SOUTH & DIGITAL AFRICA & AGE

Pathways to Digital Work

Executive Summary: 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

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Introduction and 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 range of digital opportunities broader 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 look different from our current mental models. For example, we use the language of 'w ork 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 the way in finding, executing and particularly scaling digital opportunities. This has been true especially 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.



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 African 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 with 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.



Figure 1: Areas for expanding globally-traded services in South Africa

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

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.



Figure 2: Digital platforms distribution by function (% and by sector (count)

Source: Insight2Impact Africa's digital platform database, 2019

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.

	International platforms operating in South Africa	Local platforms, some of which operate in other parts of Africa
Blue-collar services	PetBacker	K: Jomestly SweepSouth*
Transport	Uber taxify	Cabbi Loadit (D)
Food and its delivery	Uber Eats	orderin KHULA! U C O O K
Tourism	oirbnb 9flats.com	ig afristay

Figure 3: Selection of digital platforms with potential to unlock demand for low-skilled labour

This does not mean 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.

Source: Genesis Analytics research, 2019

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. 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, digitalfriendly 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 inclusive digital 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.

Figure 4: Actions, timeframes and custodians for achieving universal digital inclusion

	ACTION REQUIRED	
Quick wins Actions in the next year	Expedite spectrum allocation	Department of Communications and Digital Technology
	Address steep price curve of mobile data tariffs	Independent Communications Authority of South Africa
	Provide tablets to secondary learners	Department of Basic Education
	Establish principles for digital service regulation	National Treasury and the Department of Trade and Industry
Medium-term priorities Actions in the next three years	Include digital usage in basic education curricula	Department of Basic Education
	Shift government service delivery to online platforms	State Information Technology Agency
	Establish open ecosystem participation	Department of Science and Innovation
	Build soft digital infrastructure	Department of Home Affairs and National Treasury
Long-term investment Actions in the next five years	Establish digital access as a socio-economic right	Department of Social Development
	Develop a digital services small business sector	Department of Small Business Development
	Address the issue of language in digital content	Department of Higher Education and Training

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 in 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.



HUMAN CAPITAL IN THE DIGITAL AGE

- 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.

	ACTION REQUIRED	
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 re-skilling	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

Figure 5: Actions, timeframes and custodians for building human capital in the digital age

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 is 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.

	ACTION REQUIRED	
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

Figure 6: Actions, timeframes and custodians for government support in the digital age

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 corporations**, 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 markets 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.

	ACTION REQUIRED	
Quick wins Actions in the next year	Unlock corporates as a source of demand for digital innovation	Department of Trade and Industry
	Identify South Africa's areas of competitive advantage in digital	Business Process Enabling South Africa
Medium-term priorities Actions in the next three years	Establish Centres of Excellence in priority areas	Department of Science and Innovation
	Develop an early-stage capital provision strategy	National Treasury and Department of Science and Innovation
Long-term investment Actions in the next five years	Penetrate key off-shore markets	Business Process Enabling South Africa and the dti
	Scale the set of ecosystem facilitators	The Presidency

Figure 7: Actions, timeframes and custodians for building innovative business

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.





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