National e-Skills Plan of Action (NeSPA) 2012

“Continuing e-Skilling the Nation for Equitable Prosperity and Global Competitiveness in the Knowledge Society”

February 2013

[This document reports on achievements of the first National e-Skills Plan of Action (NeSPA) 2010 and the development and conclusions of the second e-Skills Summit, which were the bases for setting the new Action Plan (NeSPA 2012) for e-Skilling the Nation for Equitable Prosperity and Global Competitiveness and an effective participation in the Knowledge Society]
Acknowledgements

In compiling NeSPA 2012 it is important to recognise the valuable contributions of the many experienced thought leaders and managers across Government, Business, Education and Civil Society in South Africa, Kenya, Rwanda, Mexico, “Silicon Valley” USA, Ireland, United Kingdom, Australia and New Zealand who have shared their lived experience and provided such a wealth of well-considered advice. Their genuine concern and keen interest for success with this endeavour in South Africa has been both humbling and uplifting and ensured that the path chartered here is sound, achievable and can deliver sustainable impact. It is hoped that the many involved can see themselves in this document which is, in its essence, a collaborative approach to dealing with a very real issue at the centre of building a more equitable prosperity and increased socio-economic sustainability for South Africa.

The work reflected in this document valorises the e-Skills Institutes value proposition which provides a catalytic and collaborative platform for integrated action across aligned stakeholder partners.

Key global partners

The International Telecommunications Union (ITU) played a vital role in the development of this NeSPA 2012 by hosting the second South African e-Skills Summit as a part of their Global ICT Forum on Human Capital development. This not only provided a national forum but also ensured that the work reflected in here was benefitted from experience of delegates from the 55 nations in attendance.

It is a pleasure to recognise the efforts of the South African desk of the UNDP which has demonstrated the real value of having a global partner in helping South Africa chart a relevant path towards a more inclusive socio-economic future enabled by new forms of ICT through building relevant local capabilities.

It is also important to thank the IBSG of CISCO for supporting the development of the emerging platform for the e-skills agenda in South Africa since 2008.

Local partners

The Telkom Centre of Learning Team has provided valuable support and input to the formation of e-Skills Institute since 2009 and was a vital contributor to the e-Skills Summit that provided the forum for the major inputs into this document.

The e-Skills Knowledge Production and Coordination CoLabs and their hosting Universities of Pretoria, Western Cape, Limpopo, Walter Sisulu, Durban University of Technology and Vaal University of Technology provided sound thought leadership in the lead up phase and the e-Skills Summit itself.

The Research Network for e-Skills (ResNeS) also provided thought leadership for the planning, delivery as well as the collation and analysis of the findings presented here.

The initial synthesis and base compilation of this NeSPA 2012 was undertaken by Dr Zoran Mitrovic of University of the Western Cape, South Africa and a team under the leadership of Ms Mymoena Sharif (Chief Director, e-Skills Institute) and that included Dr Zoran Mitrovic, Prof Walter Claassen and Prof Wallace Taylor developed the final document.
Executive Summary

The National e-Skills Plan of Action (NeSPA 2012) advances the base laid by NeSPA 2010 after the first e-Skills Summit, (Cape Town in October 2010). It recognises and valorises the foundational premises of the National Development Plan (NDP) – Vision 2030 that building capabilities has to be at the core of developing more equitable prosperity and global competitiveness in the South African socio-economic platform that is increasingly dominated by new forms of ICT.

The South African National Development Plan – Vision 2030 (NDP) recognises that the South African economy is too reliant on resources to build a sustainable future in which its people can build more equitable opportunities and a cohesive society that is proud of its culture, resourcefulness, innovation and global recognition. The NeSPA 2012 recognises that any sustainable approach to addressing poverty and in building self-reliance, self-respect and a more cohesive society with a future for generations cannot be achieved without the social appropriation of ICT for local and personal benefit. This simply cannot be achieved without recognising the need to build an ICT-related astuteness, i.e. e-social astuteness¹, across the full spectrum of South African society: as consumers, clients, customers, entrepreneurs, businesses, workers, learners, communities and families.

The Word Economic Forum (WEF) global e-readiness 2012 rankings show that South Africa has dropped from 47th (2007) to 72nd place (2012). It is a self-evident that whatever effort South Africa has applied thus far has not prepared its society for a socio-economic reality dominated by new forms of ICT applications powerful mobile ICT devices. The WEF global e-readiness report identifies lack of appropriate skills as a major contributor to this slide. This is not because South Africa has not applied genuine effort but because other nations have applied a greater coordinated national effort and put the matter at the centre of national priorities in dealing with inequity.

Since the Global Financial Crisis (GFC) in 2008, governments have become much more aware of the necessity for their socio-economic base to become much more adroit in the use of ICT for job creation, financial processes, service delivery, flexibility, innovation and creativity, i.e. to become e-astute.

ICT devices are now rapidly increasing capacity, mobility, accessibility, affordability and adding in a vision base in ways which overcome impediments of language and literacy and enables creativity across society. At this time developmental states are the biggest market in the world for devices which are increasingly socially based, do not recognise nation state boundaries, develop new value propositions and aggregate effort into increasing economies of scale that challenge national capacity to influence. On the other hand, without national leadership and intervention, the natural tendency of this new technology is to scale into centralised hubs of decision making that increase inequity and hence poverty.

This NeSPA 2012 provides the model, identifies a planned approach, and calls for the emergence of a national entity that commands the support, resources and respect of all Government Departments, the State Owned Companies, Business, Education, Civil Society and Organised Labour. The approach outlined in this document has been informed by in depth investigation of approaches used in Mexico, Cuba, United States, Kenya, Rwanda, UK, Ireland, Australia, New Zealand and Northern and Eastern Europe. The model, which has been developed and tested across stakeholders in Government, Business, Education, Civil Society and Organised Labour since 2008, was endorsed by the ITU global ICT Forum on Human Capital Development (Cape Town, October 2012) and recommended for adoption by the fifty-five (55) nations in attendance.

¹ The novel terms of e-Astuteness and e-Social Astuteness, used throughout this document, are in more details described in sections 5.2.3 Establishing e-Skills Integration for Impact and 5.2.5 Developing an e-Skills Ecosystem.
The deliberations in developing the South African NDP – Vision 2030 inter alia identified coordination within government, the private sector, education and civil society along with people centred development and being responsive to international environment as key drivers in building a capable developmental state. NeSPA 2012 embeds responses to these issues into the essence and fabric of its approach. It provides the means for a single point of entry for national and international interactions in dealing with a matter that is at the core of its future prospects, namely building e-social astuteness across the full spectrum of society. It calls for and provides the approach for integration, aggregation and collaboration “within and across government, the private sector, education and civil society” in e-skilling South Africa. The aim is to redress its shocking slippage in the global e-readiness rankings and to build a sustainable base in South Africa for more equitable prosperity and global competitiveness in a socio-economic environment that is increasingly dominated by new forms of ICT.

NeSPA 2012 recognises the need for a mechanism to ring fence and second resources into a new vehicle to provide the means for all agencies to better align their efforts to building a societal e-astuteness that is essential to achieving success in any developmental agenda in the 21st century. It recognises that the environment surrounding education, particularly higher education and training, is irrevocably changing and that Government must provide the mechanisms for education to be more directly aligned to and engaged with the community in ways that can deliver on the goals of the NDP – Vision 2030. New vehicles involving Government, Education, Business, Civil Society and Organised Labour must be established with and at Universities to provide a means for educational processes (national and international) to develop and apply their skills to build and evaluate capabilities for embedding new forms of ICT into every facet of South African life.

NeSPA 2012 recognises the need for the myriad of existing e-centres and community e-learning centres established by a vast array of government, private enterprise and civil society to be aggregated into a system that provides collaborative focus and leadership support in ways that harness the best knowledge directly into local development. This aggregated network of the community learning centres needs to harness the skills, energy and interests of formal and informal learners - as a component of formalising and embedding e-astuteness in social capacity development. These centres need to be redesigned, reinvigorated and developed into providing the means to harness local innovation, create opportunities that can be then feed into incubator centres and accelerator centres that can create new value propositions. This simply cannot happen without a concerted, mandated and integrated national approach.

NeSPA 2012 recognises the need to develop an architecture that can spearhead a focused approach for academy, research, monitoring and evaluation and policy development specifically aimed at building a societal e-astuteness. It recognises that despite the best efforts of the existing distributed system largely operating “in silos”, South Africa’s capability development for the social appropriation of ICT for local benefit has not worked. International experiences clearly demonstrate that putting more money into the existing structures will not address the matter and in fact often increases insular efforts, unnecessary competition and fails to align effort to address national goals in visible ways.

In order to address this matter and given the foundation set by NESPA 2010, NeSPA 2012 recommends:

1. Providing the mechanism to aggregate and integrate efforts across Government, Business, Education, Civil Society, Organised Labour and with the international community that develops capabilities for an active e-astute citizenry which can grow an inclusive economy within a capable developmental state.

2. Developing policy development, research, monitoring and evaluation capacity through
a. Strengthening the Research Network for e-Skills – ResNeS with the allocation of funds and resources from existing government provisions.

b. Request a policy intervention to allocate 12 South African Research Chairs Initiative (SARChI) to e-skills, e-astuteness and e-readiness initiatives with the relevant adjustments to the selection criteria to account for emerging national needs aligned to the NDP.

3. The establishment of collaborative multi-stakeholder funding vehicle to commence coordinating a multi-stakeholder approach to addressing South Africa’s e-readiness slippage.

4. Reinforcing the mandated legitimacy and increasing awareness of the e-Skills Knowledge Production and Coordination CoLabs across all levels of government, (especially local and provincial), SOCs, business and education by instigating project engagement supported by correspondence from relevant coordinating mechanisms of the South African Government.

5. The establishment and delivery of a national curriculum and competency framework (NCCF) for e-Skills across the full education, training and social learning landscape.

6. Building capacity for e-astuteness through the establishment of a 5 year program of e-capacity building sabbaticals for senior representatives in Business, Government, Education and international exchanges for post graduate, undergraduate and high school learners in a coordinated approach across its international partnerships.
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<td>This term is closely related to developing e-competent individuals by giving them appropriate ICT-related knowledge and skills and training them to develop a competent attitude and knowledge to use it and to adapt to the rapidly changing new forms of ICT devices and associated software.</td>
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<td>e-SI</td>
<td>e-Skills Institute</td>
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<td>e-Social Astuteness</td>
<td>This term denotes a smart way of applying acquired e-skills and e-Astuteness for everyday socio-economic development and better life opportunities for local benefit in a socio-economic dynamic increasingly impacted by new forms of ICT.</td>
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<td>HRDC</td>
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1 Introduction

“We know it well that none of us acting alone can achieve success. We must therefore act together as a united people for national reconciliation for nation building for the birth of a new world”.

President J. Zuma quoting former President N. Mandela’s inaugural speech

“At the core of this plan is a focus on capabilities; the capabilities of our people and our country and of creating opportunities for both”

NDP – Vision 2030

Democratic South Africa has made genuine progress in creating a more equitable society by, for example, providing better access to education and training at all levels and continuous improvements to the healthcare system. However, despite the South African Constitution and the international human rights law recognition that everyone has the right to an adequate standard of living, we are still facing conditions which do not sustain the human rights of our citizens and their dignity. The situation is not improving in that we are still unable to achieve sustained economic growth that would support genuine equitable prosperity. As stated by the recent World Economic Forum’s Global Competitiveness Report, policy-makers worldwide (including South Africa) “are struggling to find ways to cooperate and manage the current economic challenges while preparing their economies to perform well in an increasingly difficult and unpredictable global landscape”\(^2\). This Report also points out that one of most important pillars for achieving global competitiveness is a quality of education and training as “today’s globalizing economy requires countries to nurture pools of well-educated workers who are able to perform complex tasks and adapt rapidly to their changing environment and the evolving needs of the economy”.

The recent economic and financial turmoil since 2008 has reinforced the wide-spread view that global economies and societies are more than ever reliant on information and communication technologies (ICT) as the world migrates to the so-called Information Society and Knowledge Economies – commonly named as Knowledge Society. The Internet is increasingly becoming a preferred platform for business connections as well as economic and societal innovation. Internet based applications and tools bring people together and enable them to share skills and knowledge for wealth creation, equitable prosperity and global competitiveness\(^3\).

There is common understanding among the developed and developing countries that development of the knowledge-based and innovation-driven economies and societies is not possible without having highly ICT-skilled (e-skilled) knowledge workers and digitally literate (e-literate) citizens (as consumers, clients, participants, friends, families and communities). ICT-related knowledge, skills and competences (also referred to as e-competences) are critical for the growth of “new age” economies that indispensably require innovation and aggregation of resources, to achieve global competitiveness. In the South African context, e-skills are broadly defined as the ability of people to use and create all forms of Information and Communication Technologies (ICT) in order to achieve equitable prosperity and global competitiveness in general, and to improve their life opportunities in: (i) personal and educational space, (ii) work environments, (iii) community interactions and (iv) participation in government processes.

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\(^3\) This, among others, include: employment readiness; effective e-governance and service delivery; business development; socio-economic development; and research and development.
However, there is increasing recognition that the shortage of people with appropriate e-skills and e-competences has reached “epic proportions”, as highlighted by Don Tapscott in the recent European Union e-Skills Manifesto:

“This is a problem of epic proportions because technology literacy capability and skills are critical for all industries. Old industrial age models for innovation, production, distribution and virtually every other economic activity are being turned on their heads by globalisation and the digital revolution”.

Recent efforts by the e-Skills Institute (e-SI), through its Provincial e-Skills Knowledge Production and Coordination CoLabs, has made a significant start to developing approaches to skilling that can address e-skills capacity building in South Africa. Yet there is an obvious and urgent need for an accelerated and aggregated approach to e-skilling the nation to address the goals of the NDP and the MTSF (2009-14). Besides there being a very short supply of e-skilled workers and citizens in South Africa, the 2012 Global e-readiness index further highlights South Africa’s falling e-readiness position in relation to other developmental states – requiring an urgent, even more organised and coordinated action. The South African e-SI effort (involving Government and other stakeholders in business, education, civil society and organised labour) over the last two years has found that only a national approach built on effective collaboration across and within the stakeholder groups has the potential to address the immediate and future needs of South Africa through the ubiquitous adoption of ICT to build societal capability. In order to be successful, such an effort needs to be responsive to international trends, stakeholder needs, and the developmental agenda and be demonstrably aligned with the national developmental strategies.

In preparation for the second e-Skills Summit (2012), the e-Skills Institute and the Provincial Knowledge Production and Coordination CoLabs engaged a diverse range of stakeholders (Government, Business, Education, Organised Labour, Civil Society and global partners) to identify the major issues that would help in achieving ICT-supported equitable prosperity and global competitiveness. These include:

- the population’s need to have participative and engaged electronic access to all relevant government information and services including health services;
- workers’ need to be e-competent (technical, business and social skills);
- citizens’ need to be e-astute to be able to proactively engage with the ever changing technology platform in order to be effective users of services, build sustainable businesses, develop local applications to enhance opportunities in health, crime prevention, social cohesion, local governance, training and education;
- the necessity for an ICT career structure that will advance the attractiveness of the IT profession;
- the need for a formal education structure and National Curriculum and Competency Framework that supports the development of a range of e-skills for employment and fuller participation in both a national and global society;
- the need to develop more flexible working arrangements across geography to reduce travel, and increase opportunities for rural and peri-urban dwellers;
- the requirement for clear guidance frameworks to encourage the development of transferable skills and skills that are in most demand; and
- the need for skills development, training and services to be made available on multiple delivery and structural platforms and particularly on mobile devices.

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In beginning to address these issues, the e-Skills Summit delegates, together with the international and local delegates to the ITU Global ICT Forum on Human Capital Development, extensively discussed the following main themes:

- Building the e-skills capacity across the full spectrum of society to respond to the country’s national strategic developmental strategies and policies;
- Innovation and creativity to create new job opportunities;
- ICTs and e-Skills within a developmental context; and
- Building a dynamic information structure.

The context, findings and recommendations of the second e-Skills Summit and the ITU’s Global ICT Forum on Human Capital Development, this second iteration of e-Skills National Plan of Action (NeSPA 2012) is organised in this document as follows:

Section 2: **Foundation of NeSPA 2010**, which portrays the origin of the e-skills agenda in South Africa, the document’s origin and aims as well as the key recommended e-skills action and the achieved results.

Section 3: **South African and the International Context**, which opens the discussion regarding the national and international changed circumstances and the national socio-economic current and future priorities.

Section 4: **Situational Gap Analysis** discusses the present state of the South African e-skills agenda, the impact of changed socio-economic and technological circumstances, changes in the education sector, the present organisational challenges and opportunities arising from the merger of e-SI and two other government agencies, the emerging conceptual requirements (e.g. SA e-skills taxonomy), and the need for reprioritisation of the government priorities as well as the need for delivery for impact against the goals of MTSF (2009-14) and the NDP – Vision 2030.

Section 5: **Towards Delivery for Impact** outlines the guidelines for future e-skills actions in South Africa. This section outlines further actions to the NeSPA 2010 and describes new dynamics and new interventions for accelerating e-skilling the country toward equitable prosperity and global competitiveness in the rapidly changing global environment. The particular focus in this section is based on the e-SI ‘e-Skills Value Proposition’, an integrated approach to e-skilling for socio-economic impact, a South African e-skills taxonomy, further developing the e-skills ecosystem, an e-content development mechanism, an organisational strengthening and governance, the development and importance of the national e-skills curriculum, and the strengthening of e-skills research and knowledge dissemination through the e-Skills Research Network (ResNeS). Each of the sub-sections in Section 5 ends with the set of relevant recommendations for e-skills actions.

Section 6: **Delivery Plan for Impact** brings priorities, key drivers and the required e-skills actions against the timelines over the next two years. This section also presents the relationship between the expected impact from the planned actions and the monitoring and evaluating of that impact. High level monitoring and evaluation guidelines are also provided in this section. Each of the sub-sections in this main section ends with the set of relevant recommendation for e-skills actions.

The document ends with a number of appendices that are useful to understand the broader context of this document and the e-skills agenda in South Africa.

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5 For a full range of questions discussed at the Summit, please refer to Appendix D.
2 The Foundation of NeSPA 2010

2.1 The origins of the e-Skills agenda and formation of e-Skills Institute (e-SI)

The genesis of an organised e-skills agenda in South Africa started in 2002 when the President of South Africa at that time, realising the importance of modern ICT and the shortage of e-skilled people in the country, announced a need for an ICT university. This was followed by establishment of the African Advanced Institute for ICT in 2003 and the launch of the Meraka Institute by the Department of Science and Technology (DST) in 2005. The Presidential International Advisory Council (PIAC) on the national structural theme of Information Society and Development (ISAD) gathered in 2007 to discuss the lack of e-skills in South Africa and the negative consequences that the country was facing and concluded that an institutionalised national e-skills initiative should be launched. Consequently, the Department of Communications (DoC) formed the e-Skills Institute as a Departmental incubator programme, envisioning its development in three phases: conceptual, incubation and stand-alone. The e-SI then commenced a process to engage various stakeholders ranging from Government, Business, Education and Civil Society to Organised Labour and Global (international) Partners. This process of engagement led to the national e-Skills Summit in July 2010, resulting in the development of the National e-Skills Plan of Action (NeSPA 2010) and a range of implementation activities between 2010 and 2012. The e-Skills Institute also planned to conduct biennial e-Skills Summits involving local, national and international thought leaders, across Business, Government, Education, Civil Society and Labour, to coordinate, measure, evaluate and plan e-skills efforts across South Africa.

Despite having a very limited budget, the e-Skills Institute was envisaged to become a national catalyst aimed at:

- Better positioning South Africa to increase its global competitiveness;
- Providing a better base for increasing equitable prosperity in South African society;
- Growing the human resource e-skills base for South Africa; and
- Embedding new information technologies into people’s lives.

In order to fulfil its mandate, the e-SI focused on the following areas:

- Evidence-based strategic and policy development support by appropriate research;
- A monitoring and evaluation framework;
- Teaching and learning; and
- Innovation.

The approach to e-skilling South Africa for global competitiveness and equitable prosperity was (and still is) based on the core values of:

- Responsiveness;
- Enabling the capacity of emerging talent;
- Collaboration;
- Innovation; and
- Developmental approaches.

In the past two years, the e-Skills Institute with very limited resources has managed to establish a substantive formalised multi-stakeholder collaborative network involving partners across Government, Business, Government agencies and SoC’s, global development partners and agencies, continental and international partners, community, Organised Labour and Education (Universities, FET colleges and Schools – public and private).
Furthermore, the e-Skills Institute established the fledgling beginnings of six (6) Provincial ‘e-Skills Knowledge Production and Coordination CoLabs’ (hereafter referred to as CoLabs) in association with local universities⁶ as the central recommendation of NeSPA 2010. Their aim was to coordinate effort across all stakeholder groups within each Province and to provide an operational platform to engage Business, Education, Government, Community and Organised Labour and international bodies across Africa and internationally. This network has commenced and will continue a coordination process to integrate and lead a national effort within existing and emerging key e-skills theme areas, based on collectives of excellence.

2.2 NeSPA 2010 Origin and Aims

The need for NeSPA 2010 arose from three prevailing facts at the time in 2008:

- There was widespread agreement that the social appropriation of information and communication technologies (ICT) for local benefit and associated knowledge production was essential for building a more equitable prosperity and globally competitive economy in South Africa;
- There was also substantive evidence that in South Africa there was a serious shortage of skills that would enable an effective use of contemporary ICT skills, commonly known as e-skills, and
- That South Africa was slipping down the international “e-readiness” rankings.

It was then concluded by the then stakeholder group (across Government, Business, Organised Labour, Education and Civil Society) that addressing these concerns required a substantive proactive country-wide e-skilling agenda to support of South Africa’s sustainable socio-economic growth and development. This decision led to two years of extensive consultations with all stakeholders, streamlined in the so-called “The Path to the e-Skills Summit”, which culminated in the delivery of South Africa’s first e-Skills Summit held in Cape Town in July 2010. The main aim of the e-Skills Summit was to develop a National e-Skills Plan of Action 2010 (NeSPA 2010) which was to be aligned with national priorities stipulated in South Africa’s Medium Term Strategic Framework (MTSF 2009-14). NeSPA 2010 was designed to:

- Reflect a national consensus in terms of e-skills priorities with input from all stakeholder groups;
- Provide a coordinating framework for effective implementation of current and future e-skills initiatives matching the developmental, economic and societal needs of South Africa;
- Leverage local, national and international benchmarks and good practices for adaptation, replication and scaling across South Africa, and share them with the rest of Africa;
- Provide for a framework of relevant coordinated pedagogy development and delivery across the e-skills enhancement environment (including the informal sector);
- Propose fully costed solutions, owned by key stakeholder groups, to match current and future skills gaps for key sectors identified in the MTSF and IPAP as national priorities;
- Specify performance metrics to facilitate measurement and evaluation;
- Address political, economic, social, technological, environmental and legal considerations and identify current public sector constraints that need to be addressed;
- Prepare an e-skills requirements map, displaying the skills paths and needs from beginner to expert, for MTSF priority areas for economic growth and social development; and
- Define an appropriate “enabling environment” for e-skills development.

⁶ Durban University of Technology, University of Pretoria, University of the Western Cape, Vaal University of Technology, Walter Sisulu University and, recently, University of Limpopo
2.3 Key Recommended Actions of NeSPA 2010 and their Accomplishment

Wide discussion and consultation across all key stakeholder groups (Government, Business, Education and Civil Society, Organised Labour), before and during the first e-Skills Summit, found that the three major themes needed to be addressed to develop a national approach to “e-Skilling the Nation” and advancing the country’s socio-economic development were:

- An advanced understanding of the breadth and depth of e-skills;
- Research needed to develop their real-life applications and apply these experiences to policy development; and
- Their relevance to South Africa’s strategic direction.

Accordingly, the following five Key Recommended Actions were proposed:

1. Develop the National e-Skills Plan of Action (NeSPA 2010)
   This action was completed successfully and has resulted in the first South African National e-Skills Plan of Action (NeSPA 2010), which consequently has guided operationalisation of the national agenda of “e-Skilling the Nation”.

2. Establish an e-Skills Research Network (ResNeS)
   This action was completed successfully resulting in the establishment of the South African e-Skills Research Network. This research network, in alliance with the e-Skills Knowledge Production and Coordination CoLabs, was tasked with the production and dissemination of knowledge associated with e-skills necessary for (i) the theoretical foundation of the initiative, and (ii) an informed, evidence-based, policy making.

3. Establish Network Architecture for Collaborative e-Skills Knowledge Production Hubs
   This action resulted in establishing the fledging network of six e-Skills Knowledge Production and Coordination Hubs (hereafter referred to as CoLabs) association with local universities to coordinate effort across all stakeholder groups within each Province and to provide an operational platform to engage Business, Education, Government, Civil Society, Organised Labour and international bodies across Africa and internationally. This network (Figure 1) was created in order to coordinate and lead a national effort across emerging key theme areas based on collectives of excellence.

Figure 1: National Multi-stakeholder Network Architecture Model
4. **Develop a proposal for the development of a transfer pricing mechanism to provide a basic level of free access to cell phone and Internet connectivity**

This recommendation was subsequently investigated within the construct of providing a threshold level of access free to all in an analogous manner to that already provided for water and electricity. As this approach requires a legislative approach, it could not be actively pursued with the resources available at the time. However, there is still a strong belief that such an approach would be immensely beneficial to South Africa generally. Progressing such an effort would require a high level agreement in Government and be legislated in a similar manner as exists for water and electricity. It was also recognised that water and electricity are provided by sole providers and that access to the Internet and cell phone networks is provided by a number of competing organisations.

5. **Establish a high level advisory body to develop, recommend and implement a sectoral e-skills agenda**

Whilst it is recognised that the development of such a body is of great potential value, it nevertheless requires to be representative of a wide range of competing interests. To be operationally effective it needs to have a solid policy platform which has yet to be established. Business requires some certainty and prioritises timeous follow-through action. The delivery of this recommendation still has a valuable contribution to make and it is hoped that current discourse in policy development will provide the basis for the establishment of this body as a part of the newly amalgamated entity of the e-Skills Institute. In fact, the process for the establishment of an e-skills advisory body was initiated and a terms of reference document was produced.

3 **South African and International Context**

“Although it is undeniably global, the current crisis is taking different shapes and turns in various parts of the world. It is the first time in modern history that a crisis has erupted at a time when the main producing economy is not the main consuming economy. It is also the first time in modern history that international competitive advantages
are being built on factors that have so little to do with natural endowments, geography and ‘durable technological advantages’.

This accurate description of the current international context comes from one of the leading European e-skills experts emphasising the sense of urgency of the e-skills development in Europe. This urgency is caused by increasing unemployment in Europe, particularly unemployment of youth (22.4%). Statistics South Africa, in its recent report, showed that the situation in the country is worse than in Europe. The officially stated unemployment rate for South Africa is 25.5% and the youth (15-34 years) unemployment rate accounts for the highest proportion of this, namely 70.9%. The unemployment rate among the youth is officially recorded at 36.1%. Furthermore, the official record shows that 31.4% or 3.3 million of youth aged 15-24 years are not in employment, education or training (NEET). As these can be regarded as unemployable largely due to the lack of appropriate skills, the sense of urgency regarding skilling the nation for more equitable prosperity and reducing poverty, crime and community discord is painfully evident.

A number of African countries, including South Africa, feature among the world’s fastest growing economies. However, the South African continental and global status can only dramatically change to the better if the country significantly changes its approach to building national capability (as recognised as the centrepiece of the NDP) and this can only happen by ensuring the population has the skills and knowledge necessary for the socio-economic appropriation of ICT. This is undeniably a leadership responsibility of Government. It is also a prerequisite for innovative use of new technologies, which, combined with entrepreneurship, social innovation and social astuteness, can significantly change the way people in Africa and South Africa learn, work, play and think. Thus, whilst further development of the existing training and education systems is paramount, the development of systems that build on South Africa’s undeniable thirst for uptake of new forms of ICT as evidenced by cell phone adoption rates across the full spectrum of society is a fundamental matter. Increasing the efficacy of government service delivery, education and business through the use of modern ICT is of necessity predicated by a capacity of clients, consumers, communities, families, business and SMMEs to use the technologies appropriately. In addition to offering knowledge and skills, these systems must build their skilling intervention on a full understanding of how young African people shape their social identities, use ICT (including mobile social media) and traverse learning spaces within the emerging new paradigms of these technologies.

This is also true for the vast majority of citizens who are not in formal education or training and who are not in employment that provides on-going training as an essential part of job requirements. It needs to be remembered that the African continent has the fastest adoption of cell phones across the globe and that this adoption is based on people with low levels of formal education, literacy and disposable income. As the power of mobile devices increases into so called “smart phones” and they become the default options, people will need much more than a basic understanding of short messaging (SMS) and voice to make effective use of even the basic functionality of these devices. It is, of course, in Government’s interest to ensure that people are capable of making use of the new service options enabled by these new devices, that will of necessity (costs, reach, national integration, international standards, and alike) become much more common if they are to address issues of increasing inequity and poverty. Further, there is dimension of economic drift associated with incremental adoption across the user base in the developmental states when users migrate to international options before local businesses can gain profitable economies of scale or they can afford the long “loss leader” timeframes of large international businesses. The mid to long term impact of this on the economies of developmental states should not be underestimated. These matters place an increasing urgency on South Africa to proactively e-skill its population and make its people e-socially astute.

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To place South Africa’s ICT and e-skills agenda in a global context, the e-Skills Institute’s Value Proposition highlights other key global trends that will have an impact on South Africa:

- The developing world, with more than half the world’s population, provides the biggest opportunity for “new use” users for many ICT providers and developers;
- ICT development is converging, becoming more mobile, more affordable and more accessible in ways that suit developmental agendas for many countries;
- There can be no sustainable progress in developing equity of life chances in developmental states without the effective social appropriation of ICT; and
- The rate of ubiquitous development of ICT is moving past the current capacity and attitudes of many societal, organisational and service delivery structures and for effective deployment and adoption.

In poignant contrast, the 2012 WEF Global e-Readiness report highlights South Africa’s falling position (from 47th in 2007 to 72nd in 2012) in relation to other developmental states.

Collectively these trends are irrevocably changing the fundamentals of many services, businesses, educational approaches, the praxis of governance and the way in which life is led across much of society. These impacts are likely to be greatest in places where there are existing large equity gaps. Thus, developing e-skills, e-social astuteness, knowledge and attitudes to successfully pursue (and, ultimately, lead) these trends, urgently requires formal national mechanisms for collaboration across the stakeholder groups: Business, Government, Education, Civil Society and Organised Labour. Only a national approach built on effective collaboration across and within the stakeholder groups has the potential to address the immediate and future needs of South Africa in an emerging world of the Knowledge Society. But to be successful, such an effort needs to understand and be responsive to international trends, stakeholder needs, and the developmental agenda and also be demonstrably aligned with the national strategies in ways that best position South Africa in a continental context.

3.1 National Development Plan (NDP)

“No political democracy can survive and flourish if the mass of our people remain in poverty, without land, without tangible prospects for a better life. Attacking poverty and deprivation must therefore be the first priority of a democratic government”.

The Reconstruction and Development Programme, 1994

The Reconstruction and Development Programme (RDP) formed the basis of Government’s attempt to address poverty and deprivation, and to build a united, non-racial and non-sexist South Africa. Acknowledging progress made since 1994, but also the shortcomings of the RDP, the National Development Plan recognises that millions of people still remain unemployed and that many working households live on the verge of the poverty line. The deliberations for the development of the NDP have found that the failure of the RDP to achieve its highly desirable goals was related to a lack of collaboration within and across Government, Business, Education and Civil Society together with a lack of responsiveness to international trends (NDP, November 2011, p4 and NDP August 2012). Thus, it is suggested that urgent measures should take place in order to address the most pressing issues of poverty and deprivation through tackling high levels of unemployment, especially among the young population. The NDP - Vision 2030 (Aug2012) is based on six (6) Pillars: (1) Unite South Africans around a common programme to fight poverty and inequity; (2) Active citizenry; (3) Inclusive Economy; (4) Build Capabilities; (5) A capable developmental state; and (6) Leadership throughout society to work together to solve problems. In this regard, the NDP 20121 highlights inter alia three priorities: (i) raising employment through faster economic growth; (ii) improving the

9 Fully given in Appendix A of this document
quality of education, skills development and innovation; and (iii) building the capability of the state to play a developmental and transformative role. However, the NDP highlights that this cannot be done successfully if the capabilities of South African people remain low: this is reflected in every aspect of the six (6) pillars that underpin the NDP; viz Unite a common purpose to fight poverty and inequality; Active citizenry; Inclusive economy; Build capabilities; A capable developmental state; Leadership throughout society to work together to solve problems.

These matters are at the heart of the proposed action in NeSPA 2012. Accordingly, this e-Skills Plan of Action brings the necessary guidelines for e-skilling the nation for equitable prosperity and global competitiveness in line with the following NDP’s key priority areas:

<table>
<thead>
<tr>
<th>NDP Priority Area</th>
<th>NeSPA 2012 Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pillar 1: Unite around a common pillar to fight poverty and inequality</strong></td>
<td>Developing e-social astuteness across society is an essential component in developing a united approach fight poverty and inequality. Without this essential ingredient it is difficult to see how society can be effectively engaged in dealing with these key issues facing South Africa.</td>
</tr>
<tr>
<td><strong>Pillar 2: Active citizenry</strong></td>
<td>Developing active citizenry in current times when more than 90% of poor people in townships have access to a cell phone is heavily dependent upon a national approach that recognises the essential value of new forms of ICT including social media. In turn this is then dependent upon a NeSPA.</td>
</tr>
<tr>
<td><strong>Pillar 3: Inclusive economy</strong></td>
<td>An inclusive economy simply cannot be developed without a clear recognition of the impact of increasingly powerful, mobile, accessible and affordable modern ICT devices. Without a plan to develop capacity (e-social astuteness) right across society to use these devices effectively as customers, clients, consumers, businesses, SMMEs, families and communities, an inclusive economy will remain an elusive dream.</td>
</tr>
<tr>
<td><strong>Pillar 4: Build capabilities</strong></td>
<td>All evaluation of addressing poverty and inequality identifies capabilities to socially appropriate ICT for local benefit as an essential requirement. Hence the delivery of a national collaborative and integrated plan to e-skill South Africa lies at the very heart of capacity building for more equitable prosperity.</td>
</tr>
<tr>
<td><strong>Pillar 5: A capable developmental state</strong></td>
<td>A capable developmental state in a modern world clearly requires a state that is e-ready. South Africa has dropped from 47th (2007) to 72nd (2012) in the WEF global e-readiness rankings. Achieving a capable developmental state simply cannot be achieved without a concerted effort to address the issues underlying South Africa’s e-readiness rankings.</td>
</tr>
<tr>
<td><strong>Pillar 6: Leadership throughout society to work together to solve problems</strong></td>
<td>Developing leadership across the breadth and depth of society to solve problems is heavily dependent upon the effective use of modern ICT to bridge socio-economic divides, share discussions across wide groups, build consensus and deliver collaborative approaches. Without a well-developed e-social astuteness across the full spectrum of society making best use of ICT including social media, it is difficult to see how a collaborative approach to problem solving can be developed.</td>
</tr>
</tbody>
</table>
An economy to create jobs
NDP proposes to create 11 million jobs by 2030.

Improving infrastructure
E-skilling people for employment and entrepreneurship

Transition to low-carbon economy
E-skilling (including building e-social astuteness) for the infrastructure planners and operational staff

An inclusive and integrated rural economy
E-skilling (including building e-social astuteness) for rural communities and small scale farmers

Reversing the spatial effect of apartheid
E-skilling (including building e-social astuteness) the townships population for Digital Inclusion

Improving the quality of education, training and innovation
Giving educators and learners various e-skills (including building e-social astuteness) at all levels of education (ECD, primary, secondary, tertiary)

Quality health care for all
Providing e-health skills

Social protection
E-skilling (including building e-social astuteness) citizens and government officials for using ICT in social protection services

Building safer communities
E-skilling (including building e-social astuteness) citizens and the safety and security related government officials regarding effective use of ICT for building safer communities

Reforming the public services by professionalising them
Providing e-government and e-governance skills

Fighting corruption
Providing e-governance and e-participation skills for greater transparency

Transforming society and uniting the country
Providing e-skills (including building e-social astuteness) for digital and social inclusion

Taking into consideration the pervasiveness and ubiquity of ICT in all of these key developmental priorities mentioned above, it becomes self-evident that the actors (government officials, business leaders, knowledge workers, workforce and citizens) ought to be appropriately e-skilled to effectively use and harness the opportunities these technologies can offer. Further, because of the rapid development of the capacity, mobility, accessibility and affordability of ICT devices, a capacity to sustain effective utilisation and socially appropriate this technology for local benefit is required. In this regard, more detailed linkages between NeSPA 2012 and NDP are given in section 5.2.1 under “Linking the e-skills agenda to the National Development Plan 2012 (e-literate society by 2030)”.

3.2 Human Resource Development Strategy

The Human Resource Development Council (HRDC) was established to increase the responsiveness of Education and Training to the social and economic agenda. It has a focus on improving the quality of offerings and it seeks to address the skills shortages in priority areas. The goals of the Human Resource Development Strategy (HRDS 2010-2030) are to: i) reduce poverty and unemployment, ii) build social cohesion, and iii) develop national economic growth and competitiveness. It recognises the need for multiple skills development and calls for all stakeholders to become involved in a collaborative approach.

Hence, the NeSPA 2012 is clearly aligned to the fundamental philosophy and approaches of the HRDS. All serious evaluations of how best to address the Millennium Development Goals (MDGs) in improving equity of opportunity, reducing poverty, improving health outcomes, making life safer and in delivering better education for all recognise that the social appropriation of ICT is a key underpinning variable. Hence, as already stated above, it is vital that a serious and coordinated
approach be developed to address the disastrous slide in South Africa’s global e-readiness rankings (from 47th in 2007 to 72nd in 2012). The WEF Global e-readiness report for 2012 points to the failure of capacity development efforts as a key reason for South Africa’s falling position in 2012.

The e-Skills Institute presented its work and plans to the HRDC in February 2012 as it is obvious that the e-SI and the HRDC need to maintain a close association. There needs to be an adequate alignment of intent, purpose and delivery that should be reflected in the strategic plans, the collaborations across Government Departments and State Owned Enterprises and in the monitoring and evaluation efforts of all interventions aimed at improving South Africa’s e-skills, e-astuteness and e-social astuteness within the context of a developmental agenda.

3.3 Developments on the International Scene influencing e-Skills Initiatives and Interventions in South Africa

In order to clearly define this National e-Skills Plan of Action, it is necessary to take into account the following key global trends:

- The developing world with more than half the world’s population provides the biggest opportunity for new users for many ICT providers and developers;
- ICT development is converging, becoming more mobile, more affordable and more accessible in ways that suit developmental agendas for many countries;
- There can be no sustainable progress in developing equity of life chances in developmental states without the effective social appropriation of ICT;
- The rate of ubiquitous development of ICT is moving past the current capacity and attitudes of many societal, organisational and service delivery structures;
- An increasing and massive mismatch between the skills required and the dramatic trend to knowledge work in all economies;\(^\text{10}\);
- An increasing shift across governments, education, research & development agencies and business towards new formal structural agency aggregations to align diverse capabilities around addressing issues of employment, innovation, productivity, inequity and skills development for the challenges of the knowledge economy. This effort is coupled with a programme based approach which separates “form” (organisational structures) from “function” (collaborations for impact).

Jointly, these trends are changing the approaches to service delivery across businesses, education/training, the practices of governance and the way people live across the full spectrum of society. The impacts of these trends are likely to be greatest in places where there are existing large equity gaps in the economy and society - such as the case in South Africa. In order to address these global trends and the complex matters surrounding increasing productivity and the social equality in the Knowledge Society, many countries are starting to adopt the following approaches:

1. **Aggregating diverse specialist expertise and abilities** in large government departments focussed on addressing the mega national priorities determined by analysis of the increasing impact of ICT in the socio-economic space;

2. **Separating organisational structures from programme delivery** in new forms of matrix management where individual and work group capacities are seconded, leased or contracted into programmes which are funded to deliver against national priorities. Such arrangements include proportional secondment allocations, contracted specialist staff and formal alliances between Government, Business and Education. These programmes are

\(^{10}\) See, for example, Kurop, N., Joyce, A., Bergaud, C. & Wood, C. (2012) e-Skills Manifesto, European Schoolnet and DIGITALEUROPE, Brussels, Belgium.
usually mid-to long term i.e. 3-5 years and 10-15 years and include annual reviews by external expert panels;

3. **Establishing co-operative research centres or research centre of excellence models** which undertake:
   a. Monitoring and evaluation;
   b. The development of responsive, innovative, technical and service delivery applications for mega issues (e.g. for tackling unemployment, poverty, educational and training reform etc.); and
   c. Incubation, accelerators, privatizations, start-ups, and patenting for business development, industry, and job creation aligned to interaction or knowledge work.

Having in mind these trends and approaches, it is evident that South Africa has little alternative but to adapt such approaches into the local context in order to reshape its skills set and socio-economic positioning. This will stop and ultimately reverse its frightening decline in the global e-readiness indicators, which are significant predictors of capacity development regarding the impact of ICT on equitable prosperity and the country’s global competitiveness.

Today’s world is also characterised by global **terminological shifts**. During the last two decades, for example, the concept of the Digital Divide (DD) underwent an undeniable transition from a mono-causal issue of access (in the 1990s it referred to those who had or did not have access to ICT) to a multi-dimensional and highly complex phenomenon characterised by access, motivation, skills and usage. However, it was recently realised that the concept of the Digital Divide has become much more complex and multi-dimensional than even this. To reflect that fact, the terminology shifted from DD to Digital Inequality and Digital Inclusion suggesting that a more nuanced handling of the phenomenon (analytic/descriptive and policy/prescriptive aspects) is required. Currently, the term Digital Inclusion (DI) is widely accepted by policy-makers and researchers as it refers to positive measures at the strategy and policy levels aimed at overcoming the Digital Divide and Digital Inequality.

These terminological shifts are not just semantic. The shift from Digital Divide to Digital Inclusion is also qualitative as it reflects the shift from monitoring and evaluating outputs and outcomes to assessing a socio-economic impact achieved by interventions such as e-skilling the nation for equitable prosperity and global competitiveness. Hence creating and measuring the impact of the e-skilling actions outlined in this plan is in accordance with the government-wide approach to monitoring and evaluation.

Many past e-skilling interventions in South Africa, and many other developing countries, have shown that giving the people access to contemporary information and communication technologies and teaching them how to use these technologies were not sufficient. The recent second e-Skills Summit has confirmed that only appropriation of ICT through an astute application of skills, knowledge and attitudes can create an impact on the socio-economic wellbeing and prepare our people for equitable prosperity and our companies for global competitiveness. Hence we have witnessed the emergence of novel concepts of e-Astuteness and e-Social Astuteness.

These developments on the international scene are important for e-skills initiatives and interventions in South Africa (particularly given the prominence accorded to such an approach by
the NDP) and were taken into account while performing the situational gap analysis, which forms the basis for the recommendation of e-skills actions for the next two years.

It is also significant to recognise the strong support and endorsement of the approaches being developed in South Africa by the e-Skills Institute by the ITU Global ICT Forum on Human Capacity Development (Cape Town, October 2012 – the first time that this meeting has been held on the African continent). After a full discussion at this forum, it was recommended as a model for all of the fifty-five (55) nations in attendance. Such an endorsement not only recognises the leadership of policy development and proof of concept for the model developed by e-SI but it also valorises the positioning and responsiveness within a credible international context.

4 Situational Gap Analysis 2010-2012

To inform the development of national, provincial and local e-skills plan of action aimed at the delivery of positive impact on the lives of our citizens, it was necessary to undertake an analysis embracing: (i) the current state of the national e-skills agenda, (ii) considerably changed global and local socio-economic conditions, (iii) changes that have taken place in the South African educational sector, (iv) important organisational changes regarding the e-Skills Institute, (v) technological changes that require a new set of e-skills, (vi) emerging requirements for more clarity regarding the use of e-skills concepts and terminology, (vii) the desperate need for reprioritisation of government funding of the national e-skills agenda and (viii) growing demands for delivery for impact against national priorities.

4.1 Present State of e-Skills Agenda in South Africa

The South African government has stated its intent to fully commit to support efforts to provide equal prosperity of its citizens through an effective service delivery by public organisations and the global competitiveness of its companies. However, the country is currently facing a number of serious challenges that are hindering national efforts aimed at an appropriate use of ICT for the socio-economic prosperity of its people:

- **Insufficient leveraging of the potential benefits associated with ICT** as important shortcomings in terms of (i) basic skills availability among large segments of the population and (ii) the high costs of insufficiently developed ICT infrastructure resulting in poor rates of ICT usage;

- **Lack of coordination** across the full spectrum of service delivery, business, education and policy frameworks is seen as a significant impediment to addressing the vitally important matter of e-skilling South Africa. This lack of coordination also negatively impacts on the enabling environment, innovation and capacity development, which are the crucial needs in addressing socio-economic equity in South Africa;

- **Continuing unfulfilled needs** (i) for e-skills to be embedded in all spheres of learning (primary, secondary and tertiary levels of education and training as well as in the full spectrum of society as users and consumers), (ii) to target universities (including new universities in the Northern Cape and Mpumalanga), Colleges of Education, FET colleges and community based organisations to embed e-skills in the respective curriculum to prepare learners for addressing inequity in a society dominated by new forms of ICT;

- The **provision of e-skills** for learners and communities based in deep rural, rural and peri-urban areas is a huge problem due to the lack of education through Access Centres or Distance Education. Current community centres across the country are not effectively used or focussed nor are they adequately equipped or connected virtually for open distance learning (e-learning and m-learning).

These challenges require extensive and continued coordinated action by all stakeholders (Government, Business, Education, Organised Labour and Civil Society). It is now widely understood
in South Africa that e-skills (i) form a fundamental part of building capacity for a creative and innovative workforce, (ii) enable an engaged connected society, (iii) provide an e-socially astute society able to interact effectively with new forms of service delivery and (iii) inform the expansion of an academic infrastructure to meet the challenges of an emerging Knowledge Society which includes “massification” of free access to courseware and the increasing inclusion of credentials (for individual courses) in addition to traditional qualifications such as degrees.

The e-Skills Institute (e-SI), a driving force behind the establishment of a national e-skills agenda, is currently operating and further developing six Provincial e-Skills Knowledge Production and Coordination CoLabs (previously known as Hubs) (Table 2). The Institute also puts considerable effort into developing a Research Network for e-Skills (ResNeS) while further consolidating itself at the national level as the lead institution that strives to help South Africans to achieve more equitable prosperity and appropriately prepare for the emerging socio-economy dominated by new forms of ICT. Given the plethora of existing providers and stakeholders that do not have a collaborative architecture to align effort to national priorities (as defined in the MTSF and the NDP), e-SI is positioning itself as a national catalytic collaborator to align existing effort, identify gaps and overlaps, provide coordination leadership and develop/facilitate responses to gaps. The e-Skills Institute reflects a holistic and developmental approach to e-skilling by ensuring an effective participation of various stakeholders: Government, Education, Business, Civil Society, Organised Labour and the global developmental organisations. In that regard, e-SI develops a coordination platform that synergises e-skills stakeholders’ effort, thus facilitating multi-stakeholder cooperation at the national and provincial levels (including international cooperation). This coordination platform is aimed at building a better life for all South Africans through the facilitation process of building new products and services that will improve equitable prosperity and their global competitiveness.

Table 2: The Co-Labs’ hosting Universities and Thematic e-Skills Areas

<table>
<thead>
<tr>
<th>Hosting University</th>
<th>Province</th>
<th>Thematic e-Skills Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durban University of Technology</td>
<td>KwaZulu-Natal</td>
<td>Enhanced Government e-enablement through skilling of employees and use of Web 2.0 technologies for service delivery, e-participation and e-democracy, and efficient use of broadband</td>
</tr>
<tr>
<td>University of Pretoria</td>
<td>Gauteng</td>
<td>Creative Industry and Media, including that of building the entrepreneurship base in the private sector to support a connected society</td>
</tr>
<tr>
<td>University of the Western Cape</td>
<td>Western Cape</td>
<td>e-Inclusion and social innovation that includes the empowerment of e-centre managers in the social sector</td>
</tr>
<tr>
<td>University of Limpopo</td>
<td>Limpopo</td>
<td>e-Health</td>
</tr>
<tr>
<td>Vaal University of Technology</td>
<td>Northern Cape, Southern Gauteng</td>
<td>e-Literacy</td>
</tr>
<tr>
<td>Walter Sisulu University</td>
<td>Eastern Cape</td>
<td>ICT for rural development including production and distribution, market understanding and positioning</td>
</tr>
</tbody>
</table>

The e-Skills Environmental Scanning, organised by the CoLabs in 2011 (finalised in 2012), commenced a process of identifying existing activity, focus, integration, and understanding of what constitutes the provision of e-skills at the Provincial level. However, these scans also exposed the fact that the awareness of e-skills initiatives provided by a range of providers and the efforts of e-SI and the Co-Labs, was low. This lack of awareness negatively impacts on the development of a coordinated approach to e-skilling across South Africa, thereby further dissipating effort, reinforcing a ‘siloe based’ approach to e-skilling initiatives. Therefore, it is obvious that this National Plan of Action must call for e-skills related awareness campaigns to help in coordinating the e-skilling efforts that South Africa shares with the global community. In the immediate future, e-skills initiatives must be aimed at:
• The population to be able to interact effectively and through the use of ICT with all relevant government information and services, business, community, education and training providers, interest groups, family and family providers;
• Workers to be competent (combining technological, service delivery, entrepreneurial, business and monitoring skills);
• Developing and supporting career structure and an enhanced perception of the role of ICT across all professions in order to attract prospective practitioners to enter this career path;
• Providing leadership for the development of a comprehensive, fully integrated and formal education structure that supports the development and embedding of a range of e-skills training across the full curricula for employment and fuller participation in both a national and global society;
• Providing leadership for the development of clear guidance and frameworks to encourage the societal development of e-astuteness and e-skills that can quickly respond to current and future demand; and
• Facilitating e-skills development, training and services that can be made available on multiple platforms, particularly on mobile services.

The second e-Skills Summit unequivocally determined the need for the e-skilling initiative to be underpinned by an appropriate national e-skills curriculum and competency framework. In response to this, the e-Skills Institute established a Curriculum Working Group that has undertaken a review of best practice with its global stakeholder partners and scoped the requirements for a new e-skills curriculum aimed at an accelerated e-skilling of South African people. This report, titled “Towards a national curriculum and competency framework and standardised curriculum guidelines” (NCCF), is in its penultimate completion phase (February 2013) and it brings guidelines and structured pathways for progression, ensuring that at each stage learners are provided with sufficient information to help make decisions on next alternative learning stages. The intention of this document is to clearly link job roles and opportunities to individuals and employers and also to be clear about learning and development goals for both life and work. Figure 2 provides an overview of the NCCF:

![High Level Framework: Outline of the e-Skills National Curriculum and Competency Framework for South Africa](Source: NCCF, 2012)

The framework places e-skills for inclusion and e-literacy as essential for access to any further skills development. Capacity development in e-literacy is becoming essential to access government and health services and this in turn then provides capacity for citizens to harness opportunities in the socio-economic environment which are essential to delivering on the NDP.

The fact that almost three (3) million South Africa youths between the ages 18 and 24 are categorised as belonging to the so-called “not in education, employment or training (NEET)” group puts a significant responsibility on the e-Skills National Curriculum and Competency Framework and the whole e-skilling agenda in South Africa. The 2012 Summit urged the Department of Higher Education and Training (DHET) to **closely focus on the Further Education and Training (FET) sector**. In this regard this National e-Skills Plan of Action (NeSPA 2012) supports existing education and training policies:

- Strategic Plan for Higher Education and Training 2010–2015 (DHET);
- New Growth Path (Economic Development Department);
- Green Paper for Post-School Education and Training (DHET), and
- NDP intersections with these policies.

The Centre for Higher Education Transformation predicts enrolments of 291,454 FET college students in 2020 and 1,179,095 enrolments in 2030 and graduates are projected to increase from 71,423 in 2010 to 204,018 in 2020 and 825,367 in 2030.\(^{15}\) Dealing with the escalation of the obvious need visible in these projections should be appropriately reflected in this National e-Skills Plan of Action. This requires an early recognition and appropriate intervention in the e-skilling of both lecturers and students at all South African FET colleges well ahead of the projections. This as well as other complex e-skills interventions outlined in this document will need major coordination, resource reallocations and investments of time and skill across the stakeholder bodies. This matter is also woven into this e-Skills Plan of Action.

### 4.2 Technological Changes, New Set of Skills and emerging Conceptual Requirements

It is well recognised that the rapid capacity and paradigm changes occurring in the ICT space are having significant impact on the way businesses, governments and societies conduct their affairs. The shift in appropriation of ICT is changing value propositions across the breadth of the socio-economic platform and this has particular ramifications for developmental states. The unprecedented escalation in capacity, affordability, mobility, differentiation and availability of ICT devices as well as the rapid shift towards high quality displays on mobile devices pose a significant challenge in e-skilling people within their current jobs, better preparing people for existing vacancies, creating e-capacity for emerging jobs and in creating an e-social astuteness in the citizenry for achieving more self-reliance and more equitable prosperity.

Hence this National Plan of Action recognises a need for constant monitoring and analysis of the technological changes in order to continuously influence modification of e-skills curricula though the National curriculum and competency framework (NCCF). It also recognises that the only sustainable way for South Africa to position itself in this emerging world dominated by ICT, is to instil a capacity in its people to adapt to the new technologies and to appropriate them into their socio-economic

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\(^{15}\) Perold, H., Cloete, N. and Papier, J. (2012) Shaping the Future of South Africa’s Youth, Centre for Higher Education Transformation, Wynberg, South Africa
reality, i.e. the development of an e-social astuteness. A failure to do this will only exacerbate societal inequity and create unsolvable societal issues. It is relevant here to again point to the rapid decline in South Africa's global e-readiness position from 47th (2007) to 72nd (2012). This provides a stark reminder that “business as normal” in the current ICT environment has serious consequences for South Africa’s socio-economic profile and its competitiveness beyond mineral resources.

According to research from the globally reputable Gartner\textsuperscript{16}, the following technology trends in the next three years have the potential to affect individuals, businesses and societies – thus requiring new sets of skills:

- Increased use of mobile devices in everyday life and greater use of tablet devices for work and business;
- Mobile-centric applications and interfaces are considered as one of the top strategic technology trends;
- Context-aware computing and social media are increasingly transforming the user experience;
- The Internet of Things: a “network of networks” (e.g. networks across commerce, business, transport, education etc. connected to each other and networks of people using social media);
- The use of Application (App) Stores in business and in the marketplace (e.g. supporting the notion of Bring your Own Device – BYOD);
- The next generation of Advanced Analytics: predictive, collaborative and pervasive;
- Big Data, including Open Government Data;
- In-memory computing, which emerges from the converging evolution of memory technology, system architectures and enabling infrastructure software;
- Extreme low-energy servers that are greener than traditional servers; and
- Cloud Computing as the main enabler of corporate and public organisations.

It is noticeable that the above trends are heavily influenced by the growing importance of new levels of connectivity, decreasing costs for connectivity and an unprecedented rise of mobile computing. In South Africa, according to iTWeb\textsuperscript{17}, this will have significant influence on skilling our people for more equitable prosperity and global competitiveness. For example, iTWeb has reported\textsuperscript{18} that if South Africans, aged between 18 and 30, had to choose only one ICT device, 28% of respondents preferred a smartphone, while 35% favoured a laptop, 24% would choose a tablet and only 11% of the South African respondents would use the desktop computers. A staggering 71% of the respondents said that mobile applications are important to their daily lives and work.

The exponential growth in the use of “smart” mobile devices by a large portion of the population clearly demonstrates that the ability of South Africans to achieve more equitable prosperity and global competitiveness largely depends on recognising that the 21st century requires a new approach to the use of rapidly developing ICT devices. For example, the “smart phone” will rapidly become the default option and service delivery and business will have little option but to make full use of the functions and options they provide. A question then arises about the capacity of people to use the increased functionality which will be increasingly required to access basic services. This e-astuteness requires not only acquiring “traditional” e-skills (e.g. e-literacy, e-user skills) but also the capacity to continually learn new skills away from formal education and training will become the main

\textsuperscript{16} See, for example, Gartner’s annual list of top 10 strategic technology trends: \url{www.gartner.com/technology/research/top-10-strategic-technology-trends/}


\textsuperscript{18} ibid
ingredient of the economy and societal changes. Developing the capacity to producing new understanding and knowledge and their effective use to advance the economy and society through innovation, job creation, communication and information management, require a broadly defined set of skills that includes:

- Skills to use the ever advancing technologies (e.g. mobile devices, cloud computing); and
- To use the acquired skills in the economic or social context; through
- Developing capabilities and attitude to effectively use skills for the individual (e-Astuteness) and societal (e-Social Astuteness) advancements.

It is recognised that skills for 21st century are needed not by an elite few but by the whole nation as only an e-skilled nation can position itself for more equitable prosperity, readiness for active citizenship, employability, corporate and social entrepreneurship, and global competitiveness. The ability of our citizens to assess the ever-growing information deluge (at workplace or home) in a socially astute way (e-Social Astuteness) will enable them to make more reasoned decisions regarding their work, business or social life. This includes the application not only of e-skills but also those of the critical thinking, problem solving, creative and entrepreneurial thinking. Communication skills are indispensable not only for managers - every citizen must be able to interact competently. Furthermore, achieving a more equitable prosperity and global competitiveness for our businesses (including SMMEs) is not possible without collaboration between citizens, social groups and various stakeholders responsible for socio-economic development. It is simply central to the development of social cohesion in our ethnically and culturally diverse society. An innovative use of information, skills and knowledge to create opportunities for socio-economic progression through the creation of new services, processes and products is the “lifeblood” of the Knowledge Society. All of these “non-technological” skills are indispensable for a beneficial use of e-skills for equitable prosperity and global competitiveness and should be incorporated in any approach to develop equity of usable access in a socio-economic dynamic increasingly dominated by ICT.

The technological changes that require a new set of skills and the contextual distinctiveness of South African circumstances also require a contextual conceptual clarity of definitions and an e-skills framework suitable for a developing country with an emerging developmental state. In that regard, this e-Skills Plan of Action gives, in further sections, guidelines for devising an e-Skills Taxonomy and building an e-Skills Ecosystem.

4.3 Re prioritisation of Government Funding and Delivering for impact

In today’s world distressed by a prolonged global crisis, most governments are forced to do more with fewer resources. The challenge in this scenario is usually experienced as a trade-off between costs and performance. In order to avoid this ostensibly inevitable trade-off, the funding of the e-skills agenda in South Africa will require a more effective way that inter alia includes reprioritisation of government funding.

The e-SI has undertaken evaluations of approaches in South Korea, Mexico, Cuba, Kenya, Rwanda, United States, Ireland, UK, Australia and New Zealand. This work has found that formalised integration and aggregation across Government, Education (and training) and Business is an essential requirement for success in the current socio-economic situation which is increasingly dominated by the impact of modern ICT capacity and devices. Australia which has one of the largest Broadband initiatives (per capita) in the world, has formally amalgamated Government Departments, established new vehicles to both focus on leveraging ICT into improving GNP19 and to provide competitive funding for mid-long term collaborative innovation to bridge the gap between

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stakeholders in government, business and education\textsuperscript{20}. Kenya has established the ICT Board reporting directly to the President\textsuperscript{21} and with a national mandate that leverages line department support as well as providing a single entry point for business, international agencies and funding bodies. Mexico has provided the base for universities to directly link with business and 2287 Community Learning Centres (CLCs) in ways that leverage business development using ICT (including acceleration programmes) and for more than 100,000 students to benefit from direct engagement with the CLCs as mandated learning requirements. The governance and size (both large and small) of a number of countries whilst providing useful knowledge have limitations for adaptability and scalability in the South Africa context.

From these experiences, this NeSPA 2012 advocates the development of a national approach to e-skilling by collaborative budget and resource allocations, aligned to e-skills development, into a single coordinated approach with aligned targets and accountabilities. Further, it recommends that a vehicle that reflects a combined adaptation of the approaches of the NICTA and the cooperative research model (Australia) with mid and long term secondments across Government, Business, Education, Civil Society and Organised Labour be established. It also recommends that the e-SI CoLabs be strengthened with formal resource allocations from research, education, public service, trade, rural development and USAASA so that service delivery in these agencies can be better aligned at the provincial and local levels.

5 Towards Delivery for Impact

Impact is the demonstrable contribution that an intervention makes to society and the economy. In order to make a demonstrable contribution to e-skilling the nation for equitable prosperity and global competitiveness, this National e-Skills Plan of Action (NeSPA 2012) has considered the global and South African needs for an effective adoption and socio-economic appropriation of the contemporary information and communication technologies. The increasing global needs that need to be considered for developing a delivery mechanism for impact are outlined above in Section 4.1. In overview summary these are:

- The population needs to be able to interact effectively with business, government and education in the new environment;
- Workers to be competent in the rapidly changing environment;
- Need to enhance the perceptions of ICT as a career path;
- Need for a relevant educational structure;
- Leadership to develop e-astuteness; and
- Availability on multiple platforms.

As these needs reflect the current South African situation, in order to e-skill the entire population and achieve an e-literate nation by 2030\textsuperscript{22}, the e-Skills Institute has identified the following priority areas for intervention:

- **e-Inclusion** and **Social Innovation**, which includes e-skilling Smart Community Knowledge Centre managers in the social sector;
- **e-Participation** in community, social, education, innovation and governance processes particularly involving young South Africans;

\textsuperscript{20} See, for example, Cooperative Research Centres at [www.crc.gov.au](http://www.crc.gov.au)
\textsuperscript{21} See, for example, [www.ict.go.ke](http://www.ict.go.ke)
\textsuperscript{22} Thus supporting the New Development Plan – Vision 2030
- **ICT for rural development** including rural production and distribution, understanding markets and positioning for rural produce, the development of aligned business such Creative Industries, improved government service delivery for rural areas, communications, environmental monitoring and climate forecasting aligned to agricultural development, provision of local socio-economic alternatives to reduce urban migration and increasing community interaction between and across rural communities;

- Enhanced Government e-Enablement through the skilling of employees and the use of Web 2.0 technologies for service delivery, e-Participation and e-Democracy, and efficient use of the broadband services;

- **FET ICT skills development, Multimedia training** and **Networking training** in the educational sector;

- Building an e-Practitioner base within the country which includes the skills of business analysis, application development and the management of various kinds of information systems;

- **Creative Industries development**, including building the e-Entrepreneurship base in traditional cultural pursuits in the private sector; and

- **Free and Open Source Software** (FOSS) usage for local socio-economic development.

Many of the above interventions have already commenced if only at the rudimentary level in some instances in the last two years, since the start of the implementation of the National Plan of Action (NeSPA) 2010. This iteration of NeSPA (2012-14) points to the necessity of continuing with the escalation collaborative effort to deliver visible and measurable impact on these proposed activities. On the other hand, the impact of new worldwide developments on the local efforts combined with the impact of rapid technological changes mandate a new approach and dynamics. Hence, this e-Skills Plan of Action (NeSPA 2012) recommends that the future delivery of e-skills for socio-economic impact be based on:

- Continuing with the actions already started in the past two years, i.e. building on NeSPA 2010, and

- Introducing new dynamics and new interventions to respond to the changing environmental conditions (including technology, evolving global praxis, emerging local policy shifts, local dynamics across government, business, education, civil society and organised labour, the emergence of the NDP).

### 5.1 Building on NeSPA 2010

The analysis of the implementation of NeSPA 2010 has found that three of its key recommendations have been implemented and that the operating environment opened up opportunities that overtook the prospects for delivering on the remaining two key recommendations. The opportunity to revamp NEMISA (National Electronic Media Institute South Africa), a Section 21 Company, and to combine it with the e-Skills Institute has provided a significant opportunity to advance the mandate of the eSI. Being able to operate outside of the government public service but aligned to and responsible to the Minister of Communications addresses a key issue raised by business in developing a responsive approach. All of the legal matters have now been addressed and the new entity will formally commence operations at the start of the 2013-14 fiscal year. In going forward, NeSPA 2012 will continue with the key recommendations of NeSPA 2010 refocusing where necessary to respond to changing circumstances and build on these efforts with the recommendations of the e-Skills Summit 2012. These actions include:

- Strengthening effort to increase awareness and to promote advocacy around current and future e-skills initiatives and continuing support for the highest national and international development strategies and agendas (e.g. NDP, MTSF, WSIS, MDGs);
Advancing and expanding the provincial e-Skills Knowledge Production and Coordination CoLabs (Hubs);

Proliferating and accelerating multi-stakeholder participation at all levels (national, provincial and local);

Aggregating of e-skills effort across all stakeholders (Government, Business, Education, Organised Labour and Civil Society) and at all levels (national, provincial and local); and

Strengthening the development of ResNeS.

5.1.1 Strengthen Awareness of e-skills initiatives

Recent visits to a number of countries (e.g. Mexico, US, UK, Ireland, Kenya, Rwanda, Australia, New Zealand) found that the impact of e-skilling on the national socio-economic development in these countries is significant and that the approach for e-skills development in South Africa has benefitted from these interactions. This is evidenced by the findings of the United Nations’ International Telecommunications Union (ITU) recent Global IT Forum on Human Capacity Development 23 that has urged the other 55 countries involved to emulate the example developed by the e-Skills Institute in South Africa and implement similar e-skills programs for their people 24. It specifically underpins this recommendation by highlighting the approaches by the e-Skills Institute towards collaboration, integration, the organisational network architecture and also the links to the national developmental policies and to monitoring and evaluation approaches. Given the sound base recognised by key international bodies that the e-Skills Institute has now established, it is now time to undertake a national awareness campaign to gain the understanding, support and recognition that the effort now needs from the highest levels of Government, Business, Education, Civil Society and Organised Labour. It is envisaged that a programme involving all available channels (e.g. SABC, community radio, and telcos and all government programmes) should be developed. Table 3 shows NeSPA 2012 recommended actions to develop a better understanding and awareness of the e-skills platform that has been established thus far.

Table 3: Awareness and Advocacy for NeSPA 2012 recommended actions

<table>
<thead>
<tr>
<th>NeSPA 2012 Recommended Actions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Design</strong> and <strong>implement</strong> a combined national <strong>advocacy</strong> and awareness <strong>campaign</strong> for recognising and embedding the essential requirement of a collaborative and coordinated e-skills effort into stakeholder work plans.</td>
</tr>
<tr>
<td>1. Approach the <strong>SABC</strong> through with a proposal <strong>to define specific ways of embedding e-skills awareness in all of its local programming</strong>, its current affairs, its sporting programmes, its news reporting and its internal promotion programmes</td>
</tr>
<tr>
<td>1. <strong>Identify</strong> and <strong>implement innovative advocacy</strong> and <strong>awareness campaigns</strong> at the CoLabs (Hubs) and Smart Community Knowledge Centres levels.</td>
</tr>
</tbody>
</table>

5.1.2 Align effort to National and International development strategies

5.1.2.1 Medium Term Strategic Framework (MTSF) 2009-14

The NeSPA 2012 will continue to support the Medium Term Strategic Framework (MTSF) 2009-14 25 as it is still a national strategy that all public service efforts (government and education) need to report against. As stipulated in NeSPA 2010, the MTSF lays out 10 issues and 12 impact goals. Significant achievements in all of these targets will require increased levels of e-skills and e-social

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23 Held Cape Town, 22-25 October, 2012; the first time this event has been held in Africa
astuteness if they are to be successful and sustainable in the medium to long-term future. The challenge for the NeSPAs in addressing the goals set out in the MTSF is: (i) to find the ways to deliver e-skills to communities so that they have visible impact on the MTSF goals and (ii) then to monitor the process in ways that inform continuing effort within the context of a developmental state. Table 4 (below) shows the MTSF strategic priority areas and goals recommended for support by NeSPA 2012.

Table 4: The MTSF 2009-14 Strategic Priorities supported by NeSPA 2012

<table>
<thead>
<tr>
<th>MTSF Strategic Priority</th>
<th>NeSPA 2012 Recommended Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP1.1</td>
<td><em>Speeding up growth</em> and <strong>transforming</strong> the economy to <em>create</em> decent <strong>work</strong> and sustainable <strong>livelihoods</strong>.</td>
</tr>
<tr>
<td>SP1.1</td>
<td>e-<strong>Skills</strong> development <strong>interventions</strong> for creating a more inclusive ICT enabled socio-economic platform for a mixed economy in ways that address inequity of opportunity.</td>
</tr>
<tr>
<td>SP1.2</td>
<td><strong>Strengthening competitiveness</strong> and <strong>promoting SMME development through increasing internal efficiencies</strong>, redefining value propositions, helping define “online” processes to <strong>build local connections to local businesses</strong>, facilitating e-training and e-skills development in ways that make new opportunities for SMMEs more visible.</td>
</tr>
<tr>
<td>SP1.3</td>
<td>Ensuring that the <strong>delivery of e-skills keeps up</strong> with <strong>global socio-technology trends</strong>.</td>
</tr>
</tbody>
</table>
| SP3                     | **Comprehensively develop strategy linked to land and agrarian reform and food security** by:
| | - improving service delivery to ensure quality of life by providing e-Skills for the use of appropriate ICTs to overcome physical and other impediments, and
| | - developing appropriate e-skills training programmes to support sustainable socio-economic development in rural communities; |
| SP4                     | **Strengthen the skills and human resource base** by ensuring that training and skills development initiatives in the ICT domain respond to the requirements of the economy, rural development challenges and social integration. Building an e-social astuteness to enable all people (whether in work, in education or not; women, disabled, youth) to participate more equitably in a developmental agenda that will increasingly be dominated by new forms of ICT. |
| SP7.1                   | **Building cohesive, caring and sustainable communities**;
| | - Through the delivery of e-skills for development, **expanding opportunities** for the poor to access the **labour market**;
| | - Helping all people to make use of social media in ways that can help address timeous access to relevant information for work, education, cohesive lives, dealing with disaster, building safer communities, participating in governance processes, identifying opportunities for community based socio-economic development. |
| SP7.2                   | 1. **Building cohesive, caring and sustainable communities**;
| | 2. **Promote social cohesion initiatives**, including a shared value system and a greater sense of community solidarity by using modern ICTs |
| SP10                    | Help in **building a developmental state** including the **improvement of public services** and **strengthening democratic institutions** by:
| | - Improving the delivery and skills for public services through the delivery of e-skills for government (e-Skills4Gov)
| | - Improving the capacity of people to access all forms of services electronically and, strengthening democratic institutions by delivering e-skills necessary for e-Participation/e-Democracy; |
5.1.2.2 National Development Plan Vision 2030

The vision of the South African development in the next 18 years has been clearly stipulated in the National Development Plan – Vision 2030 and is generally aimed at eliminating poverty and reducing inequality. The core focus of this Plan is developing the capacity and capabilities of South African people and the country as a whole to become active participants in a modern mixed economy. The capabilities required include those that can be provided through traditional education and work based training as well as a societal based learning system that valorises a shared responsibility and commitment across all societal layers. This requires a policy platform for a capable state to support leadership from all sectors of society and a pact for mutual sacrifice and trust. Evidence from mixed economies around the world indicates that success in this environment is heavily dependent upon a government led intervention to e-skill its people and to make them e-socially astute. To achieve this, the NDP suggests the following:

- Active efforts and participation of all South Africans in their own development;
- Redressing the injustice of the past effectively;
- Foster economic growth and higher investment and employment;
- Rising standard of education, a healthy population and effective social protection;
- Strengthening the link between economic and social strategies;
- An effective and capable government;
- Collaboration between the private and public sector; and
- Leadership from all sectors of society.

In order to achieve these aims, the following challenges should be recognised and addressed:

- Too few people work;
- The standard of education for most black learners is of poor quality;
- Infrastructure is poorly located, under-maintained and insufficient to foster higher growth;
- Spatial patterns exclude the poor from the fruits of development;
- The economy is overly and unsustainably resource intensive;
- A widespread disease burden is compounded by a failing public health system;
- Public services are uneven and often of poor quality;
- Corruption is widespread; and
- South Africa remains a divided society.

Hence, developing and upgrading capabilities to enable sustainable and inclusive development requires new approaches and a new mind-set which should result in:

- **Creating jobs** and **livelihood**. It is envisioned that this will happen through creating 11 million jobs by 2030 by;
- **Expanding infrastructure**, i.e. targeted development of transport, energy, water resources and ICT networks;
- **Transforming to low-carbon economy**;
- **Transforming urban and rural spaces** by creating conditions for more humane and environmentally sustainable living and working environments;
- **Inclusive rural economy**;
- **Improving education, innovation and training**;
- **Providing quality health care**;
- **Building a capable state**;
- **Positioning South Africa** in the world;
- **Building safer communities**;
- **Ensuring better social protection**;

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- **Fighting corruption** and **enhancing accountability**; and
- **Transforming society** and **uniting the nation**.

The NDP recognises that this is not possible without having skilled people at all levels of society. From this National e-Skills Plan of Action viewpoint, it is important to stress that this envisaged development will happen in an emerging socio-economic paradigm which is characterised by the pervasiveness and extensive use of a rapidly developing ICT platform. Hence, development of e-skills and e-competences form an indispensable part of the nationwide amplification of capabilities and competences required for achieving more equitable opportunities in a mixed mode economy.

Table 5 shows the *recommended NeSPA 2012 actions* that will support the above NDP goals. These NDP goals will be supported through policy development and monitoring and evaluation functions of the new e-Skills entity at the central level, the NCCF, activities of CoLabs and Smart Centres and also through the relevant e-skilling activities of the participating stakeholders.

### Table 5: The NeSPA 2012 support for the National Development Plan - Vision 2030

<table>
<thead>
<tr>
<th>NDP Goal</th>
<th>NeSPA 2012 Support Action</th>
</tr>
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</table>
| Creating jobs and livelihood                 | 1. e-Skilling *South African people* (particularly the young population) for:  
                                          |   • employment or                                                                 
                                          |   • starting and running their own business                                             
                                          |   • being able to make best use of online support systems                              
                                          |   to access current information, services, customers, etc;                             
                                          | 2. Developing *e-social astuteness*.                                                   |
| Expanding infrastructure                    | 1. Giving the ICT professionals *e-practitioner skills*, which are indispensable for building quality ICT networks and also to support building of other economic infrastructure;  
                                          | 2. Developing a capable base of users across the full spectrum of South Africa’s geography providing increasing economies of scale to support ROI of infrastructure development. Experience from all around the world demonstrates that without a well-developed and well-delivered awareness and training programme uptake of new access capacity is notoriously low. A failure to address this matter not only creates perceptions of economic waste but also provides significant competitive advantage to countries that address this matter and develop an e-socially astute nation. |
| Transform to low-carbon economy              | Supporting development of *e-skills* needed for supporting sustainability economic development. |
| Transforming urban and rural spaces          | *Facilitating and coordinating the development of e-skills* needed for supporting sustainable socio-economic **community development in urban and rural areas**. An e-socially astute community can better plan its development and responses to opportunity. This includes managing aggregation of supply and demand to leverage production options, adjusting supply to prices, responding to weather, planning labour supply, aggregating payments and income through EFT, monitoring environmental pressures, reporting accurate relevant data, and alike. |
| Inclusive rural economy                      | • Supporting and *delivering e-skills for digital inclusion*;  
                                          | • Supporting and *delivering agricultural development* |
| Improving education, innovation and training | related e-skills (particularly e-skills for small-scale farmers).  
- **Identifying** and **establishing new industry/business** that can sit alongside and **support agricultural development** e.g. cultural industries and crafts which can use the same supply chains.  
- **Online aggregation of supply and demand** to leverage better consistency of supply and direct returns to producers.  
- **Developing online community based approaches to resource management** and **responses to climate variations and disasters**.  
- **Developing new niche markets nationally and internationally** that can be **identified and supplied online**.  
- **Developing a coordinated online approach** to eco-tourism. |
| Providing quality health care | **Fostering e-learning** (for lifelong learning, required for an effective participation in a mixed economy increasingly dominated by new forms of ICT);  
- **Recognising and responding to the new trends in online education** including MOOCs (Massive Open Online Courses), a shift from degrees to individual course credentials and a flexible ‘just in time’ approach which changes the scope and the dynamic between ‘education’ and ‘training’.  
- **Supporting development of e-Skills for innovation, entrepreneurship and creative industry**, particularly for Social Innovation;  
- **Encouraging and assisting universities and FET colleges to respond to the emerging education and training environment** with new approaches that give their graduates one or all of the following set of e-skills:  
  - e-practitioner skills;  
  - e-business skills;  
  - e-user skills;  
  - e-literacy skills;  
  - mobile e-skills and e-competences;  
  - e-leadership skills  
  - e-social media skills for social cohesion  
  - e-training skills to assist community development |
| Building a capable state | **Developing e-Health Skills.** Developing an e-social astuteness across society to enable better use, adoption and efficacy of e-health initiatives. |
|  | **1. Building a community wide e-social astuteness** is at the core of building a capable state with a mixed economy in a developmental context.  
**2. Responding to current developments in ICT** (increasing capacity, mobility, accessibility, affordability and display capability) which suit rapid expansion in developing mixed mode economies is an absolute necessity. Failure to do so will have serious socio-economic impacts for economies currently heavily dependent upon resources (as South Africa is and as recognised by the NDP).  
**3. The development and delivery of a nationally prioritised e-skills programme** is an essential matter in building a capable state that can provide more equitable opportunities for its |
### Positioning South Africa in the world

1. **Giving the SA population e-skills for Digital Inclusion** and other e-skills (e.g. e-User Skills, leading to e-astuteness) in order to achieve a more equitable prosperity thus fostering innovation, creativity and economies of scale that can provide continuity of supply required in the international market;

2. **Supporting building of e-Business and e-Practitioner Skills** for the global competitiveness of the South African economy.

3. **Developing an e-astute society that is globally recognised.** An essential component of establishing and maintaining South Africa’s global positioning and credibility is being recognised as a modern developmental economy that can be responsive to foreign investment for its national economic growth and continental entry point.

### Building safer communities

**Developing e-social astuteness Skills that can support agency based efforts to make communities safer.** The ‘doing to’ and ‘doing for’ models delivered by Governments have been found wanting in delivering safer communities all around the world including South Africa. Social media and new forms of ICT devices can play a significant role in making communities safer and in reducing the impact of disasters (fires, floods, social unrest, drugs, and crime). The key matter here is ensuring that people have the skills, the understanding and the willingness (resulting from social cohesion) that can sit alongside and empower a system response mechanism. Many parts of the world are now making effective use of new ICT technologies to make communities safer and more cohesively responsive to both disaster and community unrest that is a direct response from social inequity.

### Ensuring better social protection

Facilitating an integrated and collaborative response to better utilisation of modern ICT devices based on a widespread approach to developing e-social astuteness across society and in service delivery systems. Specifically this includes ensuring that service delivery functions and the community have the range of skills in the categories outlined previously in this document.

### Fighting corruption and enhancing accountability

**Developing an e-social astuteness across South African society is fundamental to addressing corruption and enhancing accountability.** Specifically this includes ensuring that service delivery functions and the community have the range of skills in
The rapid increases in the capacity, mobility, accessibility, affordability and display capability of emerging ICT devices are already transforming society in South Africa. These advances ideally suit nations with a developmental agenda and a mixed mode economy in an unparalleled manner. The question is whether this is happening in a manner that increases equity of opportunity. The dramatic decline in the global rankings of South Africa’s e-readiness rankings (from 47th in 2007 to 72nd in 2012) provides clear evidence that it is increasing inequity of opportunity. This situation requires an immediate national response to transform South African society and unite the nation in an environment that is being increasingly dominated by new forms of ICT. This NeSPA outlines the need and the way forward in meeting this NDP goal.

<table>
<thead>
<tr>
<th>Transforming society and uniting the nation</th>
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### 5.1.2.3 International developmental initiatives and cooperation

In addition to supporting highest national developmental strategies and agendas, the mandate of the e-Skills Institute is also to support South Africa’s commitment to the World Summit on the Information Society’s (WSIS) Plan of Action, the Millennium Development Goals (MDGs), and South Africa’s strong endorsement of the strategic intent of NEPAD.

While MDGs and NEPAD are indirectly supported, through supporting MTSF and NDP, the WSIS Action Plan is supported directly through sharing the same conviction that “e-Skills are essential in empowering individuals so that they can participate fully as citizens of the Information Society, and take advantage of all the opportunities before them: opportunities for employment and wealth creation, for taking advantage of innovative education and learning strategies, and for using new life-enhancing services, such as interaction with public authorities.”

NeSPA 2012 also acknowledges the e-Skills Institute’s support to other international developmental programmes such as Creative Industries for Development run by the United Nations Conference on Trade and Development (UNCTAD). This support bears exceptionally high importance for South Africa (and other developing countries) as it has been demonstrated (e.g. UNDP, UNCTAD) that Creative Industries were least affected by the Global Financial Crisis (GFC) and its flow-on effects during and post 2008. Further UNCTAD’s investigation has found that the development of an embedded creative industries effort has the most potential for assisting developmental states into a more sustainable socio-economic growth path.

In last four years, the e-Skills Institute has also established e-skills related cooperation with a number of government, business, educational providers and consular partners in a number of countries including Kenya, Rwanda, Mexico, Ireland, UK, South Korea, Australia, and New Zealand and a range of global institutions including UNDP, UNCTAD, ITU, World Bank, Tec de Monterrey, Mexico, EIDOS (Australia). These institutions are regarded as Global Partners in the eSI’s efforts to develop and facilitate the delivery of an integrated, collaborative and responsive platform for e-skilling South Africa and to improve its global e-readiness position with a clear focus on aligning effort to the key national strategic goals. Developing a substantive, integrated and collaborative

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27 [www.wsis.org](http://www.wsis.org)
28 [www.mdgafrica.org/achieving_mdg.html](http://www.mdgafrica.org/achieving_mdg.html)
29 [www.nepad.org](http://www.nepad.org)
31 [www.unctad.org](http://www.unctad.org)
mechanism to respond to and leverage from the international environment is a vital success factor identified in the NDP.

The NeSPA 2012 recommendations to enhance international developmental initiatives and cooperation are outlined in Table 6.

Table 6: The NeSPA 2012 recommended actions for international developmental initiatives and cooperation

<table>
<thead>
<tr>
<th>NeSPA 2012 Recommended Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Develop a formal relationship with a number of South African embassies. Commencing with Australia, New Zealand, Kenya and Rwanda, Mexico, UK and Ireland, develop programmes to facilitate the development of formal, targeted and active partnerships that can assist the development, impact and integration of e-SI programmes in South Africa.</td>
</tr>
<tr>
<td>- Make formal requests to these embassies to become proactively involved in identifying and supporting opportunities that exist in these countries.</td>
</tr>
<tr>
<td>- Work with the UN Coordinator of South Africa regarding the opportunities to create a regional platform for e-skills collaboration across the UN bodies (i.e. World Bank, ITU, UNESCO, ILO, UNIDA and UNCTAD).</td>
</tr>
<tr>
<td>- Ensure that the opportunity presented by the ITU at the recent Global ICT Forum on Human Capacity Development/e-Skills Summit 2012 (i.e. aggregation, knowledge creation and sharing) will form the basis of the above discussions.</td>
</tr>
</tbody>
</table>

5.1.3 Advance and expand provincial e-Skills Knowledge Production and Coordination CoLabs (Hubs)

One of the NeSPA 2010 recommendations was to establish nine (one per province) e-Skills Knowledge Production and Coordination CoLabs (then called Hubs) aimed at bringing all stakeholders, agencies and programmes together in order to achieve an optimal socio-economic impact against national strategic goals. These CoLabs should also be the basis of the collaborative multi-stakeholder network architecture that can lead South Africa into a proactive position for more equitable prosperity and global competitiveness in a developmental mixed economy dominated by emerging ICT capacity, mobility, accessibility and affordability.

The e-Skills Institute has, thus far, established five CoLabs (Gauteng, Eastern Cape, KwaZulu-Natal, Northern Cape and Southern Gauteng, and Western Cape). The sixth CoLab is currently being established in the Limpopo Province. These CoLabs are strategically placed at higher education institutions (universities), where they can become the focal points for collaborative effort across Business, Government, Education, Civil Society, Organised Labour and Global Partners. Universities can provide a credible independent space that allows a more open involvement of all stakeholder groups and entities. These CoLabs can be crucial for coordinating existing and initiating new, coordinated, efforts in e-skills, aimed at the delivery of impact within the scope of the MTSF 2009-14 and the NDP. CoLabs are also tasked to develop appropriate evaluation processes and to act as knowledge hubs as well as to inform pedagogy, training, policy development and project delivery. All of these CoLabs have local management committees and are being coordinated through their own collective as well as a central entity, the e-Skills Institute. The Provincial CoLabs have already commenced interacting with a number of e-centres already established by the respective
governments and State Owned Companies at the provincial or local level. These centres are located in urban, peri-urban, rural and deep rural areas in the respective province they serve. It is anticipated that all of these centres will be administered by the centres’ managers who have undergone appropriate e-skills training at the CoLabs (commencing in the Western Cape) and who also have a role of spreading e-skills within their local communities.

The NeSPA 2012 recommendations for advancing and expanding provincial e-Skills Knowledge Production and Coordination CoLabs are outlined in Table 7.

Table 7: The NeSPA 2012 recommendations for advancing and expanding provincial e-Skills Knowledge Production and Coordination Co-Labs

<table>
<thead>
<tr>
<th>NeSPA 2012 Recommended Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Since the five CoLabs, operating from five universities (DUT, UP, UWC, VUT and WSU) are now established in Phase I of their evolution, the e-SI will:</td>
</tr>
<tr>
<td>• <strong>Commence a process of resourcing and positioning the CoLabs</strong> within ongoing formal structures of Universities, Provincial Governments and other key stakeholder groups.</td>
</tr>
<tr>
<td>• <strong>Continue with establishing the CoLab in the Limpopo Province at the University of Limpopo;</strong></td>
</tr>
<tr>
<td>• <strong>Establish Co-Labs in Mpumalanga, Northern Cape, Free State and the North-West Province.</strong></td>
</tr>
<tr>
<td>2. Having positive experience with the existing e-centres, but also realising that these centres can play an even more significant role in achieving the goals of MTSF 2009-14 and NDP 2030, it is envisaged by this National e-Skills Plan of Action that these e-centres be transformed into Smart Centres. These Smart Centres will be responsible for:</td>
</tr>
<tr>
<td>• Training and learning;</td>
</tr>
<tr>
<td>• Nurturing local talent (particularly knowledge workers);</td>
</tr>
<tr>
<td>• Enabling Digital Inclusion;</td>
</tr>
<tr>
<td>• Support for entrepreneurship and job creation;</td>
</tr>
<tr>
<td>• Fostering social innovation;</td>
</tr>
<tr>
<td>• Developing e-Social Astuteness.</td>
</tr>
</tbody>
</table>

Although Smart Community Knowledge Centres should be established in all geo-spatial areas, it is a priority to establish these centres in peri-urban, rural and deep rural areas in order to address growing inequalities, poverty and joblessness in these communities and put them on the road towards a more equitable and sustainable basis focussed on responsive approaches to local community socio-economic needs. As many of the existing community e-centres belong to various government agencies, their transformation into the Smart Community Knowledge Centres will need to be negotiated with their owners, in conjunction with the local communities as the direct beneficiaries of the e-skilling actions. It is noted that in some situations it may be desirable to establish new centres that can be more appropriately positioned to respond to the environmental issues and the integrated needs of society and communities as are raised in this document. The coordination and integration of the Smart Community Knowledge Centres into would align effort to strengthen the delivery of the National Rural Development Strategy.

5.1.4 **Proliferate and Accelerate Multi-stakeholder Participation at all levels**

The network architecture model is designed to operate in such a way that the value proposition is collaboratively shared between stakeholders in ways that also make sense to the individual stakeholders. It is based on the partnership inputs required for creating, marketing and delivering a value proposition with the goal of maximising outputs, outcomes and impact against complex strategic goals pursued by various e-skills stakeholders in Government, Business, Education, Organised Labour and Civil Society (Figure 3).
The e-SI Collaborative Network Architecture Model Framework is composed of three main elements: (i) Infrastructure, (ii) the Offering and (iii) the Stakeholders Interest or Input. The main elements are briefly described in the following sections. The diagram in Figure 3 depicts an organisational network architecture that values capabilities and network relationships to create a shared value proposition.

1.1.1.1 Network resource architecture

**Multi-stakeholder Network** includes the following main participants:

- Business (Private Sector - South African, Continental and International);
- Education (Universities & FET Colleges – South African, Continental and International);
- Learners (formal and informal – accredited and non-accredited – literate and non-literate);
- Research institutions (South African, Continental and International);
- Policy Development bodies (South African, Continental and International);
- Civil Society (NGOs, NPOs, CBOs South African, Continental and International);
- Organised Labour;
- Government (South African at all levels and international government agencies);
- Global Development Partners (e.g. UN bodies, World Bank, ITU, CISCO, ICDL); and
- Donor Agencies.

The **e-SI Network Architecture Model relies** on the following **Core capabilities**: 1

- The delivery of an integrated collaboration architecture across above listed stakeholders for building e-social astuteness in support of the Knowledge Society, in general, and impact on the NDP 2030 and MTSF 2009-14 goals;
- Employment readiness and increased business effectiveness by appropriately e-skilling South African people for employment, starting their own business and improving service effectiveness;
- Effective e-Governance and service delivery;
- Business Development, including an improved capacity to establish new business opportunities in rural and peri-urban areas;
- Socio-economic development (socio-economic appropriation of ICT to increase national productivity and competitiveness);
- Evidence based policy development, monitoring, evaluation and research for theory advancement, informed practice and thought leadership required to improve South Africa’s e-readiness, ICT use and ICT impact;
- Development of the citizenry as clients, customers, business developers, service deliverers, communities, social groups and families to build e-social astuteness for an active citizenry, an inclusive economy and a capable developmental state; and

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32 Osterwalder (2004) The Business Model Ontology - A proposition in a design science approach: a business model describes the value an organisation offers to various customers and portrays the capabilities and partners required for creating, marketing, and delivering this value and relationship capital with the goal of maximising impact and outcome.
Leadership, i.e. the development of an e-astute leadership throughout society to work together to solve problems and to be able to adequately represent South Africa across continental Africa.

... and is supported by the following **Value Configuration:**
- New Policy Development focused on the NDP 2030 and MTSF 2009-14 goals;
- Research relevant to the NDP 2030 and MTSF 2009-14;
- A new collaborative network architecture to develop and deliver an integrated approach at the local level;
- Thought Leaders / Leadership Forums / Seminars / Conferences / Colloquiums / workshops to increase understanding of the e-skills agenda and its implementation and to obtain multi-stakeholders’ buy-in;
- Develop and implement decentralised (regional) e-skills offerings; and
- Building e-astuteness and e-social astuteness to build a united approach to fighting poverty and inequality, develop an active citizenry that can meaningfully contribute to an inclusive economy, a capable developmental state, growing leadership across society to bring people together to solve problems.

### 5.1.4.1 The Offerings: the Value Proposition
- Partnerships and collaborations better coordinated, invigorated and committed at the local level to build societal e-astuteness to better deliver impact on the goals of the NDP 2030 and MTSF 2009-14;
- Focused e-astute research and innovation to improve policy development, service delivery and conceptual clarity, which is the primary objective of the Research Network for e-Skills (ResNeS) and the research arm of the Provincial e-Skills Knowledge Production and Coordination CoLabs;
- A unique permutation of catalytic contributions that can build capability for national developmental needs such as increased self-reliance, strengthening local economic development and increased e-social astuteness for equity, prosperity and global competitiveness;
- Monitoring and evaluating of e-skills interventions;
- Continuous, timely response to changing market, government and societal needs for effective service delivery (e.g. more focused qualifications);
- Development of e-social astuteness for an effective navigation through the socio-economic fabric of the rapidly emerging socio-economic dynamic that is increasingly dominated by new forms of ICT; and
- National e-skills dialogue to commence addressing the underlying problems that have been responsible for South Africa’s e-readiness dropping from 47<sup>th</sup> to 72<sup>nd</sup> from 2007 to 2012 and for South Africa being ranked at 91<sup>st</sup> out of 153 countries in the ITU's 2012 ICT Development Index (IDI).

### 5.1.4.2 Stakeholders Interest/Input
The e-SI Network Architecture Model is designed to allow the stakeholders to articulate their interest in and to actively participate in building an e-astute nation to achieve a more inclusive economy and a capable developmental state. This is enabled by well developed, soundly based and innovative approach that harnesses existing capacity through: (i) the target networks, (ii) network relationships and (iii) distribution channels.

**Target networks**
- Government, State Owned Companies, Private Sector, Education, Civil Society, Organised Labour, Donor Agencies, Policy bodies;
- Practitioners;
- Organisational users;
- Management;
• Research, monitoring and evaluation;
• Societal; and
• Local, national, continental and international.

**Network relations**
• e-SI as the central strategic coordinating point supported by advisory bodies as well as thought leaders across the multi-stakeholder linkages;
• Regional network CoLabs with specialist focus areas coordinating local and national offerings through content, planning and integration;
• Use of modern ICT converging technologies (e.g. social media) to support and drive coordination across the CoLab network and with all stakeholders.

**Distribution channels**
The main e-skills distribution channel is the e-Skills Institute and Provincial e-Skills Knowledge Production and Coordination CoLabs that is amplified by or through:
• Government, Business, Education, Civil Society channels and Organised Labour (virtual & face-to-face);
• Existing government agency delivery channels;
• Existing communication channels (e.g. mass media and personal media);
• Community channels;
• International networks.

### 5.1.4.3 Resources
For an optimal functioning of the e-SI Network Architecture Model appropriate and sustainable resource allocation, funding and revenue streams need to be established to allow the appropriate development of the network, its catalytic role and establishment of new interventions to address identified gaps

The NeSPA 2012 recommendations for proliferating and accelerating multi-stakeholder participation are given in Table 8.

**Table 8: The NeSPA 2012 recommendations for proliferating and accelerating multi-stakeholder participation**

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>NeSPA 2012 Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The e-Skills Institute will continue to be positioned as the national catalyst for e-skills development and the centre of the National Collaborative Network Architecture.</td>
</tr>
</tbody>
</table>
| 2.             | Inside the Government:  
• **Harnessing collaboration** with the Departments of Performance Monitoring and Evaluation, Higher Education and Training, Basic Education, Public Service and Administration, Rural Development and Land Reform, SALGA, National Treasury, National Planning Commission and the Human Resources Development Council, relevant State Owned Enterprises (including Telkom, USAASA, SAPO, SABC, ICASA) and Provincial Governments to meaningfully support the efforts of e-skilling the nation for equitable prosperity and global competitiveness.  
• **Align relevant e-skills activities** with the pertinent government departments at all levels (national, provincial and local) as well as the State Owned Enterprises by establishing a process of secondments to the programme activities of the e-Skills Institute. This should be done in ways that will coordinate, integrate and aggregate efforts for e-skilling the country and building e-social astuteness across the full spectrum of society. |
3. **Forge closer relationships with all stakeholders** (Government, Business, Education, Organised Labour, and Civil Society) by **delivering** (and agreeing to) **a mechanism for seamless and meaningful multi-stakeholder involvement** in e-skilling activities at all levels (national, provincial and local).

5.1.5 **Aggregation of e-skills effort across all stakeholders and at all levels**

“The NDP – Vision 2030 is based on six (6) pillars that all reinforce the absolute need for building capabilities across the full spectrum of South African Society”.

NDP – Vision 2030

Mega data based marketing is now becoming commonplace and all serious efforts to address the mega issues facing societal equity and scientific growth are recognised as requiring large scale cross-discipline, cross-stakeholder (Business, Government, Education, Organised Labour and Civil Society) and long term approaches. The e-Skills Institute has found\(^{33}\) that there is a need for an aggregated research framework to support innovation and to organise its service delivery and knowledge creation for an emerging socio-economic developmental platform dominated by new forms of ICT. It is also concluded that there is currently no coordinated, integrated and cross disciplinary approach to enable impact and evidence based policy development, research and evaluation for matters pertaining to e-skilling South Africa. This gap means that serious multi-disciplinary and multi-stakeholder policy development; research and evaluation efforts for assessing praxis, policy development and innovation are not encouraged, rewarded or funded.

In reality there is little alternative than to focus on the big socio-economic issues in a collaborative manner across Government, Education, Business, Organised Labour and Civil Society, with intended beneficiaries. The investigative visitations to a number of countries since 2011 has indicated that the current effort in these countries revolves around bringing together previous areas of independent specialisation into new structures, programmes and evaluation processes. This is a common approach by the executive leaders and programme managers in the Government, Business and University organisations visited. Often this required organisational re-focussing or restructuring for more effective ways of research and learning for impact-driven service delivery. It was evident that most of the government service delivery, education and research organisations visited since 2011 now operate in a new form of matrix management where there is formal long term interaction across sections, departments and organisations around developing new value aligned to the Knowledge Society.

The aggregation model developed by the e-SI is based on the aggregation of resources across all relevant stakeholder groups into clearly defined “national need” programmes for policy development, proof of concept, delivery, monitoring and evaluation for impact. This model should now be further advanced by secondments from across relevant Government Departments, State Owned Enterprises, Business, Education, Civil Society and global development partners. This National e-Skills Plan of Action (2012-14) also recognises that time is of the essence and that immediate action is required to position nations with the relevant skills for an accelerated socio-economic and employment sustainability in the next 10 to 15 years. The cost of not doing so in South Africa when both collaborator and competitor countries are adopting such approaches will be very difficult to determine.

The recommended NeSPA 2012 actions regarding the aggregation of e-skills effort across all stakeholders are given in Table 9.

\(^{33}\) e-Skills Institute (2012), Towards the establishment of an approach for aggregation of e-skills effort across South Africa, e-SI, Pretoria.
Table 9: The NeSPA 2012 recommendations for the aggregation of e-skills effort across all stakeholders

<table>
<thead>
<tr>
<th>NeSPA 2012 Recommended Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The e-SI and ResNeS should adopt a project based approach to support the development of a National Central Aggregation Framework to inter alia assess the impact of e-skills policy development, proof of concept and related research, monitoring and evaluation.</td>
</tr>
<tr>
<td>2. Complete the audit of e-Skills activities across the Portfolio of Departments and the State Owned Enterprises and involve the National Treasury, Department of Monitoring and Evaluation and the Department of Planning in this process in order to enhance collaborative performance against the national priorities stipulated in MTSF and NDP.</td>
</tr>
<tr>
<td>3. Interact with relevant government departments (all levels) and State Owned Enterprises regarding:</td>
</tr>
<tr>
<td>• Better alignment of relevant e-skills activities with the e-Skills Institute;</td>
</tr>
<tr>
<td>• Establishing a process of resource allocations and secondments to the programme activities of the e-Skills Institute in ways that will coordinate, integrate and aggregate efforts for e-skilling the country and building e-Social Astuteness across the full spectrum of society.</td>
</tr>
<tr>
<td>4. Together with the Department of Higher Education and Training (DHET) and the Department of Public Service and Administration establish the model of aggregating and integrating pedagogy and innovation aligned to the needs of the developing Knowledge Society.</td>
</tr>
<tr>
<td>5. Together with various stakeholders, create a plan and mechanism for the aggregation of resources, effort and assessment of the multi-stakeholders’ e-skills initiatives and, in such a way, for achieving optimal socio-economic impact.</td>
</tr>
</tbody>
</table>

5.1.6 Strengthening and Further Development of ResNeS

As mentioned in Section 4.3 above, in depth evaluations of approaches in a number of countries and noting the emerging recognition of e-skills efforts in the European Union (including SFIA, e-Skills UK, INSEAD), there is a high need to build a relevant research base to support innovation, policy development, impact measurement, relevant development of academia in this emerging space. What is clear, it is that there is a growing recognition that such an effort requires new approaches outside of existing vehicles. It is simply self-evident that whatever has been established and achieved in the past has been insufficient to predict, prevent and respond to the needs of the current situation and that no amount of readjustment in these systems can provide the necessary leadership, scholarship and relevant responsiveness required. The socio-economic and multidisciplinary focus requires a new platform that valorises stakeholder collaboration, e-astuteness across society, changing value propositions for business, government and education, systems aggregation, social appropriation and impact assessment.

NeSPA 2012 recommends that ResNES be strengthened to adopt combined approaches of NICTA\(^{34}\) and the Australian Cooperative Research Centres\(^{35}\). ResNES should be supported by the allocation of 12 new chairs under the South African Research Chairs Initiative (SARCHI)\(^{36}\) with the modified application requirements that recognise the circumstances and needs related to the establishment of new research collaborative disciplines. Further, NeSPA 2012 recommends that an adequate research budget be allocated to this new vehicle for competitive funding aligned to the needs of

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\(^{35}\) [www.crc.gov.au](http://www.crc.gov.au)

\(^{36}\) [www.hicd.nrf.ac.za](http://www.hicd.nrf.ac.za)
establishing a sound research and teaching platform based on evidence based policy and praxis. NeSPA 2012 also recommends that South Africa establish an e-skills sabbaticals programme for national, continental and international representatives from academia, business, NGO, government, civil society and organised labour to share their expertise to build local capacity and to gain a better understanding of the South African Knowledge Society environment. There is also great advantage for reciprocal postgraduate, undergraduate and school learner short term exchanges with relevant countries that understand the developmental agenda. Thus NeSPA 2012 recommends that a programme to support 250 high school learners, 100 undergraduates and 50 postgraduates on international exchange programmes be immediately established. The establishment of this programme should seek to involve and focus existing international exchange programmes through high level engagement with relevant High Commissioners and Ambassadors based in South Africa and South African diplomats based abroad.

Table 10: The NeSPA 2012 recommendations for strengthening ReSNeS

<table>
<thead>
<tr>
<th>NeSPA 2012 Recommended Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.</strong> ResNeS to facilitate the establishment of a new platform that valorises stakeholder collaboration, e-astuteness across society, changing value propositions for business, government and education, systems aggregation, social appropriation and impact assessment.</td>
</tr>
<tr>
<td><strong>2.</strong> ResNeS to develop a new vehicle based on an adaption of the combined approaches of NICTA and the Australian Cooperative Research Centres. This should be supported by the allocation of 12 new e-Skills chairs under the South African Research Chairs Initiative (SARCHI).</td>
</tr>
<tr>
<td><strong>3.</strong> Establish an adequate research budget allocated to this new vehicle for competitive funding aligned to the needs of establishing a sound research and teaching platform based on evidence based policy and praxis</td>
</tr>
<tr>
<td><strong>4.</strong> Establish an e-skills sabbaticals programme for national, continental and international representatives from academia, business, NGO, government, civil society and organised labour.</td>
</tr>
<tr>
<td><strong>5.</strong> Immediately establish an international programme to support 250 high school learners, 100 undergraduates and 50 postgraduates.</td>
</tr>
</tbody>
</table>

5.2 New Dynamics and New Interventions

Since the inception of NeSPA 2010 the South African e-skills agenda has been driven by an urgency to respond to the national needs and by innovative planning and new thinking. A number of milestones set in NeSPA 2010 were achieved and important lessons are learned and continuing to be learnt. Valuable experience also came from a number of visited countries and “best practice” learned from several developing countries that have taken on the challenge and are moving ahead to e-readiness and e-skills. In summary, it is evident that tackling South Africa’s burning issues of unemployment, the current levels of poverty and inequality cannot be effective without focus on:

- **affordable internet** and its **increased uptake**,  
- **opportunities** related to increased **mobile penetration** and **convergence**,  
- **increased need for skills** of all kinds but particularly  
  o **aggregated supply** and **demand** of e-skills coupled with its “soft” components of attitude and social astuteness (e-Social Astuteness) and
The new e-skills dynamics and interventions are inevitably related to the affordability of the Internet enabled by new international cables that are already connected and those planned to be connected in the immediate future in the country (see Figure 5). This should lead to lower prices and opportunities for much higher uptake of the technology by deep rural, rural and peri-urban areas in South Africa. It is envisaged by policy-makers that all of Africa’s major cities, towns and villages will be connected to affordable broadband Internet by 2020, thus providing the opportunity for the continent’s mass entry into the emerging world where the socio-economic platform will be increasingly dominated by new forms of ICT, i.e. the Knowledge Society.

Mobile (cell phone) penetration in South Africa and on the continent provides an unprecedented opportunity in the mobile software applications development industry, thus generating new job opportunities and developing solutions for Africans by Africans. “The ability of mobile technology to solve major social problems in Africa is unprecedented”, was highlighted by Communications Minister Dina Pule at the Second e-Skills Summit 2012 and Global ICT Forum on Human Capital Development. She added “From health to education, mobile technology is changing the way all sectors of society do business”.

This also brings a clear focus on the new needs for e-skilling and capacitating users but also on the instruments for doing so. Technological convergence is now occurring at more levels (multi-media, internet, mobility and connectivity) and this has impacts on the instruments to e-skilling. The skills needed in South Africa, including e-skills, have become even a greater and more urgent matter as the issue of unemployment, especially for youth, continues to grow despite the national efforts. The country now must respond to the challenges and opportunities related to new technology with new approaches. These new approaches must recognise the new forms of developing a creative economy, innovation, entrepreneurship as well as the social and cultural aspects in dealing with inequity and prosperity and building a more self-reliant and resilient socio-economic base. Social astuteness has become an important matter in the appropriation of ICT especially in terms of

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increasing self-reliance and ability to successfully navigate through the socio-economic fabric utilising e-skills (e-Social Astuteness).

The current trends regarding the impact of an effective deployment of ICT at international, national and local levels demonstrate that the aggregation of both supply and demand into increasingly large economies of scale is well beyond the capacity of traditional concepts of market competition within nation states wishing to operate in the national interest. Conversely, in an emerging world Knowledge Society, only a national approach built on effective collaboration across various stakeholder groups (multi-stakeholder approach) and the aggregation of:

- **efforts** for an *integrated service delivery*,
- **resources** for *optimal efficiency*,
- **strategies** and **policies**, for a systemic implementing of the e-skills agenda
- **data** for analysis of “Big Data” in the context of
- **research** for devising “best practices”, “learn lessons” and support evidence-based policy-making and
- **monitoring** and **evaluation**...

...has the potential to address the immediate and future needs of South Africa.

Understanding the international trends and the present and future national needs, new e-skills dynamics and interventions will be addressed through:

- Linking the e-skills agenda to the New Development Plan and helping in creating an e-literate and an e-socially astute society by 2030;
- Strengthening the e-Skills Institute’s Value Proposition;
- Establishing e-skills integration framework to deliver impact against national goals;
- Establishing an e-Readiness Fund to channel resources to deliver against national goals for impact;
- Adequately describing and then developing an e-Skills Ecosystem;
- Building a contextual e-Skills Framework and Taxonomy;
- Establishing an e-content development mechanism;
- Strengthening organisational transformation and resource capacity of the e-SI (namely the merger of e-SI, NEMISA, ISSA);
- Reposition e-Centres as Smart Community Knowledge Centres in urban, peri-urban, rural and deep-rural communities;
- Developing and facilitating a National e-Skills Curriculum and Competency Framework;

### 5.2.1 Linking the e-skills agenda to the New Development Plan 2012 (e-literate society by 2030)

In accordance with the principal of supporting national and international developmental strategies and programmes, stipulated in NeSPA 2010 and adopted by NeSPA 2012, this e-Skills Plan of Action recommends the following actions (Table 10) that should be further developed and executed by the e-Skills Institute and the Knowledge Production and Coordination CoLabs.

<table>
<thead>
<tr>
<th>NDP Priority Area</th>
<th>NeSPA 2012 Recommended Actions</th>
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Table 11: The NeSPA 2012 recommendations support to NDP Priority Areas
<table>
<thead>
<tr>
<th>An economy that will create more jobs</th>
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<tbody>
<tr>
<td>- the NDP proposes to create 11 million jobs by 2030 -</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>• <strong>Developing citizens’ e-skills for sustainable employment</strong>, innovation, creativity, participation and inclusive economic growth;</td>
</tr>
<tr>
<td>• <strong>e-Skilling SMMEs for more effective business and increasing competitiveness</strong>;</td>
</tr>
<tr>
<td>• <strong>Developing e-skills necessary for increasing capacity for exports and global competitiveness</strong>;</td>
</tr>
<tr>
<td>• <strong>Providing e-skills for strengthening government’s capacity to provide direct leadership to economic development</strong>;</td>
</tr>
<tr>
<td>• <strong>Including in the e-SI awareness and advocacy campaigns the actions that will support mobilising all sectors of society around a national vision</strong> for building capacities relevant to an enabled socio-economy – e-social astuteness.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Improving infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Providing planners, managers and workers with the e-skills necessary for the effective use of ICT for building and maintaining appropriate infrastructures to improve informal settlements, public transport, mining, water schemes or renewable electricity infrastructure.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transition to low-carbon economy</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-Skilling ICT professionals, industry and public organisations’ leaders, managers and the workforce as well as citizens for sustainable development (sustainability e-skills and e-competences).</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>An inclusive and integrated rural economy</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-Skilling the rural population and the providers of public services for effective use of ICT and e-services in areas of education, healthcare, transport and other basic services.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reversing the spatial effect of apartheid</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-Skilling the population in townships to overcome the tyranny of distance and for employment or small business readiness as well as giving them e-skills for Digital Inclusion and Social Innovation.</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Improving the quality of education, training and innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Providing educators and learners with e-skills for all levels of education: early childhood development (ECD), primary and secondary schools, FET, higher education.</td>
</tr>
<tr>
<td>• e-Skilling in the context of the changing face of delivering high quality education and training, which is necessary for local innovation to help shift to a more e-enabled and connected economy, in order to develop a wider system of innovation consistent with national socio-economic priorities.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quality health care for all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designing and providing e-Health skills necessary for improved health management and accountability, better trained health professionals, better patient information systems that supports a more decentralised and home-based care model and support to maternal and infant care. Developing a social e-astuteness at the societal level to increase the efficacy of e-health delivery at the community level.</td>
</tr>
</tbody>
</table>
| Social protection | 1. **Building e-social astuteness at the community level** to more appropriately enable individuals and communities to socially appropriate digital capacity in the development of more cohesive and safe communities.  
2. **e-Skilling youth** and women for **specific public employment and the adoption of modern ICT enabled delivery and response mechanisms**;  
3. **e-skilling public service providers** for **expanded social welfare services** and the **integration** of a number of **databases** in the **social security environment**. Social audits of government services are needed for better and more effective social and employment programmes by government. |
| Building safer communities | **e-Skilling officials** and citizens for an **effective use of ICT for the development, delivery and response of community safety programmes** using an integrated approach and community participation in community safety. |
| Reforming the public services by professionalising them | **Developing and accrediting appropriate e-astuteness amongst public servants** necessary for the effective delivery of e-Government and e-Governance. |
| Fighting corruption | **Developing e-skills** aimed at **greater transparency: e-Governance and e-Participation** and providing adequate and safe e-response mechanisms to report corruption. |
| Transforming society and uniting the country | **Developing a coordinated, integrated national programme of e-skills across all stakeholder groups for Digital (and Social) Inclusion and ICT-supported social cohesion.** |

The National Development Plan proposes that by 2030, the economy should be close to full employment. This can be achieved by inter alia providing the resources for investment in human and physical capital and equipping the South African people with the skills they need to operate in a mixed economy that will increasingly be dominated by new forms of ICT. One of the first steps is to e-skill the growing numbers of young unskilled and low-skilled population, while upgrading the skills and knowledge of its citizens - enabling them to fully participate in the emerging socio-economic platform and achieve more equitable life chances. To achieve the successful implementation of these noble plans requires the development of different levels of e-skills (e-social astuteness) across the full spectrum of stakeholders. This requires a collaborative network architecture model and the aggregation of all available resources and actions as recommended by this National e-Skills Plan of Action. Particular focus should be placed on improving the skills base through better education and vocational training, as detailed in the e-SI document “Towards a National Curriculum and Competency Framework and Standardised Curriculum Guidelines”.

### 5.2.2 Strengthening the e-Skills Institute’s Value Proposition

The e-SI Value Proposition\(^{38}\) provides a context for a government ecosystem to develop e-social astuteness to make effective use of ICT for more equitable life opportunities across the full spectrum of society. It recognises that in democracies and in most centrally managed societies, no amount of **provision** (doing to), or **support** (doing for) can succeed without a **social, cultural and economic contract** (doing with)\(^{39}\). This contract must be based on trust and reciprocity between government and the people, which is particularly important in developmental states where there are large inequities in living standards and opportunities. At the centre of this contract lies individual and collective capability to maximise current circumstances in ways that are responsive to both current and future individual and collective needs.

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\(^{38}\) E-Skills Institute Value proposal is given in its full form in Appendix A.

\(^{39}\) See Attachment I in Appendix A.
The e-SI Value Proposition also recognises the inability of incremental appropriation of ICT to address complex issues of inequality, joblessness and poverty. Instead, disruptive and ubiquitous interventions that are fundamentally “life changing” are recommended. The experience from the last decade shows that the over-emphasis on technological capability, reductionist research and treating ICT as a mere tool has placed South Africa on downward trajectory of “e-readiness”. Thus, it is recommended that complex and critical matters of inequality, unemployment and poverty require a new national approach beyond current processes. It is recommended that South Africa should harness the technology in ways that valorises South Africa’s culture, independence, social identity, socio-economic prosperity, innovation, creativity, employment opportunities, global competitiveness and continental position. For this, a sound approach to the social appropriation of ICT for local benefit is needed.

Such an approach emphasises development of social capacity and social astuteness to make use of ICT by South Africans in ways that suit their personal circumstances (e-Astuteness) and their local communities’ needs (e-Social Astuteness). E-skilling the nation, recommended through this National Plan of Action, will be within a function of developing better understanding of ICT appropriation that will lead to increased socially cohesive approaches to self-reliance. This must happen through: (i) a formal multi-stakeholder aggregation and collaboration process, (ii) coordinated effort, and (iii) developing knowledge, aptitude and astuteness at the local level. As emphasised in the e-SI Value Proposition, such a process requires “a mirror policy development function at the national level which can harness the best talent across business, government, education, civil society and organised labour from within and outside of the country”.

In a nutshell, the e-SI Value Proposition is based on the following set of key issues:

- The e-SI provides linkages to new networks across a multi-stakeholders base (Business, Government, Education, Civil Society and Organised Labour) within a “government recognised” and “business credible” integrated framework that is responsive to new deployment and delivery approaches. This network allows for a formal process of more effective engagement between government and other stakeholders;
- The Value Proposition offers a collective base for developing appropriate methodologies, training, products and services applicable to a range of markets in the developing countries, particularly those that are implementing (or wish to implement) the developmental state approach;
- This multi-stakeholders platform, on which the Value Proposition is based, allows for better assessment of gaps, overlaps and opportunities both for existing and future e-skills endeavours.

To strengthen the e-SI Value Proposition the following NeSPA 2012 actions are recommended (Table 11).

Table 12: The NeSPA 2012 recommendations for strengthening e-SI Value Proposition

<table>
<thead>
<tr>
<th>NeSPA 2012 Recommended Actions</th>
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40 See Appendix A: Attachment II for summary of South Africa’s position; references - the WEF Global Information Technology Report 2011-2012. Dutta (INSEAD) and Mia (WEF); The Digital Inclusion Index, MapleCroft, UK, 2011.
1. **Further strengthen the e-SI approach to e-skilling** the nation for equitable prosperity and global competitiveness by:
   - Continuing with promotion and development of the human resource e-skills base in South Africa;
   - **Ensuring** that e-SI National Curriculum and Competency Framework (NCCF) **responds to new market needs and demands** in a coordinated environment with higher education institutions;
   - **Capacitate and resource policy development, monitoring and evaluation and research efforts** to **provide a focus for continuous evidence based action** in a cross disciplinary manner that will explore new ways of embedding ICT into people’s lives to improve business opportunities, access to government services and facilitate improved social cohesion;
   - **Continuing with and strengthening a proactive approach to environmental scanning** in a rapidly changing landscape through its national platform that can more adequately assess gaps, overlaps and opportunities for collaborative approaches.

2. **Further positioning of the e-Skills distributed network** of the Knowledge Production and Coordination CoLabs through:
   - A positive engagement with multi-stakeholder groups (nationally, provincially and locally) represented by both leaders and project managers across Government, Business, Education, Civil Society and Organised Labour;
   - Links to university networks within South Africa and worldwide that can help evaluate case study approaches, provide postgraduate research capacity and internships;
   - Increase the size of the national and international opportunity within a “Government recognised”, “business credible” and integrated framework that is responsive to new deployment and delivery approaches;
   - Maintain a collective energy for developing appropriate methodologies applicable to a range of markets in developmental states, whilst also providing a base for a collaborative approach towards these markets;
   - Enhance useful networks across Government, Business, Education, Civil Society, Organised Labour and Global Partners related to pedagogy, research, innovation, policy development in a cross disciplinary area that has been highlighted by all evaluations of limits to growth, sustainability, equity, global competitiveness.

3. **Further positioning** of the e-SI’s National Research Network for e-Skills (ResNeS) by:
   - Providing an environment for a multi-disciplinary policy and research base for the e-Skills initiative, which goes to the heart of building South Africa’s capacity for equitable prosperity and global competitiveness;
   - Commencing the process of building a relevant taxonomy, providing a coordinating framework, proactively aligning research to national priorities, business needs, and emerging technology capabilities and establishing a sound credible and active research collaboration body;
   - Undertaking the important matter of aggregating relevant existing data and in establishing a process for on-going data collection that is more closely aligned to the needs of a broad based national approach to capacity building for South Africa’s developmental needs in the Knowledge Society;
   - Informing and influencing e-capacity building policies, grounded on evidence based research, and identifying South Africa’s needs within its own cultural identity;
   - Assessing existing research approaches in order to recommend the most suitable methods for e-Skills research in South Africa and developing countries.
4. **Providing opportunities for building South Africa’s e-Skills capacity** by:
- Refining policy settings within a more integrated and innovative approach to the subject matter;
- Testing new approaches to service delivery within a safe environment that has broad technical, praxis and policy support across business, service delivery agencies, education and the local community;
- Developing and testing new products and services in protected environments in the e-Skills Knowledge Production and Coordination CoLabs;
- Accessing academic case study approaches with university researchers and students (undergraduate and postgraduate), government managers and programmes, and business-related knowledge and experience;
- Establishing new pedagogical and research approaches to undergraduate courses, short courses, postgraduate courses and evidence based research, aligned to current needs and future trends;
- Developing a formal process to more effectively engage with government from a collective stakeholder stance around praxis, evaluation, policy development, research needs, and new approaches to vertically and horizontally integrated efforts to national skills development for the Knowledge Society.

5. **Support e-SI Stakeholder Value Proposition** in accordance with the stakeholders’ specific needs.

### 5.2.3 Establishing e-Skills Integration for Impact

“By social impacts we mean the consequences to human populations of any public or private actions that alter the ways in which people live, work, play, relate to one another, organise to meet their needs and generally cope as members of society. The term also includes cultural impacts involving changes to the norms, values, and beliefs that guide and rationalize their cognition of themselves and their society.”

Developing a sound approach to the impact-driven social appropriation of ICT for local benefits must be done in ways that valorise South Africa’s culture, independence, social identity, socio-economic prosperity, innovation, creativity, employment opportunities, global competitiveness and continental position.

It is a common agreement of all e-skills stakeholders in South Africa that such an approach to complex problems of inequality, poverty and joblessness cannot be successful if done in isolation (“in-silo” approach) but requires the establishment of a formal multi-stakeholder aggregation and collaboration. That process will coordinate e-skilling endeavours, including development of knowledge, aptitude and astuteness, which are necessary for achieving an integrated impact on socio-economic development. The aim of the aggregation and collaboration processes is to deliver socio-economic and cultural appropriation of ICT for innovative job creation, community cohesion and participative approaches to service delivery.

This approach has the potential to overcome the barriers of an “in-silo” operational attitude and embedded hierarchies within all spheres of within and across government, education and business. It has a capacity to deliver an integrated approach and be more responsive to global changes identified by The Presidency’s Department of Performance Monitoring and Evaluation and highlighted as key issues in the National Development Plan – Vision 2030. This joint approach across

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stakeholder groups is required for effective evidence-based policy development which should be mirrored at all levels of the multi-stakeholders partnership. This is needed to provide the necessary leadership for line Departments (National, Provincial and Local), State Owned Enterprises, Tertiary Education and Training, industry, business, donor bodies/countries and international agencies. Such an effort is essential to harness the best talent across business, government, education, civil society and organised labour from within and outside of the country to develop, implement and evaluate coordinated policies to ensure that the adoption of ICT does not cause increased inequality.

The integrated approach outlined in this section provides the basis to provide the integration and aggregation frameworks for impacting the national strategic goals (including the MTSF, NDP and HRDC) through the socio-economic and cultural appropriation of ICT. The e-Skills Integration for Impact framework (Figure 6) not only aligns stakeholder needs but ensures the inclusion of fundamental e-skills concepts such as e-social astuteness, innovation, creativity, transition requirements for moving to a socio-economic platform increasingly dominated by new forms of ICT (the Knowledge Society) and building an environment for new jobs. It also entails an aggregation framework for monitoring and evaluation.

**5.2.3.1 Transition requirements for moving to Knowledge Society**

There is a common understanding and agreement among the many e-skills stakeholders consulted and engaged since 2008, that South African society must embark on a speedy transition from the industrial/agrarian society and its legacy of widespread poverty, inequality and unemployment to fully realise opportunities offered by the emerging Knowledge Society. This necessitates job creation through innovation and creativity, social astuteness\(^\text{42}\), here applied as e-Social Astuteness, self-reliance and improved quality of life. In order to do so, the nation must acquire basic e-skills (here

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\(^{42}\) We here use the term astuteness in a positive connotation: using individual shrewdness for personal advancement by not taking unfair advantage of other people or the community.
called e-Literacy\(^{43}\)) needed for the socio-economic appropriation of the modern information and communication technologies. These are indispensable for digital inclusion (\textit{e-Inclusion}) and social innovation, electronically conducted business (\textit{e-Business}), effectively using electronic media (\textit{e-Media}), ICT-supported health systems and applications (\textit{e-Health}), e-Learning and the use of ICT in education (\textit{e-Education}), e-government/governance and e-participation for an effective service delivery (\textit{e-Enablement}) and an astute use of skills for personal growth and self-reliance (\textit{e-Astuteness}).

The concept of e-Astuteness is closely related to developing e-competent individuals by giving them appropriate ICT-related knowledge and skills and training them to develop a competent attitude and knowledge to use and adapt to the rapidly changing new forms of ICT devices and associated software. If applied to benefit the community’s socio-economic context (and possibly combined with other “e-Astute” community members), e-Astuteness then transitions into \textit{e-Social Astuteness}, i.e. it becomes a smart way to apply acquired e-skills for everyday socio-economic development and better life opportunities for all. If applied appropriately, e-Social Astuteness can further help in developing ICT-supported social cohesion (impacting on basic issues including health, safety, food security, youth unemployment, increasing self-reliance, education and training, business development, etc.) which is very high on the agenda of the NDP and MTSF.

\subsection*{5.2.3.2 \textit{E-Social Astuteness}}

As one of the key concepts supported at the 2\textsuperscript{nd} e-Skills Summit, the benefits of appropriately developed e-Social Astuteness needs to be elaborated in more detail as the primary issue is related to how people without much formal education can make best use of their e-skills to become self-reliant in maintaining proficiency with the ever changing technology to deal with their real life issues at the local community level. The concept of e-Social Astuteness was strongly endorsed by delegates at the Summit and the ITU Global ICT Forum for Human Capital Development (Cape Town, October 2012). This concept was considered by the delegates as an integral part of e-skills development, which was also echoed in the recent speeches of the Minister of Communications at the Innovation Africa Summit and that the Deputy Minister of Communications in the Opening Address at the 2\textsuperscript{nd} e-Skills Summit.

The notion of e-Social Astuteness helps in recognising opportunities in an ICT-enabled world for all people regardless of their formal education, employment status, location, age, gender or physical disabilities. Thus, the aim is to make them capable e-users in the same way that children seem to be able to develop ‘an intuition’ in how to interact with all emerging technological devices without formal education; a concept of ‘child driven education’ as espoused by Sugata Mitra\(^{44}\). As this is fundamental to the success of new ICT-enabled approaches to service delivery, it is in the best interest of government, business and education to resource its human capacity base by helping them to become e-Socially Astute workers and citizens.

\footnotesize{\textsuperscript{43} Detailed explanation of different e-skills is given in section 5.2.6 \hspace{1cm} Building an e-Skills Framework and Taxonomy

\textsuperscript{44} See for example http://www.ted.com/speakers/sugata_mitra.html}
5.2.3.3 Aggregation Framework, Monitoring and Evaluation

The Knowledge Society offers an improved quality of life through a spread of opportunities: from job creation and self-reliance to innovation, creativity and social astuteness. However, to facilitate the move from Industrial or Agrarian Society legacies towards Knowledge Society opportunities, coordination and collaboration of effort across all of the key stakeholder groups are fundamental. Hence, this framework for aggregated impact focuses efforts on key areas (Figure 7) that are aligned to the national priorities outlined in MTSF and NDP. This aggregation will be achieved through the established, decentralised collaboration network architecture (including provincial e-skills knowledge production and coordination CoLabs) that allows for channelled outputs, outcomes and impact at local, provincial and national levels. The aggregation framework for e-skills impact (currently being developed and implemented) will address three main issues: (i) aggregation of efforts (collaborative approach through the e-skills collaborative networks), (ii) aggregation of resources (e.g. funding for impact), and (iii) aggregation of results and information, which are necessary for an informed strategy and policy decision-making. This framework is also expected to address the drivers for the realisation of the goals of the e-skills agenda. Such drivers are including an improved ICT connectivity and the lowering of broadband costs, focused funding, thought leadership and sustainability. The geo-spatial scope, ensuring that peri-urban, rural and deep rural areas are catered for, is of utmost significance in an effort to use e-skills for increased opportunities in the socio-economic platform dominated by new forms of ICTs.

The monitoring and evaluation model that will support the development of the e-Skills Integration for Impact Framework is planned to include socio-economic parameters that can directly and indirectly align effort to the highest national socio-economic priorities outlined in the MTSF and NDP. Therefore, the monitoring and evaluation should include:

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46 The possible structure for the e-skills aggregation framework is given in Appendix C.
**Digital** and **Social inclusion**: the capability of all citizens to use ICT in order to play a full part in society and enjoy a fair share of wealth and opportunity (equitable development). This effort includes accessibility to digital resources and the capacity to apply this capacity to address individual, community and social needs through e-Astuteness.

**Effective delivery of government services**: the degree to which citizens are capable of accessing and appropriating e-government and e-governance services (e-Enablement of effective service delivery). This also encompasses the use of mobile devices for utilising government services at all levels (m-government).

**Expansion** and **modernisation** of ICT facilities: assessing the success in transforming e-Centres into Smart Centres for more learning and training opportunities, access to services for work, cultural and social opportunities.

**Building** the **capacity of individuals, groups and communities**: monitoring and evaluating progress of empowering the inherent and developed capabilities of citizens. This includes capabilities to use e-skills, e-Astuteness and e-Social Astuteness to make decisions regarding matters of individual, economic and societal development. This also includes assessing the skills necessary to find employment or start and manage their own business, thereby the creation of jobs and tackling poverty.

**Re-skilling** and **up-skilling**: monitoring and evaluating the gaps in e-skills delivery in order to advise evidence based policy making and also in the creation of e-skills programmes that will close these gaps. In part this will encompass regular e-skills environmental scanning.

**Supporting Social Capital** and **Social Cohesion**: assessing the use of ICT and e-skills for connecting people and helping them to maintain and strengthen social ties between family members, friends and communities; assessing the appropriation of e-skills for participation (e.g. e-Participation and e-Democracy) which has an important contribution to make in the evaluation of the readiness of individuals and communities to cohesively support the national, provincial and local development agendas.

### Table 13: The NeSPA 2012 recommendations to integrate e-Skills in an Impact Framework

<table>
<thead>
<tr>
<th>NeSPA 2012 Recommended Actions</th>
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<tbody>
<tr>
<td><strong>1. Fully develop, test and implement an e-Skills Integration for Impact Framework.</strong></td>
</tr>
<tr>
<td><strong>2. The universities</strong> (particularly those which have signed the MoUs with e-SI), as places intended for thought leadership, <strong>need to be co-opted</strong> into establishing independent knowledge creation approaches for the collaborative efforts described in this e-Skills Integration for Impact Framework. These knowledge creation spaces can be <strong>harnessed</strong> inter alia to support the development of this Framework and its implementation - hence helping development of the South African Knowledge Society in ways that will <strong>ensure a more equitable prosperity</strong> for its citizens and an improved <strong>global competitiveness</strong> of its economy.</td>
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### 5.2.4 Establishing an e-Readiness Fund for Impact

In its efforts since 2008, the e-Skills Institute has found a high level of willingness by IT related business (South African and International) and international agencies to become engaged with a national e-skilling effort. They understand the need and want to see it advanced rapidly not only because of self-interest but also because most have a genuine desire to help improve the human condition through the social appropriation of ICT.

However, the common issues raised by business relate to visible and committed government support, speed of response, evidence of a sound responsive plan that recognises the reality of the situation and valorises stakeholder interests.
Experience with business support for well-developed approaches that deal with ‘real societal’ issues in meaningful practical and implementable ways is evidenced by initiatives such as NEPAD and projects emanating from the Davos events. Further there are many donor countries including South Korea, Finland, Sweden, Belgium, UK, USA, Canada that have established individual programmes of up to five (5) years in South Africa in the ‘Information Society’ space. Whilst these have been well intentioned and have often been clearly focussed, all efforts seem to meet a slow or quick decline once the money stops.

What is missing in this obvious interest to assist South Africa’s poor in the appropriation of ICT for local benefit and in overcoming poverty and inequality is a single point of entry and coordination of effort over the longer term.

This NeSPA 2012 recommends the establishment of an e-readiness fund accounted through the e-SI and administered in an open manner based on the recommendations and oversight of an independent Advisory Board consisting of people with high levels of financial management, deep understanding of the real issues of socio-economic and e-skills development.

5.2.5 Developing an e-Skills Ecosystem

“An ICT ecosystem encompasses the policies, strategies, processes, information, technologies, applications and stakeholders that together make up a technology environment for a country, government or an enterprise” (Open ePolicy Group, 2005).

It is widely recognised that ICT is one of the enablers for improving socio-economic platforms, opportunities and life conditions of people in poor circumstances. Rapidly increasing Internet broadband, electronically enabled social networks, real-time sharing and augmented reality, to mention a few of the advances in the social and economic appropriation of ICT, have played a role in transforming the social and economic life of both developed and developing worlds. Ever-developing ICT brings new possibilities for improving and transforming socio-economic activities and human relationships - requiring a rapid and continuous e-skilling, re-skilling and up-skilling. Hence, the South African stakeholders that actively participate in developing and implementing the e-skills agenda (Government, Business, Education, Organised Labour and Civil Society) have recognised a need for an “e-skills ecosystem” that would support adoption and socio-economic appropriation of ICT. When developed fully, such an e-skills ecosystem will be able to support an accelerated e-skills development programme in South Africa, thereby contributing to the equitable prosperity of its citizens and global competitiveness of its developing Knowledge Economy. However, current literature or praxis does not offer examples for such a system that could be possibly replicated and adopted within a developmental state such as South Africa.

NeSPA 2010 has set the foundation for such an ecosystem by introducing a system structure through the governance of the e-skills framework in South Africa (e-Skills Institute, e-Skills Knowledge Production and Coordination CoLabs, e-Community Centres) in conjunction with the Multi-stakeholder Network Architecture. But other necessary elements of an e-skills ecosystem and their relationships are still to be fully defined. This document (NeSPA 2012) gives further descriptive guidelines for development of the e-skills ecosystem in South Africa (Figure 7) by briefly describing:

- foundational principles;
- structures, governance and regulations;
- national multi-stakeholder network architecture;
- aims of this e-Skills ecosystem;
- necessary drivers;
- geo-spatial scope;
- need for a local e-Skills taxonomy and
- tentative maturity levels of such an ecosystem.
It is necessary to emphasise that the e-skills ecosystem is not static but a dynamically changing system that should reflect social, political, economic and technological changes. Thus, this system should be regularly reviewed and revised in order to optimise efforts to e-skilling the nation in the urgent matter of preparing it to engage with a global socio-economic system dominated by ICT.

5.2.5.1 Foundational principles

The foundational principles for the e-skills ecosystem are those sets of indigenous South African and African philosophical and political principles that have already been accepted by the South African government and the society: Batho Pele and Ubuntu.

The Batho Pele\(^48\), meaning “People First”, is a set of eight principles aimed to enhancing the quality and accessibility of government services by improving efficiency and accountability to the recipients of public goods and services\(^49\):

- regularly consult with customers;
- set service standards;
- increase access to services;
- ensure higher levels of courtesy; and
- provide more and better information about services;
- increase openness and transparency about services;
- remedy failures and mistakes;
- give the best possible value for money.

All eight Batho Pele service delivery principles are embedded the e-Skills Institute’s initiatives.


\(^{48}\) The initiative Batho Pele was first introduced by the President Mandela Administration on October 1, 1997 aimed at better services delivery.

The Ubuntu philosophy recognises the importance of the collective human action for the common good by emphasising that “people are people thru other people”\(^{50}\). The following words of Steve Biko\(^{51}\) illustrate significance of this philosophy for the human development, as seen from the indigenous African context:

“The great powers of the world may have done wonders in giving the world an industrial and military look, but the great still has to come from Africa - giving the world a more human face”.

The Ubuntu principles of valuing the good of the community above self-interest and to help others in the spirit of service are crucial for developing an effective e-skills ecosystem that enables developing skills and knowledge for equitable prosperity and global competitiveness, respecting human dignity through inter alia developing e-Social Astuteness, positive Social Capital and (much needed) Social Cohesion. The e-Skills Institute’s approach recognises the value of Ubuntu in achieving sustainable socio-economic benefits across the full spectrum of South African society.

5.2.5.2 Aims

The successful utilisation of a South African e-skills ecosystem is ultimately linked to improving the quality of life for all citizens and their equitable inclusion in an emerging Knowledge Society. The aim of skilling people through such an ecosystem is to give them: (i) the skills and knowledge for the employment readiness or starting their own business, (ii) e-Astuteness and e-Social Astuteness for an increased self-reliance and appropriate application of the skills and knowledge for personal and community development. e-Social Astuteness developed in this manner can help in developing stronger relationships between community members and, ultimately, developing more cohesive communities conducive to supporting the equitable prosperity and global competitiveness of its members.

5.2.5.3 Drivers

Building a successful e-skills ecosystem requires embedding elements that create or support the e-skills actions – these elements are here called “drivers”:

- **ICT connectivity** and, increasingly, **mobility** are the main presuppositions for creating an interactive\(^{52}\) e-skills ecosystem.

- In this era of all-pervasiveness of ICT and information, **Digital Inclusion** of all citizens is one of the pre-requisites for **effective service delivery** and **ICT-supported sustainability development**\(^{53}\).

- Developing a continuous **ICT-supported competitive** and **social innovation** and the accompanying skills is one of the key drivers for reaching more equitable prosperity and global competitiveness in the Knowledge Society.

- Having an appropriate **national e-skills curriculum**, which adheres to the **local context** and provides **locally relevant content**, is an indispensable driver of an e-skills ecosystem.

- This must be accompanied by an effective **e-skills knowledge production** and **dissemination** through the **e-Skills Knowledge Production and Coordination CoLabs** and the **Research Network for e-Skills** (ResNeS).

- An e-skills ecosystem will not be possible without having **adequate thought leadership** at all levels of e-skills planning and execution accompanied by **focused and adequate resource allocations**.

\(^{50}\) In Xhosa “Umntu ngumntu ngabanye abantu” means “people are people thru other people”; in Zulu the word Ubuntu means “humanness”.


\(^{52}\) For example, a system based on the collaborative multi-stakeholders and interconnected citizens.

\(^{53}\) Doing good business while preserving or bettering ecological environment and being socially responsible.
• The successful function of the e-skills ecosystem also significantly depends on the **monitoring and evaluation** of the system’s structures, functions, inter-relationships and the system’s ability to support an impact on people’s life.

• **Aggregation of resources, efforts** and, **results** that positively impact people’s capability to develop skills for a more equitable prosperity and global competitiveness, must be an integral part of this e-skills ecosystem.

### 5.2.5.4 Geo-spatial scope

As explained by UNESCO\(^{54}\), today, as in the past, the control of knowledge has caused serious inequality, exclusion and social conflict since ‘knowledge’ was long the exclusive domain of “tight circles of wise men and the initiated few”. Secrecy was the organising principle behind these exclusive knowledge societies. Having stated that the building of an equitable society, which is capable of global competitiveness, is its highest priority, the South African government is fully committed to a more equitable development of both individuals and communities regardless of the geo-spatial areas urban, peri-urban, rural and deep rural. It is recognised by various e-skills stakeholders that creating value is about creating new knowledge and capturing its value for more equitable socio-economic development. It is also recognised that new knowledge cannot be beneficial if it is tightly bound within prescribed socio-economic circles - be these industry, political, societal or geo-spatial boundaries. Thus, more equal opportunities for the access, creation and use of knowledge and praxis in an environment increasingly dominated by new forms of ICT must be given to all South African people.

### 5.2.5.5 Structure, Governance, Regulations and Maturity levels

The e-Skills Ecosystem in South Africa is currently emerging with already established governance and system structure. At present the system is governed by the e-Skills Institute, the provincial e-Skills Knowledge Production and Coordination CoLabs, and their emerging linkages with a number of Community e-Centres. Although the system is centrally governed and its parts are funded by e-SI, the CoLabs have the mandate to flexibly support the national e-skills agenda by taking into account their mandate and the contextual circumstances. Being a cooperative endeavour with the associated universities\(^{55}\), the CoLabs are also governed in accordance with the regulations of these universities. The multi-stakeholders’ interest is planned to be represented in the CoLabs’ governing bodies, thus ensuring that the e-skills agenda is appropriately aligned to the needs and interests of business, government, education, civil society and organised labour.

This e-skills ecosystem structure is supported by the emerging research and development body, the Research Network for e-Skills (ResNeS) and the e-Content Delivery Mechanism (e-CDM). While ResNeS is responsible for coordinating and developing a research and evidence based approach to furthering knowledge, required for an informed and impact-oriented e-skills strategy and policy-making, the e-CDM provides a mechanism for delivering contextualised and localised content necessary for appropriately skilling individuals and communities for more equitable opportunities to effectively participate in the emerging Knowledge Society.

The concept of the maturity of an e-Skills Ecosystem is borrowed from theories of societies as self-organising systems\(^{56}\). The e-skills ecosystem in its embryonic phase has been organised and fully governed from a single point of interest and power. The single point of interest in South Africa was (and still is) the e-Skills Institute, which was mandated by the Department of Communications and subsequently endorsed by the Portfolio Communication Committee to centrally coordinate the

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\(^{55}\) Durban University of Technology, University of Pretoria, University of the Western Cape, University of Venda, Vaal University of Technology, Walter Sisulu University

effort with seed funding and then to develop a separate function. This can be regarded as a basic (Supported) level of e-skills ecosystem maturity. On the other end is an independent, self-organising e-skills ecosystem in which the government is not the main actor but only setting conditions and regulations for realising the potential of the e-skilled individual actors to successfully transmit their knowledge and skills to other members of a community. This level (here called Independent maturity level) requires a very high level of e-Social Astuteness, social capital and social cohesion. It is posited here that the transition period (Semi-independent maturity level) in this case is that one in which the central organisation weakens, as there is an increase in e-Social Astuteness and the capability of communities to self-organise.

5.2.5.6 e-Skills Taxonomy

An appropriate, context-dependent taxonomy, which provides a coordinating framework, proactively aligning e-skills research to national priorities, business needs, and emerging technology capabilities and establishing a sound credible and active research collaboration body, is a key element of an e-skills ecosystem. These elements of e-skills taxonomy, shown in Figure 7, are taken from NeSPA 2010 and are subject to changes in accordance to the development of a new taxonomy framework, which is explained in the next section.

Table 14: The NeSPA 2012 recommendations for the e-Skills Ecosystem

<table>
<thead>
<tr>
<th>NeSPA 2012 Recommended Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Fully develop e-Skills Ecosystem conceptually/theoretically.</td>
</tr>
<tr>
<td>2. In accordance with the fully developed conceptual/theoretical model, continue development of South African e-skills ecosystem that will fully support e-skilling the nation for equitable prosperity and global competitiveness.</td>
</tr>
</tbody>
</table>

5.2.6 Building an e-Skills Framework and Taxonomy

Current experience is demonstrating that the matter of developing e-skills for socio-economic development for a more equitable prosperity and global competitiveness is a complex matter. It requires a much better understanding of mixed economies, new value propositions, the bidirectional nature of benefit/loss and preferential intent of disadvantage enabled by increased broadband access.

Currently, there is a vibrant interest in the matter of e-skilling across both developed and developing economies. Nations are quickly recognising that a comprehensive approach to e-skilling involving much more than an incremental approach within a business model is required. The rapid advance of social media and its impact in the socio-economic fabric of all societies was not predicted and took some time to be fully recognised as a legitimate part of the socio-economic landscape.

In this environment the old style and familiar taxonomies, feedback loops, response times, economies of scale and impacts are now being tested in unexpected ways.

New taxonomies that more accurately describe and understand the new dynamics need to be developed. In this mix, new approaches to teaching, learning and training are being developed and deployed in very short time frames; witness the emergence of MOOCs (Massive Online Open Courses).

There is a very high need for nations with developmental agendas to ensure that they don’t become unwitting losers in this rapidly changing environment. Thus it is fundamental to develop a taxonomy that reflects their aspirational goals and the reality of existing inequity, lack of capacity and lack of a coordinated response mechanism.

NeSPA recommends that a high level task team be established to develop a national e-skills taxonomy that can be understood within the national planning and treasury functions and across the full spectrum of stakeholder groups.
Table 15: The NeSPA 2012 recommendations for building an e-skills framework and taxonomy

**NeSPA 2012 Recommended Actions**

1. **Establish a high level working group** that can effectively analyse and adapt current international initiatives to develop an appropriate South African e-Skills taxonomy and framework.

2. **Establish an on-going engagement** with **global leaders** in the area of **e-skills thinking and implementation**.

3. **Conduct a high level workshop involving** the NPC, DPME and international actors to **define** an appropriate **taxonomy** and **e-Skills Framework** in early 2014.

### 5.2.7 Establishing an e-Content Development Mechanism

The ITU Global ICT Forum on Human Capital Development and the 2\textsuperscript{nd} e-Skills Summit (held in Cape Town in October 2012) urged the creation of locally appropriate content development and dissemination on all electronic platforms to ensure appropriate context and cultural relevance. The study tours to various countries since 2011 by representatives of e-Skills Institute and CoLabs also confirmed that e-skilling for job creation and job opportunities is also tightly linked to the local content development and online presentation thereof\textsuperscript{57}. This finding across such a wide environmental context underpins the necessity of the establishment of an e-Content Development Mechanism.

Table 16: The NeSPA 2012 recommendations for the establishment of e-CDM

**NeSPA 2012 Recommended Actions**

1. **Establish an e-Content Development Mechanism** for the creation of locally appropriate content development and dissemination on all electronic platforms in order to ensure appropriate context and cultural relevance.

### 5.2.8 Strengthening Organisational Transformation (e-SI, NEMISA, ISSA)

The e-Skills agenda is a multi-disciplinary approach that goes beyond mere technology training and involves a broad spectrum of competency, needs and delivery options for an emerging Knowledge Society – thus, not allowing an ‘in-silo’, uncoordinated approach. Hence the establishment of the New Single Entity as a key national catalytic collaborator in e-skilling the nation is critical for advancing the development of South Africa within the context of national goals (NeSPA, 2010).

The New Single Entity for e-Skilling set up using an already established Section 21 Company (NEMISA) will lead the coordination, integration, creation and implementation of e-skills interventions including research, monitoring and evaluation, and innovation. This will be done by confirming and extending the existing multi-stakeholder collaborative network of partners across universities, FET colleges, NPOs, corporate and global development agencies. This collaborative network will, in turn, contribute to the “massification” of e-skills delivery at all levels of the society, thought-leaders, e-practitioners, e-users and ICT-illiterate citizens.

The further goal of this New Single Entity for e-Skilling (hereafter referred to as “The Entity”) is to leverage existing ICT education and training expertise, infrastructure and courses and help existing service providers to better align to the MTSF 2009-2014, NDP 2012, MDGs and the WSIS Plan of Action. The Entity will collaborate with all e-skills stakeholders and national and international institutions in ways that will contribute to new curriculum planning, course development and courses. The New Single Entity for e-Skilling will also identify the gaps, shortages and mismatches in

\textsuperscript{57} Minute to Minister: Report on the Multi-Stakeholder International Exchanges Programme to Australia and New Zealand, November 2012
course content regarding the demand for ICT and ICT-related skills and competencies across organisational boundaries. This will be done through broad consultation and the formalisation of relationships between The Entity and the multi-stakeholder community to ensure alignment between the current and future skills supply and demand.

Furthermore, it is envisaged that The Entity for e-Skilling will explore appropriate, and innovative, ways to address systemic problems and other inefficiencies and weaknesses in achieving learning success. The Entity will also build a formalised multi-stakeholder aggregation and collaborative network that allows linkages between outputs and impact and helping existing e-skills service providers to demonstrate measurable impact against national strategic plans (MTSF, NDP). The Entity will implement a monitoring and evaluation framework in order to aggregate the uptake of ICT within the SA society and consistently address the opportunities emerging between supply and demand of e-skills. Consequently, it will address many of the reasons for the current shortage of e-skills in the country. The Entity will work on increasing the pool of entrants, improving throughput and graduation success rates, continually facilitating the introduction of new and updated courses and approaches in response to the requirements of business, government, education, civil society and organised labour. It will further focus on up-skilling and re-skilling those whose existing qualifications prevent them from finding work, those who are not maximally effective within their current jobs, and among trainers and educators. It will also facilitate, coordinate and help massify approaches to increase e-social astuteness across the full spectrum of society.

The Entity for e-Skilling will be formed by merging the following government agencies:

- e-Skills Institute (e-SI)
- ISSA, a directorate in the DoC established to deliver appropriately skilled software engineers for the space industry. The programme was officially terminated in 2005. Since then the remaining staff mainly focused on the development of software applications for Government.
- NEMISA, originated as the Broadcasting School of South Africa, established in 1998. It was established as a non-profit organisation (Section 21 Company) in terms of the Companies Act (1973) in 2001. Its main role was to deliver students with the requisite skills for the broadcasting industry i.e. radio and television. Over the years it added courses in animation and graphic design.

As an entirely new organisation, The Entity for e-Skilling will be in a position to consider the current supply of and demand for skills, an appropriate portfolio of offerings, and innovative ways of teaching and learning from a variety of perspectives and without needing to defend entrenched opinions. At the same time as a Section 21 Company sitting outside of but aligned to Government it will be able to more effectively collaborate with stakeholders that have in the past been in competition with each other. This does not mean that the very significant challenges that they will face as a new organisation are not being recognized.

Table 17: The NeSPA 2012 recommendations for strengthening organisational transformation of the e-Skills Institute

<table>
<thead>
<tr>
<th>NeSPA 2012 Recommended Actions</th>
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<tbody>
<tr>
<td>1. <strong>Complete</strong> the merger and <strong>constitution</strong> of The New Single Entity for e-Skilling.</td>
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<tr>
<td>2. <strong>Obtain</strong> exceptionally <strong>capable staff</strong> to <strong>build credibility</strong> and a <strong>brand</strong>.</td>
</tr>
<tr>
<td>3. <strong>Continue</strong> to <strong>coordinate</strong> the national e-skills efforts and building of e-Skills Integration for Impact and the e-Skills Ecosystem.</td>
</tr>
<tr>
<td>4. <strong>Continue</strong> to strengthen <strong>research</strong>, <strong>innovation</strong> and <strong>aggregation</strong> through ResNeS and the e-Skills Knowledge Production and Coordination CoLabs.</td>
</tr>
<tr>
<td>5. <strong>Monitor implementation</strong> of NeSPA 2012 and <strong>evaluate</strong> its <strong>impact</strong> against MTSF and NDP.</td>
</tr>
<tr>
<td>6. <strong>Ensure development</strong> of e-skills policies that will <strong>support</strong> and <strong>strengthen</strong> the NeSPA 2012 recommended actions.</td>
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</table>
5.2.9 Reposition e-Centres as Smart Community Knowledge Centres in Urban, Peri-urban, Rural and Deep-rural Communities

The analysis of the activities and usage of the existing e-Centres suggested that they are not optimally utilised for supporting the local socio-economic development and, thus, are not contributing sufficiently to building capacity required to be effectively engaged in the emerging socio-economic environment which is increasingly dominated by new forms of ICT. Hence, the delegates of the 2nd e-Skills Summit and the ITU Global ICT Forum on Human Capacity Development (Cape Town, October 2012) supported the concept of repositioning the community e-Centres into Smart Community Knowledge Centres. These centres will exist in all geo-spatial areas (urban, peri-urban, rural and deep rural) and will provide ICT-enabled space in which members of local government, business, education, healthcare institutions and the general public will work together to improve the socio-economic status of a community.

The primary aim of a Smart Community Knowledge Centre is to improve the lives of the community members and enable them to be more self-sufficient by not only giving the citizens necessary e-skills but to help them to become e-Astute and e-Socially Astute. Smart Community Knowledge Centres will ideally also provide ICT infrastructures such as computers and Internet connectivity which can be used for a range of options such as learning, training and communications. However, the ICT infrastructure is primarily a mechanism and an important driver that will enable developing a smart community and preparing its members for equitable development and the communal economy socio-economic sustainability through three key programmes (Figure 9):

- Education
- Applied Knowledge
- Entrepreneurship.

![Figure 9: Action areas of Smart Community Knowledge Centres (Source: e-Si working material)](image)

The Education programme includes both formal and informal education, while the Applied Knowledge programme includes: (i) Legal advice, (ii) Health and Nutrition, (iii) use and management of Natural Resources, and (iv) Self construction.
The Entrepreneurship programme is aimed at increasing employment, self-reliance and local economic development and consists of: (i) **Basic training**, (ii) **Incubation** and **Consulting**, (iii) Connection with **Microcredits** and (v) Connection with **Marketing Network**.

The Applied Knowledge programme is aimed at assisting the Smart Centres community members to practically apply the acquired knowledge and skills in everyday situations: be it for (i) obtaining **legal advice**, (ii) obtaining **health** and **nutrition guidance** and **help**, (iii) **building capabilities** for the use and **management** of the community’s **natural resources** or (iv) **building self-capacity** through, for example, building and applying e-Astuteness and e-Social Astuteness.

### Table 18: The NeSPA 2012 recommendations for repositioning of e-Centres as Smart Community Knowledge Centres

<table>
<thead>
<tr>
<th>NeSPA 2012 Recommended Actions</th>
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<tbody>
<tr>
<td><strong>1.</strong> Continue activities regarding <strong>repositioning</strong> e-Centres as <strong>Smart Community</strong> Centres by selecting e-Centres that <strong>already have locational, physical, technological</strong> and <strong>human capacities</strong> to realise the above described aims.</td>
</tr>
<tr>
<td><strong>2.</strong> Prepare other e-Centres for <strong>repositioning</strong> as the <strong>Smart Community centres</strong> by capacitating them for the purpose. This <strong>capacitating</strong> should <strong>include</strong> the centres from <strong>all geo-spatial areas</strong> (urban, peri-urban, rural and deep rural) and should be carried out by the Provincial <strong>e-Skills Knowledge Production and Coordination CoLabs</strong> and their stakeholders. The <strong>New e-Skills Entity</strong> will have a national <strong>coordination role</strong>.</td>
</tr>
<tr>
<td><strong>3.</strong> Use the <strong>advocacy</strong> and <strong>awareness campaigns</strong> and <strong>activities</strong> to <strong>promote</strong> Smart Community Centres as the <strong>hubs</strong> of the <strong>local ICT-supported</strong> socio-economic development.</td>
</tr>
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### 5.2.10 Developing and facilitating a National e-Skills Curriculum and Competency Framework (NCCF)

Currently, the e-Skills Institute has commenced a journey of establishing a base for the aggregation of e-skills curriculum development within the **National e-Skills Curriculum and Competency Framework** (NCCF). This Framework directly addresses the strategic needs of South Africa (e.g. MTSF 2009-14; NDP – Vision 2030) and points to the matters outlined in the 2012 WEF Networked Readiness Report. The aim of this Framework is to apply and contextualise relevant worldwide “best practice” (e.g. UK, Australia, New Zealand) and the experience of countries with similar developmental agendas (e.g. Mexico, Kenya, Rwanda, Cuba) in ways that can be amplified by a range of service providers across the multi-stakeholders network architecture: Government, Business, Education, Organised Labour and Civil Society.

As specified in the e-SI document “Towards a national curriculum and competency framework and standardised curriculum guidelines”, the NCCF is critical for ensuring that: (i) all areas of e-skills need are provided for, (ii) there are clear structured pathways for progression, and (ii) at each stage learners are provided with sufficient information that will help them to make decisions about where to go next. It is also stipulated that the NCCF should be: (i) clearly linked to job roles and opportunities, (ii) relevant to both individuals and employers and (iii) clear about learning and development goals for both life and work. This framework recommends focus on the following e-skills areas:

- Identify and articulate a clear value proposition for adoption of a competence framework by stakeholders; the solution must be demand-driven rather than committee-driven, and the development of value driver models for each stakeholder community is an important next step;

- Adopt a multi-stakeholder partnership approach encompassing industry and academia, industry and civil society partners – recognised as key to establishing a successful competence framework which adequately reflects the needs of the different stakeholders;
- Develop increased brand awareness to support a “virtuous cycle”;
- Ensure access to the NCCF is open and free, encouraging adoption by all stakeholder communities;
- Promote NQF initiatives to counter low levels of awareness, and therein, diminished value;
- Develop brand recognition including the benefits of the NCCF in order to motivate certification providers to undertake the certification mapping process;
- Use the framework to enable greater transparency of standards;
- Seek practitioner-led clarification and definition of the roles for e-skills development. These can then be used to provide supporting development for a foundation syllabus for education and training;
- Facilitate demand-driven, high-level programme development in which the inclusion of real-world practitioners is of key importance;
- Ensure the courses undergo an appropriate accreditation process to safeguard their relevance and validity;
- Define a suitable approach for the provision of relevant lifelong learning programmes. These programmes should be aware of the dynamic environment in which we operate and the need to update their competences accordingly.

The e-Skills National Curriculum and Competency Framework, as outlined in Figure 2, is closely linked to the development of the e-skills taxonomy and, in fact, largely depends on it. Hence, it is recognised by this National e-Skills Plan of Action 2012-14 that both the NCCF and the e-skills taxonomy should reflect the South Africa’s strategic developmental plans such as MTSF and NDP. Furthermore, it has to be linked to the current stakeholders (Business, Government, Education, Organised Labour and Civil Society) needs, particularly in regard to the current and projected future needs.

Table 19: The NeSPA 2012 recommendations for developing and facilitating an e-Skills National Curriculum and Competency Framework (NCCF)

<table>
<thead>
<tr>
<th>NeSPA 2012 Recommended Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Complete development</strong> of the <em>e-Skills National Curriculum and Competency Framework</em> in a way that will ensure its <em>relevance</em> to the national developmental strategic programmes such as MTSF and NDP.</td>
</tr>
<tr>
<td><strong>2. Ensure involvement of all major e-skills stakeholders</strong> (Business, Government, Education, Organised Labour and Civil Society) in order to make the NCCF relevant to these stakeholder groups.</td>
</tr>
<tr>
<td><strong>3. Use e-Skills Environmental Scans</strong> to help ensure continuous relevance of the NCCF for developing an e-skilled workforce for <em>current</em> and <em>future socio-economic needs</em>.</td>
</tr>
</tbody>
</table>

6 Delivery Plan for Impact

This National e-Skills Plan of Action 2012-14 acknowledges its concrete support to MTSF 2009-14 and the National Development Plan - Vision 2030 by primarily addressing current national challenges related to: (i) the education system’s failure to produce sufficient numbers of people to work in the ICT sector, (ii) the education system’s failure to produce the required skills necessary for advancing the South African Knowledge Society (Information Society and Knowledge Economy), (iii) the absence of central coordination of demand and supply of e-skills and aggregation of data related to the building of e-skills capacity, which results in (iv) difficulties to make informed strategy and policy decisions. It is recognised by the government and other e-skills stakeholders in the country that failure to address these challenges would result in South Africa’s further drop in global development
rankings in line with the disastrous fall in the WEF global e-readiness position from 47th in 2007 to 72nd in 2012.

6.1 Priorities

The highest priority of all programmes and activities of the e-Skills institute is to support South Africa’s strategic socio-economic developmental programmes and goals. By doing this, the e-SI’s plans and programmes – including this e-Skills Plan of Action 2012-14 - will also support the international developmental agendas such as MDGs and the WSIS Plan of Action. In that regard e-SI has identified the priority areas of intervention as:

- e-Inclusion and Social Innovation that includes Smart Community Centres managers in the local communities;
- e-Participation in community, social, education, innovation and governance processes, particularly involving young South Africans;
- ICT for rural development, including both production and distribution in existing and new industries, market intelligence and positioning, growing creative industries opportunities, focussed government service delivery, communications and climate forecasting, environmental monitoring, reduction in urban migration and community interaction;
- Enhanced government e-enablement through skilling of employees and use of Web 2.0 technologies for service delivery, e-participation and e-democracy, and an efficient use of the broadband;
- FET ICT skills development, multimedia training and networking training in the educational sector;
- Building of the e-practitioner base within the country which valorises the development of e-skills and applications for an e-socially astute society;
- Creative Industries including that of building the e-entrepreneurship base in the private sector;
- Free and Open Source Software (FOSS);
- Other skills needed in all these sectors, particularly in the areas of teacher training in the use of ICT and e-health, which are key enablers in economic and social development.

In particular, the e-Skills Institute has planned to achieve the following in the next five years:

1. Producing Thought Leaders (across all stakeholders groups) by attaining the following:
   - engage 100 postgraduate students;
   - organising 60 seminars and lectures for senior decision-makers within the stakeholders groups as well as for established researchers from other disciplines and emerging e-skills researchers; the above activities will help to engage 100 e-skills researchers that will assist forming a firm theoretical and conceptual foundation for e-skills interventions as well as for assessing the interventions (aggregation, monitoring and evaluation);
   - Organise regular biannual e-Skills Summits and annual e-Skills Colloquiums.

2. Supporting ICT sector and Creative Industries by facilitating the enrolment of e-skills related:
   - 50 PhD students;
   - 100 Honours and Masters level students;
   - 500 Bachelor level students; 10 internationally renowned scholars;
   - It is also envisaged that the e-SI will help facilitate the establishment of a range of industry-related and recognised qualifications (short courses and postgraduate diplomas);
3. **Developing e-Skills users** across key stakeholder sectors. It is envisaged that through the facilitated efforts of the e-SI, one million ICT users will have recognised, industry-related qualifications relevant for their field of work (e.g. Business, Government, Health sector, Education, Civil Society organisations);

4. **e-Skilling Communities** by achieving:
   - 10 million e-literate citizens able to socially appropriate ICT;
   - Capacitating 20% of Civil Society organisations for delivering skills necessary for the social appropriation of ICT.

Furthermore, e-SI proposes the following priorities to be accomplished in the next 5 years:

- 50% increased intake in relevant e-skills course and programmes, organised by universities FET colleges, training institutions and civil society organisations, that are recognised and accepted by industry;
- 75% of graduates appropriately e-skilled for employment and entrepreneurship;
- Assisting in the establishment of at least two (2) new industries and/or service provision options that will support the current national industrial strategy in order to create sustainable employment, aligned to job opportunities for the knowledge-based economy such as the Creative Industries;
- 100% increase in the number of substantive and targeted e-skills research programmes;
- 100% increase of undergraduate, postgraduate and short courses relevant to the country’s e-skills needs and delivered through open and distance learning;
- 100% access to the e-skills for Digital Inclusion and Social Innovation in the rural and peri-urban communities – particularly for unemployed youth, women and “vulnerable groups” such as people with disabilities or minority groups.

### Table 20: The NeSPA 2012 recommendations for e-Skilling Priorities

<table>
<thead>
<tr>
<th>NeSPA 2012 Recommended Actions</th>
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<tbody>
<tr>
<td>1. It is recommended that the above-mentioned e-skilling priorities become integral part of the e-SI Business Plan and also the e-Skills Knowledge Production and Coordination CoLabs.</td>
</tr>
<tr>
<td>2. e-Skills Knowledge Production and Coordination CoLabs should analyse the e-skills demand and supply in their respective provinces as a part of their environmental scans and set e-skilling priorities that will provide coordinated support for the national developmental strategies (e.g. NDP, MTSF) and the provincial strategic developmental plans.</td>
</tr>
<tr>
<td>3. In conjunction with the Smart Community Centres, e-Skills Knowledge Production and Coordination CoLabs should analyse the local community e-skills demand and supply to identify gaps and thus prioritise the current and future e-skills actions.</td>
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### 6.2 Key drivers

The e-skills Institute realises and the delegates at the 2nd e-Skills Summit confirmed that these above-mentioned priorities cannot be realised without having in place mechanisms to address the key enabling factors, here named as key drivers. Global and South African experience suggests that an effective e-skilling for more equitable prosperity will not be possible without having in place the following key environmental drivers:

- **ICT Connectivity**: affordable broadband connections in all geo-spatial areas (urban, peri-urban, rural and deep-rural) are required as the first step in the socio-economic appropriation of ICT;
• **Mobility**: an embedded and coordinated response to the increasing mobility of new ICT devices and capacity across all forms of service delivery, business development, work environments, education and training and social;

• **Digital Inclusion**: a strongly embedded policy and praxis approach across government, business and education to enable effective participation of individuals and communities as clients, customers, members of society, family, groups, clubs and participants;

• **Innovation** and **Social Innovation**: a conducive environment for innovation and creativity in all socio-economic spheres as the means for developing successful change in addressing major societal, economic, technological and educational issues;

• **Focused Resource Allocations and Support Funding**: transversal government and multi-stakeholder funding to radically improve national rankings in the global e-readiness indicators and in developing national capacity to deliver more equitable opportunities in a socio-economic platform that is increasingly dominated by new forms of ICT;

• **Sustainability**: the development of a business-friendly environment that understands the opportunities in the emerging economy and that can significantly increase both business development and employment options;

• **Thought Leadership**: that can facilitate a strongly supported coordinated and integrated effort to realise opportunities across Government, Business, Education, Civil Society and Organised Labour;

• **e-Skills Curriculum**: a recognised and coordinated e-skills curriculum response across all levels of education and training to provide the context and content needed for synchronised, impact-driven e-skilling actions across the geo-spatial spaces and the stakeholders’ efforts;

• **Effective knowledge production and dissemination**: As a key underpinning variable of developing a national e-astuteness across all levels of society, relevant processes for the development and dissemination of new knowledge and praxis are required. To be effective, this necessitates a coordinated and aggregated response mechanism. The provincial e-Skills Knowledge Production and Coordination CoLabs and the Research Network for e-Skills (ResNeS) have been established to facilitate the development of an architecture that can assist this process;

• **Monitoring** and **Evaluation**: A foundation stone of effective policy development and service delivery is the development of a relevant process to monitor progress and evaluate effort against national, provincial and local plans. The process must be enacted at the outset of effort if it is to deliver impact against the desired goals which are mostly multi-disciplinary and multi-organisational involving actors across Business, Government, Education, Civil Society and Organised Labour. Delivering e-readiness, e-astuteness across the full spectrum of South African society requires the development of effective measuring tools and applications that can both inform process and demonstrate progress of e-skills interventions;

• **Aggregation**: In a space that has emerged in such a disjointed manner, there are many actors, programme/project responses that operate within perceived and real mandates without any effective coordination or integration. Further, the new operating environment enabled by ICT has limited respect for national boundaries and advantages dramatically escalating economies of scale which are delivering new value propositions across government, business and education. The established disjointed approach has obviously failed South Africa as demonstrated in WEF global e-readiness rankings (where South Africa has dropped from 47th place in 2007 to 72nd place in 2012). The current “in-silo” approach
Table 21: The NeSPA 2012 recommendations to develop e-skilling Key Drivers

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<tr>
<td><strong>1.</strong> The e-SI (New Single Entity for e-Skilling) to engage with <strong>ICT infrastructure development stakeholders</strong> and to advocate for <strong>affordable ICT broadband access for all</strong>. This particularly applies to <strong>mobile access</strong> and <strong>affordability</strong>.</td>
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</tr>
<tr>
<td><strong>2.</strong> The e-SI (New Single Entity for e-Skilling) to engage with all spheres of government and government agencies in order to ensure focused <strong>multi-stakeholder resource allocations and funding to deliver impact</strong> against the global <strong>e-readiness indicators</strong> and in developing a societal <strong>e-astuteness</strong> that can provide a more equitable approach in the emerging socio-economic dynamic which is dominated by new forms of ICT.</td>
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</tr>
<tr>
<td><strong>3.</strong> The e-SI (New Single Entity for e-Skilling) to engage with all spheres of government and other e-skills stakeholders (particularly with Business and organised Labour) in order to advocate development of a <strong>business-friendly</strong> environment that understands the opportunities in the emerging economy and that can significantly increase both business development and employment options.</td>
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<tr>
<td><strong>4.</strong> The e-SI (New Single Entity for e-Skilling), through its <strong>e-Skills Knowledge Production and Coordination CoLabs</strong> and <strong>ResNeS</strong>, to facilitate development of the <strong>thought leadership, e-skills curriculum, effective knowledge production and dissemination, monitoring and evaluation, aggregation, Digital Inclusion</strong> and <strong>Social Innovation</strong>.</td>
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6.3 Aggregated Actions

“National Planning Commission painted a picture based on the aggregation of effort across South African society by using the words ‘active citizenry’, ‘people centred development’, ‘improving coordination within government’, ‘collective responsibility’ and ‘implementation’. With these words he highlighted the need for coordination, aggregation and integration as being central to the National Development Plan”.

Trevor Manuel, Minister in the Presidency
In launching the NDP Vision 2030, 15 August 2012

A number of e-SI documents stress that the pervasive and ubiquitous nature of the global dispersal of modern ICT is rapidly redefining base concepts of “economies of scale” for socio-economic sustainability, both vertically and horizontally, across all spheres of service delivery, management, business analysis, education, innovation and research. Echoing the above citation from the National Development Plan, the e-Skills Institute has also identified that the lack of coordination across the full spectrum of service delivery, business, education and policy frameworks create a significant impediment to addressing the serious matter of e-skilling South Africa. This is also seen as a crucial for addressing equitable prosperity in South Africa and the global competitiveness of its economy.

The e-SI recognises that the current trends in the impact of ICT deployment demonstrates that aggregation of both supply and demand into increasingly large economies of scale are well beyond the capacity of traditional concepts of market competition within nation states to operate in the national interest. This causes an increasing shift across Governments, Education, Research & Development and Business towards new formal structural agency aggregations aimed at aligning diverse capabilities around addressing issues of employment, innovation, productivity, inequity and skills development. It is thus concluded that nothing could be more logical than to fulfil the high need for a coordinated and aggregated approach to e-skilling South Africa.

Further, e-SI realises that with the borderless nature of ICT, business service providers are now coalescing into large oligopolies which make it difficult for small scale populations of even 50 million (such as the South African) to have a socially appropriated voice. In this context, traditional views of reductionist market based approaches in business, service-delivery, education, innovation and research suffer, suggesting that the need for national aggregation of effort should be given a priority. ‘In-silo’ approaches, such as project-based or small scale efforts outside of the national aggregation architecture, create unnecessary competition, overlap and duplication of resources, innovation gaps and wasteful “sunk costs”. This inevitably suggests a need to developing an aggregation architecture or platform for both supply and demand in the e-skills delivery, development, evaluation, innovation and policy development space.

The New Single Entity for e-Skilling, now in the final formation state, will foster aggregation of e-skilling resources, actions and results – particularly of the impact of the e-skilling actions on the equitable prosperity of South African citizens and global competitiveness of its economy. This Entity will build a formalised multi-stakeholder aggregation and collaborative network that allows linkages between outputs and impact and also help existing service providers to demonstrate measurable impact against national strategic plans. It will implement a monitoring framework to aggregate the uptake of ICT within society and consistently address the opportunities highlighted between supply and demand of e-skills to deliver against the MTSF 2009–2014 goals and the NDP 2012.

The e-skills aggregation that will better position South Africa for the Knowledge Society will be achieved through the enabling platform of a decentralised integrated collaborative architecture across Government, Business, Education, Civil Society and Organised labour. The e-skills aggregation efforts will need to be monitored and evaluated through the national e-skills monitoring framework and with help of an e-skills virtual network in collaboration with key strategic partners. This virtual network is inter alia aimed at local, regional and national coordination, collaboration, aggregation and monitoring and evaluation.

<table>
<thead>
<tr>
<th>Table 22: The NeSPA 2012 recommendations for e-skills Aggregated Actions</th>
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<tbody>
<tr>
<td><strong>NeSPA 2012 Recommended Actions</strong></td>
</tr>
<tr>
<td>1. <strong>Integrate, aggregate</strong> and <strong>commit</strong> to formal organisational architectures** that link across stakeholder boundaries. This <strong>integration</strong> and <strong>aggregation</strong> needs to be <strong>focused on impact</strong> on the <strong>equitable prosperity</strong> of all South Africans and the <strong>global competitiveness</strong> of the South African economy.</td>
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<tr>
<td>2. <strong>Spread awareness</strong> and <strong>advocate</strong> a need for the <strong>commitment</strong> of <strong>individual people</strong> at all levels to <strong>recognise</strong> the essential dimensions for <strong>new collaborative architectures</strong> outside of and across disciplines in ways that <strong>respond</strong> to the <strong>changing global</strong> and <strong>national operating environment</strong> and a <strong>recognition</strong> of the <strong>necessity</strong> for securing their future in the Knowledge Society.</td>
</tr>
<tr>
<td>3. By <strong>conducting</strong> the <strong>awareness</strong> and <strong>advocacy campaigns</strong>, influence the willingness of people at all levels to work with available resources, i.e. to “make a start” with what is there, <strong>apply</strong> it in <strong>innovative ways</strong>, <strong>recognise</strong> and <strong>embed social media</strong>, <strong>focus</strong> on providing benefit to individuals regardless of organisational impediments, move past blaming failures of existing systems and commit to filling the gaps with local solutions and local resources.</td>
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</table>
4. By conducting the awareness and advocacy campaigns, influence the willingness of stakeholders to establish long term collaborations in ways that are beneficial for the stakeholders and the national e-skills agenda – and, ultimately, highly valuable for e-skilling the nation for equitable prosperity and global competitiveness.

6.4 Expected Impact and Monitoring and Evaluation

In South Africa, large gaps exist in trans-disciplinary and multi-stakeholders approaches to e-skilling across Government, Business, Education, Organised Labour and Civil Society creating very few well-articulated pathways between e-skills policy-making, theory, implementation, monitoring and evaluation, and societal impact. Assessing the outputs and outcomes against the planned actions and available resources is an important part of determining what effect the e-skilling actions have on the citizens and the workforce. However, addressing the e-skills shortages, e-skills gaps, and e-skills mismatches aimed at e-skilling the nation for equitable prosperity and global competitiveness cannot be appropriately evaluated unless the e-skilling actions are assessed against the strategic national developmental goals and agendas. This is clearly one of the reasons for tightly linking the recommended actions of this National e-Skills Plan of Action (NeSPA 2012) to the National Development Plan – Vision 2030 (NDP) and the Medium Term Strategic Framework 2009–2014. In monitoring and evaluation (M&E) terms, the impact of e-skilling actions led and coordinated by e-SI and its e-Skills Knowledge Production and Coordination CoLabs will be assessed against the developmental priorities spelt out in these strategic documents.

On the other hand, the e-SI (New Single Entity for e-Skilling) will monitor and periodically evaluate the execution of this National e-Skills Plan of Action to inform the evidence-based policy making that should propose possible corrective actions or reinforce delivery of impact against the NDP and MTSF. The same is recommended at the level of the e-Skills Knowledge Production and Coordination CoLabs.

Monitoring and evaluation of this NeSPA 2012 will be performed in accordance with the efficiency (outputs) and effectiveness (outcomes) of its execution and the impact the e-skilling actions have on everyday life of the South African population in terms of Digital Inclusion, poverty alleviation, equitable chances for employment and socio-economic prosperity.

In technical terms, the evaluation of e-skilling actions and the activities of the catalytic and coordination entities (e-SI, CoLabs, Smart Community Centres) will be done in accordance with the “Policy Framework for the Government-wide Monitoring and Evaluation System”\(^{59}\). This is applicable to all entities in the national, provincial and local spheres of government. Hence, this National e-Skills Plan of Action (NeSPA 2012) has adopted the following definitions from the above-mentioned document (Table 23).

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Monitoring</td>
<td>Involves collecting, analysing, and reporting data on inputs, activities, outputs, outcomes and impacts as well as external factors, in a way that supports effective management. Monitoring aims to provide managers, decision makers and other stakeholders with regular feedback on progress in implementation and results and early indicators of problems that need to be corrected. It usually reports on actual performance against what was planned or expected.</td>
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Evaluation
This is a time-bound and periodic exercise that seeks to provide credible and useful information to answer specific questions to guide decision making by staff, managers and policy makers. Evaluations may assess relevance, efficiency, effectiveness, impact and sustainability. Impact evaluations examine whether underlying theories and assumptions were valid, what worked, what did not and why. Evaluation can also be used to extract crosscutting lessons from operating unit experiences and determining the need for modifications to strategic results frameworks.

Inputs
All the resources that contribute to the production of service delivery outputs. Inputs are “what we use to do the work”. They include finances, personnel, equipment and buildings.

Activities
The processes or actions that use a range of inputs to produce the desired outputs and ultimately outcomes. In essence, activities describe “what we do”.

Outputs
The final products, goods and services produced for delivery. Outputs may be defined as “what we produce or deliver”.

Outcomes
The medium-term results for specific beneficiaries which are the consequence of achieving specific outputs. Outcomes should relate clearly to an institution’s strategic goals and objectives set out in its plans. Outcomes are “what we wish to achieve”. Outcomes are often further categorized into immediate/direct outcomes and intermediate outcomes.

Impacts
The results of achieving specific outcomes, such as reducing poverty and creating jobs. Impacts are “how we have actually influenced communities and target groups”.

In particular, the monitoring and evaluation of this National e-skill Plan of Action (NeSPA 2012) will be done against the recommended actions specified through this document.

Table 24: The NeSPA 12 recommendations for Monitoring and Evaluation of e-Skills Actions

<table>
<thead>
<tr>
<th>NeSPA 2012 Recommended Actions</th>
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</thead>
<tbody>
<tr>
<td><strong>1.</strong> The e-Skills related monitoring and evaluation (M&amp;E) should be linked to the impact the e-skills actions recommended by this document have on the realisation of the NDP and MTSF.</td>
</tr>
<tr>
<td><strong>2.</strong> The e-SI (New Single Entity for e-Skilling) to provide an M&amp;E coordination function within the NeSPA 2012 in a coordinated manner and to involve all relevant government departments and State Owned entities in this process.</td>
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<tr>
<td><strong>3.</strong> e-Skills M&amp;E strategies of the e-SI (New Single Entity for e-Skilling) and the Knowledge Production and Coordination CoLabs should describe the approach these entities are to follow to create and operate M&amp;E systems that produce credible, accurate information on an on-going basis can be used to improve service delivery and the entity’s governance.</td>
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<tr>
<td><strong>4.</strong> The e-SI (New Single Entity for e-Skilling) and the Knowledge Production and Coordination’s CoLabs should create and implement capacity building plans specifying how these entities will put in place the human capacity to fulfil its M&amp;E functions.</td>
</tr>
<tr>
<td><strong>5.</strong> The e-SI (New Single Entity for e-Skilling) and the Knowledge Production and Coordination CoLabs should also create and implement the plans for an integration between these entities and also other e-skilling stakeholders. The aim is to achieve aggregation of M&amp;E for easier assessment of the impact that e-skilling actions produce. This will also contribute to the multi-stakeholders knowledge sharing, thus allowing for more informed future e-skills actions.</td>
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Appendices
Appendix A: The e-Skills Institute Value proposition

1. The Context for a Government eco-system for developing social astuteness to make effective use of ICT for equitable prosperity

Governments build hard (physical) and soft (services) infrastructure based on an intention that individual and collective capability will make effective use of natural, manufactured and intellectual resources for individual and national prosperity. Success is based on many variables including history, homogeneity of purpose, culture and identity, population size, existing inequity and economic, social and cultural independence.

However what is clear is that in democracies and in most humane centrally managed societies no amount of provision (doing to)60, or support (doing for) can succeed without a social, cultural and economic contract (doing with) based on trust and reciprocity between government and the people. This is particularly evident in developmental states where there are large inequities in living standards and opportunities. At the centre of this contract is individual and collective capability to maximise current circumstances in ways that are responsive to both current and future individual and collective need. This nexus which varies by national circumstance is most acute in developmental states with high inequity where the realities of developing and delivery of both “hard” and “soft” infrastructure involve long and difficult processes. Expectations (which are often not realistic) by the people are difficult to meet and problems are exacerbated by limited individual and collective capability to make effective use of what is available and what can be provided.

These matters are often complicated by the linear nature and purpose of government infrastructure and service delivery which by their very nature (structure, funding and reductionist focus) find it difficult to deliver against national goals in an integrated manner. This is particularly true with disruptive and ubiquitous interventions which are incrementally imposed or made available from “the outside”. Such interventions are often fundamentally “life changing” and do not fit comfortably within the current achievable delivery plans of government, existing structures or economic, social and cultural capabilities of service delivery or society.

This is particularly true for what has become known as Information Communications Technologies (ICT) where incremental appropriation has in point of fact increased inequity right across the world. Whilst it is patently obvious that no substantive progress against inequity can now be made without effective use of ICT, it has been clearly demonstrated that the mere provision of physical access within existing structures in the absence of well thought out plans for social, cultural and economic appropriation to impact real needs at the societal level has failed to adequately address inequity. The over emphasis on technological capability, reductionist research and treating ICT as “a mere tool” has placed South Africa on downward sliding trajectory of “e-readiness” 61 which is severely affecting national standing for investment, development, continental impact, equity, job creation, innovation (national, community and individual) and global competitiveness. South Africa has dropped from 47th position in 2007 to 72nd position in 2012. This is obviously a critical matter that requires a national approach beyond current processes.

What current efforts fail to realise is that the social appropriation of ICT for local benefit is not only necessary for an “informed customer” base for business, it is in fact a life changing potential for individual prosperity, self-reliance and participatory capability growth. Further, it must be clearly recognised that ICT is not a harmless technology as it has the capacity to homogenise culture, socio-

60 See Attachment I
61 See Attachment II for summary of South Africa’s position; references - the WEF Global Information Technology Report 2011-2012. Dutta (INSEAD) and Mia (WEF); The Digital Inclusion Index, MapleCroft, UK, 2011.
economic approach, norms and attitudes in ways that are alien to African cultures and that are proving to be inadequate in many places around the world. In other words it can be the modern equivalent of alien plants introduced into South Africa and have been now found to be harmful and difficult to control or eradicate. It is impossible and clearly not in South Africa’s interests to impede the adoption of ICT.

However, it is obviously in South Africa’s interests to recognise that the appropriation of the technology within a “western” mind-set alone is not in its interests because ICT’s natural business tendency is to aggregate in economies of scale beyond national and local interests. South Africa should harness the technology in ways that valorises South Africa’s culture, independence, social identity, socio-economic prosperity, innovation, creativity, employment opportunities, global competitiveness and continental position. It must develop a sound approach to the social appropriation of ICT for local benefit. Such an approach clearly puts emphasis on developing social capacity and social astuteness to make use of ICT in ways that suit local needs and develop better understanding of appropriating the technology to increase cohesive approaches to self-reliance.

To achieve this, Governments need to establish a formal multi-stakeholder aggregation and collaboration process to coordinate effort, develop knowledge, aptitude and astuteness at the local level. Their aim would be to deliver socio-economic and cultural appropriation of ICT for innovative job creation, community cohesion and participative approaches to service delivery. Universities and Tertiary Education as places intended for thought leadership need to be co-opted into to establishing independent spaces for this collaborative effort for Government, Business, Education, Civil Society and Organised Labour to create knowledge spaces. These knowledge creation spaces can be harnessed for the development and understanding of societal intelligence, astuteness and aptitude suited to the South African “Information Society and Knowledge Economies” in ways that make sense in dealing with inequity, providing continental leadership and increasing global competitiveness.

Such a process requires a mirror policy development function at the national level which can harness the best talent across business, government, education, civil society and organised labour from within and outside of the country. This policy coordination function is required to provide the necessary leadership for line Departments (National, Provincial and Local), State Owned Enterprises, Tertiary Education and Training, industry, business, donor bodies/countries and the international agencies to provide the integration and aggregation frameworks for impacting the national strategic goals (including the MTSF, NDP & HRDC) through the socio-economic and cultural appropriation of ICT for local benefit. Such an effort is required to develop, implement and evaluate coordinated policies to ensure that the adoption of ICT does not cause increased inequity. This joint approach of formal linked structures at both high level and the local coordination level across stakeholder groups is required for effective evidenced based policy development, delivery and evaluation for complex matters such as e-readiness. Further, it has the potential to overcome the barriers of “silos” and embedded hierarchies within Government to deliver an integrated response and be more responsive to global changes identified by The Presidency’s Department of Monitoring and Evaluation and highlighted as key issues in the National Development Plan -2030.

2. Global Trends

Current trends in the impact of ICT deployment demonstrate that aggregation of both supply and demand into increasingly large economies of scale and lost leader time frames across much of business, education and government service delivery are well beyond the capacity of traditional concepts of market competition within nation states to operate in the national interest. Key global trends include:

1. The developing world with more than half the world’s population provides the biggest opportunity for “new use” users for many ICT providers and developers.

2. ICT development is converging, becoming more mobile, more affordable and more accessible in ways that suit developmental agendas for many countries.
3. There can be no sustainable progress in developing equity of life chances in developmental states without the effective social appropriation of ICT.

4. The rate of ubiquitous development of ICT is moving past the current capacity and attitudes of many societal, organisational and service delivery structures and for effective deployment and adoption.

5. In poignant contrast, the 2012 Global e-Readiness Index highlights South Africa’s falling position in relation to other developmental states.

Collectively these trends are irrevocably changing the fundamentals of many services, businesses, educational approaches, the praxis of governance and the way in which life is led across much of society. These impacts are likely to be greatest in places where there are existing large equity gaps. All analysis of the threats and opportunities afforded by the necessary deployment of ICT points to the need for formal mechanisms for collaboration across the stakeholder groups; organised Business, Government, Education, Community and organised Labour – [sometimes known as the quadruple helix approach].

Only a national approach built on effective collaboration across and within the stakeholder groups has the potential to address the immediate and future needs of South Africa in an emerging world pervasively impacted by ICT across all spheres of life. But to be successful, such an effort needs to understand and be responsive to international trends, stakeholder needs, and the developmental agenda and be demonstrably aligned with the National strategies (including the NDP, HRDC, the STI Review, the Distance Education (DRAFT) Policy, NEPAD etc.) in ways that best position South Africa in a continental context.

3. The e-Skills Institute (eSI)

The e-Skills Institute (eSI) was formed by the national Department of Communications (DoC), following the 2007 recommendations of the Presidential International Advisory Council (PIAC) on the national structural theme of Information Society and Development (ISAD). The shortage of ICT-related skills (e-skills) was identified as a serious problem and the DoC was mandated to drive the national e-skills agenda through its e-Skills Institute. The e-Skills Institute engaged stakeholders from government, business, education, civil society and organised labour. This process led to the national e-Skills Summit in July 2010, the development of the National e-Skills Plan of Action (NeSPA) and a range of implementation activities since 2010. The e-Skills Institute plans to conduct biennial e-Skills Summits involving local, national and international thought leaders across Business, Government, Education, Civil Society and Labour to coordinate, measure, evaluate and plan e-Skills efforts across South Africa.

**As a national catalyst it aims to help:**
- Position South Africa to increase its global competitiveness
- Provide the base for increasing equitable prosperity in South African society
- Grow the human resource e-skills base for South Africa, and
- Embed technology into people’s lives.

**The e-SI’s will achieve its aims through:**
- Evidence-based research
- A monitoring and evaluation framework
- Teaching and learning; and
- Innovation

**And is based on the core values of:**
- Responsiveness
- Enabling the capacity of emerging talent
- Collaboration
- Innovation
- Developmental approaches
The e-Skills Institute has established a substantive formalised multi-stakeholder collaborative network involving partners across Government, Business, Government agencies and SOCs, global development partners and agencies, continental and international partners, community, organised labour and education (Universities, FET colleges and Schools – public and private).

In South Africa the e-Skills Institute has established six (6) Provincial e-Skills Knowledge Production and Coordination Co-Labs in association with local universities to coordinate effort across all stakeholder groups within each Province and to provide an operational platform to engage Organised Business, Education, Government, Community, Organised Labour and international bodies across Africa and internationally. This network will coordinate and lead a national effort generally and within emerging key theme areas based on collectives of excellence.

4. The e-SI Value Proposition

4.1. The position of the e-SI approach

- The e-Skills Institute has been formally established by Government as a national catalyst and responsive change agent which impacts national priorities within the context of a global information society and knowledge-based economy.
- With its initial formation within with the DoC the e-Skills Institute has direct access to influence national departments on the usage of ICTs in national plans and programmes to promote growth of the human resource e-skills base in South Africa.
- With its established links with Government, Business, Education, Civil Society and Labour, the e-Skills Institute’s Curriculum Framework responds to new market needs and demands in a coordinated environment with higher education institutions.
- The e-skills Institute’s research facilities provide a focus for continuous research in a cross disciplinary manner to concentrate on new ways to embed technology into people’s lives to improve business opportunities, access to government services and social cohesion.
- The e-Skills Institute has a proactive approach to environmental scanning in a rapidly changing landscape through its national platform that can more adequately assess gaps, overlaps and opportunities for collaborative approaches.

4.2. The position of the e-Skills distributed network - Knowledge Production and Coordination Co-Labs

The e-Skills Institute’s distributed Provincial network of Knowledge Production and Coordination Co-Labs based at Universities provides:-

- A positive engagement with multi-stakeholder groups (locally, provincially and nationally) represented by both leaders and project managers across Business, Education, Civil Society and other Government bodies. These can bring to bear context, praxis and resource networks to existing programme delivery in a subject matter that by its very nature is multidisciplinary and multilayered.
- Links to University networks within South Africa and across the world that can help evaluate case study approaches, provide post graduate research capacity and internships and provide new approaches to skilling existing resources in ways that are more responsive to emerging trends and technological development.
- The means to increase the size of the national and international opportunity within a “Government recognised”, “business credible” and integrated framework that is responsive to new deployment and delivery approaches.
- A collective energy for developing appropriate methodologies applicable to a range of markets in developmental states, whilst also providing a base for a collaborative approach towards these markets.
A useful network across Business, Government, Education, Civil Society and international bodies for pedagogy, research, innovation, policy development in a cross disciplinary area that has been highlighted by all evaluations of limits to growth, sustainability, equity, global competitiveness

4.3. Position of the e-SI’s National Research Network for e-Skills (ResNeS)

- The e-SI has established the National Research Network for e-Skills (ResNeS) to provide a professional platform for multi-stakeholder research collaborations to support the national e-skills drive aimed at e-skilling South Africa for equitable prosperity and global competitiveness.
- ResNeS is a formal evolving network body of researchers across the higher education, private sector, government, civil society sectors and other national and international role players that will provide the necessary multi-disciplinary research base for the e-Skills initiative which goes to the heart of building South Africa’s capacity.
- It is both self-evident and well documented that existing research approaches have not been able to address the huge capacity building needs of South Africa in adequately preparing it to appropriate the current and emerging communications technologies into sustainable and visible local benefit within a developmental context.
- The fragmented approach by traditional disciplinary research and their within paradigm extensions to socio-economic applications have not been able to provide useful interventions into addressing the huge capacity gap that South Africa now faces in adequately preparing itself for the emerging Information Society and Knowledge Economies. As stated above this matter goes to the very heart of South Africa being able to deal with every socio-economic matter it faces.
- ResNeS will commence the process of building a relevant taxonomy, providing a coordinating framework, proactively aligning e-capacity research to national priorities, business needs, and emerging technology capabilities and establishing a sound credible and active research collaboration body.
- It will undertake the important matter of aggregating relevant existing data and in establishing a process for ongoing data collection that is more closely aligned to the needs of a broad based national approach capacity building for South Africa’s developmental needs in the Information Society and Knowledge Economies.
- Through these processes ResNeS will be able to inform and influence e-capacity building policy based on evidence based research. Further it will be able to identify South Africa’s needs within its own cultural identity which is more complex and different to the existing “Western” paradigm.

4.4. Opportunities that e-SI provides in building South Africa’s e-Skills capacity

The collaborative, catalytic and coordinating approach of the e-Skills Institute provides new opportunities to:
- Refine policy settings within a more integrated approach to a subject matter that is innovating at rates that are difficult for government bodies to respond to within their planning, structural and accountability frameworks.
- Test new approaches to service delivery within a safe environment that has broad technical, praxis and policy support across business, service delivery agencies, education and local community.
- Develop and test new products and services in protected environments in the e-Skills Knowledge Production and Coordination Co-Labs and access to academic case study approaches with University researchers and students (under graduate and post graduate) Government managers/programmes and business knowledge and experience.
- Establish new pedagogical/research approaches to undergraduate, short courses, post graduate courses and evidence based research aligned to current needs and future trends.
• Develop a formal process to more effectively engage with government from a collective stakeholder stance around praxis, evaluation, policy development, research needs, new approaches to vertically and horizontally integrated efforts to national skills development for the Information Society.

• Establish and embed innovative and creative approaches to the development of capacity to address inequity, build increasing self-reliance, create jobs in the information society, socially appropriate ICT to improve productivity in existing sectors, apply ICT to health, education & lifelong learning, crime reduction, social responsibility, rural development and service delivery.

5. e-SI Stakeholder value propositions

As indicated above the specific value propositions for individual stakeholders will varying upon individual need. However, there are a number of key principles that will impact the value proposition for all partners.

For example from a **business perspective** it can provide

1. Introductions to new networks across Business, Government, Education, Civil Society and Labour within a “government recognised” and “business credible” integrated framework that is responsive to new deployment and delivery approaches.
2. A collective energy for developing appropriate methodologies applicable to a range of markets in developmental states, whilst also providing a base for a collaborative approach towards these markets.
3. Access to current applications and innovation across the broad international base of collaborators and their established linking networks.
4. The opportunity to develop and test new products and services within a safe independent environment which is supported by best available skills, knowledge and resources.
5. Access to new approaches for pedagogy and tailored skills development that can scale opportunity.
6. Better analysis of business focus, processes and scalability from independent, collaborative and current knowledge approaches applied within a case study methodology.

From a **Government agency perspective**, it can provide

1. A better and more focussed opportunity to be kept abreast of trends in technology application, service delivery, policy development, and evaluation and monitoring.
2. A platform that can more adequately assess gaps, overlaps and opportunities for collaborative approaches to service delivery.
3. A better opportunity to determine impact of existing programmes in a more holistic sense.
4. Opportunities to refine policy settings within a more integrated approach to a subject matter that is innovating at rates that are difficult for government service delivery bodies to respond to within their planning, structural and accountability frameworks.
5. Better links to University networks within South Africa and internationally that can help develop and evaluate case study approaches, provide post graduate research capacity and internships and provide new approaches to skilling existing resources that are more responsive to emerging trends.
6. Opportunity to test new approaches in a broader and integrated environment

From a **FET College perspective** it can provide

1. A sound platform to consider pedagogy that is aligned to business, industry, government and societal needs.
2. A means to up-skill teachers, instructors and management staff.
3. A platform to engage students in integrated “real life” experiences that improves both learning and employability.
4. A capacity to respond to issues of scalability as they arise.
5. A collaborative network that may facilitate new market opportunities in other jurisdictions.
6. Alignment to a network of business leaders for two-way interaction for alignment, internships and employment.
7. Closer access to technology foresight trends.
8. Increased opportunities to embed alignments with existing successful training providers and programmes e.g. Cisco Network Academies, Multi-media, etc.

From a **University perspective** it can provide

1. The opportunity for new pedagogical approaches to undergraduate, short courses, post graduate courses and research
2. An entity which can attract external funding programmes for profile international sabbaticals and business placements and internships.
3. The opportunity to establish funded chairs in e-Skills related areas
4. The opportunity to establish centres of excellence for software development, new technology hardware, social appropriation, policy development, governance processes for new Information Society approaches relevant to developmental states.
5. A base to aggregate data across society, government, business, labour and education within South Africa and across the world for mega data analysis on uptake, diffusion, social appropriation, service delivery and the like within different socio-economic, cultural and geographic settings.
6. The opportunity to engage with, test and develop new forms of education, learning and skills development based on network experiences and cutting edge global trends in a cross disciplinary area that has been prioritised all evaluations of limits to national growth, sustainability, equity and global competitiveness.
7. An integrated platform to more effectively engages with large international research funding agencies.
8. A formal process to more effectively engage with government from a collective stakeholder stance on matters of praxis, evaluation, policy development and research needs for vertically and horizontally integrated efforts to national skills development for the Information Society.

From a **State Owned Company (SOC) perspective** it can

1. Provide all of the benefits itemised under the business and government opportunity examples listed above
2. Provide a new mechanism to connect with existing and new clients
3. Help develop an aggregation platform for new approaches, services, programmes and client loyalty programmes.
4. Develop new mechanisms to demonstrate collaborative approaches to addressing national strategic objectives
5. Demonstrate an integrated and coordinated approach to e-skilling South Africa.
6. Provide an opportunity to fund well developed, sustainable and widely supported projects and programmes.
7. Provide a means to more carefully target service offerings with in a wider collaborative approach.
ATTACHMENT I
A diagrammatic view of governance structures

“Doing with”

The Dictated Way...Doing to

Out Dated Way...Doing For

The New Way...Doing with

Within Organisation Collaborative Network Architectures
Inputs Outputs Outcomes Impact
Inputs Outputs Outcomes Impact
ATTACHMENT II
A summary overview of South Africa’s e-readiness positioning and limitations

South Africa’s e-readiness
World Economic Forum (WEF)
Global Information Technology Report – Dutta & Mia

<table>
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Now behind countries such as Mongolia, Brazil, Uruguay, Puerto Rico, Costa Rica, Mauritius

*World Economic Forum – Networked readiness report 2012 – 142 countries*

- South Africa 72 place overall
  - 23rd regulatory environment [✓]
  - 50th entrepreneurship & innovation [✓]
  - 94th basic skills
  - 76th rates of usage
  - 34th business integration [✓]
  - 59th economic impacts
  - 98th social impacts

Upgrading skills at all levels of society - biggest issue

GLOBAL ICT FORUM ON HUMAN CAPACITY DEVELOPMENT
22 – 25 October 2012
CAPE TOWN, SOUTH AFRICA

DIGITAL INCLUSION: TRANSITION FROM ANALOGUE TO DIGITAL BROADCASTING

GLOBAL ICT FORUM REPORT

Original: English

FORUM REPORT

Overview and purpose of this Report

1. The Global ICT Forum on Human Capacity is a biennial global conference dedicated to building human capabilities and skills that are ready for the digital economy and digital society. The theme of the 2012 ICT Forum was “Digital Inclusion: Transition from analogue to digital broadcasting”. The event was held in Cape Town, South Africa, at the Cape Sun Southern Sun hotel. The Forum was co-organised with the Department of Communications of the Republic of South Africa and its e-Skills Institute, together with Telkom South Africa. The Forum was held jointly with the 2nd South African national e-Skills Summit 2012. The e-Skills Institute is a Government initiative under the Department of Communications, aiming to harness the potential of ICTs in society to address the major socio-economic challenges, which South Africa faces, in delivering equitable prosperity and global competitiveness. The e-Skills Institute provides an enabling environment for a coordinated response to the challenges posed by the rapidly expanding capacity, mobility, convergence and affordability of new ICTs and their impact on the country’s competitive position.

2. For this reason, there was complementarity between the goals of the e-Skills Summit 2012 and the Global ICT Forum, as the digital e-skills debate and endeavour was seen within the broader context of the digital inclusion agenda. The Forum’s agenda was therefore designed with the Skills Summit 2012 as an integral part.

3. Taking into consideration the Forum’s theme, as well as the interests of all the event organisers, it was agreed that the morning sessions would focus on the main theme of analogue to digital broadcasting, while the afternoon sessions would deal with other digital economy skills related issues in two breakaway sessions. One of the sessions would discuss topics aligned to the e-Skills
Summit 2012 agenda, though those discussions were open to the other delegates. Speakers were drawn from different spheres of activity, representing high-level officials, policymakers, regulators, non-governmental organisations, academia and private sector. Expected Forum’s outcomes were clear programs of action at a global level on how nations can prepare their human capital to leverage on the digital broadcasting in particular, but beyond that, how they can develop national e-skills capabilities to leverage a digital economy. Outcomes were therefore expected to be targeted at people as recipients of training; policymakers in terms of initiating the right policy frameworks, as well as other stakeholders in the private and public sector.

There were approximately 282 delegates from 56 countries, participating in the Forum. This Forum report is a summary of the deliberations that took place from 22-25 October 2012. Full documentation of the Global ICT Forum, including the final agenda and all presentations, is available on the website at http://academy.itu.int. The Forum had a live streaming and feedback on Twitter.

GLOBAL ICT FORUM ON HUMAN CAPACITY DEVELOPMENT 2012: REPORT

The International Telecommunication Union (ITU) believes that full social and economic development can only be achieved through digital inclusion, when all the citizens of the world are able to access and fully utilise the vast life-changing services of a digital economy. While infrastructure and access are important constraints that need to be overcome upfront, it is the human capabilities that are critical for leveraging the benefits of this infrastructure through maximising the use of the services provided by the digital technologies. The transition from analogue to digital broadcasting is a giant leap in the direction of the digital economy and its challenges are worthy of attention. The Forum looked at the technological, policy, and regulatory imperatives of the digital era in light of the significance of the global deadlines for migrating to digital broadcasting. It addressed the challenges this poses for nations in terms of human capacity development preparedness.

The objective of the Forum was to discuss the capacity building challenges of transitioning to digital broadcasting and address how these challenges can be met. It also highlighted the huge opportunities of a digital economy and how these can be a source of empowerment for people. Within the sphere of capacity building, it explored the learning opportunities available for distance learning through mobile based platforms and devices, and how these can transform the way we access information and learning. The Forum was also an opportunity for countries and organisations to learn from the fascinating e-Skills initiative of South Africa.

Pre-conference, Monday, 22 October

The whole day of Monday, 22 October was a pre-conference entitled “Unpacking the migration issues”. The purpose of this pre-conference was to lift the curtain on the understanding of the analogue to digital transition process and prepare the audience for the main conference starting on 23 October. Other topics discussed at the pre-conference covered human capital development, learning systems, digital society development and national e-skilling strategies.

Official Opening Ceremony, Tuesday, 23 October

The Opening Ceremony took place on Tuesday, 23 October and set the tone for structured, inclusive dialogues for the following days. The Forum’s opening was addressed by Ms Charmaine Houvet, Group Executive, Telkom Corporate Affairs, South Africa, H.E. Mr Walter Folotalu, Minister of Communication and Aviation, Solomon Islands, Mr Brahima Sanou, Director, Telecommunication Development Bureau, ITU, and Deputy Minister of Communications of the Republic of South Africa H.E. Ms Stella Ndameni-Abrahams, who opened the Forum and also delivered the keynote address. In her opening address, H.E. Ms Ndameni-Abrahams highlighted that the Global ICT Forum, which encompasses the second e-Skills Summit of South Africa, not only addresses the aims of the ITU but
also interacts with South Africa and other developmental states. Mr Sanou explained the choice for the topic, noting the looming deadline of June 2015 for transitioning to digital broadcasting, and the technological significance of this transition for the digital economy agenda, as compelling reasons. He said that attention to the human capacity development implications of these technological milestones reminds us that people are at the centre of all changes.

He emphasised the importance of education and training as ways of acquiring knowledge, adding that there need to keep exploit the growing power of mobile technology for learning.

**High Level Segment, Tuesday, 23 October**

The High-Level Segment comprised Ministers, Director-Generals, private sector executives, UN and ITU representatives who addressed the topic of transition from analogue to digital broadcasting from the global, regional, policy and regulatory, private sector, and ITU perspectives. The High-Level Segment had the following panellists:

- H.E. Mr Walter Folotalu, Minister of Communication and Aviation, Solomon Islands
- H.E. Mr Mohammad Al-Taani, Chairman of the Board of Commissioners/Chief Executive Officer of the Telecommunications Regulatory Commission (TRC), Jordan
- Mr Brahima Sanou, Director, Telecommunication Development Bureau, ITU
- Mr Pedro Mendes de Carvalho, Director General, National Communications Regulatory Authority (INACOM), Angola
- Ms Elizabeth Migwalla, Senior Director Government Affairs, Qualcomm, South Africa
- Dr Harold Wesso, Deputy Director General, e-Skills Institute, Department of Communications, South Africa.

The session was moderated by Dr Cosmas Zavazava, Chief of Department, Project Support and Knowledge Management, BDT, ITU.

The main discussion was concentrated around the questions of the transition process, capacity building, new opportunities, role of the governments and ITU. During the discussions, global technology trends and their impact on the developmental agenda like transition from analogue to digital broadcasting were presented. Policies, views and perspectives of all actors and stakeholders in the telecommunications/ICT sectors were highlighted.

It was pointed out that ITU is giving special attention to transitioning from analogue to digital broadcasting and the importance of prioritizing capacity building development to empower people in the knowledge society. The main challenge of this transition process is to bring all stakeholders together and get a common vision of the process. It was stressed that human capacity building development is an ITU priority for all regions and ITU is focused on training for sustainable, social and economic development. ITU has provided capacity building through Centers of Excellence for more than 10 years. To streamline its capacity building activities, ITU created the ITU Academy as a platform to allow the exchange of information and provide training opportunities on ICT and Telecommunications for all countries. The importance of focusing on e-skills and on the development of people for entrepreneurship in the information society was highlighted. It was also stressed during the session that some supportive attitudes should be adopted to facilitate the transition and beat the deadline of 2015. Consequently, it is important to take into account legal and economic restrictions.

This session also highlighted different aspects and approaches that countries could consider when developing their national broadcasting strategies. It was noted that there is a need for a political and strategic vision, as well as a long-term plan, as the people in the country will have to live and adapt to the technology for many years to come. It was emphasized that a clear vision, close collaboration amongst national agencies, good coordination and a shared understanding of why this is being done, as well as strong national leadership are needed.
The ITU Academy was officially launched. The Director stated that the primary objective of the ITU Academy is to harmonize and integrate all existing ITU training services and to extend the current portfolio of training programs. The Academy offers a wide and growing range of general and specialized courses on all aspects of telecommunications in Radiocommunication, Telecommunication Standardization and Telecommunication Development, delivered both face-to-face, as well as online through the ITU Academy portal. At the same time, current and relevant training material will be developed and stored on the portal for access and use by members. Mr Sanou called on the member countries and all stakeholders to join hands with the ITU in partnership to strengthen the ITU Academy.

Parallel Sessions, Tuesday, 23 October

Four parallel sessions took place in the afternoon. The first parallel session (Session I) dealt with the theme of managing change in the technological environment. This session looked at the change issues in the transition to digital broadcasting, identifying the key success factors for competitive advantage in a new environment and developing capabilities for a digital economy. Presenters looked at the role of human capital in managing change in a digital environment, the type of workforce that will characterise this environment, the role of leadership in the digital age and their impact.

Session II was dedicated to the coordination of, and building the e-skills capacity to respond to the country’s national developmental strategies and policies. Initial discussions focused on the e-skills for equitable development and global competitiveness. It is important to go beyond skills for shaping programmes that are able to promote e-readiness and social and economic inclusion. For the promotion of this process it is necessary to have the participation of people in the society mainly considering the exiting gap among different social groups.

It was highlighted that access in terms of ICTs is still a problem in developing countries and special attention is required to people in remote areas. It is also important to draw attention to children and their relation with ICTs as tools. It was noted that there are a number of initiatives addressing skill issues; however, there is a lack of coordination to get together the stakeholders for the promotion of e-skills in a collaborative manner.

Human capital development in an m-education environment was presented within Session III. The focus of the session was on e-education and m-education, its challenges and perspectives. It was illustrated how mobile technology can support e-education. In general, m-learning can assist in solving problems in education in Africa by addressing some of the many challenges that exist including accessibility and quality. It was also stated explicitly that e-learning can be significantly cheaper than other methods of education.

Problems within the context of m-education were discussed. One of the main challenges in ensuring effective learning in an e-education environment, is related to access to a consistent on-line platform to enable students to access the educational provider. In addition, as e-learning often requires home-based internet broadband subscription, the high cost of access can be a barrier to learning. There are also challenges related to inadequate infrastructure such as electricity and local loop. There is also the issue of lack of technical skills that are considered inadequate to support high bandwidth intensive applications.

After the presentations and debates participants came to the conclusion that while there is a need to promote access to existing globally available and appropriate content, there is still a need to stimulate the flow of new electronic content that promotes e-learning.

Session IV was an interactive session, which was built as an exchange of experiences on the items around each speaker. The objective was to present the role of e-skills capacity development on generating new job opportunities within an innovative and creative approach in rural and peri-urban
Plenary Session V, Wednesday, 24 October

This Plenary session carried over from the High Level Segment and dealt with its theme under the title “Unmasking the transition”. This session analysed the policy, regulatory, technical and human capacity building implications of the transition from analogue to digital broadcasting. It also explored the roadmap to the digital broadcasting, and covered the new ITU Digital Dividend Report. The session also highlighted the opportunities that the transition will open for businesses and the implications of the transition for consumers.

This session started with the ITU presentation on the Digital Dividend Report: Insights for Spectrum Management and the main issues raised in the Report. The Report takes into consideration, among other things, the potential use of the digital dividend and its availability for broadcasting and other services.

It was stressed by ITU that for achieving a successful transition to digital terrestrial television, it is necessary to consider legal and regulatory measures, as well as harmonized allocation of the digital dividend spectrum and coordination among all relevant stakeholders. In addition, the opportunities that the transition will open and how nations should be dealing with it in terms of building human capacities were discussed. Policy, regulatory, technical and human capacity building implications were also covered. Part of the discussion was focused on the post regulatory regime of broadcasting distribution sector and status of digitalization in Pakistan. This was a case study presentation, covering the mandate of Authority, licensing regime and status, cable TV penetration in the country and digitization of distribution networks.

Parallel Sessions, Wednesday, 24 October

Four parallel sessions took place in the afternoon. Session VI, which was dedicated to the ICTs for capacity building gathered under its umbrella e-Learning trends, strategies and perspectives and innovative uses of mobile devices for knowledge dissemination. Participants were able to learn about projects receiving world recognition. This session provided remarkable case studies of organisations that have used mobile devices for educational purposes.

The first part of the session explored the value of ICTs and learning in developing countries, and the value proposition of mobile learning. Participants had the opportunity to see the future of mobile learning and how the connected world would be in 2020. The situation with mHealth was explored in the 50 poorest countries prioritised by the UN Commission for Life-Saving Commodities.

In the second part of the session was a case study from Nigeria, which showed how Nigeria is trying to provide ICT literacy to its population in a presentation on “Building ICT literacy for transition to knowledge based economy – the NCC-DBI experience”. Some statistics regarding the ICT in Nigeria (mobile penetration is 55,78%, fixed is 0.48, and internet penetration is 2.3%) were provided.

The presentation on ATMs of knowledge showed the significant contribution to the education in Africa that can be made by offering these ATMs as a sustainable and scalable solution. Innovative ideas on disseminating knowledge to communities through installation of ATM’s in convenient
community centers for downloading material by people from these public information kiosks were shared and discussed.

A presentation on “Using social networks and mobiles as tools for youth empowerment: the Young Africa Alive project” demonstrated how mobile technology can create disruptive, life enhancing services for the majority world. The project’s work has touched more than 80 million people in 17 countries. Young Africa Alive project provides an educational and informational platform for young people about sexual and reproductive health, which can help to decrease the level of AIDS. Another project, “Ummeli”, helps to create a profile builder and job board for the youth, in a country where most job seekers will never achieve employment in the formal sector.

Nokia gave a presentation entitled “Nokia innovation related to the Nokia Life-Life and Livelihood improvement through knowledge access at the Bottom of the Pyramid-76 million and growing...”. This is a presentation of an experience shared about a veritable innovation by Nokia to improve the lives of poor people around the world. With this experience, Nokia provides low price mobiles for agriculture information, for example, and covers 76 million of persons.

During the last presentation a pedagogic platform for learning and digitalization of training school books was presented.

Session VII was dedicated to ICTs and e-Skills within a development context: strategies to design a multi-stakeholder collaborative network to e-skill a nation. This session consisted of two parts, which were organised as a panel discussion.

Part of the session, which was dedicated to the building a dynamic information structure highlighted the role of e-Skills Institute in achieving developmental goals; its challenges, risks, and drawbacks to promote growth. Embedding technology for effective service delivery and a competency framework were presented.

In addition, the session offered a unique opportunity to discover and compare lessons from different regions: Europe, Asia-Pacific, Latin America, Middle East and Africa. During the case study from Oman, participants got acquainted with initiatives and services that are designed and created to improve the efficiency of government services, enhance the activities of businesses and empower individuals with skills and knowledge to meet society’s needs and expectations and to direct Oman towards becoming a sustainable Knowledge-based economy.

The Asia –Pacific perspective on the strategies to design a multi-stakeholder collaborative network to e-skill a nation was given also.

During the case study from Europe, some important questions were raised. The presenter explained where the knowledge society begins and how the Knowledge Economy Programme works.

These regional examples demonstrated the need for stronger collaboration between governments, academia, consumers and other stakeholders to create a stable learning platform.

**Parallel sessions, Thursday, 25 October**

The final day of the Forum provided two parallel sessions. Session VIII, which was dedicated to the role of academia and training providers in building human capacity in digital environment, discussed the role of academia for content development and curriculum design. Professors and executives gave their view on using cloud computing and its implications for educational institutions.

The workplace development was presented as a dimension of the integrated skills supply model. In addition, participants had a presentation on the role of the UUM Eminent Management University in Malaysia as a Rural Campus in building regional and national capacity with a case study for Malaysia.
The presenter shared strategies to promote the human capacity building process. Moreover, strategies for building a sustainable human capacity development training centre were highlighted.

The special session for South Africa was dedicated to the drafting of the national e-Skills plan of Action 2012 (NeSPA 2012). During this session, evaluation of the progress of the 2010 NeSPA document was conducted. All the lessons learned during the first two years of NeSPA, aligning current initiatives, and identifying gaps to impact the South African national strategic developmental goals were presented.

Forum Outcomes, Action Plan and Final Recommendations

The Outcomes, Action Plan and Recommendations are drawn from the discussions of the various sessions as well as documents, presentations and contributions made during the plenary sessions.

This final session addressed lessons learned from different countries on their approach to enhance their citizens’ capacity, for using appropriate new technologies (broadband, digital TV, etc.). Participants discussed the difficulties and challenges countries are facing in the context of the transition from analogue to digital broadcasting, and ways to overcome these difficulties.

It was pointed out that almost in every country the main problems are high unemployment, high demand for e-skills, teaching and learning. Consequently, there is a need for:

- Aggregation, coordination of demand and supply for building e-skills capacity
- Infrastructure
- Application development and local digital content and knowledge creation
- Development of a matching training delivery capability

The Forum has produced some recommendations and takeaways:

1. The Forum notes the important role that a digital economy plays for the social and economic development of people and societies.
2. The Forum acknowledges that the transition from analogue to digital broadcasting is a major milestone towards a digital economy and digital society.
3. The Forum considers it essential to have digital inclusion for all people and communities.
4. Human capital building is central to the attainment of a digital-inclusive society.
5. The Forum notes that to achieve a digitally inclusive society requires strong and deliberate interventions by all stakeholders, led by the state players, to put in place all-inclusive e-skills programmes at a national level. This intervention must be supported by the right set of policies.
6. The Forum stresses the need for strong support to governments in creating policy frameworks, which will promote e-Skills agendas. In addition, ways of assisting nations to develop and implement national e-Skills agendas with clear implementation timelines should be established. The importance of promoting the development of local content that can be used on digital platforms was highlighted.
7. The Forum notes the need to encourage the development of people-friendly digital broadcasting policies (for example subsidising the prices of the equipment for transition). It was stated that successful transition from analogue to digital broadcasting requires:

- Strong leadership of the government
- Firm decision of analogue TV switch-over date
- Close cooperation of Regulators and market parties
- Clear and timely regulatory framework
- Adequate information and assistance to viewers
8. The Forum encourages leveraging new tools available in the digital economy to promote knowledge dissemination and learning. To this end, the role of mobile devices is highlighted as a way of bridging the digital divide and bridging knowledge to some remote areas.

9. The Forum urges the creation of local and appropriate content to be disseminated on the new digital broadcasting platform to ensure relevance to local environments.

10. Within the context of national e-Skills Agenda for South Africa 2012, their Forum takes note of the achievements made in promoting the e-Skills agenda in South Africa, and highlighted the following points:
   - Clear alignment within South African government development strategies
   - Internationally-recognized South African coordinating platform that engages government, education, business and civil society in addressing the lack of e-skills
   - Legitimate platform to increase awareness of current practices and development of e-skills capacity in South Africa and across the African continent
   - Roadmap to advance e-skills development in South Africa for equitable and global competitiveness
   - The Forum urges other countries to emulate the example set in South Africa and implement similar e-skills programs for their people.

   **Recommendations:**

   1. The Forum urges ITU to support governments in developing national e-skills agendas
   2. ITU should work with like-minded organisations to promote the use of mobile based devices for knowledge dissemination, learning and development
   3. ITU should organise follow-up workshops on a regional basis and assist countries to prepare their human capital for transition from analogue to digital broadcasting, according to their respective needs.
Appendix C: Structure of e-Skills Aggregation Framework

In order to provide useful, accurate and timely information for an effective decision making, the e-Skills Aggregation Framework might\(^2\) inter alia contain the following elements:

1. **Stakeholders:**
   - Stakeholder’s Name and Group (e.g. Business, Government, Education, Civil Society, Organised Labour, International Partner)
   - Other partners involved

2. **Name of e-Skills Programme/Project**

3. **Objective of the Programme/Project**

4. **Focus Area** (i.e. innovation, infrastructure, e-skills capacity development, research)

5. **Starting and Finishing Year**

6. **For e-Skills development:**
   - sourced (if yes, the name of the source),
   - new or
   - modification of curriculum

7. **Geographical information:**
   - Province
   - Municipal area
   - Location within the Municipal area

8. **Targeted group** (e.g. unemployed graduates, e-entrepreneurs, information/knowledge workers, communities, e-professionals and thought leaders)

9. **Anticipated number of people Impacted by the project/programme**

10. **Number of people impacted by the project/programme by the agreed date**

11. **Actual (final) number of people Impacted by the project/programme**

12. **Funding details**

13. **Impact assessment:**
   - If conducted and by whom
   - Impact results

14. **Identified challenges**

15. **Lessons learned**

16. **Other important information**

\(^2\) This Framework is yet to be discussed by various stakeholders before the final version is produced and implemented.
Appendix D: An overview of the skills development entities of the Department of Communications and the way forward for integration

Skills development for an ICT-enabled world by the Department of Communications is currently carried out by two key institutions namely NEMISA and the e-Skills Institute. Below is a high-level overview of each of these entities and ISSA.

1. ISSA

ISSA was established in 2001 as a directorate in the DoC to deliver appropriately skilled software engineers for the space industry. Students were trained in collaboration with the University of Stellenbosch. The programme was officially terminated in 2005. Since then the remaining staff mainly focused on the development of software applications for Government.

2. NEMISA

NEMISA originated as the Broadcasting School of South Africa, established in 1998. It was established as a non-profit organisation (Section 21 Company) in terms of the Companies Act (1973) in 2001. Its main role was to deliver students with the requisite skills for the broadcasting industry i.e. radio and television. Over the years it added courses in animation and graphic design.

Currently, NEMISA offers 5 MICT SETA accredited courses namely:
- National Certificate: 2D Animation (NQF Level 5)
- National Certificate: 3D Animation and Visual Effects (NQF Level 5)
- National Certificate: Radio Production (NQF Level 5)
- FET Certificate: Design Foundation (NQF Level 4)
- FET Certificate: Film, Television and Video Production Operations (NQF Level 4)

In addition to the above, the Institute responded to two national projects namely (1) National Digital Repository: captures local heritage content in an online environment; and (2) the skilling of employees of local community radio stations. The Institute can accommodate a maximum of 140 students at its campus in Parktown and 60 students at is facility in Franschhoek in the Western Cape. Currently it has 130 registered students. Most of its students (77%) come from three provinces of Gauteng, Limpopo and Mpumalanga.

3. e-SKILLS INSTITUTE

The establishment of the e-Skills Institute (e-SI) was initiated by the Department of Communications, following the 2007 recommendations of the Presidential International Advisory Council (PIAC) on the Information Society and Development (ISAD). The shortage of ICT-related skills (e-skills) was identified as a serious problem and the Department was mandated to drive the national e-skills agenda through its e-SI.

The e-SI engaged stakeholders from government, business, education, civil society and organised labour. This process led to the first national e-Skills Summit held in July 2010 and produced the National e-Skills Plan of Action (NeSPA) 2010. Since then a number of activities were implemented and in October 2012 the second e-Skills Summit in collaboration with the International Telecommunications Union and Telkom took place. The key objective of the summit was to evaluate progress of the 2010 NeSPA and develop an updated action plan for the next 24 month (NeSPA 2012). Given its mandate and through its decentralized network architecture in association with six
(6) local universities spread across six (6) provinces, the e-SI during the financial year 2011/12 made the following inroads at a national and international level:

- Increased the number of accredited courses through participating universities that are relevant to new market needs and demands in a coordinated environment (see Annexure I);
- Increased University and FET colleges intake in relevant e-skills aligned to an accepted by industry, government and educational needs;
- Identified Creative Industries (incl. Broadcasting, Digital Media and ICT) as a industries for sustainable employment;
- Established a national e-skills research network focusing on continuous research in cross disciplinary manner to concentrate on new ways to embed technology to improved business opportunities, access to government services and social cohesion;
- A major recognized contributor and aggregator to improving the country’s global e-readiness indicator rankings. The e-SI has direct access to influence national departments on the usage of ICTs in national plans and programmes to promote growth of the human resource e-skills base in the country. The e-SI model was endorsed by the International Communications Union (ITU) at the recent national e-Skills Summit 2012.
- Established a proactive approach to environmental scanning in a rapidly changing landscape that can more adequately assess gaps, overlaps and opportunities for collaborative approaches for e-skilling the nation.
- Through its proof of concepts impacted on 4 500 citizens across a wide spectrum of society, from PhD students to individuals in communities.

The table below provides a further analysis of the operations of the three entities in terms of key focus areas that should be pursued by a modern institution of learning. The table shows a very unbalanced picture. NEMISA does not operate at the level of the e-SI in terms of serving as a national catalyst that provides an enabling platform across key national and provincial departments, education, business including the ICT Sector, organised labour, civil society and global developmental partners.
In lieu of the above, there is a strong business case to consolidate and integrate the three entities and all other targeted e-skills interventions of the Department of Communications into a New Single Entity for e-Skilling for an ICT-enabled world and for national impact.

**OPERATIONAL ISSUES FOR THE NEW ENTITY**

**VISION**
“Be a recognised national catalyst, facilitator, responsive change agent and thought leader in the development of SA’s capacity in the optimum utilisation of ICTs for the development of growth of the Knowledge Economy and African continent.”

**MISSION**
The New Single Entity for e-Skilling will:
• Provide a decentralised integrated collaborative architecture across government, business, education and civil society that will better position South Africa for the Information Society and Knowledge Economy (enabling platform);

• Strengthen and support the focus and delivery of e-skills training and accreditation and research within existing service providers aligned to the national strategic goals (focus on gaps);

• Provide diversified, unique e-skills education, training programmes and e-skills upliftment across key stakeholder groups (empower users);

• Achieve change by acting as a catalyst to achieve information society goals (aggregation);

• Play a leading role by orchestrating the various existing and new initiatives around e-skills and undertaking an advocacy role in developing citizenry for the Information Society and Knowledge based Economy (leadership through advocacy at all levels);

• Through thought leadership, be an actor and a stimulus for research and innovation (innovation);

• Enable and promote innovation that responds to the developmental needs of the South African society by providing physical facilities for learners, communities and business to exploit new technologies such as smartphones and tablets, develop new local software applications and create new job opportunities (entrepreneurship);

• Ensure that all communities including specific groups (unemployed, elderly, disabled, low-income earners and women) and with a special focus on deep rural, rural and peri-urban based communities are able to leverage from the opportunities and the e-skills virtual network for knowledge production and transfer (e-skills virtual cloud); and

• Work collaboratively to leverage existing capacity and resources and help existing service providers better align to the MTSF 2009-2014 and NDP 2012 (collaboration for impact).

The institution’s vision and mission statements can be adapted to environmental influences.

CRITICAL SUCCESS FACTORS

The environmental impacts have been translated into a set of critical success factors for the New Single Entity for e-Skilling which give an indication of the associated risks. Critical success factors define the goals that the New Single Entity for e-Skilling must achieve in the context of its environmental factors.

• Be recognised as a national development institution by government, business, academia, civil society and organised labour responsible for e-skilling for equitable prosperity and global competitiveness within the context of South Africa’s emerging Information Society and Knowledge Economy;

• As part of its mandate provide a national oversight role across government, business, civil society and education for e-skill interventions within South Africa;

• Better coordinated, invigorated and committed partnerships and collaborations at the local level to deliver against national goals (MTSF 2009 – 2014), NDP 2012 and the MDGs;

• Focused on e-skills research and innovation to improve policy development; service delivery and evaluation;

• Unique permutation of offerings reflecting national developmental needs aimed at increased self-reliance, strengthening of local development and increased skilling for equitable prosperity and global competitiveness; and
Monitoring of e-skills intervention across stakeholder groupings and more focused qualifications aimed at the changes the market, government and societal needs for effective service delivery.

Continuous, timely response to changing markets in terms of offering, teaching capability (method, trainers and mixed mode of learning), student enablement (flexible enrolment, etc.), supporting technologies, funding, partnerships and solution development.

Establish a multi-stakeholder network architecture to promote thought leadership and innovation, and to facilitate ICT strategy for Government, industry and society.

Maintain a culture conducive to ethical work practice, thought leadership, continuous change and flexibility, teaching and learning, collaboration, accountability, innovation, human capital development and talent management.

Develop an appropriate tool to measure the appropriate e-skills interventions against the goals of the MTSF 2009-2014, NDP 2012 and MDGs;

Develop a measurement mechanism that is reflective of our business strategy.

FUNCTION STRUCTURE

The function structure diagram below show all the goals that the Institution needs to achieve and group these according to functional areas. The ideal internal business functions have evolved from the institution’s vision and mission statements and the impact of the critical success factors.

Its structure was defined in six models which represent six views on the New Single Entity for e-Skilling:

1. Multi-stakeholder Collaboration
   - Manage multi-stakeholder partnerships across business, government (including global development agencies), education and civil society including labour to impact national priorities.
   - Has a proactive approach to environmental scanning in a rapidly changing landscape through its national platform that can be more adequately assess gaps, overlaps and opportunities for collaborative approaches.

2. Curriculum Development
   - Developing taxonomy for e-skills teaching and learning curricula and service offerings aligned to South Africa’s strategic plans and that this framework be populated by all current offerings across business, government, education and civil society.
   - With its established links with Government, Business, Education, Civil Society and Labour, the New Single Entity for e-Skilling curriculum framework responds to new market needs and demands in a coordinated environment with higher education institutions.

3. Research and Innovation
   - Provide a focus for continuous research in a cross disciplinary manner to concentrate on new ways to embed technology into people’s lives to improve business opportunities, access government services and social cohesion.
   - Manage evidence-based research and development for a collaborative knowledge economy to address the national goals (MTSF 2009-2014 and NDP 2012) e.g. thought leaders (policy and practice).
   - Develop and manage an evaluation and monitoring framework for collaborative knowledge economy based efforts to address national goals i.e. MTSF 2009-2014 and NDP 2012.

4. Advocacy and Awareness
   - Create citizenry for the Information Society i.e. awareness, advocacy, application and alignment to the MTSF 2009 – 2014 and NDP 2012.
5. e-Skills Aggregation

- Develop and implement a national e-skills monitoring framework to measure the uptake and usage of technology within the country.
## Appendix E: e-Skills Summit 2012 Panel Questions

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<tr>
<th>Theme</th>
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<td>Building the e-skills capacity to respond to the country’s national strategic developmental strategies and policies</td>
<td>What could be the role of e-SI as a national catalytic organisation in conducting an even more responsive approach to the lack of skills in the country? What national architecture is required?</td>
<td>How can social astuteness and leadership skills help in building e-skills capacity to respond to the country’s national strategic developmental strategies and policies?</td>
<td>What issues are important in capacity development for an e-education and e-society environment?</td>
<td>How can aggregation of effort and M&amp;E at all levels (i.e. local, regional and national) be further developed and successfully implemented?</td>
<td>What are the critical factors for effective human capital development in a rapidly changing technological environment?</td>
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<td>Innovation and creativity to create new job opportunities</td>
<td>What are the key innovation and creativity competencies needed for extensive job creation for equitable prosperity in an ICT enabled society (deep rural, rural and peri-urban)?</td>
<td>How can government support innovation, creativity and social astuteness among its citizens in an e-context (e-social astuteness)?</td>
<td>What role can the private sector, academia, civil society and organised labour play to promote innovation and creative industries within a developmental state context?</td>
<td>How can mobile ICT (and other ICT) be innovatively utilised to enhance the general skills level of young unemployed and citizens with insufficient formal education?</td>
<td>What are the components and role of an e-skills ecosystem in the mobile environment?</td>
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<td>ICTs and e-Skills within a developmental context</td>
<td>What/where are the main opportunities and challenges for socio-economic appropriation of ICT across governments, business, education, civil society and organised labour in developing countries?</td>
<td>What types of policies are needed to promote a vibrant ICT sector to be capable of contributing to the local socio-economic development, food security, and land and agrarian reform to improve quality of life for deep rural, rural peri-urban communities?</td>
<td>What policies should be in place to enable the incentives that government can give to stimulate acquisition of e-skills for equitable prosperity and inclusive growth?</td>
<td>What policies are needed for an effective way to raise local appropriation of ICT in deep rural, rural and peri-urban areas in relation to current practices and the development of e-skills in South Africa?</td>
<td>How can e-skills be used to expand opportunities for the rural poor and uneducated to access an increasingly demanding labour market, whilst promoting social cohesion initiatives?</td>
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<td>Building a dynamic information structure</td>
<td>What set of e-skills are required to enhance service delivery and community participation that is developmental, agile, competent and citizen-centric?</td>
<td>What would be necessary for an effective shift in Government funding towards delivering impact against the global e-readiness indicators and in increasing equitable prosperity (e.g. what should be the nature of re-alignment to new National strategic goals, development of a collaborative Government, Business, education, Civil Society and Organised Labour structural Architecture [NQF, Collaboration] Aggregation?)</td>
<td>What would be the most effective ways/s to proliferate and accelerate multi-stakeholder participation at all levels (local, provincial, national) and across all stakeholder groups for national impact against e-readiness for improved equitable prosperity?</td>
<td>What new e-skills are required for the changed technological development (e.g. mobile, cloud computing, big data…)?</td>
<td>How can the e-Skills Institute best ensure that ICT-oriented education and training, research and evaluation and broadly defined e-skills development initiatives are appropriately designed to address the requirements of rural development challenges and social integration?</td>
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