can ensure that the transformation mandate of the Codes are honoured. We propose a combined social partnership and Code-driven approach to open South African corporates to business from domestically-based start-ups and small digital businesses.

Solve early stage financing

Develop an early-stage capital provision strategy. Equity funding of technology firms is commonly divided into four types according to the development stage of the firm. These are:

- *seed capital* to develop an idea into a workable product,
- *early stage* funding supporting the firm to take its product to market, and therefore pre-revenue,
- *expansion* funding supporting a revenue-earning firm's path to achieve profitability, and therefore pre-profit, and
- *scaling* funding supporting the growth of a profitable firm.

The challenge is that South Africa's well-developed private equity industry is limited to the fourth and occasionally the third category. Compared to India, South Africa remains deeply under-served in the first two categories, with little more than occasional individual 'angel investor' support available.

Government is aware of the need for a true venture capital industry, and has sought to enable its creation through tax incentives. Further, the Department of Science and Innovation (DSI) as also provided grants for technology development which have provided valuable support in the seed capital category, although not at the ticket sizes (amounts per grant) that would be available from the market in India.

It is therefore recommended that government, the industry and the financial sector jointly formulate an early-stage capital provision strategy. In the meanwhile, the DSI's programme of grant support should be dramatically expanded. Another possibility is a venture capital fund sponsored by government, but run by independent specialists, with a first loss facility to encourage additional investment. Further, the equity equivalent investment required of global players in South Africa could be a source of seed capital.

Market to offshore demand

Penetrate key off-shore markets. Whilst communications technology enables South Africa to serve offshore markets, geographic distance still matters in the sale of such services to clients. For example, it is well-recognised in global value chains that nearby countries find it easier to break into new markets. Therefore a geographically distant market such as South Africa needs concerted and consistent investment in off-shore market development. This includes efforts to understand market purchase decision points better, missions to key markets and customers, and visits by key customers to South Africa.

We therefore propose an expanded set of market-penetration activities by companies, industry associations and government – and often jointly by these parties. Countries like India and the Philippines have proven the benefits of focused effort, good internal cooperation and specific market penetration targets. This requires having industry representatives in each of the source markets targeted for growth to attend events, meet with potential investors, and facilitate interaction with government departments in South Africa. This role should be played by an expanded BPESA which can use additional membership fees from extending its membership base into the ICT and digital outsourcing sector to fund these positions.

Construct ecosystems

Identify South Africa's areas of competitive advantage in digital. As South Africa's economy transitions to an increasingly digital one, it is critical that the country is able to identify specific niche areas of technology application that it is well suited to develop. These areas are not just new technologies, but relate to specific sector or domain use cases of new technologies where South Africa can succeed. For example, India has successfully undertaken this exercise as a market and identified the areas that the country is well suited to solving problems using technology, and export these solutions to other parts of the word. This was determined by a mix of where India had the right skills, where the domestic sources of demand were, and what the priority government area of development were. South Africa needs to urgently conduct a similar exercise to identify the niche areas where it can develop expertise, and export this globally.

Establish Centres of Excellence in priority areas. Once this exercise has been completed, the government in co-ordination with industry should establish centres of excellence in these priority areas. These centres have been set up successfully in India by partnerships with NASSCOM and state governments to bring together stakeholders in a particular area of technology application (for example the internet of things and artificial intelligence) to improve India's ability to generate solutions. This includes bringing together academic institutions conducting research on the potential and application of the technology, start-ups who are using the technology to develop commercial solutions, large enterprises that need these commercial solutions for improving their business models, and government stakeholders to provide funding and alleviate regulatory bottlenecks. The power of these centres is in their co-ordinating role, making sure that resources and talent are channelled to areas that are in demand and which can unlock job creation and solve development challenges.

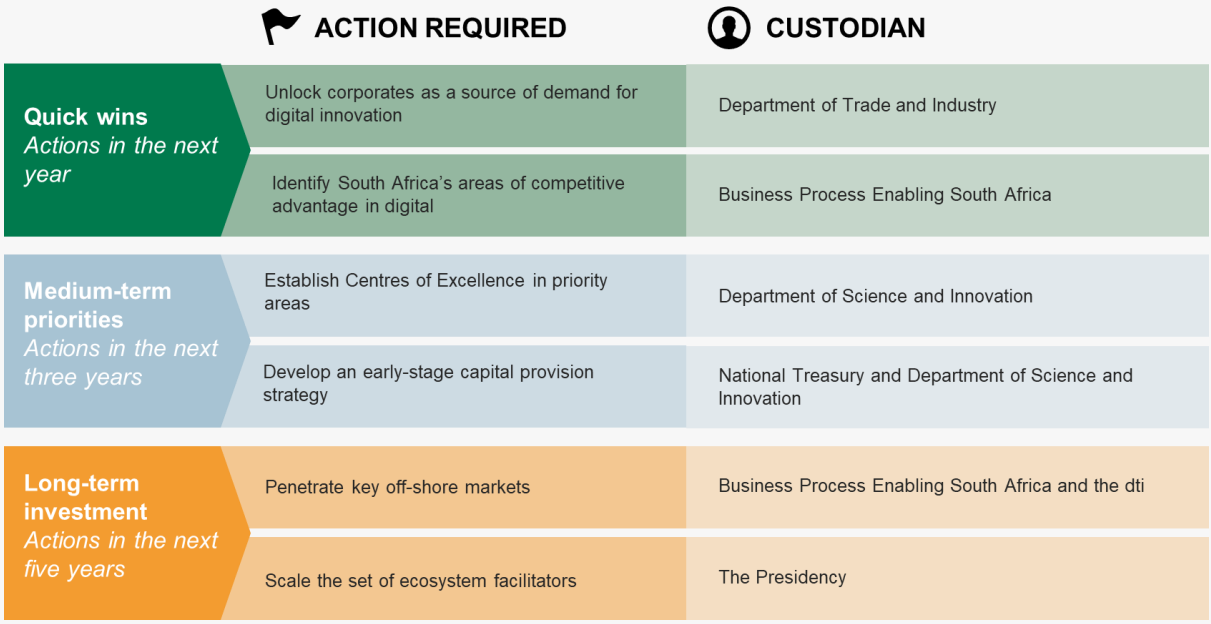
Scale the set of ecosystem facilitators. This primer has discussed the role of successful ecosystem facilitators, such as NASSCOM in India. The closest South Africa currently has to this role is the business processing body BPESA and its partnership with the dti. But even this successful partnership does not perform all the NASSCOM functions; it also operates in a narrower, if critical, segment. The BPESA/dti

success story deserves to be broadened and deepened to cover a larger part of the digital universe. More generally, a broader set of ecosystem facilitators need to be encouraged, and funding models from industry or government devised to support those that succeed. These coordinating functions can also be used for problem-solving and coordinating in areas other than the development of business opportunities, for example solving for skills challenges and finding digital solutions to help address social challenges.

Timeframes and stakeholders

The diagram below summarises the actions required for building innovative business into three timeframes: quick wins (actions in the next year), medium-term priorities (actions over the next three years), and long-term investments (actions over the next five years). A stakeholder that can act as the custodian for implementing the action is also identified.

Figure 17: Actions, timeframes and custodians for building innovative business



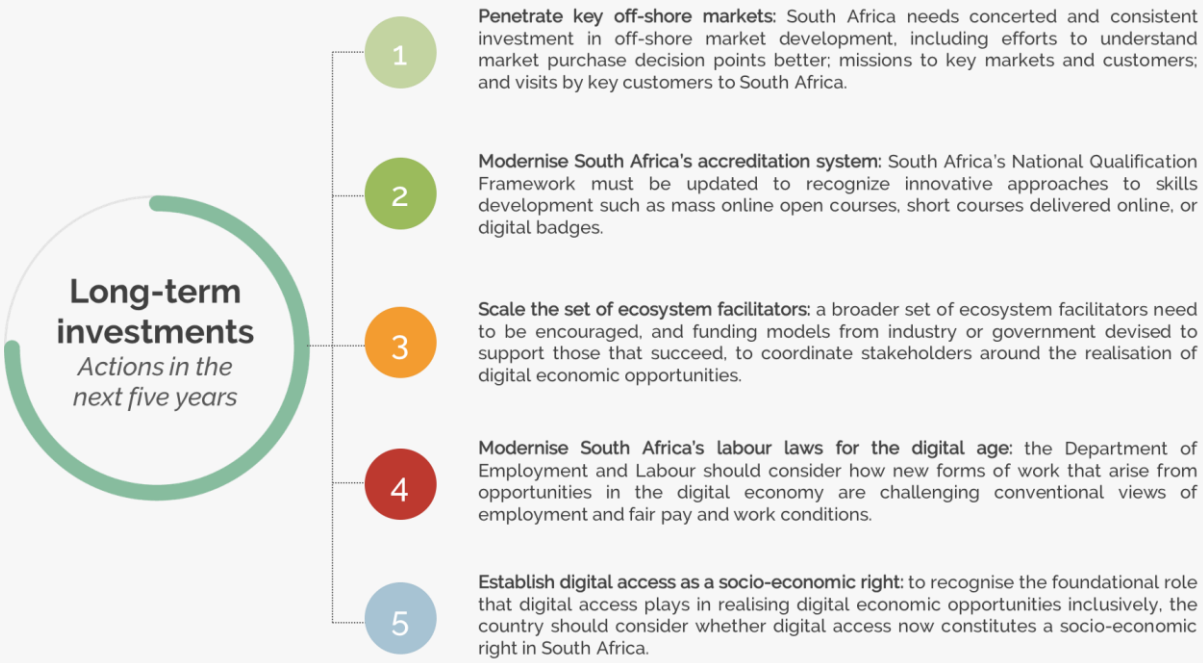
PART C

ACTIONS TO CLOSE SOUTH AFRICA'S READINESS GAPS

The previous section has identified the large amount of work that remains to be done to realise and scale the opportunities presented to South Africa in the digital age. This section summarises the identified actions for each imperative into three timeframes: quick wins which can be achieved in the next year, medium-term priorities which require action over the next three years, and long-term investments that require effort over the next five years.

Given the breadth of work that remains, prioritising effort and resources will be crucial. In the diagram below, we identify the top five priorities that have the greatest potential to move the needle in developing South Africa's digital economy in each timeframe.

Figure 18: Top five actions: quick wins, medium-term priorities, and long-term investments



A summary of all the actions within each imperative is provided on the next page.

Figure 19: Summary of actions: quick wins, medium-term priorities, long-term investment

	Universal digital inclusion	Human capital	Government support	Innovative business
Quick wins *Actions in the next year*	• Expedite spectrum allocation • Address steep price curve of mobile data tariffs • Provide tablets to secondary learners • Establish principles for digital service regulation	• Improve efficiency of South Africa's work visa process • Update the relevance of the critical skills list • Re-channel budgeted government funds behind jobs in demand	• Empower public private teams • Continue competitive and sufficiently broad incentives • Establish a digital innovation team in government	• Unlock corporates as a source of demand for digital innovation • Identify South Africa's areas of competitive advantage in digital
Medium-term priorities *Actions in the next three years*	• Include digital usage in basic education curricula • Shift government service delivery to online platforms • Establish open ecosystem participation • Build soft digital infrastructure	• Address the departure of skilled talent • Change the way government funds for skills in demand are managed • Develop industry-wide mechanisms for reskilling	• Address regulatory bottlenecks to the scaling of digital business • Develop sector-specific charters for FDI • Position government as a strategic digital purchaser	• Establish Centres of Excellence in priority areas • Develop an early-stage capital provision strategy
Long-term investment *Actions in the next five years*	• Establish digital access as a socio-economic right • Develop a digital services small business sector • Address the issue of language in digital content	• Mainstream work readiness and on the job training in the private sector • Modernise South Africa's accreditation system	• Modernise South Africa's labour laws for the digital age • Update South Africa's competition framework	• Penetrate key off-shore markets • Scale the set of ecosystem facilitators

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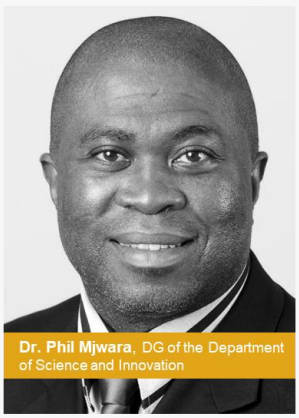

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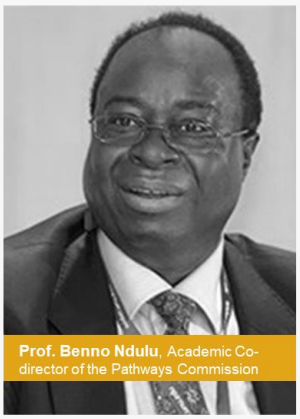

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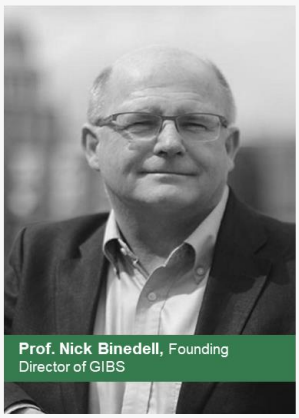

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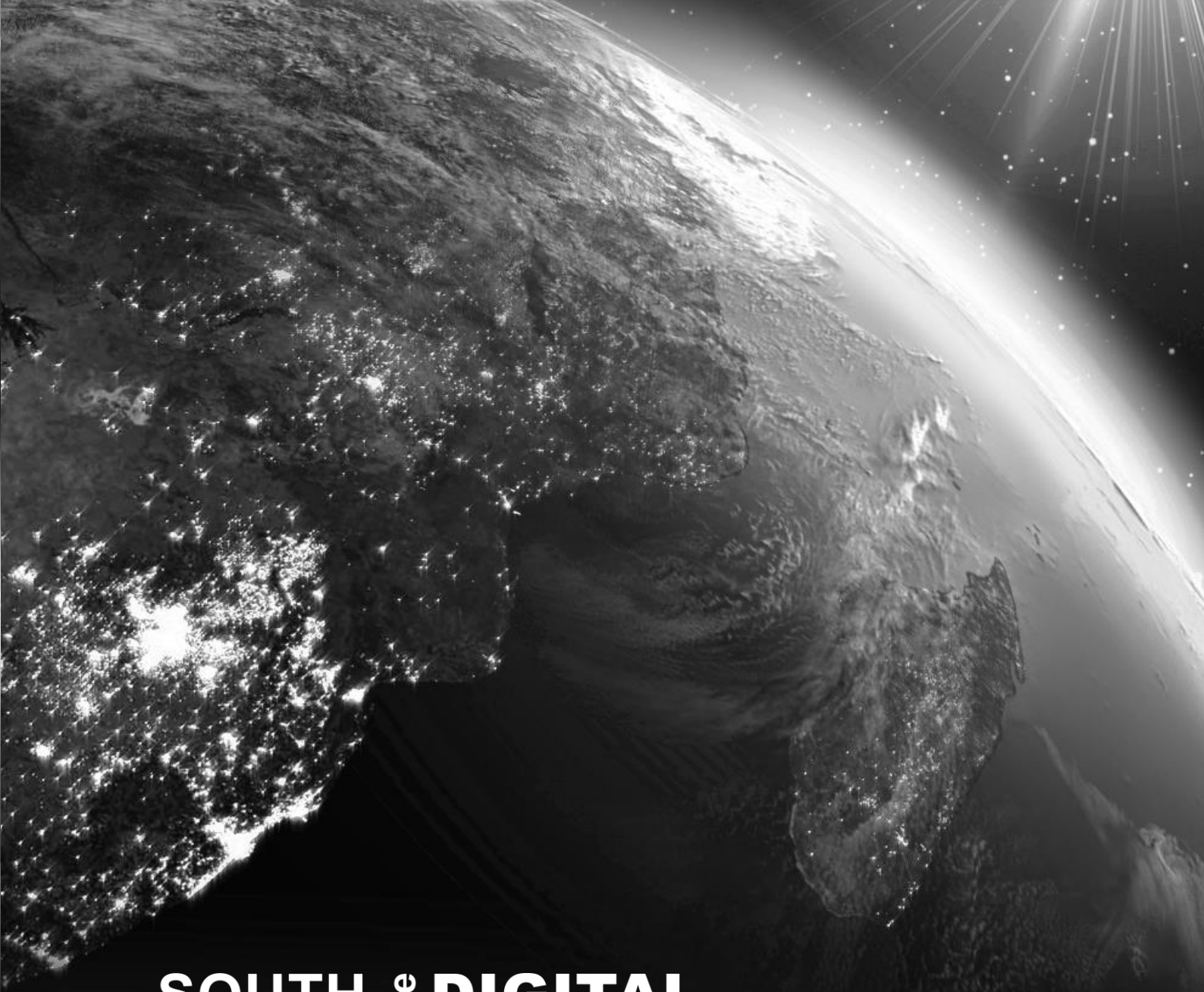

SOUTH AFRICA in the DIGITAL AGE

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