



**SUBMISSION IN RESPECT OF THE  
NATIONAL INTEGRATED  
ICT POLICY GREEN PAPER**

**MARCH 2014**

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## 1. Introduction and Context

It is essential that the South African Government in general and the Department of Communications in particular recognise the vital role played by the so-called ICT sector in the growth and development of the country, both economically and socially. It is no longer acceptable to pay lip-service to the “information society” and “knowledge economy” concepts, without the support of light-touch enabling legislation and regulation to make these concepts a reality. Too many of the current policies and derived laws are based on obsolete notions founded when analogue technology and manual systems were all we knew. The digital age requires a complete re-think of the approach to maximising the opportunities presented in the 21st Century.

### IITPSA

IITPSA (Institute of Information Technology Professionals South Africa), formerly The Computer Society of South Africa (CSSA), is proudly South African and has served both Computer Professionals and (latterly) Information and Communications Technology (ICT) Practitioners and Professionals for around fifty seven years. We are a SAQA recognised professional body, and our professional designation (PMIITPSA) is registered on the NQF. The Institute is a Not-for-Profit Company (NPC) and has grown into a body of just over 4 300 members of all grades.

In the last 18 Years, IITPSA has played an active role in the formation of the Sector Education & Training Authority, the development of Unit Standards, the compilation of the BEE ICT Charter and the promotion of the industry in the SAVANT programme.

### General comments in respect of the National Integrated ICT Policy Green Paper

The gaps in the ICT arena in South Africa remain predominantly the same as they have been for many years. South Africa’s foundation is mostly based on developing countries’ models, but ICT in developed countries is rapidly evolving and South Africa is left to play catch up. South Africa’s priorities need to shift to understanding what its strengths are and from there to choosing its strategic priorities. South Africa needs to come up with its own model that is suitable for it. Models that are being used in other countries are not always the best fit. Research and development hence become key factors in ensuring the success of the ICT sector, for meeting the current needs of the people and identifying where South Africa is falling behind.

For the purpose of commenting on the Green Paper, IITPSA will follow the framework of the gazetted document. However, we point out that the danger of organising the thinking based on the historical divisions between telecommunications, broadcasting and postal services (for example) can lead to restricting the development of new ideas that should come from “outside of the box”. Convergence of technologies enables new approaches and we urge an open mind when considering how best to adapt to the new environment.

IITPSA supports the Key Principles set out in section 2.2 of the Green paper, including the additional five objectives suggested by respondents to the Framing Paper. There is some duplication in the 19 items under this heading and we believe they can be re-written into (say) no more than twelve guiding principles that can be included in the legislation as criteria against which all policies and laws can be measured.

The way in which ICT sector policy has been developed and implemented since the early 1990s has entrenched fragmentation and the protection of certain organisations and enterprises against the interests of South Africa. IITPSA urges the Government to move away from a controlling regime to an enabling regime that will promote affordable and available access to information, knowledge and services to all South Africans.

## **2. The Current State of the SA Communications Sector**

The common theme of the Electronic Communications sector is that wireless digital technologies have enabled wide access to telephony services and a growing coverage of wireless broadband access. The decline in fixed line services reflects the difficulty of raising investment for connections and time-to-market for these services. What is certain is the dominance of a few major service providers using the current licencing regime to protect their revenues and limit true competition.

In the Broadcasting services sector, the principal challenge is the failure to move to digital terrestrial television, where the lack of clarity over many years has allowed the vested interests of the main players to become more entrenched. IITPSA is concerned that the delay is at the expense of citizens who will have to pay a high price to access TV broadcasts, whether public or private, and that many will be cut off from these services by the technology change.

IITPSA urges Government to take account of the convergence of technologies in setting policies for both electronic communications and broadcasting. We suggest that, instead of the vertical division of services, there should be a horizontal approach where the foundation layer of the enabling infrastructure of high speed broadband is overlaid by the services available to users, with the third layer being the devices by which access is achieved. Each of these layers can have an appropriate licencing regime that takes into account public and private ownership.

IITPSA's main interest in the Green Paper is to ensure the appropriate innovation, adoption and implementation of technology to support the delivery of services to citizens and the empowering of economic and social development through access to information and services. Our comments on the sub-sectors will focus on the technology components. However, we also believe that the role of the Department of Communications should be defined in a similar light – focusing on the technology that enables communication.

In our view, this would lead to moving the issues of broadcasting content to the Department of Arts and Culture and the management of the SABC and SAPO to the Department of Public Enterprises, as these are not “communications” matters and serve to dilute the ability of the Department of Communications to deal with core concerns of infrastructure, access and standards.

## **3. Postal Infrastructure Services**

IITPSA agrees that SAPO is an essential service for reserved items (under 1Kg) but must compete in other segments. We understand that every household and business (including community enterprises and entities) must have an address. We sympathise with the challenges created by the high number of informal settlements in South Africa and call on SAPO to work with GIS enterprises to find a solution.

IITPSA is confused by the numbers on page 23 of the Green paper (section 3.3.2) about numbers of PO boxes and addresses and requests that the stated figures be clarified.

IITPSA emphasises that SAPO needs professional management, good employee relations, high service standards in order to fulfil its mandate. It must not exhibit the characteristics of a government bureaucracy if it is to be the trusted service provider of choice.

IITPSA recommends that SAPO must use/offer appropriate technology to provide service that include e-mail and web hosting, e-commerce, digital signing, Internet, SIM cards, Postbank, etc.

#### **Policy questions:**

1. The distinction between reserved/unreserved is clear enough.
2. The SAPO infrastructure can be easily adapted to offer additional government services. Already renewing vehicle licences. Can renew passports, issue IDs, accept payment of taxes, rates, licences.
3. Postbank should have a full banking licence but remain as a revenue generator (at low cost to clients) for SAPO.
4. The right to an address needs to be coordinated with Dept of Human Settlements – squatter camps not included.
5. Unreserved segment operators can enter into service agreements that transfer part of revenue for deliveries into remote areas, or can carry SAPO items free when entering such areas.
6. SAPO locations should be connected to broadband network and offer WiFi access nodes.

## **4. Enabling Environment for Electronic Communications**

This is the core function of the Department of Communications and its portfolio agencies. It is essential that policy is not hidebound by outdated understanding of the role of the State in this essential contributor to the future of a democratic society that grows economically and develops socially, to eradicate poverty and establish fairness and equal opportunity.

As suggested earlier in this document, IITPSA urges the reviewers of policy-making to step back from the precedents of the past and take a fresh look at what can be done, given the current situation as the starting point. We must acknowledge that mistakes in the past have constrained the country's ability to benefit from the introduction of digital technologies and have moved South Africa too far down the global rankings.

IITPSA recommends that South Africa reviews the legislative and regulatory environments in countries that have embraced the contributory nature of digital technology and its positive effect on growth, and emulates the best practice found in those territories. IITPSA fully understands the imperatives of transformation and empowerment in South Africa and contends that these objectives will be more easily and quickly achieved through the creation of a ubiquitous and affordable electronic communications environment that encourages fair competition while underpinning efficient service provision.

To this end, ICASA must be resourced to ensure it is a truly independent Authority, empowered to make an enforce regulations that provide a clear and stable environment in which all operators and service providers can plan and implement their future operations. IITPSA does not believe there is any need for another agency to manage spectrum – it falls within the ambit of ICASA and there is plenty of knowledge available globally to support decisions in this field.

IITPSA contends that the licencing regime must change to accommodate the way in which communication of information takes place now and will take place in the next 10 or more years. Government's duty is to enable the infrastructure that allows individuals, businesses and communities to create, share and store information and to turn that information into knowledge that supports decision-making and economic value. When the Dept of Communications has achieved that goal, it is the responsibility of other Departments to encourage and promote the activities that use the infrastructure, such as creation of content, trading, finance and government service delivery.

#### **Policy questions:**

1. Facilities-based or service-based competition? It is likely that a hybrid solution will be appropriate, to embrace the current realities of network ownership.
2. Mechanisms to ensure coordination of broadband planning and rollout: all networks are licenced by ICASA. They must use appropriate database systems, together with GIS technology, to track all broadband infrastructure (cable and wireless, private and public).
3. LLU has been overtaken by events and is hardly relevant.
4. There is little to be gained by attempting to reduce the significant market power of the established operators. More could be leveraged from using the same power to fund investment in greater coverage of high speed networks.
5. Spectrum management falls into the ICASA ambit, and is subject to international norms. There is no need to reinvent this wheel.

### **5. Digital Information age: E-Services and Cybersecurity**

e-Government is the responsibility of the DPSA and its agencies. ICT policy must ensure that ALL government offices are reliably connected to the broadband network.

It is the responsibility of the relevant departments to develop or acquire the applications that enhance their ability to meet the objectives set for them. Thus, matters of e-tax, e-health, e-education, e-commerce and cybersecurity fall within departments other than Communications.

#### **Policy questions:**

1. The regulatory mechanisms are generally adequate to protect consumers in the e-commerce environment but IITPSA recommends better education of consumers and training of officials to improve the effectiveness of these mechanisms.
2. Institutional arrangements to build a robust e-commerce environment require a simple tax regime, secure payment facilities and consumer recourse in the event of product or service failure.
3. Current legal measures in respect of cybercrime require reinforcement of the skills and capacity of the crime detection and prosecution services to enable effective implementation.
4. Institutional arrangements – see 3 above.
5. Crime is crime, cyber or otherwise. The SAPS and NPA must have adequate skilled personnel to detect and prosecute crime, and the courts must understand the application of the law and appropriate sentencing of guilty persons.

### **6. Information Technology (IT)**

IITPSA firmly believes that there must be a "champion" in Government for the industry comprising technology enabling communications and other services. There must also be clear boundaries between the core function of promoting, enabling and supporting that "sector" and the responsibilities of other

departments, as previously mentioned. If the Dept of Communications is to fulfil the core role adequately, it must recognise the hurdles that need to be overcome.

The failure to leverage the potential of the sector arises from poor policies and/or poor implementation of policies in respect of education, training, labour, investment and regulatory environment, exacerbated by fragmented and fractious representation of interest groups and stakeholders and lack of firm data about the size and shape of the sector. (On this point, IITPSA is concerned about the IT industry data given in section 7.2 of the Green Paper, which says there were close to 2 000 companies in the IT industry as at the end of March 2012. IITPSA is aware of approximately 4 500 companies registered with the MICT SETA – a significant difference).

Sections 7.4 and 7.5 of the Green Paper are vague and superficial, considering they relate to the future success of a multi-billion rand industry. IITPSA recommends a much closer engagement with the industry organisations to ensure an in-depth understanding of the ingredients of the sector, the types of enterprise and their relation to the global market. This sector cannot operate in isolation – it is international and interdependent – for components, for connectivity, for standards and for skills.

### **Policy questions:**

1. The country's IT competitiveness can best be enhanced by encouraging innovation and investment. Rapid improvement in education at all levels for STEM subjects will increase the supply of potential skills. Access to technology hubs, offering facilities, mentoring, coaching and skills development will support aspiring practitioners and entrepreneurs.
2. At the very least, Africa offers enormous opportunities to export IT products, services and knowledge. However, to do so, South Africa must first regain its strengths, through the points mentioned above, and through the active support of export potential by the Dept of Trade & Industry.
3. The Government's FOSS policy has been a dismal failure, due to a lack of will to implement it, a lack of skills to support it and a lack of understanding about how best to harness it. This is more a matter for DPSA, SITA, GITOC and SALGA to address than for Dept of Communications.
4. Other factors critical for the growth of the IT market are better government acquisition and procurement processes, a more effective SITA, clearer regulation and implementation of DTTv.
5. SMEs are a vital link in the IT market value chain. They are best able to support the needs of local clients, they are flexible and affordable sources of skills and services and they are more likely to provide employment growth than the large enterprises.

## **7. Broadcasting**

As proposed earlier in this document, IITPSA believes that a new approach to licencing in a converged environment is required. The providers of the platform will have one type of licence, whether it is satellite or terrestrial, cable or wireless. The providers of services on the platform will have another type of licence, be it TV, audio, data, or communications. The trend of current entertainment services is becoming increasingly interactive, making it more appropriate to consider licencing appropriate to 2-way communication than to "broadcasting".

There are issues of market dominance, both from the public "broadcaster" and the private sector satellite services provider, and these will need to be addressed, to ensure choice and affordability as well as access across the geography of South Africa.

IITPSA believes that once the service providers have been licenced (in particular the SABC) it should be the responsibility of other departments (Arts & Culture and Public Enterprises) to deal with matters of content and funding.

## **8. Universal Access and Service**

In spite of the vast amount of money that has been channelled into the Universal Service and Access Fund (USAF), the agency (now the USAASA) charged with employing those funds appropriately has signally failed to achieve the objectives thereof. Noble and appropriate those objectives were, but the policies and practices of USAASA failed to take into account the realities of attempting to plant licensees in underserved areas and the dramatic changes in take up of mobile technology, making fixed line services obsolete.

In addition, many other initiatives to increase the access to and use of ICTs, such as Gauteng Online, have also failed to achieve their objectives, largely due to a lack of understanding that installation of technology must be accompanied by ongoing training in its use and support for the maintenance of the equipment and the network.

IITPSA suggests that a review of the role of SOEs in the communications arena in respect of their role in universal service and access is carried out. This would include Sentech, Broadband Infracore, and SAPO. Areas needing additional investment would be identified and funds from the USAF appropriately channelled.

### **Policy questions:**

1. Improved affordability should be enabled by ensuring state-owned infrastructure is offered on a cost-recovery basis (or subsidised basis) to service providers who connect such entities as schools, clinics and community centres. Providers who install their own connections to such places must be incentivised through the USAF.
2. Government's perspective on the sector must be converged if it is to be effective in managing UAS – in exactly the same way as we noted in respect of controlling the rollout of broadband.
3. UAS obligations should focus on coverage, ensuring all South Africans can access the communications network from home or work.
4. In a converged environment we should cease to refer to sub-sectors, rather to the layers of infrastructure, services and devices.
5. USAASA needs a completely new approach, given the changes in technology. The MDDA should not be a DoC portfolio organisation, as it is more concerned with the skills around content creation. ICASA remains relevant as an independent, skilled, professional regulator.

## **9. Promoting Investment in the ICT Sector**

IITPSA notes that it is vital for the entire South African economy that investment in the “ICT sectors” is not just promoted but actively sought and channelled, to ensure that the country moves steadily up the relevant global rankings. Unless this is done, the growth in GDP essential for combating poverty and unemployment will never be achieved.

In this regard, it is interesting to note the reference to the ICT Charter only appears at this point in the Green Paper. We emphasise that the IITPSA supports the aims of the BBBEE process but recommends that there is no need for a “sector Charter” and that it will be simpler for all concerned to follow the generic

codes. The passage of time since the Charter was drafted has made it superfluous and there is no need for the sector to bear the cost of setting up and supporting a sector-specific Council.

Also we note that there are “6 737” SMMEs operating in the ICT sector, according to this section, as opposed to the “2 000 companies” quoted in the IT section earlier. Again, we emphasise the importance of accurate data to sensible policy and decision-making.

## **Policy questions:**

### **Question 1:**

*Given this Economic Climate, how can the South African ICT Industry attract and sustain the Investments?*

### **Considerations**

- The number and frequency of industrial actions is a cause for concern in this sector. Unless resolved, this will deter investment and confidence in the sector.
- The inadequately educated labour force, coupled with labour unrest, will not promote investor confidence for the country as a capital destination.
- Innovators and researchers must be satisfied that their intellectual property (IP) will be properly protected.
- Investment support programmes must recognise the nature of the software and services markets and apply appropriate criteria, rather than the “traditional” industrial environment rules.

### **Areas identified for Investment**

- Software and applications development
- Broadband Networks
- Signal distribution
- Content development
- ICT skills development for both professionals and end users (e-citizens – for access to and utilisation of e-services)

### **Question 2:**

*How do we grow the domestic market amid the high levels of imports without undemanding our trade agreements and what other industry-specific support mechanisms both direct and indirect should be implemented so that the sector is rejuvenated to create jobs and revive South Africa’s excellence?*

This is primarily an issue of procurement policy and enforcement of BBBEE legislation and is not unique to the ICT sector. There are many more opportunities to “buy local” than are pursued, usually for inappropriate reasons. The issue should be addressed across the spectrum of government and not in isolation.

### **Question 3:**

*The value of IP does not necessarily lie in its registration but its use. How can we promote the use of local IP to drive innovation in the ICT sector?*

See Q.2 above.

### **Question 4:**

*Considering the economic climate characterised by limited domestic capital, how can South Africa balance FDI and local ownership of ICTs particularly in those highly regulated sectors such as Broadcasting and Telecommunications services?*

South Africa has to accept that the global nature of ICTs, especially in the post-convergence era, means that there is no simple answer to this question. We have demonstrated our ability to form and sustain

multi-national enterprises in the sector – such as Dimension Data, Multichoice and MTN. The “quid pro quo” is that MNEs based in other countries will invest here, and should be welcomed. By being creative in developing empowerment programmes, South Africa can leverage this incoming investment to best advantage.

### **Question 5:**

*How can we re-engineer ICT SMME development so as to enable them to participate across the entire ICT value chain?*

### **Considerations**

- The current incentives for SMMEs are not structured or coordinated
- Ongoing support structures for SMMEs are a concern, given the importance of SMMEs in respect of job creation in the country

### **Recommendations**

- There should be a consolidation of funding initiatives for SMMEs
- Ongoing support structures for SMMEs need to be strengthened and communicated more broadly. Access needs to be made easier
- Broader promotion of local developed IP for global competitiveness
- Increase university industry partnerships to ensure consistency between research and the needs of the knowledge economy

## **10. Skills Development for the Future**

### **Background and Context**

There are many, sometimes conflicting views on the availability and, particularly, the sustainability, of essential ICT skills to help grow the SA economy, including facilitating a step change from being a predominantly industrial nation to one that functions as both an African and a world player in the knowledge economy.

It is also acknowledged that, in terms of the National Development objectives, poverty, unemployment and inequality need to be addressed.

Whilst a few may disagree, the overwhelming sentiment seems to be that SA suffers from a lack of critical ICT skills at the professional level.

Apart from this, although many initiatives are aimed at making ICTs available to the broader population - e.g. Broadband, Universal Access, digital terrestrial television, the provision of e-Government and e-services, etc., there are few initiatives that really focus (and have had any significant impact) on creating and improving the end user e-skills of the average citizens in the country in order that they can effectively use these new services and systems.

In order to address these challenges, both the private and public sectors have to take a uniform view of what needs to be done, across a broad spectrum of areas in relation to the sphere of ICT skills.

### **Question 1:**

*How can SA maximise its human e-Skills capital to take advantage of new technologies to become a more effective part of the Knowledge Society?*

## Definition of e-Skills

The first thing to understand is what is meant by e-Skills. It would seem there are two possible "definitions":

1. "The ability to use and develop ICTs within the context of an emerging South African information society and global knowledge economy, and associated competencies that enable individuals to actively participate in the world in which ICT is a requirement for advancement in government, business, education and society in general."
2. **E-skills** or electronic skills include those needed to make use of Information and Communication Technologies (ICT) *as well as those required to apply and develop them*. The term e-skills is defined as covering three main Information and Communication Technologies (ICTs) categories:
  - a. **ICT practitioner skills** are the capabilities required for researching, developing, designing, strategic planning, managing, producing, consulting, marketing, selling, integrating, installing, administering, maintaining, supporting and servicing ICT systems.
  - b. **ICT user skills** are the capabilities required for the effective application of ICT systems and devices by the individual. In the Information Society, ICT users apply systems as tools in support of their own work. User skills cover the use of common software tools and of specialised tools supporting business functions within industry. At the general level, they cover "digital literacy".
  - c. **e-Business skills** correspond to the capabilities needed to exploit opportunities provided by ICT, notably the Internet; to ensure more efficient and effective performance of different types of organisations; to explore possibilities for new ways of conducting business/administrative and organisational processes; and/or to establish new businesses.

The difference between these two definitions is the recognition in the second definition that ICT is an industry, in and of itself, and that there is a range of jobs performed in the industry that result in "systems" relevant to government, business and the Information Society as a whole.

NeSPA (2013) uses the first definition as its base which means that little or no focus is given to the skills needed to create the infrastructure (systems) that enable the Information Society.

## Priority of Skills Development

The South Africa e-Skills initiative identifies the following categories:

- **e-literacy skills**: defined as skills aimed at employment readiness, particularly target unemployed and unskilled youth and rural society (including starting own small business).
- **e-participation and e-democracy skills**: defined as focusing on enhancing citizen interactive engagement with communities, local, provincial and national governance processes to increase participation, self reliance and equity.
- **e-government/governance skills**: defined as focusing on increasing efficiency and productivity interactive bimodal approaches to service delivery of governments and their agencies across all ICT platforms including new cell phone technology, community radio, and the like.
- **e-business skills**: defined as aimed at increasing organisational efficiency and productivity.
- **e-user skills**: defined as focusing on enhancing efficiency of public and private sector knowledge workers.
- **e-practitioner skills**: defined as aimed at enhancing capacity of public and private sector to manage, support and service ICT.
- **e-community skills**: defined as aimed at increasing self reliance, participation and community support in a socio-economic setting to build social cohesion in ways that can better build local solutions to societal matters such as crime, health, education and the like.

Nowhere in these definitions is there a focus on the ICT Professional who is responsible for designing, building, and implementing ICT solutions that facilitate the above definitions. It is our contention that this is the main reason why the South African ICT industry has gone backwards over the past 8 to 10 years.

## South Africa's Global Competitiveness

The tables below show the South African ICT Industry's rank in terms of Global Competitiveness. The first table is from the 2007 report, and the second table is the 2011 report.

### BSA IT Competitiveness Report - 2007

	Rank	Overall Index Score	Business Environment	IT Infrastructure	Human Capital	Legal Environment	R&D Environment	Support for IT Industry Development
United States	1	77.4	97.0	81.3	96.4	92.0	39.8	86.8
Japan	2	72.7	82.0	52.3	67.4	79.0	84.3	77.1
South Korea	3	67.2	80.0	61.7	74.8	66.0	56.6	74.3
United Kingdom	4	67.1	95.0	69.4	81.6	88.5	23.2	84.9
Australia	5	66.5	92.0	75.9	76.2	87.0	21.1	86.2
Greece	33	38.6	75.0	13.9	56.3	71.0	3.5	60.9
Latvia	34	37.9	72.0	19.3	55.9	69.0	1.9	55.4
Lithuania	35	36.6	68.0	14.4	54.7	71.0	2.3	55.4
Malaysia	36	34.9	73.0	16.5	43.7	53.0	1.8	65.5
South Africa	37	33.4	77.0	8.9	40.8	63.5	1.5	60.6

### BSA IT Competitiveness Report 2011

	Rank	Overall Index Score	Business Environment	IT Infrastructure	Human Capital	Legal Environment	R&D Environment	Support for IT Industry Development
United States	1	80.5	95.3	76.5	74.1	92.0	74.3	87.2
Finland	2	72.0	98.2	71.0	52.1	89.5	67.3	78.6
Singapore	3	69.8	91.0	65.2	51.8	81.5	67.2	82.3
Sweden	4	69.4	90.1	83.3	46.4	85.0	54.9	81.6
United Kingdom	5	68.1	93.2	74.0	57.5	88.5	46.7	80.0
Bulgaria	43	38.1	64.2	33.2	36.8	56.0	21.7	44.0
Mexico	44	37.0	72.5	19.5	33.1	65.5	16.3	57.4
Argentina	45	36.2	53.9	28.7	38.3	67.5	16.8	43.3
Russia	46	35.2	48.4	32.0	52.4	50.0	15.4	31.1
South Africa	47	35.0	57.5	17.5	32.1	64.5	18.4	55.2

In the period 2007 to 2011, South Africa dropped from 37<sup>th</sup> position to 47<sup>th</sup> position out of the total of 64 countries that are evaluated.

The specific areas of weakness are:

- **IT Infrastructure** – which evaluates
  - Extensive personal computer (PC) ownership
  - High broadband penetration

- Good Internet security
- Substantial levels of spending on IT – both public and private sector
- **Human Capital** – which evaluates
  - Students studying IT as a percentage of gross university-age population
  - Number of students enrolled in tertiary-level science programs
  - Number of people employed in the Technology sector
  - The education system’s capacity to train technologies with business skills
- **R&D Environment** – which evaluates:
  - Gross government expenditure on R&D
  - Gross private-sector expenditure on R&D
  - Number of new domestic IT patent applications filed by residents each year, as % of total patent applications.
  - Receipts from royalty and license fees
 and, in 2011
- **Support for IT Industry Development** – which evaluates:
  - Access to medium-term finance for investment from domestic and foreign sources
  - Existence of a coherent national government strategy to achieve e-government
  - Government spending on IT hardware, software and services
  - Existence of an even-handed public policy stance on technology or sector development.

### South Africa as an IT Outsourcing Destination

The global IT services market is a highly dynamic environment and selecting the best outsourcing location for IT operations can have a significant long-term impact on organisations. SourcingLine has compiled the most comprehensive database of outsourcing country statistics to aid organisation decision making. Each country has been scored across key statistics which fall into three broad areas of Cost Competitiveness, Resources & Skills, and Business and Economic Environment.

Overall rank ▲	Country	Overall outsourcing index	Cost competitiveness index	Resources & skills index	Business & economic environment index
1	India	7.1	8.3	6	4.2
2	Indonesia	6.7	8.6	4.3	4.4
3	Estonia	6.6	7.5	5.2	6.9
4	Singapore	6.5	6.4	5.7	9.4
5	China	6.4	7	5.6	5.6
25	Jamaica	5.2	6.2	3.7	4.7
26	Ukraine	5	6.3	3.2	3.8
27	Ghana	4.9	7.5	0.9	4.3
28	Israel	4.7	3.8	5.5	7
29	South Africa	4.6	6.9	0.6	6.3

According to these statistics, compiled in 2012, South Africa is 29<sup>th</sup> out of 38 destination countries for IT outsourcing. The specific reason for our low ranking is the Resources and Skills Index where South Africa has a score of 0.6 compared with India's 6.

### **Growing Youth Unemployment and Unrest**

These exceptionally poor results for South Africa as an IT industry, are even worse when considered in the light of increasing youth unemployment and increasing civil unrest in the country.

### **Blueprint for Global IT Competitiveness**

Technology innovation drives economic growth and improves people's daily lives, but countries cannot take innovation for granted. They must actively promote it with public policies that foster development of new technologies. National ICT policy frameworks need to:

- protect intellectual property;
- attract and welcome talent from around the world;
- invest in basic science;
- create exceptional schools;
- promote open markets;
- ensure fair competition; *and*
- build trust and confidence in technology.

This is applicable to all countries aspiring to thrive in today's globally integrated digital economy.

### **Promote Job Creation by Fostering Creativity and Innovation**

Robust intellectual property protections — including copyright, patent and trademark laws — provide the very foundation for creative enterprise to flourish.

BSA recommends the following:

#### **Strong intellectual property enforcement**

- Raise awareness among the public about the roles that intellectual property rights play in fostering innovation and driving wage and job growth.
- Vigorously enforce copyright and trademark laws — and ensure they keep pace with new innovations such as cloud computing.
- Institute civil and criminal penalties to combat IP infringement, especially in the world's fastest growing markets for information technology, such as China, India, Brazil, and Russia.

#### **World-class patent systems**

- Devote adequate resources to patent offices to ensure they can review applications efficiently and award high-quality patents while weeding out those that are undeserving.
- Do not discriminate among technologies or types of inventions.

#### **Technology Neutrality**

- Promote technology-neutral principles in government procurement and other policy initiatives.

### **Case Study: South Korea - The Payoffs and Perils of IT Industry Policy**

Policymakers are widely credited with making South Korea an IT powerhouse and one of the world's most connected countries. It ranks a respectable 19<sup>th</sup> in the 2011 IT Industry Competitiveness Index. But government efforts to foster a competitive IT sector have come in for plenty of criticism, too.

No doubt, the IT industry is the driver of South Korea's economic success. The Asian country is today the world's biggest producer of memory semiconductors and display panels and the second-biggest maker of mobile phones. According to the Ministry of the Knowledge Economy (MKE), IT exports increased from US\$5m in 1970 to US\$154bn in 2010 and now represent 33% of total exports. The IT sector accounts for about 11% of GDP, compared with just 0.01% 40 years ago.

MKE officials stress that the key to this success is effective collaboration between the government and the private sector. A good example is in the rollout of super-fast broadband networks, which will be crucial in the era of cloud computing. By establishing firm targets for speed and coverage, and providing

incentives such as a favourable tax regime, the government has encouraged the private sector to invest the bulk of the funds needed while ensuring competition does not suffer.

The government's efforts in the educational area are also laudable. One initiative is to promote cooperation between businesses, universities and research institutions. An "IT mentoring" program gives students the opportunity to gain experience in a commercial environment. At the same time, the government tries to ensure that business people are involved in shaping university curricula. All of this is aimed at matching the needs of the IT sector with the educational system.

## Recommendations

*How can SA maximise its human e-Skills capital to take advantage of new technologies to become a more effective part of the Knowledge Society?*

In order to maximise South Africa's e-Skills – in the broad definition – there are a number of things that need to be done:

1. There needs to be more attention on ICT Professionals. Development of IT specific knowledge, skills and ability should take first priority. In doing this there are a number of benefits:
  - a. We will improve our ranking as a destination for outsourcing. This in turn will increase jobs and reduce unemployment.
  - b. We will create an environment more conducive to research and development to create the products and services that will benefit the Information Society
  - c. We will create more products for export, earning higher levels of royalty and licence fees.
2. The current environment for IT skills development needs to be reconsidered. Entry level for IT jobs is level 5 or 6 of the NQF. Besides what the IITPSA (Institute for IT Professionals SA – the SAQA recognised Professional Body for IT in South Africa) has put together, there is no method of growing people in the IT industry. This is confirmed in the Green Paper, paragraph 11.7. Government and the MICT SETA need to recognise the framework development by IITPSA for structured, certificated workplace development.
3. Of the estimated 13,6 million employed people in South Africa, just 180 000 are estimated to be employed in the IT industry. This is just 1.3% of the employed population working in an industry that, globally, is recognised as a driver of economic growth. The proportion of IT employment to Total Employment of countries that use IT to drive economic growth needs to be established, and targets set for South Africa.

## Question 2

*What Strategies should be put in place to meet the sectors human resources needs?*

*(Note: This response is briefer than the response to question 1, as there is some overlap in these questions)*

## Background

There are two main players with regard to IT Skills in South Africa, and there are reasons why neither has achieved much in terms of developing the IT workforce in South Africa:

1. MICT SETA – The SETA, with a few exceptions where they have an MOU, only works on skills development up to NQF level 5. For all practical purposes, IT Skills only *start* at Level 5, and the skills shortages are mainly at about level 7 & 8. Even more importantly, most of the IT workers in South Africa work at organizations that are not members of MICT SETA, such as Financial Institutions, Manufacturers, Retailers, Government Departments and State-owned enterprises. Thus the information the SETA gets from contributors is not fully representative of the IT workforce as a whole.
2. E-skills Institute – this organization is mainly concerned with creating an information and knowledge society, in other words ensuring that citizens can access ICTs as required. It is

important to note that such a society requires a competent and ethical IT workforce to enable technology and services at all levels. This is demonstrated by the Pillars of the NeSPA, which are concerned with the citizenry and society.

So there is not a strategy that looks at how to develop the IT workforce within South Africa, and there is no clear career path. As IT skills have a relatively short shelf-life, most skill and competency development takes place through workplace learning and continuous professional development.

Workplace learning in the internet economy is further complicated by the sheer volume of learning materials available. Thus it becomes important that learning is related to the skills and competencies needed for IT employees, and assessment of these skills against an accredited framework is essential.

In terms of Teacher Training (11.6) – the Institute sees this as a really critical area since far too few secondary schools offer Information Technology (IT) as a subject, and one of the primary constraints leading to this is a severe deficit of adequately qualified and competent teachers to teach the subject. The Department of Communications needs to interface with the Department of Higher Education and Training in terms of addressing this critical need.

### **Recommendation**

South Africa needs to develop a strategy that considers all the job roles in IT (numbering some 420+), with a framework in place for developing these skills.

To learn from best practice, we should consider the European e-Competence Framework (e-CF). The Framework provides a reference of 40 competences as required and applied at the Information and Communication Technology (ICT) workplace, using a common language for competences, skills and capability levels that can be understood across Europe. As the first sector-specific implementation of the European Qualifications Framework (EQF), the e-CF was created for application by ICT service, user and supply companies, for managers and human resource (HR) departments, for education institutions and training bodies including higher education, for market watchers and policy makers, and other organisations in public and private sectors. See <http://www.ecompetences.eu/> for more. To ensure that the e-CF is in line with global requirements, the EU have engaged with other bodies from other countries.

The ICT Policy makers in South Africa should invite IITPSA, the SAQA accredited Professional body for IT in South Africa, to take the lead in setting up a project to get stakeholders to discuss and refine the IITPSA IT Competency Matrix, to make sure it meets the needs of everyone. Once this is complete, the Competency matrix and associated career paths will be integrated into the ICT Policy.

An intra-ministerial task team should be formed to consider the human resource needs of the country, and the matter of training, developing and retaining sufficient teachers and educators to grow the skills level of the population needs to be urgently addressed.

## **11. Institutional Arrangements**

IITPSA agrees that a fine balance needs to be maintained between policy and regulation on the one hand and too much control which can stifle both the sector and the economy as a whole on the other hand.

The roles of regulatory agencies need to be clearly defined and constituted in the interests of the economy and the citizens whom they seek to protect. The issue of “independence” is paramount and both the Department and Government in its broader context must be required to do everything within their power to both ensure and fiercely defend the independence of the regulators. Sectoral consultation

through Industry organisations in respect of these matters can also add much value to the constitution and functioning of the regulators and help to maintain true transparency in their processes.

As noted in section 4 of this submission, “ICASA must be resourced to ensure it is a truly independent Authority, empowered to make and enforce regulations that provide a clear and stable environment in which all operators and service providers can plan and implement their future operations.”

IITPSA again urges the Department to focus its attention on the real need of South Africa for an ubiquitous, reliable and affordable communications infrastructure – this must be the core mission of the Department. Diversion of resources and energy into matters that are more appropriately dealt with by other Departments merely dilutes the ability of DoC to achieve its mandate.

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24 March 2013