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Southern African Development Community

## **e-SADC Strategic Framework**



Economic Commission for Africa (ECA)



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# Acronyms and Abbreviations

AISI	Africa Information Society Initiative
ATM	Automated Teller Machine
AUC	African Union Commission
COMESA	Common Market for Southern Africa
CRASA	Communications Regulatory Association of Southern Africa
DNL	Digital Subscriber Line
DTBM	Digital Television Broadcasting Migration
EDGE	Enhanced Data Rates for GSM Evolution
E-SADC	Electronic - Southern African Development Community
GPRA	Generalized Packet Radio Access
ICT	Information and Communication Technology
IDI	ICT Development Index
IPR	Intellectual Property Rights
ISP	Internet Service Provider
ITU	International Telecommunications Union
IXP	Internet Exchange Point
MDG	Millennium Development Goal
NEPAD	New Partnership for Africa's Development
NGOs	Non Governmental Organizations
OSISA	Open Society Initiative for Southern Africa
PC	Personal Computer
PIAC	Public Internet Access Centre
POS	Point of Sale
PPP	Private Public Partnership
RISDP	Regional Indicative Strategic Development Plan
SADC	Southern Africa Development Community
SAPOA SATA	Southern Africa Postal Operators Association
SMEs	Southern African Telecommunications Association Small and Medium Enterprises
UNECA	United Nations Economic Commission for Africa
UNICTRAL	United Nations International Commerce and Trade Law
VoIP	Voice over Internet Protocol
WiFi	Wireless Fidelity
WSIS	World Summit on Information Society



# Foreword

The Southern African Development Community (SADC) Secretariat is pleased to present this e-SADC strategy document which represents strong political will, commitment and institutional support at the highest level in the member States to drive the process forward. The document presents the acknowledgement by SADC that regional cooperation and integration efforts should mainstream information society issues in their programmes. This would lead to improved intra-institutional communication among regional cooperation institutions, thereby promoting trade, financial cooperation and efficiency in key sectors such as agriculture, health, business and education.

While the role of information and communication technologies (ICTs) for regional cooperation and integration has gained considerable attention, they will only have a substantial impact on regional cooperation and integration if suitable policies, programmes and mechanisms are established. As a result, the SADC Secretariat assumed a leading role to enable member States to engage in consultations leading to development of the e-strategy that addresses regional communications policy, financing, regional harmonization, capacity building and key applications. As ICTs are strategic in facilitating national and regional development, SADC member States will play a prominent role in establishing the required enabling environment and providing the necessary resources, financial and otherwise, for the realization of the promulgated vision and mission.

This strategy will also address the pronouncements of the 2001 Declaration which recognized that SADC needed “a coherent regional ICT policy and strategy that promotes sustainable economic development and technology and bridges the digital divide within the region and the rest of the world.” The Declaration also acknowledged that effective information communication was best achieved under an environment characterized by, policy guidelines; legislation; well-defined strategy; telecommunications deregulation; reliable, efficient and scalable network infrastructure; human resource development in the area of ICT; knowledge management; affordable access to information; natural way for collaboration and conversation; seamless integration; ubiquitous access and security.

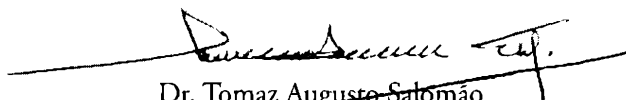
The e-SADC activity will ensure regional harmonization, capacity building and the implementation of e-strategies whilst encouraging the development of legislation that harnesses the dynamism of ICT to modernize the regional economy and establish consistency in rules. It will also address issues of convergence, harmonization of ICT infrastructure, services and indicators and promote ICT usage for regional economic integration, enhancement of connectivity and access to ICT services among and within the member States.

Strategy implementation will not be possible without investing and crafting innovative financing mechanisms. Addressing the multi-faceted issues articulated in the strategy would therefore require a multi-stakeholder approach for which governments will need to establish an enabling environment for partnership mechanisms.

The SADC Secretariat wishes to commend the sterling multi-stakeholder efforts undertaken in strategy development by the all the participants from the member States, Intergovernmental Organizations (IGOs), the African Union (AU), the New Partnership for Africa's Development (NEPAD) e-Africa Commission, the Common Market for East and Southern Africa (COMESA), the Southern Africa Postal Operators Association (SAPOA), the Communications Regulatory Association of Southern Africa (CRASA), the Southern African Telecommunications Association (SATA) and the SADC Secretariat.

I would also like to express my profound appreciation to the Open Society Initiative for Southern Africa (OSISA), which co-hosted the E-SADC initiative workshop and to the United Nations Economic Commission for Africa (ECA) ICT, Science and Technology Division, in collaboration with the Subregional Office for Southern Africa (SRO-SA) for the financial and technical support provided from the launch to the final adoption by the Conference of SADC Ministers responsible for Telecommunications, Postal and ICT in Luanda, Angola from 10 to 13 May 2010.

The onus is now on us all to play our respective roles to ensure ownership and implementation of the recommendations which we all developed and adopted. The SADC Secretariat will continue to play its role of monitoring and evaluating strategy implementation.



Dr. Tomaz Augusto Salomão  
Executive Secretary  
SADC Secretariat



# Acknowledgements

The e-SADC Strategy Framework is the outcome of a series of activities leveraging on the potential of ICTs, which over the last decade have brought about dramatic improvements and unprecedented opportunities for Africa's participation in the global networked economy. The impact of new ICTs has permeated virtually all sectors of society and access to information and knowledge has become a prerequisite to reducing poverty and achieving basic healthcare and education as part of achieving Millennium Development Goals (MDGs)<sup>1</sup>.

It therefore becomes of paramount importance that the subregion embraces a common vision and strategy for an information-based society that not only recognizes ICT as a tool for economic innovation, but also as a platform for socio-economic development.

The e-SADC strategy framework was developed under the auspices of the SADC Infrastructure and Services Directorate and is part of the e-SADC initiative undertaken in the context of the SADC - United Nations Economic Commission for Africa (UNECA) Multi-year programme of collaboration between the two institutions. The mandate for economic and social development has enabled UNECA to play a primary role in facilitating the development of international and regional policies and programmes with a view to ensuring Africa's full and active participation as a partner in the development of the global knowledge economy.

The strategy framework development entailed an extensive stakeholder participatory process within SADC member States (including country visits to Botswana, Lesotho, Mauritius, Namibia, South Africa and Zambia), the African Union Commission, the private sector, non-governmental organizations and international cooperating partners from the formulation and adoption of the terms of reference, to the launch in Gaborone, Botswana in October 2009 (in partnership with OSISA), the validation by member States in Maseru, Lesotho, from 29 to 30 April 2010 and eventual adoption by the meeting of SADC Ministers responsible for Telecommunications, Postal and ICT in Luanda, Angola from 10 to 13 May 2010.

Solisane Investments (Pty) Limited consultants, Mr. Mzwandile Richard Mabuza, Ms. Dudu Sihlongonyane, Mr. Ralph Nkambule and Ms. Nozipho Freya undertook activities towards the development of the framework under the technical guidance of the ECA ICT, Science and Technology Division (ISTD) and SRO-SA. The entire process was overseen by SADC Secretariat's Ms. Cecilia Mamelodi-Onyadile, Mr. Robin Unuth, Mr. Munorweyi Dhlwayo, Mr. Sizo D. Mhlanga and Ms. Atamelang

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1 [www.un.org/millenniumgoals/](http://www.un.org/millenniumgoals/)

Ngwako of ECA. The activities were undertaken under the guidance of Ms. Jennifer Kargbo, then Director of ECA-SRO-SA.

Jennifer Kargbo  
Director, Subregional Office for Southern Africa  
Economic Commission for Africa

# Executive Summary

SADC<sup>2</sup> comprises 15 sovereign States - 12 on the mainland in Southern Africa and three Indian Ocean islands (Madagascar, Mauritius and Seychelles). It has made huge strides in the use of ICTs as an important strategic tool for promoting competitiveness and stimulating economic growth, in addition to lowering public service delivery costs in all sectors.

The role of ICTs in facilitating and enhancing regional cooperation and integration has increasingly gained considerable attention. In view of the inherent multiplier effects, ICTs play an important catalytic role in the development of all the other sectors and as such, a regional approach to ICT development and building of the information society allows for greater harmonization of national efforts in strategy formulation and implementation. For ICTs to have an impact on regional cooperation and integration, Regional Economic Communities (RECs) will need to play a leading role in regional consultations and in the development of e-strategies that address regional communications policy, financing and regulatory issues in a way that promotes harmonization.

Recognizing the significance of ICTs in socio-economic development, SADC has undertaken various ICT initiatives since the late 1990s. However, despite the numerous efforts, enormous challenges still exist and to address these and enable realization of an integrated knowledge economy, SADC, in collaboration with partners, initiated development of the e-SADC Strategy Framework.

The Framework was undertaken as part of the e-SADC initiative in the context of the SADC-UNECA Multi-year Programme whereby SADC ICT work is guided by the SADC Protocol on Transport, Communication and Meteorology (1996), the SADC Declaration on Information and Communication (2001)<sup>3</sup>, the Regional Indicative Strategic Development Plan (RISDP) and ECA work under the African Information Society Initiative (AISII).

The e-SADC Initiative was launched in Botswana in October 2009. The launch established the methodology for data collection and analysis and addressed challenges and constraints including the opportunities for promotion of ICT development as well as SADC e-readiness. The validation workshop held from the 29 to 30 April 2010 in Maseru, Lesotho was attended by representatives from member States reviewed the structure of the e-SADC strategy report, content details, and relevance of the strategic goals, objectives and priorities. The e-SADC Strategy Framework was adopted by the

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2 [www.sadc.int](http://www.sadc.int)

3 [www.tralac.org/scripts/content](http://www.tralac.org/scripts/content)

Conference of SADC Ministers responsible for Telecommunications, Postal and ICT which took place in Luanda, Angola from 10 to 13 May 2010.

The main objectives were promotion of ICT use for regional economic integration; enhancement of connectivity and access to ICT services among and within SADC member States; development of applications including e-government, e-commerce, e-education, e-health, e-agriculture, and addressing policy, legislation, regulation, human and financial issues.

The Framework is based on three action-oriented overarching themes incorporating seven strategic objectives geared towards realization of the SADC vision. The three themes are: Enabling the delivery of quality ICT services; E-applications and innovation; and Governance of the e-SADC strategy. The seven strategic objectives identified to support the three themes are as follows:

- Establish a conducive legal, policy and regulatory environment for the development of an ICT culture;
- Develop the ICT infrastructure and security;
- Invest in human resource development;
- Develop e-applications including e-government;
- Increase the use of ICT in business;
- Develop an ICT industry; and
- Develop institutional mechanisms.

In order to achieve these strategic objectives, the e-SADC strategy framework identifies action lines associated with each of the three overarching themes and their respective strategic objectives.

The document is presented in two parts:

Part I reviews the background and the strategic orientation for ICT development in SADC and the contextual overview from the global, regional and subregional perspectives. Opportunities and challenges are also analysed. Part II presents the e-SADC strategy framework structured under the three overarching themes and the corresponding seven strategic objectives.

# PART I: Background and Context

## 1. Background: Strategic Orientation for ICT Development in SADC

SADC was initially established on 1 April 1980, as the Southern Africa Development Cooperation Conference (SADCC). SADCC was transformed into the Southern Africa Development Community (SADC) in August 1992. With subsequent admission of new member States, SADC is now a grouping of 15 sovereign States comprising 12 countries on the mainland Southern Africa and three Indian Ocean islands (Madagascar, Mauritius and Seychelles). These countries include: Angola, Botswana, the Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe.

The SADC Treaty (Article 21, 1992) made provisions for new technologies under the auspices of infrastructure and services. Telecommunications expansion was cited as being a key element to development and in 1996, the SADC Protocol on Transport, Communications and Meteorology was established for restructuring the telecommunications sector. The Protocol was a commitment by member States to embark on fundamental reforms in the transport and communications sectors and focused on deployment of reliable infrastructure in transport and communications to speed up development and facilitate trade amongst member States.

The Protocol has had a profound impact on reforms in the telecommunication sector within SADC. The State-owned telecommunication companies had progressed towards commercialization and were now competing in mobile telephony and related services. Most member States had regulators in place to address disputes and promote the establishment and operation of efficient, adequate and cost-effective telecommunications networks, which met the diverse needs of customers while being economically sustainable.

Continuing with strides to develop ICTs, the SADC Heads of State signed a SADC Information and Communication Technology Declaration in August 2001 declaring the following as priority areas for action:

- The regulatory environment for ICT
- Infrastructure for ICT development
- Community participation and governance in ICT development
- ICT in business development Human resource capacity for ICT development.

The Declaration also urged member States to accord priority to ICT for national and regional social and economic development and proposed a policy to build an information economy in SADC. The need to adopt and adapt technologies that enabled e-commerce capability to avoid increasing exclusion from the global economy was also emphasized. In the same vein, the SADC e-Readiness Task Force (World Economic Forum and SADC, 2002) recommendations alluded to three means of directly improving e-readiness and harnessing ICT for social and economic advancement within SADC as follows:

- Establishing a policy framework for action
- Building necessary infrastructure
- Undertaking ground-level projects.

The SADC Regional Indicative Strategic Development Plan (RISDP) in 2003 defined the SADC vision, mission and strategic objectives with a wider focus on transforming it into an information-based economy with specific objectives and deadlines (box 1). The ICT programme within the RISDP comprised specific projects with special emphasis on human resource development in ICT, policy and regulatory support, applications (e-business, e-government, telemedicine, etc.).

Although at the policy level, member States had adopted ICT as a key driving element for socio-economic development (ICT Declaration of 2001) in practice, at the strategic level, implementation had not taken place. This therefore called for concerted efforts to assist member States in developing their national ICT policies and strategic plans based on the SADC guidelines. These plans would chart the roadmap for effective ICT applications in all economic sectors.

Recognizing the challenges being faced by SADC member States and to address those of the new digital revolution, SADC established specialized associations to undertake specific tasks in the ICT sector. Some of the associations included:

- (a) The Telecommunication Regulators Association of Southern Africa (TRASA (1997) now CRASA), which was established to coordinate and harmonize regulatory issues in the wake of accelerated transformation in this sector; and
- (b) Southern Africa Telecommunications Association (SATA), an association of all SADC Telecommunications operators, aiming to harmonize interconnectivity in terms of setting up of radio, fibre and microwave backbone links in SADC.

## **Box 1: RISDP Strategies and Vision for Transforming SADC into an Information-Based Economy**

### **Overall Goal**

The overall goal of the ICT intervention is to shift gear in order to move beyond the current emphasis on backbone infrastructure development towards addressing structural bottlenecks such as:

- Reinforcement of citizens' connectivity and ability to effectively use ICT and be involved in ICT planning and national development;
- Development of skills at individual and institutional levels to increase ICT use and capitalize on innovative ICT applications;
- Creation of conducive environments to ensure market development and public participation in the information and knowledge-based society;
- Building a self-sustaining process with the positioning of the community as an effective participant in the information and knowledge-based society - i.e. transition from e-readiness to e-participation

### **Areas of Focus**

- Creating the requisite harmonized policy environment, as well as legal and regulatory frameworks to promote ICT diffusion and use;
- Human resources development and institutional capacity building for rapid and effective ICT diffusion and use; and
- Promoting ICT applications across all sectors and improving universal access to ICT tools in order to improve efficiency and productivity.

### **Strategies**

#### **Policy and Regulatory Framework**

- Assist member States in the formulation of national ICT policies based on SADC guidelines;
- Promote the active participation in international ICT forums to learn from other experiences, and consolidate a SADC position in this regard;
- Establish a SADC database on e-readiness and undertake e-participation assessments for effective strategy formulation and knowledge exchange; and
- Build ICT literacy and awareness including commitment to the development of conducive policy environments and legal and regulatory frameworks for the knowledge-based economy.

#### **Human Resource Development and Institutional Capacity Building**

- Create knowledge society focal points and research/training networks - networks of excellence - which will provide expertise, lead in the development of national programs and act as a continuous resource for the development of the SADC knowledge society and knowledge based economy;
- Support key ICT research institutions, universities and other educational institutions through cheaper and faster internet access and partnerships with more advanced counterparts;
- Develop strategies which promote mass e-literacy and create a self-sustaining culture of ICT use and development; and
- Develop strategies and actions that ensure the diffusion and use of ICT in service delivery at all levels of social and economic development.

The purpose of the e-SADC Strategy Framework will therefore serve as a guideline for the implementation of the information society in the subregion. The specific objectives include the following:

- (a) Enhancement of connectivity and access to ICT services among and within the member States of the subregion;
- (b) Enhancement of connectivity and access to ICT services among and within the member States of the subregion;
- (c) Development of major aspects of e-applications including e-government, e-commerce, e-education, e-health, e-agriculture, among other sectors;
- (d) Where relevant, addressing policy, legislation, regulation, human and financial resources; and
- (e) Promotion of ICT use for regional economic integration.

## 1.1 The strategy context

The development of the e-SADC Strategic Framework is in line with the following global, regional and subregional ICT development pronouncements and undertakings to which SADC member States are signatory.

## 1.2 World Summit on the Information Society (WSIS)<sup>4</sup> process

The World Summit on the Information Society (WSIS) is an initiative of the 1998 Plenipotentiary Conference of International Telecommunication Union (ITU). It was endorsed by the United Nations General Assembly as an effective means of assisting the United Nations in fulfilling the goals of the Millennium Declaration. The first phase of the WSIS, held in Geneva from 10 to 12 December 2003, provided a global platform where key players: governments, United Nations agencies, private sector and the civil society, came together to develop a common vision and an understanding of the information society and adopt a declaration and a plan of action.

The Summit adopted a Declaration of Principles and a Plan of Action<sup>5</sup>, setting the stage for international cooperation to close the existing digital divide between developing and developed countries while involving all stakeholders in building an inclusive information society. Heads of States and stakeholders from around the World recognized and endorsed the need to create an enabling environment based

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<sup>4</sup> [www.itu.int/wsisis/](http://www.itu.int/wsisis/)

<sup>5</sup> The World Summit for the Information Society (WSIS) Plan of Action, Document WSIS-03/Geneva/Doc/5-E, Geneva, December 2003.



on clear policies, laws and regulatory frameworks to enable universal, equitable and affordable access to the knowledge-based society.

Building on what was achieved during the first phase, the second phase held in Tunis from 16 to 18 November 2005 adopted the “Tunis Commitments” and the “Tunis Agenda for the Information Society”. At both meetings, leaders from Africa and around the globe recognized the significant role of ICTs as a catalyst for facilitating the achievement of the Millennium Development Goals (MDGs).

### 1.3 African Information Society Initiative

Recognizing the important role ICTs play in facilitating the attainment of development goals and responding to the challenges of the information age in Africa, the ECA launched AISI in May 1996 as a common vision, not only to bridge the digital divide between Africa and the rest of the world, but more importantly, to create effective digital opportunities to be developed by Africans and their partners, and speed the continent's entry into the information and knowledge global economy (box 2).

#### Box 2: AISI Objectives

AISI is a common vision for Africa's quest to bridge the digital divide. It was adopted by ECA Conference of Ministers, in May 1996 and subsequently endorsed by the Organization of African Unity Heads of State and Government at Summit meetings including the 1997 G-8 Summit. Several implementation activities have taken place in the following areas:

- (a) Policy awareness;
- (b) Training and capacity building;
- (c) National Information and Communication Infrastructure (NICI) plans;
- (d) Development information;
- (e) Democratizing access to the Information Society;
- (f) Sectoral applications; and
- (g) Infrastructure development and Internet connectivity.

Since the launch of AISI, ECA has been supporting member States to embark on development of National Information and Communication Infrastructure (NICI) policies, plans and strategies. The first African Development Forum (ADF-I)<sup>6</sup> organized in October 1999 by the ECA with the theme, “The Challenges of Globalization and the Information Age” proposed strategies and actions to be undertaken within the AISI framework, to accelerate Africa's socio-economic development efforts in the Information Age.

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6 [www.uneca.org/adf99](http://www.uneca.org/adf99)

In addition, Africa's commitment to ICT for development has been demonstrated through the NEPAD Action Plan, where ICTs have been identified as a key priority sector, with projects and initiatives to speed up subregional/regional connectivity and inter-connectivity plans. Most recently, the African Union Heads of State and Government affirmed Africa's commitment to ICT for development by adopting a Declaration that called on African countries to prioritize ICTs as a vehicle for driving Africa's development agenda (box 3).

### Box 3: AU Summit Declaration

At the Fourteenth Ordinary Session of the African Union Assembly in Addis Ababa, Ethiopia on 31 January 2010 and 1-2 February 2010, ICTs in Africa and related development challenges and prospects were chosen as the overall theme. In a Declaration (Doc. Assembly/AU/11 (XIV), the Heads of State and Government underscored the importance of ICTs and outlined their priorities.

In the Declaration, African leaders stated that they were determined to take all the necessary steps to strengthen their common institutions and provide them with the necessary resources to enable them to fulfill their mission efficiently including implementation of the Action Plan of the WSIS. They also noted that attainment of the MDGs depended "not only on the ability of our States to make use of the enormous potential offered by Information and Communication Technologies but also on their will to provide this sector with increased and sustained investment".

Signatories agreed *inter alia* to intensify activities to harmonize of telecommunication and ICT policies and regulations in Africa; strengthen national programmes and regional cooperation for the development and interconnection of broadband infrastructures, the deployment of Regional Internet Exchange Points, and the improvement of rural area connectivity; accord particular attention to the postal sector; develop programmes and actions on relevant ICT training, particularly for national and regional regulatory organs; promote research and development actions and an environment favourable to innovation and entrepreneurship in the ICT sector; support operationalization of the Forum of Telecommunications Regulators' Assembly; encourage national and regional harmonization and efficient management of radio frequency spectrum and promote a coordinated approach for the efficient development of broadband services; and promote favourable regulatory environment for the implementation of innovative public-private partnership and financing models, the sharing of infrastructure, favourable taxation on ICT equipment as well as measures needed to lower the tariffs and provide better quality of service in the sector.

The AU Commission was requested to set, in collaboration with the RECs ECA, ITU, higher education and research institutions and the ICT sector's specialized institutions in Africa, an African digital agenda identifying the main stages in establishment of a harmonized African ICT market by 2020; and to develop a coherent and integrated approach as well as a coordination mechanism involving the key African stakeholders and development partners for the implementation and follow up of this Declaration.

### Box 3 contd.

Finally, the Declaration appealed to the development partners, especially the financing institutions, to support the implementation of this Declaration and integrate Telecommunications and ICT into their priorities by granting them financing conditions similar to those of other basic public utility infrastructures.

*Source: African Union Declaration (Doc. Assembly/AU/11 (XIV)) adopted by the Fourteenth Ordinary Session of the Assembly in Addis Ababa, Ethiopia on 2 February 2010.*

## 1.4 Common Market for Eastern and Southern Africa (COMESA)

More than half of SADC members States are members of the Common Market for Eastern and Southern Africa (COMESA)<sup>7</sup>, and in line with the Treaty establishing COMESA, the member States are harmonizing their policy and regulatory frameworks in order to create an integrated ICT market and promote regional connectivity in line with the objectives of SADC.

The subregion adopted the COMESA ICT Policy and accompanying Model Bill in March 2003 as a guideline for use by member States in reforming their communications policies and legislation within a period of five years. A five-step, five-year (2003-2007) action plan for integrating the principles and strategies in the ICT Policy and Model Bill into the regulatory frameworks of member States was proposed. These steps included:

- (a) Adoption or modification of policy and legislation;
- (b) Establishment or strengthening of regulatory authorities;
- (c) Liberalization of cellular mobile operations and value-added services;
- (d) Privatization of State-owned telecommunication operators;
- (e) Introduction of competition into fixed telecommunications network operations and services.

### Box 4: COMESA/SADC member States

*Democratic Republic of Congo*  
*Madagascar*  
*Malawi*  
*Mauritius*  
*Seychelles*  
*Swaziland*  
*Zambia*  
*Zimbabwe*

Most COMESA countries were expected to complete the fundamental changes contemplated in the COMESA ICT Policy and Model Bill earlier than the 2008 target <sup>8</sup>, and the strategies and guidelines for ICT applications or electronic strategies (e-government, e-commerce, e-education, etc.) were designed to be adopted at a later stage. A draft COMESA ICT Strategy, which was an attempt to systematize ICT acquisition, development, and use and to identify relevant ICT sectoral priorities, was developed in 2008 with ECA support.

## 1.5 Opportunities, challenges and constraints

This section highlights the major opportunities, challenges and constraints faced by SADC member States in relation to the digital economy. The detailed analysis of opportunities and constraints are presented in phases 1 and 2 of the assessment reports (annex 1).

### 1.5.1 Opportunities

- (a) The benefits of using ICT in business are enormous and include improved efficiencies, widening of markets, reduction in the cost of transactions, removal of distance limitations, removal or replacement by electronic agents of some intermediaries, increased access to goods and increased access to financial services for the unbanked, enhanced competitiveness in all spheres of business such as tourism, leisure, agriculture, etc;
- (b) The use of ICTs can assist governments in enhancing productivity in areas such as education and health and achieve better and faster cross-border operations such as the single visa (Univisa) and the Automated System for Customs Data (ASYCUDA) initiatives in SADC and COMESA respectively;
- (c) ICTs can facilitate collaboration in education, health - the current Pan-African e-network project supported by the Indian Government;
- (d) ICTs can enhance small and medium enterprises (SMEs) with the help of ICT enabled villages and communities' productivity and market access;
- (e) The use of ICTs offers the possibility of enhancing government transparency and corruption reduction through online availability of services as well as reduction of intermediaries, particularly in government procurement services;

### 1.5.2 Challenges

Although ICTs, if utilized appropriately, offer enormous benefits, there are still a number of challenges that need to be addressed to realize these benefits:

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8 COMESA ICT Policy and Regulatory Assessment (2003).

- (a) On the policy, legal and regulatory front, ICT policies/strategies become obsolete before full implementation;
- (b) Regulatory institutions lack the requisite capacity to implement policies, laws and regulations;
- (c) Institutional mechanisms are often non-existent, resulting in poor sectoral coordination combined with lack of high level leadership and commitment;
- (d) The financial and human resources required to deploy broadband infrastructure and the underlying services are huge and governments cannot afford to do it alone. A multi-stakeholder approach is necessary including collaboration and cooperation within and outside SADC;
- (e) The inability to develop an Information Technology (IT) industry within SADC stems from high technology deployment costs, coupled with low levels of innovation and technological development, as the member States continue to import both hardware and software;
- (f) Limited availability of ICT skills and high prices in SADC limit the rapid expansion of ICT use and negatively impact the quest to become a choice destination for outsourcing.

### 1.5.3 Limiting factors in the development and use of e-applications

In many SADC member States, the underlying ICT infrastructure, including optical fibre backbone networks has been deployed but with very limited use due to lack of e-applications. This requires the investment attraction in the development of these e-applications. In the past, e-applications were largely built or designed around the Internet, which in most member States had evolved around the Digital Subscriber Line (DSL) technology, which unfortunately is only accessible as far as where the copper network reaches. Content management and e-commerce formed the first generation of e-applications which were Internet based, but today's enterprises are global and a different approach is needed to implement e-applications. This means that Internet and mobile-based applications have to be combined to achieve organizational objectives. Today's businesses, customers and employees need anywhere, anytime access to relevant enterprise applications. Information and data are becoming increasingly critical and today's enterprises need to have both Internet and mobile-enabled solutions. For educational institutions and public or community communication centres, web-enabled applications should be considered.

Applications are either non-commercial or commercial and those with a huge societal impact include education, health, agriculture, environment and e-government. The WSIS Plan of Action cites e-government, e-business, e-learning, e-health,

e-employment, e-environment, e-agriculture and e-science as being the most important.

The assessment studies conducted identified the following as some of the factors affecting SADC member States in implementing e-applications:

**Table 1: Factors affecting SADC member States in implementing e-applications**

<b>Demand side</b>		<b>Supply side</b>
1	Unaffordable, inaccessible narrowband and broadband infrastructure, PC, mobile handsets	High price, shortage of international bandwidth
2	Lack of relevant local content	High cost of imported software license regimes
3	Unreliable, unavailable commercial mains power supply	Lack of incentives for investments in the rural areas
4	Theft of solar panels, computer equipment	Lack of skills in e/m applications research, development and modelling
5	Security concerns over government critical information on the Internet	Lack of skills and high prices hinder outsourcing
6	Entrenched culture of conducting business using paper trail as opposed to ICT means	Legal and regulatory frameworks impede ICT developments which are fast changing all the time, hence the lack of support and reliability
7	Low literacy rates - even the simplest ICT gadgets require some effort on the users' part	Donor-dominated supply of IT infrastructure and networks resulting in lack of standards
8	Institutional arrangements often play conflicting and opposing roles	Limited budgets for ICT programmes in national budgets
9	Lack of awareness of the benefits of ICT	Lack of a champion to drive the ICT agenda within government and nationally
10	Notion that all e-applications always require access to the Internet	Uncertainty over the true independence of the regulator

## PART II: The e-SADC Strategy Framework

### 2. Introduction

The e-SADC strategy framework assessment studies on opportunities, challenges and constraints revealed that SADC had several challenges that if not addressed could hamper the vision for transforming it into an information and knowledge-based society. E-readiness studies revealed that there were some SADC member States, which were ready to participate in the knowledge economy (see annex I). This was as a result creating a digital divide amongst member States, which could jeopardize regional integration. For SADC to refocus its vision, a three-theme strategy framework, taking into consideration the original SADC priorities and additional priority areas arising from country assessments, is proposed.

The three themes are:

- Theme 1: Enabling the delivery of quality ICT services
- Theme 2: E-applications and innovation
- Theme 3: Governance of e-SADC Strategy.

The seven strategic objectives geared towards the realization of the SADC vision are as follows:

#### 2.1 Strategic objective 1: Conducive legal, policy and regulatory environment for development of an ICT culture

Creation of a predictable, transparent and non-discriminatory policy, legal and regulatory environment necessary for development of the information society, is a prerequisite, if SADC countries are fully to benefit from the deployment and use of ICTs. The Community needs to enact cyber laws and regulations that are harmonized with a regional model. The convergence of networks and services requires harmonized convergence policies, laws and regulations that keep up with the changes in technology or are technology neutral.

##### 2.1.1 Strategic objective 2: Develop the ICT infrastructure and security

Globalization and regional integration require effective regional infrastructure to widen and integrate markets, achieve economies of scale, encourage participation

of the private sector and attract foreign direct investment and technology. The development of infrastructure is also critical for poverty reduction and achieving the MDGs in Africa. Increased market size through regional integration and lower prices through the benefits of economies of scale are examples of the impact of infrastructure development and regional integration in enhancing economic growth, improving living standards and reducing poverty. Despite the aforementioned benefits, infrastructure and regional integration have played a very limited role in SADC social and economic development. While the situation of infrastructure services is typically one of lack of coverage, poor maintenance and weak finance, some countries have been able to upgrade and expand their infrastructure base and improve services through a combination of policy changes, institutional reforms and investments.

Overcoming these problems would, in the first instance, require critical analysis of the issues and constraints, and development of an appropriate policy framework for infrastructure development and regional integration. Infrastructure development requires substantial capital expenditures, which have historically been financed through the public sector. Given the increasing demands on public funds, there is a need to address the issue of mobilizing additional resources, particularly from the private sector to meet the investment needs for infrastructure development and economic integration.

Development of information networks offering fast, reliable, secure and affordable access through competitive market conditions and through related innovation in network technology, services and applications is a critical requirement for the information society. To do this, a conducive environment for investment should be in place. Coordination with support infrastructure development such as roads, energy, water and national development programmes is critical for improved access, quality and reach. There is also need for a regional cyber security framework, model guidelines and standards to facilitate the harmonization of SADC rules and regulations.

### 2.1.2 Strategic objective 3: Invest in human resource development

The development of human resources, capable of responding to the demands of the information age through education and lifelong learning and addressing the rising demand for ICT professionals in many sectors of the economy is critical if SADC must be part of an information and knowledge-based economy. The optimal use of our regional ICT training institutions including colleges and universities and the sharing of these institutions should be encouraged for optimal use and to avoid duplication of facilities as well as establishment of multi-stakeholder partnerships and other innovative mechanisms for the sustainability of these programmes.



### 2.1.3 Strategic objective 4: Develop e-applications including e-government

E-applications entail the use of ICTs in sectors such as education, health and government, parliament, commerce and agriculture. Providing an enabling innovative pro-ICT policy, legal and regulatory environment is critical for the development of e-applications. Programmes such as the development of regional policy, laws and regulatory model guidelines and laws to harmonize national e-strategies to the regional framework, the development of regional guidelines and laws for integrating cross-border e-applications, play a critical role in development and deployment of e-applications for the intended objective especially in regional networks.

### 2.1.4 Strategic objective 5: Increase the use of ICT in business

Many factors still prevent government, private sector, corporations and SMEs, from fully realizing ICT benefits. The lack of confidence and trust in e-transactions is one major setback in the use of ICT in business. The limited availability of infrastructure, equipment, e-applications and skills due to pricing and obstructive policies, regulations is another impediment. Addressing these barriers through the development of policies, laws and regulations (i.e. taxes and duties, price regulation, education policy), human capacity-building partnerships, and innovative funding would ensure increased uptake and usage.

### 2.1.5 Strategic objective 6: Develop an ICT industry

For SADC to be a global player, it is critical to provide an environment that fosters global competitiveness. This will require investment in research and development and upscaling in the area of science and technology. Universities have to adopt curricula that are pro-science and innovation. SADC must embody north-south or south-south technology transfer, with intellectual property rights mechanisms that protect inventions but are flexible enough not to hinder access to information. There should be processes for the incubation of products and innovations and bilateral cooperation on the development of the ICT industry.

### 2.1.6 Strategic objective 7: Develop institutional mechanisms

The SADC Secretariat has to play a lead role in the development and implementation of the e-SADC strategy just as governments need to take up the lead in their respective countries if the ICT for development agenda is to advance. SADC must ensure that the Secretariat is capacitated and accorded the authority to spearhead development and where possible, must encourage governments to support development in areas where

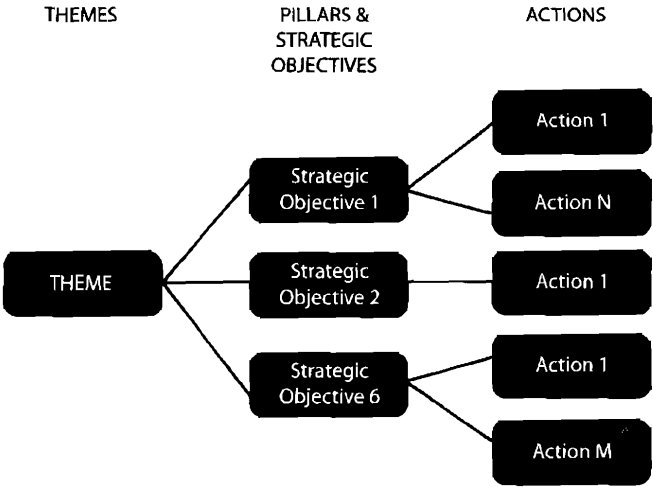
it is not lucrative for the private sector to invest. Commitment by all stakeholders is crucial for buy-in and ownership in the e-SADC Strategy. It is recommended that governments should create structures necessary to support management and coordination of ICT activities. The SADC Secretariat and governments should take a lead in establishing partnerships, providing project financial resources, and creating awareness regarding the benefits of ICTs. Monitoring and evaluation mechanisms should be put in place during implementation of the Strategy.

2.1.7 The e-SADC model framework

The e-SADC Strategy Framework recognizes the opportunities and challenges as well as the impact to be derived from taking advantage of the opportunities while addressing the challenges. This requires actions to maximize the opportunities and minimize the challenges/constraints through the development of a common reference framework to enhance e-readiness and guide e-usage and impact.

The Framework, if adopted and regularly updated through annual monitoring and evaluation mechanisms, would represent a regional approach to ICT development and building of the information society that allows for greater harmonization of national efforts in strategy and policy formulation and implementation. In line with the SADC Treaty, ICTs will have a substantial impact on regional cooperation and integration, provided suitable policies, programmes and mechanisms are established.

Figure 1: The e-SADC Framework Model



## 2.1.8 Priorities

The e-Strategy Framework aims at creating the necessary policy environment. It also sets appropriate goals and actions that will enable SADC economies to maximize the benefits emerging from the use of ICT, drawing upon existing efforts and ongoing work within SADC.

The Framework addresses issues that are macro and micro in scope including cross-cutting issues such as investments, regulation, private sector participation, political commitments, governance and human skills development. Furthermore, the constraints to the development of ICT will be addressed holistically in the Framework, which builds on and is fully consistent with the SADC ICT development priorities, including addressing factors to increase ICT impact.

The framework recommends a long-term and action-oriented plan under three themes:

## 2.2 Theme 1: Enabling the delivery of quality ICT services

Table 2: Theme 1: Enabling the delivery of quality ICT services

Strategic objective 1: To provide a conducive policy, legal and regulatory environment for the development of an ICT culture

Actions:

Enact digital/cyber security laws and regulations and continuously update the legal framework;

Develop a SADC regional cyber law model for adoption and harmonization;

Develop a SADC regional model on convergence;

Develop regional policy, legal and regulatory model guidelines and laws to harmonize national e-strategies with the regional framework;

Develop regional guidelines and laws for integrating cross-border e-applications;

Create an enabling policy, legal and regulatory environment and incentives conducive for both foreign and domestic investment and to facilitating electronic transactions;

Develop taxation policies needed to encourage the development of e-applications and other innovations;

Review the banking and financial services regulations to facilitate electronic transactions at national and regional levels.

Strategic objective 2: To develop ICT infrastructure and services

Actions:

Create an enabling environment for investment in infrastructure and technology development and increase infrastructure provision to achieve affordable access and enhance its use;

Coordinate the development of roads, energy supply and ICT infrastructure to enhance access and quality;

Develop and adopt a regional cyber security framework and model cyber security/crime legislation;

Deploy regional cross-border broadband networks and links to connect national capitals to the submarine cables;

Explore private-public partnerships and other similar mechanisms for the effective and efficient deployment of ICT infrastructure and services;

Build synergies amongst initiatives such as COMESA, EAC, SADC Tripartite and other continental initiatives.

Strategic objective 3: To invest in human resource development

Actions:

Develop human resources and skills which are critical to meeting the knowledge economy;

Develop a strategy to fill or compensate gaps in human resource needs;

Develop curricula (at all levels) that include an ICT component;

Equip teacher training colleges to prepare teachers in the integration of ICT in the curriculum;

Engage the public and private sectors in relevant training to meet the needs of the ICT sector;

Develop a skills-retention strategy (skills transfer, incentive programme);

Support regional research and development initiatives;

Build capacities of SMEs to embark on e-business;

Develop a regional programme for knowledge and skills development for the creation of an ICT labour pool for the information economy;

Strengthen and/or include ICT capacity-building programmes in regional and national centres of excellence;

Prioritize innovation in the development of the education curriculum from primary to tertiary levels, including lifelong learning;

Develop a regional capacity-building programme in partnership with the private sector;

Take advantage of existing human resources capacity-building programmes for ICT knowledge development offered by business and management schools.

For SADC to develop economically and compete in the information age, it requires a very robust policy, regulatory and legal environment combined with efforts to address the constraints that include inadequate infrastructure and issues related to human capacity.

## 2. 2.1 Policy, legal and regulatory environment

Policy, regulatory and legal issues will require action to harmonize policies and legal and regulatory frameworks around common standards in order to create a predictable,

transparent and non-discriminatory policy and regulatory environment necessary for realizing the benefits from ICT. ICT-related rules and practices should be responsive to the changes in economic transactions, while taking into account the principles of effective public-private sector partnerships, transparency and technological neutrality. The rules must be predictable and inspire business and consumer confidence.

## 2.2.2 ICT infrastructure and services

Building telecommunications infrastructure and technology to harness the benefits from use of ICT requires policies and actions that target basic and broadband infrastructure and technology requirements. Networks and services continue to evolve around the Internet, open architecture and wireless infrastructure. These dimensions bring to the fore security aspects which should be addressed by policies and actions. These aspects include on-line transactions, electronic authentication and signatures, network and information security, personal data protection and consumer trust, access to digital information, development of standards and ensuring compliance. This then calls for the promotion of competitive, affordable and non-restrictive access for all and the deployment of reliable, fast and affordable non-IT services and distribution channels which meet the diverse needs of customers while being economically sustainable.

## 2.2.3 Human resource development

Enhanced human capacity is fundamental to maximizing the benefits of ICT usage including harnessing the enormous potential towards contribution to social and economic development goals. The realization is dependent on the ICT usage and in skills and ability to create influential social and economic networks for enhancing information exchange.

Education and training are vital for ICT development and usage. Emphasis should therefore be placed on providing comprehensive, high-quality education and training and skills development programmes, including basic education and distance and lifelong learning. This calls for policies that promote broad access to skills and competencies and especially the capability to learn and ICT literacy. This includes providing broad-based formal education, establishing incentives for firms and individuals to engage in continuous training and lifelong learning in order to facilitate continuous learning and re-skilling, thereby matching labour supply and demand to the skill requirements<sup>9</sup>. SADC member States should recognize the importance of ICT as a core competency for teaching and learning programmes. ICT skills development must be intensified whilst ensuring that ICT training is compulsory in all schools,

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<sup>9</sup> [www.trinity.unimelb.edu.au](http://www.trinity.unimelb.edu.au)

such that each member State possesses the requisite human capacity to exploit and develop new technologies that meet national development requirements.

Societies today are far more dependent on technology-mediated communication than before<sup>10</sup>. Business to consumer interaction is increasingly being conducted over the networks. For all members of society to remain active in the knowledge society, measures have to be put in place for lifelong learning to cope with the demands of the Information Society. SADC has a number of centres of excellence and some member States are in the process of setting up such facilities operating in a synergistic manner. As the Community continues to develop and close skills gaps, it is important to pay attention to skills-retention programmes to keep skills within SADC.

A number of strategic actions to enable the delivery of quality ICT services are outlined as follows:

## 2.3 Theme 2: E-applications and innovation

**Table 3: Theme 2: E-applications and innovation**

Strategic objective 4: Development of e-applications including e-government

Actions:

Develop common standards to enable e-applications to facilitate cross-border and regional services and transactions, including banking and financial transactions;  
Promote and provide incentives for the development of innovative e-applications relevant to regional needs; and  
Initiate an e-government programme to promote more efficient regionally based applications to better serve citizens, businesses and consumers.

Strategic objective 5: Increase the use of ICTs in business

Actions:

Introduce regional measures such as certification, authentication to ensure trust in the use of e-services and e-commerce; and  
Remove barriers to increased use through PPPs and other mechanisms in the development of e-applications.

Strategic objective 6: Developing an ICT industry

Actions:

- Engage in regional programmes to promote innovation that leads to the development of the local ICT manufacturing including the support of research and development in institutions of higher learning;
- Develop regional partnerships amongst member States already involved in the ICT industry;

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10 [www.ICTregulationtoolkit.org](http://www.ICTregulationtoolkit.org)

#### Actions:

- Develop regional standards and agreements with upstream suppliers, to achieve economies of scale;
- Explore the potential of developing a regional ICT manufacturing industry and ICT services sector;
- Promote entry into the ICT Industry through PPPs and other mechanisms in the development of e-applications;
- Promote incubation for start-ups and also for commercializing research and development;
- Provide for innovation and technology diffusion by structuring Intellectual Property Rights (IPR) regimes to bolster innovation.

### 2.3.1 E-applications

E-applications and innovation can be an effective means to improving the delivery of public services and business transactions. With respect to public services this can also enhance the timeliness and relevance of information published on the government website and the communication flows among government offices. This also has relevance at the regional level, especially for promoting e-applications and e-government for the delivery of regionally integrated services. E-government for regional integration can be useful in promoting common standards, efficiencies, quality and transparency in regional public services and goods through the delivery of regionally integrated e-government applications with the objective of strengthening and harmonizing national and regional e-government processes.

### 2.3.2 ICTs in business

In relation to business transactions, e-applications and innovation must be viewed as a strategic business tool and can be very useful in many areas of business to improve efficiency, reduce costs, improve customer satisfaction and facilitate communication and information sharing. The Business Competitiveness Index sees a correlation between improved productivity and increased competitiveness. In order to ensure the inclusion of all sections of society, efforts should be made to liaise with other institutions such as banking regulators to facilitate innovations in their respective sectors.

### 2.3.3 ICT industry

The ICT industry is driven by innovation, creativity, technological expertise and entrepreneurship. Its development requires a holistic approach to addressing opportunities and challenges. It is also well recognized that information and knowledge-based economies are characterized by targeted investment in cutting-edge research and development. Higher levels of research and development are correlated with higher levels of economic performance and thus, its importance cannot be overlooked as economies become more knowledge-based. Countries that have taken the lead are reaping the benefits of the potential of research and development and accelerated innovation and are also taking advantage of emerging global markets.

It takes vision, commitment and leadership, including strong public-private partnerships to develop an ICT industry. Inventors of IT products and services are very sensitive to their inventions being replicated and as such will seek to see measures in place for the registration and protection of IPR. IPR is an instrument with which government could provide incentives for invention and diffusion of technology by structuring its regimes to bolster innovation and economic growth. The IT industry also requires simplified dispute resolution mechanisms as traditional dispute settlement means do not suit the needs of IT<sup>11</sup>. The expertise required in the IT industry calls for SADC to venture into north-south or south-south cooperation and partnerships.

E-application and innovation should be anchored on appropriate policy, legal and regulatory environment to facilitate the expansion of e-commerce and new e-services as a profitable way of doing business. Member countries should work with all stakeholders to introduce regulatory reforms including rules and practices to reflect a constantly changing ICT environment.

Furthermore, the policy, legal and regulatory environment should foster transparency with greater investor protection to increase the availability of capital to develop ICT. SADC should encourage the development of e-governance standards for the access and use of ICT by various groups with the aim of ensuring rights to information and protection of information and data.

Efforts to enhance e-application and innovation should also take into account the human capacity needs. Having a pool of ICT professionals is vitally important for the survival and development of ICT companies. SADC, in addressing the human capacity needs, should apply various approaches to respond to the demand and supply issues as well as stimulate competitive advantage. Therefore, this plan of action includes activities to bring education providers and employers together, to work collectively on making sure provision is made to meet the needs of the ICT sector.

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11 [www.mcit.gov.eg/](http://www.mcit.gov.eg/) Info Industry Dev



The framework seeks to address e-application and innovation through a number of strategic objectives and related actions outlined as follows:

## 2.4 Theme 3: Governance of e-SADC strategy

**Table 4: Theme 3: Governance of e-SADC strategy**

Strategic objective 7: Development of an institutional mechanism

### **Governance**

Actions:

Strengthen SADC Secretariat to facilitate implementation, monitoring and evaluation of progress;

Strengthen the regional ICT implementing agencies to drive the ICT agenda.

### **Financing**

Action:

Adopt regional sustainable financing mechanisms with emphasis on domestic sources.

### **Multi-stakeholder partnerships**

Action:

- Strengthen existing regional multi-stakeholder forums, engage them in policy making, and build synergies.

### **E-SADC communication strategy**

Actions:

- Engage with the regional ICT professional networks and media bodies to develop and rollout the communication strategy;
- Develop a regional media training programme to create awareness on ICT reporting.

### 2.4.1 Governance

Governance of the e-SADC Strategy embraces action to enhance e-governance, promote partnerships, address sustainable financing, awareness creation and information dissemination and implementation progress reporting and monitoring and evaluation mechanisms.

To benefit from ICT opportunities, special attention should be accorded to e-governance, especially with respect to providing visionary leadership and commitment. Countries where government leadership in ICT for development activities has been conspicuous have enjoyed success in such initiatives. Governments' role in creating a competitive climate in all industries as well providing for educational institutions can assist the human resources development agenda. Government can provide the necessary resources needed to effectively manage ICT processes as well as participate in international forums at which Internet governance issues are deliberated. Leadership is recognized as having an inspirational role in building commitment to a shared vision and collaboration among companies and between industry and government.

## 2.4.2 Multi-stakeholder partnerships

Enhancing multi-stakeholder partnerships, which include governments, international organizations, the private sector, regulators, NGOs, civil society, research and development institutions and development partners will contribute towards building synergies and allow for a multi-stakeholder approach to addressing the multi-faceted issues in the e-SADC Strategy. Multi-stakeholder partnerships will require governments creating an enabling environment for partnerships to thrive, with the partners committing to ensuring partnership success.

Regulators, on their part, have to ensure a level playing field for all operators, implement policies and laws speedily, protect consumers and ensure that they keep abreast with technological changes. As and when necessary, regulators must facilitate a level playing field for all operators, including new entrants.

In SADC member States, there is a section of the private sector which is interested in investing in the ICT sector. While local, national interest in investing in ICT is growing, at present, most of the interest is from other countries within the subregion. Challenges which potential investors face include lack of incentives, exclusivity requirements and lack of the necessary infrastructure. There is need to identify and create special incentives for the sectors that serve as a boost to ICT utilization. This presents an opportunity for governments to explore the possibility of private sector investment and effective participation in the sector.

Higher education and research institutions should also provide technical and scientific backstopping for primary and secondary school curricula and for teaching of ICT subjects in order to develop a culture of ICT use in young children. The ICT culture would also establish the often forgotten link between the different levels of education. ICT teacher-training programmes should accompany the design of the ICT syllabus. Local governments and/or communities must provide infrastructure and facilities, while the higher education and research institutions must provide the knowledge.

The participation of civil society in the information society in SADC member States is crucial for promotion of sustainable and balanced development. Civil society can provide leverage to influence policy and ensure that strategies and plans enable development and building of an information society based on social justice and human development.

Because of this critical role which civil society can play, it is important to promote awareness of the issues related to ICT policies, strategies and plans, as well as to clarify the role of each stakeholder and build the capacity of civil society to participate in the WSIS process.

Most NGOs operate at the grassroots level and are knowledgeable about the challenges and possible interventions that could be introduced to improve the socio-economic conditions in the communities in which they operate. One of the main challenges encountered by NGOs, however, is that they often operate in isolation from the main government programmes and in many cases end up not being able to sustain the activities in which they are involved, in the long term. Governments therefore need to establish a strategic relationship with NGOs and encourage them to be involved in ICT programmes following the ICT national strategy. In this regard, one of the areas that could benefit from partnership is in human resource development and education in order to increase the number of ICT-skilled people. Employment in the knowledge-based economy is characterized by an increasing demand for more highly skilled human resources for developing and maintaining a competitive edge on the global market. Educated and skilled human resources or human capital have become the most valuable asset and a central pillar in development and growth.

Many development partners are active subregionally in the area of ICT in SADC and in member States. In general, they tend to implement “quick win” hardware-based ICT projects with little continuity and sustainability. Such hardware is acquired, in many cases, outside an established framework. Moreover, some projects leave out important aspects that could contribute to the sustainability of their activities. Donor activities should contribute to human resource development and ICT skills building, transfer of technology, technological innovations and technology incubators, thereby promoting the development of a knowledge base which would support a wide range of projects, from those of rural communities to those of government departments.

### 2.4.3 Financing

ICT-related infrastructure development needs are a high priority for all SADC countries and the current financing levels have not been adequate to meet the needs, although there are many different funding mechanisms supporting ICTs in place. Public and private finance can be important sources for investment in ICT infrastructure and technology development.

In order to adopt ICT a priority in transforming SADC into an information-based economy, the first port of call, that is, to narrow the digital divide in so far as basic services are concerned, has been accomplished largely through the widespread availability of mobile services. However, a new divide is now surfacing around speed and quality. According to the National Academic Press Report of a symposium (2006) on “the Telecommunications Challenge”<sup>12</sup> broadband is central to community development in that it has affected every aspect of a community: economic activities, development, education, and delivery of health care and government services. Broadband is the

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<sup>12</sup> [www.nap.edu](http://www.nap.edu)

driving force behind the individual and social activity that people are willing to pay for, be it information and entertainment media or “simply talking to someone somewhere else”. Accessibility and affordability of ICTs are critical if all citizens are to access the information they need for their developmental needs. Exploiting the opportunities and constraints, developing the relevant applications, developing and retaining the much needed ICT skills and facilitating the development of e-transaction capacity requires huge financial investment, skills transfer, entrepreneurship development, a conducive legal and regulatory environment and multi-stakeholder partnerships. Government leadership, commitment and willingness to create the right institutional mechanisms for ICT projects are of critical importance. The e-SADC Strategy identifies these gaps and recommends remedial action for each member State.

#### 2.4.4 E-SADC communication strategy

Awareness creation and communication dissemination should ensure understanding and support by all stakeholders of the e-SADC Strategy. The communication strategy should be anchored on: enabling the delivery of quality ICT services; e-applications and innovation; and governance of the e-SADC strategy. Monitoring and evaluation mechanisms to track implementation of the e-SADC Strategy will be an integral component of the governance architecture. This will be necessary to assess progress, refocus and adapt strategy to changes in the environment. Monitoring and evaluation should be a core SADC Secretariat function. SADC may have to consider setting up a programme to monitor and evaluate progress annually, beginning from 2011.

A number of issues that the Community has to consider in demonstrating commitment and leveraging the benefits from ICT are discussed below.

### 2.5 Strategy implementation enabling factors

The successful implementation of Strategy objectives will depend on an integrated approach underpinned by strategic synergies and partnerships between the public and private sector as well as civil society at both the national and regional levels. Some of the preconditions and interventions for the sustainable implementation of the strategy activities discussed below.

- **Political will** - the most important role for governments in SADC will be to provide vision and leadership in the area of ICTs. The structural transformation of ICT institutions is essential in order to achieve objectives that have been set for the growth of ICT services, in an investor-friendly environment, which is conducive to rapid development. Political will and

leadership will be indispensable and championship at the highest level is therefore paramount.

- **Necessary policy environment** - a series of institutional factors inherent in each country determine the way ICTs affect national development and in turn, regional integration and growth. These include factors such as the robust policy, regulatory and legal environment necessary for realizing ICT benefits; building of infrastructure; and enhancing human capacity.
- **Financial resources** - the lack of financial resources needed to implement most programmes and projects delays successful execution of the intended goals and objectives. Funding is not always adequate to meet demand and therefore rigorous planning processes which match demand to available financial resources is desirable. Government's role in the financing of ICT should include the dedication of an appropriate budget and resources for sustaining this cross-cutting development-enhancing sector and the establishment of a conducive/enabling environment in the form of policy, legislation and regulation and other related issues to attract investment. In this context, government should allocate a certain percentage of national budgets to ICT activities in various ministries, departments and agencies. In addition, it should mainstream ICT funding in its various programmes from development assistance frameworks. Since government does not usually have the resources to provide all the necessary tools and solutions, the private sector should be encouraged to pursue a more proactive role in facilitating the development and implementation of various ICT applications through innovative financing schemes.
- **Human resource and skills** - human resources and expertise in the area of ICTs are factors that can potentially have a direct impact on strategy implementing activities. The effective use of ICT presumes a literate population able to use the tools provided by the new technologies. Insufficient training in areas most relevant to the achievement of the intended use and adoption of ICTs could be a significant barrier to achieving the expected country outcomes. Programmes that continuously enhance innovation, creativity, technological expertise, entrepreneurship and full utilization of available technologies to enhance growth and development, should be in place.

10. [www.zicta.zm](http://www.zicta.zm)
11. [www.wec.org](http://www.wec.org)
12. [www.unesco.org](http://www.unesco.org)

# Annex I

## ICT Development in SADC

This section gives a picture on the status of ICT development in SADC, showing the e-readiness status of member States. The section briefly reviews ICTs in the areas of legal and regulatory reforms; national ICT policies; national development plans and development strategies; basic communications services and internet connectivity; affordability and accessibility; universal access, cyber laws and ICT-related taxes; digital television broadcasting migration and policy on broadband; connectivity to rural/remote, disadvantaged communities and schools and cross-border broadband connectivity among other ICT indicators.

### Legal and regulatory reforms

In the area of legal and regulatory reforms, SADC member States, with the exception of Swaziland, have been successful in introducing the three-tier separation of power, with government responsible for policy frameworks, independent regulators responsible for licensing and managing scarce national resources, and a multiplicity of providers particularly in the mobile and value added services sector, responsible for providing services. There is a converged regulatory regime that exists in Lesotho, Mauritius, South Africa, Tanzania and Zambia. There is also a technology neutral licensing regime which exists only in Botswana. Competition in fixed services exists only in Mauritius and South Africa, while in mobile it exists in all member States except Swaziland.

### National ICT policies, national development plans and poverty reduction strategies

Almost all countries have now put in place national ICT policies linked to the national development plans and poverty reduction strategies. These national policies contain pillars which are contained in most benchmarked policies in both developing and developed countries. The table below shows the status of the ICT policies and strategies in SADC. It is observed from table 5 that most of the countries have taken policy strides towards ICT development.

Table 5: Status of policy/strategy implementation

Country	Existence of a national strategy	Implementation status
Angola	A plan known as "Strategy for the Development of Information Technology 2000-2010" has been elaborated	The Government of Angola created a National Commission for Information Technology by decree no. 6/2002 of 4 April 2002. <sup>13</sup>
Botswana	A plan known as the Maitlamo-National Policy for ICT Development, 2007 has been established	The policy is being implemented under various initiatives such as "Connecting communities", "Thuto- Net (school Connectivity) and "Government on-line" <sup>14</sup>
DRC	National ICT Policy <sup>15</sup> exists	Needs to develop strategy
Lesotho	National ICT Policy 2008 <sup>16</sup> is in place	Needs strategy development
Madagascar	Has a plan developed by Ministry of Telecoms, Posts and Communications in collaboration with UNDP	Has an action plan 2007-2012
Malawi	The process of developing a national strategy started in 2002	The ICT policy framework was finalized in May 2002. The NICI plan is being finalized
Mauritius	The National IT strategic plan of 2007/2011	124 projects cutting across various sectors such as education, tourism, health, industry, agriculture and government are being implemented with a view to making ICT the fifth pillar of the economy and transforming Mauritius into a regional ICT hub
Mozambique	Has a 2002 strategy <sup>17</sup>	Needs updating as per the OSISA report
Namibia	Namibia has a 2009-2013 strategy in place	Government adopted and launched strategy in 2010
Seychelles	A National strategy on ICT has been put in place <sup>18</sup>	The implementation started on many sectors linked to trade and capacity-building
South Africa	ISAD 2010-2013 <sup>19</sup>	Strategy is in place
Swaziland	Swaziland has a NICI policy adopted by Government in 2006	An implementation plan is under development
Tanzania	The national ICT policy (2003) is in place	Needs to develop strategy as per OSISA report
Zambia	The national policy was completed in 2006 <sup>20</sup>	It is being implemented as evidenced by the new ICT Act of 2009, the Postal Act of 2009 and the Electronic Communication and Transactions Act
Zimbabwe	An e-Strategy 2010-2014	Strategy is in place

13 <http://www.uneca.org/aisi/nici/Angola?angola.htm>

14 Government Paper No 3 of 2007- National Information and Communications Technology Policy

15 [www.infodev.org](http://www.infodev.org)

16 <http://mediaresearchhub.ssrc.org/ict4d/ict-policies-1/>

17 [www.ifopol.gov.mz](http://www.ifopol.gov.mz)

18 Workshop on the Formulation of the Seychelles ICT Strategic Pal 15 to 19 October 2007

19 <http://www.ist-africa.org/home/default.asp?page=doc-by-id&docid=3577>

20 10<sup>th</sup> Forum on Telecommunications/ICT Regulation and Universal Service Development: The Zambian Experience



## Basic communication services and internet connectivity

Basic communication services, largely through mobile platforms, have reached an average of 50 per cent teledensity, with two member States having a mobile phone teledensity above 100 per cent. Internet connectivity remains very low in the region with most of the member States still falling below the African average of 6 per cent. Comprehensive data collection on Internet connectivity remains a challenge in the region primarily because the network and services are highly competitive. This makes operators reluctant to provide data, and even where such data are available, there is no split of the figures between narrow and broadband, fixed and mobile connectivity. The tables below reflect the available indicators in fixed, mobile and internet services: In terms of the fixed line teledensity, it is observed that South Africa, Mauritius and Seychelles have relatively higher levels of teledensity; and in terms of mobile phone teledensity, Botswana, Seychelles, South Africa and Mauritius lead the region, while Mauritius, Seychelles and South Africa lead in terms of Internet access.

Table 6: National ICT indicators - Fixed

Country	Population (million)	GNP (USD)	Fixed subscribers (000)				
			2009 <sup>21</sup>	2008 <sup>22</sup>	2007 <sup>23</sup>	Tele- density 2008	Growth 07/08
Angola	15.1	1030	100	114	982	0.66	(88.36)
Botswana	1.7	434	44	142	137	8.49	3.94
DRC	62.64	115		22	97	0.03	(77.32)
Lesotho	2.01	823	42	65	53	2.08	22.79
Madagascar	19.68	397		165	134	0.84	23.15
Malawi	13.9	170	111	175	175	5.75	(0.11)
Mauritius	1.2	4434	379	365	357	31.59	2.02
Mozambique	18.8	234.3	78	78	67	0.42	16.87
Namibia	2.07	2250.3		140	138	6.76	1.38
Seychelles	0.09	10944		22	21	24.78	8.25
South Africa	48.5	5815	4,500	4,425	4,642	9.28	(4.67)
Swaziland	1	2515	44	44	40	4.4	10.00
Tanzania	38.7	408	50	124	237	0.13	(47.65)
Zambia	9.9	380	91	91	92	0.91	(1.31)
Zimbabwe	13.2	440		348	345	2.63	1.02
SADC	248.49					6.58	-8.67

21 CRASA AGM 2009, Livingstone, Zambia

22 [www.itu.int/ICTIndicators](http://www.itu.int/ICTIndicators)

23 [www.itu.int/ITU-D/ict/statistics/at\\_glance/](http://www.itu.int/ITU-D/ict/statistics/at_glance/)

Table 7: National ICT indicators-Mobile

Country	GNP (USD)		Mobile subscribers (000)			Tele-density 2008	Growth 07/08
	Population (m)		2009	2008	2007		
Angola	15.1	1030	5,632	6,673	3,307	37	102
Botswana	1.7	434	1,834	1,486	1,427	108	4
DRC	62.64	115		1,807	6,592	3	
Lesotho	2.01	823	550	581	456	27	27
Madagascar	19.68	397		4,835	2,218	25	118
Malawi	13.9	170	1,508	1,781	1,051	11	69
Mauritius	1.2	4434	1,049	1,033	936	87	10
Mozambique	18.8	234.3	4,405	4,405	3,300	23	33
Namibia	2.07	2250.3		1,052	800	51	32
Seychelles	0.09	10944		94	77	104	21
South Africa	48.5	5815	50,000	45,000	42,300	103	6
Swaziland	1	2515	531	470	380	53	24
Tanzania	38.7	408	11,500	13,006	8,252	30	58
Zambia	9.9	380	3,539	3,539	2,639	35	34
Zimbabwe	13.2	440		1,656	1,226	13	35
SADC	248.49			87,418	74,961	47	41

Table 8: National ICT indicators-Internet

Country	GNP (USD)		Internet (000)			Tele-density 2008	Growth
	Population (m)		2009	2008	2007		
Angola	15.1	1030		107	95	0.7	
Botswana	1.7	434		10	80	0.58	
DRC	62.64	115		-	230	0.36	
Lesotho	2.01	823		3	52	2.56	
Madagascar	19.68	397		11	110	0.05	
Malawi	13.9	170	105	105	140	0.76	
Mauritius	1.2	4434		200	320	16.63	
Mozambique	18.8	234.3		-	178	0.95	
Namibia	2.07	2250.3		90	101	4.87	
Seychelles	0.09	10944		6	29	32.22	
South Africa	48.5	5815	8,000	3,566	5,100	16.49	
Swaziland	1	2515	80	20	42	4	
Tanzania	38.7	408		-	384	0.99	
Zambia	9.9	380	73.156	13	500	0.74	
Zimbabwe	13.2	440		100	1,351	0.75	
SADC	248.49					5.51	

## Affordability and accessibility

Affordability and accessibility are still major constraints particularly in rural and remote areas. Prices of terminal equipment as well as usage fees continue to be outside the income levels of most rural folk. The targeted citizens often find the ratio between tariffs and annual disposable income to be on the high side since most rural folk live below the poverty line. Low population in areas to be served also limits infrastructure rollout. Roads and energy infrastructure constraints also contribute to the accessibility problem. Below is a table of indicative charges extracted from one of the returned e-questionnaires. The tables reveal that intra-SADC communication costs are almost as expensive as communication costs between SADC and UK or USA.

### Own network:

Table 9: Sample pricing

Fixed	\$ 0.10/ minute
Mobile	\$ 0.28/minute (peak period 07:00hrs – 19:59hrs) \$ 0.18/minute (Off-peak period 20:00hrs – 21:59 hrs) \$ 0.11/minute (Value period 22:00hrs -06:59hrs)
Data	\$ 0.25/Megabyte
London UK	\$1.00/minute (peak period 07:00hrs -19:59hrs) \$ 0.90/minute (off-peak periods 2000hrs -21:59hrs) \$.54/minute-fixed
Washington USA	\$1.05/minute (peak period 07:00hrs -19:59hrs) \$ 0.90hrs/minute (off peak periods) \$ .85/minute (fixed)

### Across networks:

Fixed to mobile	\$ 0.23/ minute
Mobile to fixed	\$ 0.28/minute (peak period 07:00hrs – 19:59hrs) \$ 0.18/minute (off-peak period 20:00hrs – 21:59 hrs) \$ 0.11/minute (Value period 22:00hrs -06:59hrs)
Intra SADC	\$ 0.85/minute (peak period 07:00hrs – 19:59hrs) \$ 0.078/minute (off-peak period 20:00hrs – 21:59 hrs) \$ .33/ minute (fixed)

### Average price for terminals in (\$US)

2.5G or 3G handset	71.00
Laptop	1333.00
Desktop	800.00

## Universal access, Cyber laws and ICT-related taxes

Universal access schemes exist in most member States but their effectiveness is not very evident. Cyber laws exist only in Mauritius and South Africa. However, even these are still to be modeled along the UNICTRAL model. Except in Mauritius and Tanzania, there is no evidence of the removal of ICT-related taxes and tariffs by other member States, so as to lower the cost of ICT equipment.

## Digital television broadcasting migration and policy on broadband

All SADC member States are preparing to migrate to digital television broadcasting by 2013 but only South Africa has a national policy on DTB migration<sup>13</sup>, and it is only South Africa that has a national policy on broadband.

## Connectivity to rural or remote, disadvantaged communities and schools

Connectivity to rural or remote, disadvantaged communities and schools are evident in those countries where government has shown commitment and in particular has provided funding directly or indirectly (through reduced dividend or license fees). In one of the member States visited, all secondary schools have been connected and primary school connectivity programmes are underway.

## Cross-border broadband connectivity and other ICT indicators

On cross-border broadband connectivity, all countries have projects that have either been completed or are being connected to neighbouring states and ultimately, to the submarine cables where applicable. From the ICT Development Index (IDI) developed by ITU, all member States have challenges in ICT infrastructure development, access, usage, skills and price<sup>14</sup>. In comparison, five countries, namely Botswana, Namibia, Mauritius, Seychelles and South Africa are ICT readier than the rest.

On the human resource side, brain drain is a huge problem, given the scarcity of ICT talent and skills worldwide. South Africa is the main attraction for the other SADC member States while the developed world is the main attraction for South Africa's ICT skilled labour. In terms of capacity building, centres of excellence exist or will soon exist in countries such as Botswana, Namibia, Mauritius and South Africa<sup>15</sup>.

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13 [www.doc.gov.za](http://www.doc.gov.za)

14 [www.itu.int](http://www.itu.int)

15 Country visit information

Removal of barriers to e-Trade still remains an obstacle to trade facilitation in many member States. The outsourcing concept has not been fully exploited to the level of India, but there are initiatives in Mauritius and South Africa directed at enhancing participation in this endeavour.

All member States have a multiplicity of banks. In order to extend the banking services to the unbanked, there should be an increase in the number of debit and credit cards and payment gateways have to be established in all countries. Below is the ITU ranking depicting the low levels of the status of ICT in SADC countries.

Table 10: IDI 2007 SADC member States rankings

Country	ICT Development		Access to ICT		ICT Usage		ICT Skills		ICT Price	
	ITU	SADC	ITU	SADC	ITU	SADC	ITU	SADC	ITU	SADC
Mauritius	62	1	61	1	52	1	88	2	72	4
RSA	87	2	84	2	92	2	80	1	70	3
Botswana	109	3	103	3	115	4	106	3	63	2
Namibia	112	4	109	4	119	5	109	4	95	5
Swaziland	113	5	112	5	125	7	116	6	121	7
Lesotho	126	6	133	7	127	8	120	8	115	6
Zimbabwe	126	6	148	12	100	3	115	5	nil	
Zambia	129	7	146	11	122	6	119	7	140	8
Malawi	141	9	138	9	144	11	136	10	144	10
Tanzania	145	10	140	10	143	10	142	12	142	9
Mozambique	148	11	136	8	139	9	149	13	148	11
DRC	151	12	154	13	151	13	137	11	nil	
Seychelles									57	1
Angola										
Madagascar	133	8	125	6	148	12	131	9		

Source: International Telecommunications Union (ITU) 2009.

Note: 154 countries were ranked.

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