

## **E-social Astuteness skills for ICT-supported equitable prosperity and a capable developmental state in South Africa**

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### **ABSTRACT**

Over 350 national and international delegates at the 2<sup>nd</sup> e-Skills Summit and the International Telecommunication Union (ITU) Global ICT Forum on Human Capital Development have agreed that the e-skilling agenda in South Africa is making a *“profound difference”* but still not sufficient to build a capable developmental state. The delegates suggested that for positive impact in addressing inequality, poverty and joblessness - a new approach to e-skilling was needed. It was generally agreed that some “soft” skills were needed to help people successfully apply e-skills to benefit their everyday life. These skills were identified as *e-astuteness* and *e-social astuteness*. The objective of this study is to provide the conceptual clarity of these two terms, i.e. the general aim of this study is a theory building around these two concepts. The findings of this study confirmed that concepts of e-astuteness and e-social astuteness, together with e-skills, can be useful in addressing the South Africa’s major developmental agenda as articulated in the national developmental strategies.

**Keywords:** *Information and communication technologies (ICT), information management, decision making, equitable prosperity, e-skills, e-astuteness, e-social astuteness.*

### **INTRODUCTION**

*“Give a man a fish and you feed him for a day; show him how to catch fish, and you feed him for a lifetime” (An old Chinese proverb)*

The establishment and development of the Internet and other information and communication technologies (ICT) in recent decades, represent the material foundation for the networked society, often referred to as the Knowledge Society. The rapidly increasing capacity, mobility, accessibility affordability and “vision based” applications of ICT put these technologies at the heart of the modern societies and economies in both developed and developing worlds. The adoption of increasingly powerful cell phones across the developing world has been an unexpected phenomenon that is now changing the very nature of dealing with poverty and

inequity. However, the creation of such a technology-supported society that can be increasingly self-reliant and equitable, involves fundamentally new ways of thinking, working and living. It requires the building of new capacities, particularly those related to ICT, not only in the work force but in the entire population including the low socio-economic groups. These capacities have often been referred to as “e-skills”, “e-literacy” or “e-competences”.

Since 2008, the South African e-Skills Institute (e-SI) has acted as a catalytic collaborator across government, business, education, organised labour and civil society stakeholder groups advocating the case that e-skills and e-competences are necessary for positioning the South African society to be innovative, more self-reliant and to better compete nationally and internationally. But these skills are also indispensable for addressing important social issues such as poverty and unemployment, the safety of citizens and to build an inclusive and capable developmental state. Since the first South African e-Skills Summit, held in 2010, the e-SI has been systemically championing, facilitating and providing the discourse to e-skill the nation as a vital component of building national capabilities. South Africa’s National Development Plan 2030 (NDP) points out that South Africa is currently too dependent upon mining and that it must broaden its economic base if it is to sustain a vibrant inclusive economy in the future. The global evidence is that the socio-economic growth required by South Africa to create the targeted 11 million jobs by 2030 will be heavily dependent on the development of a society that has appropriated ICT across its full socio-economic spectrum. All credible evaluations of approaches for overcoming poverty and inequity point to the necessity of effectively appropriating ICT into local socio-economic circumstances (OECD, 2005; Spence & Smith, 2010; World Bank, 2012). There is agreement among South African e-skills stakeholders that this can be best achieved through supporting the national (e.g. Medium Term Strategic Framework 2009 – 2014; National Development Plan 2030 (NDP) and international (e.g. UN Millennium Development Goals; World Summit on the Information Society) developmental strategies (Mitrovic et al., 2012).

The 2<sup>nd</sup> e-Skills Summit (Cape Town, October 2012), jointly held with the International Telecommunication Union’s (ITU) Global ICT Forum on Human Capital Development, provided the e-SI and various e-skills stakeholders (business, government, education, organised labour, civil society organisations) and the international partners (e.g. UNDP, ITU, CISCO) with the opportunity to “take stock” of what had been achieved in the previous two years and also to forge the way forward for e-skilling the South African nation. More than 350 national and international delegates agreed that a major e-skilling agenda in South Africa was required to make a “*profound difference*” in people’s lives: to address poverty, to develop an active citizenry that was capable of contributing to “people centred development” and establishing a capable and developmental state. The Summit reinforced the reality that “core” e-skilling, i.e. skilling people for using ICT (hardware, software, networks), although necessary, was not sufficient to improve inequity and to build an inclusive economy that could sustain itself in a world increasingly dominated by pervasive ICT which increasingly embedded new, unavoidable technological applications including social media. It was recognised that the rate of ICT evolution was often outstripping the capacity of Government, Education and Business to adequately equip society within nation states (ITU-Summit, 2012). This almost inevitably meant that the ‘smart’ countries were getting ‘smarter’ and the developing countries were being left further behind despite the reality that most of the recent innovations in ICT (including capacity, mobility, accessibility and cost) had the capability to provide greater advantage to developing countries. In South Africa’s case this matter was emphasised by the fall in global e-readiness rankings from 47<sup>th</sup> in 2007 to 70<sup>th</sup> in 2013 (WEF, 2013). Hence, a new approach to ‘e-skilling’ was needed to achieve a positive impact on meeting the goals and aspirations of South Africa’s strategic plans. Further it was recognised that in order to meet the stated targets of achieving an e-literate society by 2030, formal education and training could not be the sole basis of an e-skilling agenda. This needed to be supported by a government led initiative to build on the amazing adoption of cell phone technology right across the South African socio-economic spectrum. Mitra (2005, 2006 and 2012) has demonstrated the power of

learning networks (peer-to-peer) and self-organising systems in the adoption of ICT devices for local benefit in low socio-economic situations. Hence, it was concluded that some social and “developed intuition” related skills (“soft” skills) needed to be included in the e-skilling agenda, if the majority of citizens were to successfully apply e-skills in their everyday lives: be it for economic (e.g. employment readiness or starting and running an own business), service delivery, education and training or social (e.g. building more cohesive and safer communities) purposes.

The e-Skills Institute introduced a concept of “astute” use of e-skills for personal growth and self-reliance (*e-Astuteness*) into its strategic plans during 2012 and the South African Deputy Minister for Communications promoted the term to the international audience at the e-Skills Summit in October 2012 (ITU-Summit, 2012). The concept of e-astuteness envisaged by the eSI was not confined to the formally educated but encompassed developed and existing capability across the full spectrum of society that would allow individuals and collectives (business, education, social and family) to harness ICT for individual or group benefit. In applying and delivering such a concept in South Africa, it was important to provide a collaborative mechanism that could aggregate stakeholder effort in a development dynamic across service delivery aligned with the major South African planning strategies i.e. the National Development Plan 2030. All of the six pillars supporting the NDP highlight the need for a collective social responsibility for “people centred” development and particularly in building capabilities for an “inclusive economy” (NDP Pillar 3). In-line with many developing nations across the African continent, South Africa has a surprisingly high level of uptake of a whole range of social media ICT based applications. When coupled with the very high uptake of cell phones across the full socio-economic spectrum, this points to abounding opportunities for connecting and harnessing “self-organising systems” to unite South Africans around a common purpose to fight poverty and inequality (NDP Pillar 1). This clearly points to a national need to develop collective capability to harness modern forms of ICT in a cohesive manner to advance the aims of the NDP i.e. need for an *e-Social Astuteness*. In other words, e-Astuteness and e-Social Astuteness skills can be considered as “*smart ways*” to apply the required e-skills for more equitable personal and communal socio-economic development. Subsequently, these terms have found a place in the National e-Skills Plan of Action (NeSPA) 2013 within a concept of “people centred development” (as called for in the NDP) and in “building capabilities” (NDP Pillar 4) for increasing self-reliance as highlighted in the proverb at the beginning of this section.

## **PROBLEM, OBJECTIVES AND APPROACH TO THIS STUDY**

*“There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things”*  
(Machiavelli, 2012)

The terms e-Astuteness and e-Social Astuteness, although deemed plausible by the e-skills programme and supported by the 2012 e-Skills Summit delegates, have not yet been underpinned with an adequate conceptual or theoretical clarity in the academic literature. This limits widespread informed, purposeful and shared academic action in the delivery of the NDP and the National e-Skills Plan of Action 2013 (NeSPA 2013) which emanated from the second e-Skills Summit held in October 2012. Consequently, the aim of this paper is to clarify these terms conceptually in order to inform e-skills policy-making and the practical implementation of these concepts within the NDP and the NeSPA 2013. In other words, the general aim of this study is theory building around these two concepts. In a general sense, “*theory embodies statements of the knowledge that has been developed by humanity in a form that has both use in the practical world where human beings act based on their knowledge (partly learned from theories) and in the theoretical world where researchers validate or refute old knowledge and build new knowledge in the form of theories*” (Venable, 2006).

Since theory building includes “*development of new ideas and concepts*” (Nunamaker et al., 1991), the approach of this study was to understand how concepts of e-Astuteness and e-Social Astuteness could contribute to more effective socio-economic appropriation of ICT, for more equitable development: at both personal and societal/communal levels. In order to achieve this, the paper attempts to provide answers to the following questions:

1. What is e-Astuteness and how will it enable e-skilled individuals to successfully navigate socio-economic opportunities – thus providing individuals more equitable opportunities for better life?
2. How can e-Astuteness be transferred into the societal/communal context as e-Social Astuteness, thereby building leadership in communities for a more inclusive economy and a capable and developmental state (NDP Pillars 3,4 and 6)?
3. How can these two concepts be interwoven into the systematic e-skilling of the South African population to unite people around a common program to fight poverty and inequity (NDP Pillar 1)?

It is envisaged that the answers to these questions will help the intended beneficiaries of this study to improve socio-economic equity, service delivery, self-reliance, policy development, monitoring and evaluation, aggregation of effort to impact the aims of the NDP, educational focus, business development and coordination of research in a vital national area of interest. The intended beneficiaries include: (i) e-skills policy-makers: to have knowledge as operational principles which are foundational to success (Vaishnavi & Kuechler, 2004) and a clear direction when addressing e-Astuteness and e-Social Astuteness within the context of building capabilities through e-skilling for an inclusive economy, (ii) stakeholder participation, service delivery and leadership within and across government, business, education, civil society and organised labour: to develop sufficient understanding to practically apply these concepts for local benefit and (iii) researchers and academics: for critiquing and advancing these concepts and also in developing new approaches for monitoring and evaluating e-skilling interventions.

The theorising of e-Astuteness and e-Social Astuteness is addressed here by formulating these concepts (after Nunamaker et al., 1991) in order to demonstrate how explanatory theories, such as this one, can possibly be put to practical use (Walls et al., 1992), i.e. how these two concepts can be used for more appropriate e-skilling in a practical sense. Hence, this paper proceeds by, firstly, defining concepts of e-Astuteness and e-Social Astuteness. This is followed by the definition of e-skills for equitable prosperity within a capable and developmental state. The paper ends with theorising about possible use of these two terms in a context of e-skilling South African population and more generally across developmental states.

This paper aims to provide a theoretical and practical basis for defining a requisite skill for the appropriation of emerging ICT capability, mobility, accessibility and affordability that at the outset favours ‘smarter’ developed economies which have higher levels of embedded use and understanding and disadvantages developing economies.

## **THE CONCEPTS DEFINED**

The concept of an astute use of ICT aligned to the general concept of e-skills is not unique to the South African thinking as it appears that other countries (developed and developing) also favour this idea. For example, the European ICT Standards Board emphasised the importance of an astute use of ICT and information for decision making in the “*world economy in new millennium*” (ICTSB, 2012). The Government of Hong Kong is also advising its top-ranking universities to deliver “*astute ICT personnel*”, which are in a short supply but are dearly needed in the knowledge-based society and economy (HK, 2012). The government of Thailand, through the ICT Policy Framework (ICT2020, 2011) states “*for the civil servants and/or general staff, skills should*

be developed in using basic ICT in a smart way, with good judgement and astuteness". Even some schools have realised the importance of an astute use of ICT aligned to the general concept of e-skills by asserting that their "*students will learn to become independent and astute users of ICT*" (TEC, 2012). These examples, together with the ITU/e-skills Summit (2012) conclusions, have convinced the authors of this paper that it is worth exploring the concept of the astute use of ICT. This has been done through the review of "best practice", reported in pertinent literature, and exploring the applicability of these findings to the South African context.

### From Astuteness to e-Astuteness

As the concept of e-Astuteness is directly based on the notion of Astuteness, the latter term will be explored first in order to set a foundational concept understanding. Various dictionaries define astuteness as "*the acute, keen intellect*" (The Funk & Wagnalls Dictionary, 1943), "*clever and able to see quickly something that is to one's advantage*" (The Longman Dictionary of English Language and Culture, 1992), "*having or showing a clever or shrewd mind*" (Webster's online dictionary, 2005) or "*clever; keen, acute, bright; shrewd; perceptive*" (Oxford Babilon Dictionary, 2012).

The origin of the term Astuteness comes from the Latin expression "*astutia*", which means having the quality of being "*astutus*", i.e. astute. As Parales-Quenza (2006) explains, in the original Latin, the word "*astutus*" can mean: "*sagacious*", "*deceitful*", "*crafty*", "*cunning*", "*acute*", and "*perspicacious*". It is, however, indicative that the term astuteness does not have the same meaning in all languages. For example, in modern English it has lost most of its original Latin meaning and has mainly positive connotation (e.g. Perrewe et al., 2000) as it usually relates to qualities such as dexterity, understanding, and sagacity. In Spanish, on the other hand, "*astucia*" (astuteness) maintained a closer, mainly negative meaning of dishonesty and lying.

Although there is no commonly accepted definition of astuteness, there is an agreement that the term refers to an intellectual capacity that "*emerges at the crossroads between mind and culture*" (Parales-Quenza, 2006). The concept of astuteness also refers to the skill of planning to achieve goals, mainly in political or business situations (Perrewe et al., 2000). From this article's viewpoint, it is significant that "*astuteness is not a personality construct or a psychopathological category*", thus "*it should be considered essentially as a functional, adaptive intelligent capacity fuelled by sociocultural conditions*" (Parales-Quenza, 2006). Astuteness is a skill that can be learned and deployed in "*situations involving diverse and sometimes competing interests and stakeholders, in order to create sufficient alignment of interests and/or consent in order to achieve outcomes*" (Alford et al., 2012).

Astuteness, or sometimes called "political astuteness", is *inter alia* defined through the five-dimensional framework of skills, which conceptualises astuteness beyond the narrower account of self-interest (Hartley et al., 2011). The five dimensions (ascending from the "micro" personal level to the "macro" strategic level) are seen as:

- Personal skills;
- Inter-personal skills;
- Reading people and situations;
- Building alignment and alliances;
- Strategic direction and scanning (Hartley et al., 2011).

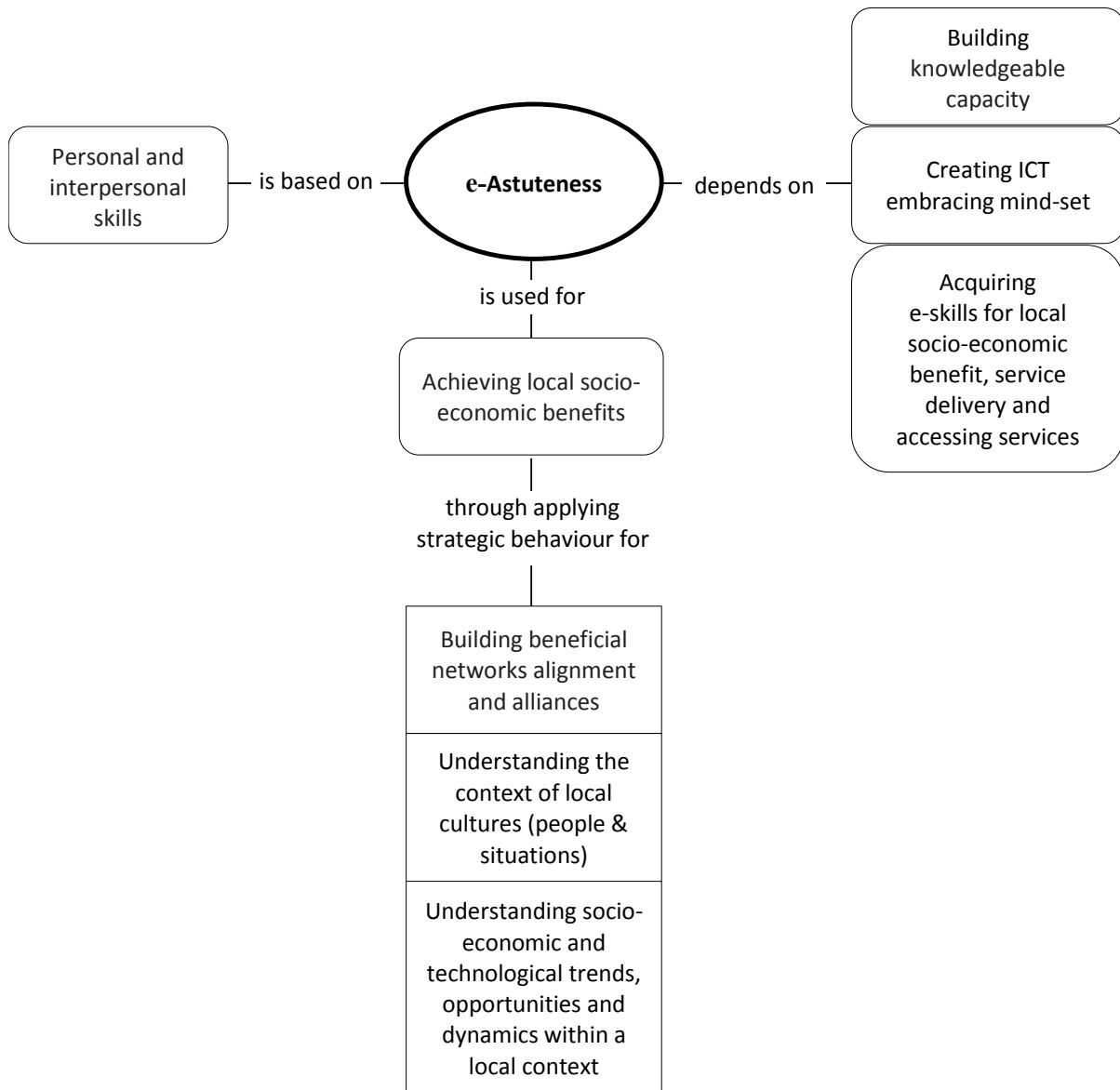
Transposed to the context of this paper, astuteness is here defined as an intellectual capacity, based on personal and interpersonal skills, that involves 'reading' people and situations, building alignment and alliances (networks), acute understanding of a strategic direction and applying strategic behaviour that allows individuals to take personal advantage of a situation.

It is significant from an e-skills perspective that the pertinent literature also refers to “*technological astuteness*” which is characterised by creating a mind-set that embraces all forms of technology and prepares users for future forms of technology and their possible applications (Caron & Stasko, 2010). From the perspective of this paper, this term is defined rather broadly, as it does not allow for straightforward operationalization within an e-skills construct in a developmental context. Hence, e-skills related astuteness needs to be defined in a more concrete way. The e-Astuteness concept within the context outlined at the beginning of this article involves a knowledgeable capacity, based on personal and interpersonal skills, that *inter alia* involves understanding of the emerging capacity of ICT devices relevant to local applications, people and situations, building alignment and alliances (networks), acute understanding of strategic direction and applying strategic behaviour that allows individuals to take personal advantage of the use of ICT through appropriate e-skills in the social (e.g. building social connections), service delivery (making the best use of ICT enabled services as users), education (formal and informal) or economic (e.g. obtaining job or starting own business) situations. It should be clearly understood, that the concept of e-astuteness outlined here is not necessarily predicated on formal education or high levels of literacy. The “Hole in the Wall” project (Mitra, 2005, 2006, 2012) and the unpredicted adoption of cell phone right across the socio-economic dimensions in Africa, and South Africa in particular, clearly demonstrate both an inbuilt personal and societal ‘hunger’ and perceived applicability of new forms of ICT - as well as questioning a prerequisite requirement for formal education as a barrier to e-astuteness.

The ability to effectively be aware of, understand, and control social interactions is referred to as *social effectiveness* or *social competence* of which astuteness is a component (Rahmani & Homayenikfar, 2010) - as astuteness emerges at the crossroads between mind and culture and depends upon social coexistence (Parales-Quenza, 2006). Parales-Quenza points out that “*within cultural and ontogenetic development, astuteness results from social interaction for it implies the capacity to transcend individual expectations and intentions to include them in a network of social relations*”. This provides a direct link to another, similar concept called “Social Astuteness”.

Conceptually, e-Astuteness is a dependent construct (Figure 1) that is based on personal and interpersonal skills of individuals and is reliant on building a knowledgeable capacity and creating a mind-set that embraces all forms of technology and prepares users for future forms of technology and their possible socio-economic applications. This new capacity should then help individuals (i) to understand people (local cultures) and situations better, (ii) to build beneficial alignment and alliances (networks – local, national and international – personal, learning, business and services) and (iii) towards better understanding of the current strategic socio-economic and technological directions within local applicability. Furthermore, the concept of e-Astuteness assumes that individuals should possess certain e-skills (described below) so that they can apply both operational and strategic behaviour in the use of modern ICT for achieving individual socio-economic benefits.

In practice e-astuteness may result in quite simple applications (so-called ‘apps’), which can deliver relatively small individual benefits at the outset. However, the concept of ‘scale’ (‘economies of scale’) across cultures, socio-economic circumstance, profitability and alike is fundamental to the power of modern ICT to shift value propositions.



**Figure 1:** Conceptual model of e-Astuteness

### From Social Astuteness and e-Social Astuteness

Social Astuteness has been defined as the skill to astutely observe others, comprehend social interactions, keenly attune to diverse social situations and accurately interpret their behaviour, as well as that of others (Todd et al., 2009; Shi et al., 2011). Ferris, Treadway, et al. (2005) maintain that the astute individuals have strong powers of discernment and high self-awareness and are “keenly attuned to diverse social situations” and are also able to “comprehend social interactions and accurately interpret their behaviour, as well as that of others”. Therefore, social Astuteness is about more astute ways of people interacting with others, which includes social interactions, level

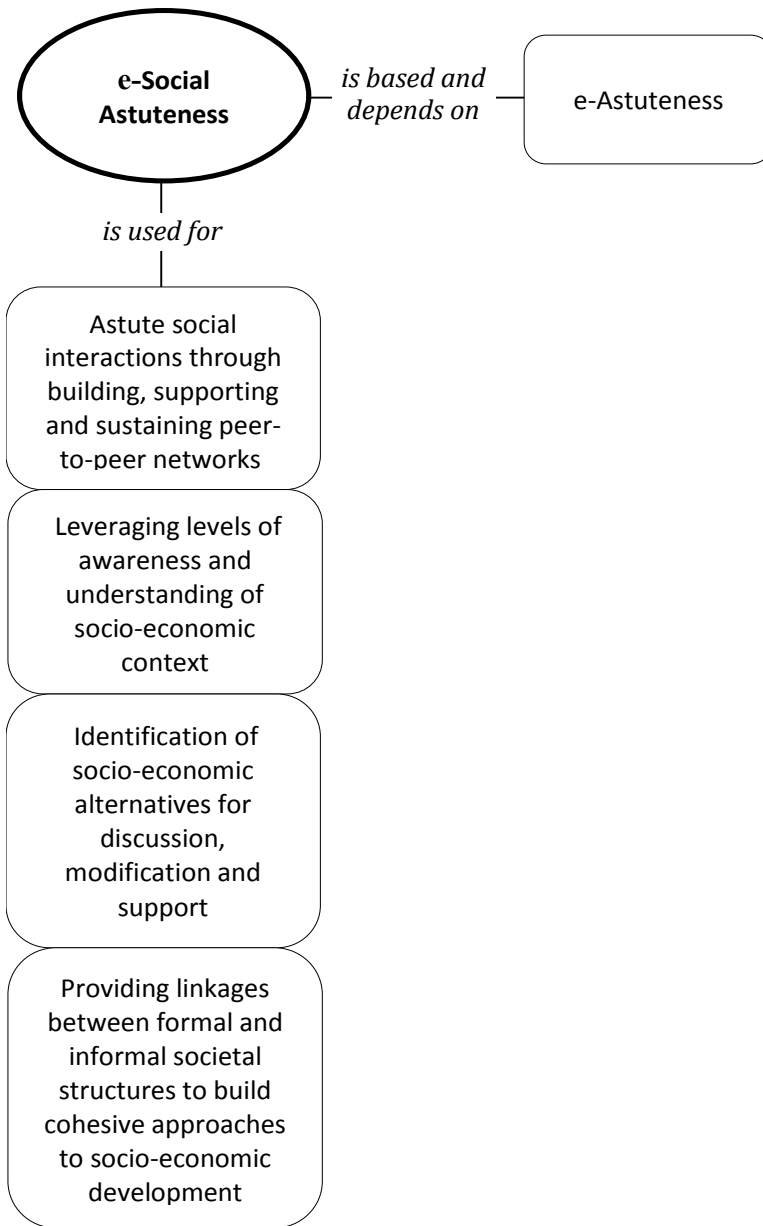
of awareness and understanding and the various alternatives open to them for response (Davidson et al., 2005).

The review of modern literature actually does not provide much about the concept of Social Astuteness except in the context of political skills. Ferris, Treadway, et al. (2005) discuss Social Astuteness within four dimensions of political skills: (i) networking ability, (ii) interpersonal influence, (iii) social astuteness, and (iv) apparent sincerity. Many authors believe that (i) the ability to 'read' and understand people, and (ii) being able to act on that knowledge in influential ways are two dimensions reflecting on Social Astuteness (Mintzberg, 1983; Pfeffer, 1981; Ferris, Treadway, et al., 2005). On the other hand, Social Astuteness can be most strongly related to self-monitoring, attending to details (conscientiousness) and political savvy (Snyder, 1987). Notions of "savvy" in general, and "*political savvy*" in particular, as noted by Ferris, Treadway, et al., (2005), make reference to a degree of understanding that is closely related to the Social Astuteness. This paper favours a definition of Social Astuteness that refers to more astute ways of people interacting with others, including social interactions, levels of awareness and understanding diverse social situations and the various alternatives open to them for a collective positive response to changed circumstances. The unprecedented adoption of so called 'social media' applications right across the world brings into clear focus the need for a discussion on the social application of e-astuteness. The power of social media to transcend nation boundaries and cultures for beneficial and perceived 'non-beneficial' impacts can be seen through the efforts of a number of powerful nation states to limit the operation, application and use of social media within their boundaries. Having in mind the above discussion, an e-Social Astuteness construct can be viewed as the use of ICT and e-skills for more astute ways of people interacting with others for a collective socio-economic benefit. This would involve a process of (i) involvement in a network of social interactions, (ii) having a collective level of awareness and understanding diverse social situations, (iii) the identification of socio-economic needs and opportunities that could be met with ICT enabled applications, (iv) the examination of various alternatives, (v) the development, testing and modification of options, (vi) the assessment of 'fit' of value proposition i.e. success or failure and applicability and (vii) network supported adoption and scaling. There are numerous advantages of community based capacitation of e-Astuteness and e-Social Astuteness in everyday life in a wide range of socio-economic contexts but particularly in developing countries where there are wide ranges in literacy, inequity, language, culture, dependency and alike, be it in economic or social contexts.

The concept of e-Social Astuteness (Figure 2) is also a dependent construct and is primarily built on e-Astuteness but applied in a networked community socio-economic context. Thus, developed e-Social Astuteness can be used, together with the acquired e-skills, for more astute ways for socially interacting with other community members. It should be understood that this can be a powerful construct for providing local benefit in developmental contexts where formal education levels are often low and quite disparate across society.

Astute social networks can also leverage new levels of awareness and understanding of diverse social and economic situations, and can lead to the identification of new alternatives to address local socio-economic issues. The benefits from utilising e-Social Astuteness are primarily enacted by community networked action but this does not exclude individual effort.





**Figure 2:** Conceptual model of e-Social Astuteness

**E-skills, equitable prosperity within a capable and developmental state**

The South African Government has allocated a high priority to creating a more equitable and inclusive society and this construct is deeply embedded in the National Development Plan 2030 (NDP). Providing a platform for widespread capacity building that can deliver local leadership for a more inclusive economy is fundamental to South Africa’s future prosperity in the emerging global socio-economic platform dominated by ICT. *“Today’s globalizing economy requires countries to nurture pools of well-educated [and skilled] workers who are able to perform complex*

*tasks and adapt rapidly to their changing environment and the evolving needs of the economy”* (WEF, 2012). South Africa’s declining level of e-readiness (from 47<sup>th</sup> place in 2007 to 70<sup>th</sup> place in 2013 (WEF, 2013) demonstrates that dramatic changes in policy and praxis are required. This issue still persists *inter alia* due to the policy-makers’ inability “*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”* (WEF, 2012).

The dramatic increases in capacity, accessibility, affordability, mobility and vision capability of modern ICT devices and applications are setting a new landscape for socio-economic sustainability. New ICT has little regard for nation state boundaries, economic inequity, culture or traditional expectations of economies of scale. It is most apparent that nation states that do not actively pursue an agenda that engages all of its citizenry in the astute use of emerging ICT capacity are dramatically reducing their opportunities and those of their citizens. A significant challenge for developing countries is to provide a platform that allows those with low levels of formal education (often the largest component of the population) to participate in a socio-economic space that is increasingly dominated by modern forms of ICT.

Low levels of formal education and literacy do not preclude people from being astute and/or socially astute in ways that allow them to take innovative advantage from their circumstances. From a modern ICT perspective, this has already been proven by the widespread adoption and innovative use of cell phone technology right across the socio-economic spectrum, across the whole of the African continent.

However, as the base level of cell phone technology inevitably rises to ‘smart phone’ levels, the required understanding to optimise the technology for personal local benefit rises dramatically. A proposition that unaided commercial diffusion will address this potential for increasingly sophisticated use is significantly challenged by the vast advances in centralisation of economic advantage and culture in developed economies through increasing economies of scale and loss leader costs and timeframes required for market entry and sustainability. Hence, without proactive intervention, developmental economies face a huge risk of socio-economic and cultural ‘swamping’ (‘technological imperialism’) by oligopolies and applications which do not respect large scale inequity or the ‘mixed mode’ economies that exist in developing countries.

It is posited here that proactive efforts that build innovative capacity to optimise local benefit from modern ICT through a focus on e-astuteness and e-social astuteness can mitigate ‘technological imperialism’ and allow developing countries to ‘leapfrog’ their falling e-readiness rankings. Such an approach aims to shift from a single focus on traditional education, training, business and service delivery, i.e. ‘doing to’ and ‘doing for’ approaches, towards a multi-focussed approach of ‘doing with’. This involves placing emphasis on developing e-Astuteness and e-Social Astuteness across the full socio-economic profile, including those with low levels of formal education and those ‘not in employment, education and training’ (NEETs).

The recent economic and financial turmoil (since the global financial crash in 2008) has reinforced the wide-spread view that global economies and societies are more than ever reliant on 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 economy-related and societal innovation. The Internet-based applications and tools bring together people and enable them to share skills and knowledge for wealth creation generally and to establish capable developmental states that can address issues of poverty and inequity. However, it is not possible to effectively use this or other ICT platforms without having highly e-astute knowledge workers and e-socially astute citizens as consumers, customers, communities and families (inadequately referred to as digitally literate or “e-literate”).

The literature reviewed for this paper shows that skills, inevitably including e-skills, are prominent factors in dealing with poverty and inequity. For example, the importance of skills is regarded as one of the six pillars of the ICT ecosystem (World Economic Forum, 2009:2): *“Best-practice countries have a solid base of ICT technical skills and a good level of broader science and math education. Interventions to improve ICT-relevant skills include focused training, certification and pipelines to university graduates in engineering and IT fields”*. Skills acquisition is seen as the way out of poverty and of a workforce delivering more towards competitiveness (European Commission, 2010, cited in Nash, 2011).

In the South African context, *e-skills* are broadly defined as the ability of people to use and create all forms of ICT in order to achieve more equitable prosperity and global competitiveness in general and to improve their personal life opportunities in: (i) personal and educational space, (ii) work environments, (iii) community interactions and (iv) participation in government processes (NeSPA, 2010). The South African e-Skills Institute and its various stakeholders (government, business, education, organised labour, civil society and the international partners) have agreed that the most effective way to develop a more equitable prosperity is to build capabilities to effectively use ICT across society within the context of the National Development Plan 2013 (NDP) and the Medium Term Strategic Framework 2009-14 (MTSF). Many other developing countries are also aggressively driving such an agenda which has challenged South Africa’s position in the global e-readiness rankings (WEF, 2012). For example, Kenya has been identified by the International Telecommunications Union’s IDI (ICT Development Index) as one of the most dynamic countries in terms of policy and uptake (ITU, 2012). Kenya’s “Broadband in Kenya” approach lays out a comprehensive policy and implementation plan that recognises the need to build a society that can use ICT astutely (Misimang, 2011).

In advancing such an agenda in South Africa, NeSPA (2010) and the new National e-Skills Plan of Action (NeSPA 2013) have identified the priority issues that have to be supported by e-skilled individuals in order to achieve more equitable prosperity and uniting South Africans around a common purpose to fight poverty:

- Speeding up growth and transforming the economy;
- Strengthen the skills and human resource base;
- Strengthening competitiveness and promoting SMMEs;
- Building cohesive, caring and sustainable communities;
- Improving of public services and strengthening democratic institutions.

The e-Skills Institute’s agenda to support these issues and the goals of the NDP emphasises the importance of introducing these two novel concepts of e-Astuteness and e-Social Astuteness into the national discourse and delivery plans.

## **USING E-ASTUTENESS AND E-SOCIAL ASTUTENESS**

According to Van Deursen (2010), there are various ways that digital competences and skills (commonly referred to as e-skills) benefit communities, individuals and society:

- *Social benefits*: ICTs connect people, socially and culturally integrate communities, provide interaction channels for all people including the marginalised such as the elderly, those in remote villages, the illiterate, the physically disabled and alike;
- *Health benefits*: There are increasing volumes of health information and community resources becoming available in formats accessible by quite diverse audiences online;
- *Economic benefits*: Being digitally competent has become a major issue in terms of a person’s employability, capacity to establish and sustain SMME activity, consume and effectively use government services, business offerings and new education or training options;

- *Civic benefits*: There is a vast range of up-to-date information and resources that can be accessed using modern digital tools and media. The technology provides increasing capacity for building social cohesion to strengthen local capacity in ways that improve participation in local decision making to increase the effectiveness of outcomes in health, education, safety and local economic development;
- *Cultural benefits*: The availability of Internet and various social platforms including 'blogging', 'tweeting', 'skyping' etc. provide a new stage for people to interact with one another and share a wide range of information;
- *Societal benefits*: ICTs have permeated all areas of life allowing people to use the Internet to improve the educational experience and value, setting up and sustaining business, travel, developing 'self- driven' lifelong learning, enjoying quality of life etc. (Ala-Mutka, 2011).

The capability approach (CA) to development, originated by Sen (1992), refers to the "*concept of 'freedom' [which] in a broad sense refers to effective opportunities we have to lead the kind of lives we have reasons to value*". It is largely what is posited here: the South African people can achieve if they develop and effectively use ICT for local benefit i.e. e-Astuteness and e-Social Astuteness. Sen (as cited in Zheng & Walsham, 2008) proposed CA as an alternative approach to mainstream economic theories and egalitarian approaches that focused solely on material inequality, while he argues that inequalities were much wider than that, and include "*lack of opportunities, freedoms and choices*". Thus, it seems that achieving equitable development through ICT and e-skills can be assisted by the notions of e-Astuteness and e-Social Astuteness as "*most digital skills are not the result of computer courses, but of learning through practice in particular social user environments*" (Van Dijk, 2012). Garrido et al. (2012) posit that, besides improved computer skills, the benefits of ICT skills training not only draw users into developing non-technical workplace skills, but also propel them into self-directed learning and encourage participation in extended social networks that facilitate employability.

Lanvin & Kralik (2008) and Lanvin & Passman (2008) point out the importance of e-skills in the following way: "(i) *e-skills are pervasive and therefore, required in all sectors and at all levels of activity to sustain competitiveness*; (ii) *the emerging global knowledge economy will push for more e-skills*, and (iii) *e-skills will enhance a person's horizontal and vertical mobility, improving employability opportunities.*"

According to Davies et al. (2011) the relevant skills for at least the next decade will mean that individuals will have to continually reassess the skills they have against what they need. Workers will need to be adaptable and be prepared for lifelong learning. Garrido et al. (2012), point out that beside ICT competence, additional skills required within the labour market will include communication skills, team work, collaboration, critical thinking, decision making and general social skills. It is within this environment that those who are unemployed and are older workers can fall prey to technology driven employment because of skills obsolescence. Davies et al. (2011) also support development of other skills that will complement e-skills, for example, *Computation thinking or New-media literacy*. The list of Davies et al. (2011) includes a number of skills that are compatible with the definitions of e-Astuteness and e-Social Astuteness as outlined above:

- *Sense-making*: These are higher level thinking skills that cannot be codified;
- *Social intelligence*: Machines have limited capabilities when it comes to the wide range of social skills including connecting with people at deep emotional level, and to collaborate and develop relations based on deep levels of trust;
- *Novel & adaptive thinking*: Refers to the ability to respond to unique and unexpected circumstances as they arise;

- *Cross-cultural competency*: Organisations and societal systems are increasingly adapting to new forms of cultural diversity, being adaptive to new contexts and acquiring added linguistic skills that will aid people to make better use of new forms of ICT when opportunities present themselves;
- *Computational thinking*: These skills are required in decoding the vast amount of data that is captured and which is required to create new in the context of this new environment;
- *New-media literacy*: The next generation of people (workers, service deliverers, learners, education and civil society) must become fluent in forms such as video, able to critically “read” and assess them in the same way that they currently assess a paper or presentation. This is particularly relevant in sharing meaning across languages, cultures, differing levels of literacy, age, gender and disability;
- *Trans-disciplinarily*: the ideal worker in the emerging environment is the one who is “T-Shaped” meaning he/she has deep knowledge of at least one field, but adequate knowledge to be conversant across other disciplines;
- *Design mind-set*: Motivation and inspiration for operating in the emerging environment increasingly dominated by new forms of ICT are affected by a number of factors associated with context, environment, influencing emotions and mood; effective participative citizens of the future need to be adept at reorganising the kind of thinking required and to readjust their own operating environments to achieve best results.
- *Cognitive load management*: There is a constant flow of rich information streaming across all emerging mediums, and active citizens will need to be adept at using tools to filter the vast flow of data;
- *Virtual collaboration*: Citizens (workers, service deliverers, learners, education and civil society) will increasingly be required to use connective technologies to collaborate in virtual teams to share information, and create virtual presence for interaction on any number of areas of interest.

Astute e-skilled individuals can better understand social situations, influence others to follow their lead, be adept at networking and building social credit (often called social capital), and will be, at least apparently, genuine and sincere in their interpersonal interactions. This set of skills is a competency that whilst it is seen by some to be partially ‘inborn’, is also one that can be learned and shaped (Davidson et al., 2005). Individuals with high levels of social astuteness have higher self-awareness and discernment (Shi et al., 2011), and have an accurate understanding of social situations as well as the interpersonal interactions that take place in these settings (Ferris, Treadway, et al., 2005). Interpersonal influence (a subtle and convincing personal style that exerts a powerful influence on those around them) and networking ability (developing and using diverse networks of people) are two components of e-Astuteness and e-Social Astuteness. These can help individuals adapt their behaviour in a range of situations to achieve different targets of influence in varying contextual conditions to deliver one’s goals (Ferris, Treadway, et al., 2005).

Pamela Perrewé believes that it is much easier to complete any work if somebody can count on others: through networking, obtaining social support, receiving help with projects. However, this support is much easier to obtain through applying skills such as Social Astuteness (Perrewé, 2013). Thus using e-Astuteness in the social context (i.e. e-Social Astuteness) has a particular significance in relation to addressing the aspirations of desired societal goals and in the particular case of South Africa, the South African NDP and in particular alignment to the six (6) pillars that underpin it.

Astuteness in a governance context (also described as political awareness, political savvy or “nous” (e.g. Hartley & Fletcher, 2008) is deemed as an increasingly necessary skill for public managers (Hartley et al., 2011). The increasing salience of political problems in delivering desired

outcomes is important as Rittel & Webber (1973) and Hartley et al. (2011) point out “*confronting governments has required managers to be more attuned to the political difficulties which often permeate those kinds of problems, it is now even more important for public managers to be politically astute*”. Service deliverers need to be able (i) to ‘read’ society’s various and collective aspirations, especially as they change over time, (ii) to obtain support from their authorising environment to achieve their value-proposition (to secure a mandate) and (iii) to understand not just what direction to push a value-proposition, but also how far. Thus, “*political astuteness is a vital attribute of value-creating public managers, for the simple reason that they operate in both formal and informal political environments, where there are complex, varied and sometimes competing interests amongst the stakeholders*” (Alford et al., 2012). This is particularly applicable to e-skills structures at national (e.g. the South African e-Skills Institute) and provincial/local governance levels (e.g. the South African e-Skills CoLabs) when considering how to balance an approach to conflicting stakeholders’ (government, business, education, organised labour and civil society) e-skilling interests.

Having highlighted the benefits of e-skills and related e-Astuteness and e-Social Astuteness skills, these benefits can be categorised according to the priorities of national developmental issues. In South Africa’s case the highest national developmental strategies are the NDP and the MTSF (2009-14). This mapping in Table 1 provides an example of how improved e-skills, e-Astuteness and e-Social Astuteness could support national priority issues.

**Table 1:** An example of how e-Astuteness and e-Social Astuteness can be mapped to develop a common purpose to fight poverty and inequity in a capable developmental state

Priority developmental issue	Supported by e-skills	Supported by e-Astuteness and e-Social Astuteness
<b>Speeding up growth and transforming the economy</b>	<ul style="list-style-type: none"> <li>• e-skills for ICT professionals;</li> <li>• e-skills for the organisational users;</li> <li>• e-skills for doing business over the Internet (e-skills necessary for raising exports and global competitiveness);</li> <li>• e-skills to make best use of government and business services</li> <li>• e-skills for life-long learning and adaptability</li> <li>• e-skills to recognise and develop local opportunities</li> <li>• e-skills to strengthen social cohesion in local communities and across the nation.</li> </ul>	Globalizing economy requires workers (government, business, education), learners and civil society consumers who are astutely able to perform complex tasks and adapt rapidly to a changing environment and the evolving needs of the economy which is increasingly dominated by new forms of ICT. Well-developed understanding of both practical and strategic opportunities and applying appropriate behaviour i.e. astuteness allows individuals to take personal advantage of the use of modern ICT devices in their own socio-economic situations.

Priority developmental issue	Supported by e-skills	Supported by e-Astuteness and e-Social Astuteness
<b>Strengthen the skills and human resource base</b>	<ul style="list-style-type: none"> <li>• Strengthen the e-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, effective use of ICT enabled services and social integration for an inclusive economy and embedded socio-economic cohesion;</li> <li>• e-skilling in the context of high quality education, life-long learning and social appropriation of ICT for local benefit which are necessary to sustain a societal shift to a more inclusive knowledge-intensive economy and a wider system of innovation consistent with the socio-economic priorities.</li> </ul>	<p>Best-practice countries have a solid base of ICT technical skills as well as highly developed adoption of ICT across business, education, service delivery and social uptake as consumers, communities and families. Creating an e-Astuteness and an e-Social Astuteness mind-set that embraces all forms of technology and prepares users for future forms of technology and their possible applications provides countries, businesses, education, governments and civil society with significant advantage. Most digital skills are not the result of computer courses, but of learning of how to apply modern ICT in local situations and with non-technical applications in real life situations i.e. e-astuteness and e-social astuteness.</p>
<b>Strengthening competitiveness and promoting SMMEs</b>	<ul style="list-style-type: none"> <li>• e-skilling of SMMEs for more effective business and competitiveness;</li> <li>• e-skilling the population for employment or small business readiness as well as developing e-skills across society for e-Inclusion (including societal capacity to make effective consumer use of ICT enabled SMME's).</li> </ul>	<p>Skills required within the labour market, starting a business, developing and using ICT enabled service delivery, education and local socio-economic development require astuteness in communication skills, team work, collaboration, critical thinking, decision making and general social skills. In environments that are increasingly dominated by modern ICT an e-astuteness in understanding strategic and practical environmental implications and applying relevant strategies and praxis (responsive and pre-emptive) is essential in developing and sustaining a vibrant SMME sector.</p>

Priority developmental issue	Supported by e-skills	Supported by e-Astuteness and e-Social Astuteness
<b><i>Building cohesive, caring and sustainable communities</i></b>	<ul style="list-style-type: none"> <li>Building cohesive, caring and sustainable communities through the delivery of e-skills for development (e-Inclusion) and expanding opportunities for the poor to access the labour market, government and business services, education and learning alternatives and peer group support networks. (e-skills for organisational users, social networks, community developers, families);</li> </ul>	<ul style="list-style-type: none"> <li>Astuteness in appropriating modern ICT within cultural and socio-economic development, results from social interaction - for it implies the capacity to transcend individual expectations and intentions to include them in a network of social relations (developing social capital and cohesion).</li> <li>Interpersonal influence and networking abilities can help individuals to adapt their behaviour according to each particular situation. This allows different targets of influence in ranges of contextual conditions to be developed for both personal and community goals.</li> <li>Whilst modern ICT capacity allows for greater social interaction across traditional physical, cultural and economic boundaries in unprecedented ways e.g. the emergence of so-called 'social media', the application of this capacity to strengthen socio-economic cohesion, building sustainable communities and mitigating inequity has to be nurtured, planned, supported in at least a semi-structured manner.</li> </ul>
<b><i>Improvement of public services and strengthening democratic institutions</i></b>	<ul style="list-style-type: none"> <li>Improving the delivery and skills of public services through a structured e-skills capacity building approach for government and strengthening democratic institutions by developing 'societal wide' e-skills necessary for e-participation and e-democracy;</li> <li>Providing organisational user e-skills for strengthening government's capacity to provide leadership for socio-economic development;</li> <li>e-skilling the rural population and the providers of public services for effective use of ICT and e-services in education, healthcare, transport, public safety, finance and other basic services.</li> </ul>	<ul style="list-style-type: none"> <li>Governments must have astute ICT capacitated personnel to ensure effective service policy development, delivery and evaluation that aligns with and develops capacity for access and engagement with modern ICT capabilities. Governments will increasingly be required to facilitate 'development dynamics' that valorise social astuteness for increasing self-reliance and build more inclusive economies. Governments require more astute managers to be attuned to the political difficulties associated with the delivery of new programmes and to be able to develop systems that mitigate problems in a service delivery environment increasingly dominated by modern ICT capabilities.</li> <li>Competent culturally diverse individuals with high levels of social astuteness have higher self-awareness and discernment and thus those with high levels of e-social astuteness will be proponents of strengthening democratic institutions and values.</li> </ul>

## CONCLUSION

This paper has attempted to conceptually clarify the novel concepts of e-Astuteness and e-Social Astuteness skills and their applicability within a broad context of e-skills capacity building



particularly as conceived in a South African context. This was done within a theory building paradigm in information systems aimed at the “*emergent theory about embedded phenomena*” and “*knowledge as operational principles*” (Venable, 2006; Vaishnavi & Kuechler, 2004; Nunamaker et al., 1991). In that regard, the concepts of e-Astuteness and e-Social Astuteness are perceived to be needed for building an inclusive economy and in developing leadership to work together at the local level to solve socio-economic problems. Such a terminology aims to focus the concept of social astuteness within the construct of an ICT enabled society within the context of a capable developmental state. This paper shows links between these concepts and proposed their use in supporting national developmental strategies and agendas and demonstrated this within a South African context with the Medium Term Strategic Framework (2009 – 2014) and the National Development Plan 2030. The paper has argued that, since modern ICT applications are demonstrating a ubiquitous influence, people across the full spectrum of society must be skilled to understand the flow and impact of this influence on human social and economic development. Further the paper has argued that individuals should not only understand rudiments of this ubiquitous ICT impact across all human life but also the need to have understanding of a basic value perception and an astute acquisition and application of e-skills in managing the impact on their personal socio-economic development (based on Foley et al., 2002).

There are two distinctive ways how people think and act about their own (human) condition (Garner, 2012: 11-12). The first approach is a static where people show a preference to stay in the *status quo* and consolidate what they have. The second way involves a discovery of what is still possible to achieve and opening up considerations of how far a person can go. Garner further states that the majority of people are predisposed to choosing the first way - the path of safety and security. Use of e-Astuteness and e-Social Astuteness, as defined in this paper, leans towards to the second approach – a path of discovery to appropriate modern ICT into a social construct that can unite people in a common purpose to address inequity. In order to achieve a society that offers a more equitable prosperity and a more inclusive economy, there is a need for committed people across the full spectrum of society who understand how to best appropriate ICT into personal benefit and how to use it to develop collectives of self-organising systems focused on building local capacity to grow a capable developmental state.

In practise, success in these matters is heavily dependent on government leadership in establishing enabling environments for the emergence of a ‘development dynamic’ that can aggregate effort across government, business, education, civil society and organised labour to support national development strategies. The paper demonstrates that components of e-Astuteness and e-Social Astuteness skills as defined above are congruent with the aims, objectives, value proposition and delivery approaches of the South African e-Skills Institute. The paper uses the South African NDP and the Medium Term Strategic Framework (MTSF 2009-14) to demonstrate how concepts of e-Astuteness and e-Social Astuteness can be aligned to the delivery of national strategies. It demonstrates that such an approach provides an inclusive basis for a new collaborative thinking around structures, resource allocations and focus for the many disparate efforts across government, business, education, civil society and organised labour. As pointed out, South Africa now finds itself in a parlous state with regard to its global e-readiness rankings (dropping from 47<sup>th</sup> to 70<sup>nd</sup> in the six years to 2013) and the 2012 & 2013 WEF Global Technology Reports have identified the lack of skills as key matter in this situation. This is also reflective of the situation of many African nations. These matters go to the very heart of Africa’s capacity to develop a more equitable society and a capable developmental state which can respond to the global competitiveness challenges that modern pervasive ICT are irretrievably making obvious.

The paper proposes that the concepts of e-Astuteness and e-Social Astuteness have an important role to play in addressing opportunities and overcoming embedded socio-economic

problems that face Africa in general and South Africa in particular. The paper also proposes that e-Astuteness and e-Social Astuteness need to be embedded in policy development, research, monitoring and evaluation discourse and praxis across Africa and in South Africa in particular. Hence, it is recommended that these variables should be considered in addressing the aspirations of national strategies and the multitude of government, business, education and civil society ICT interventions. Although the capacity for astuteness in a general sense is considered by some researchers to be partially “inborn”, it can be developed through training even without a strong natural propensity for it (Davidson et al., 2005). Certainly much experience across African society provides evidence that there is ample astuteness embedded in all levels of society. In some cases mere daily survival demonstrates this.

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