Regional Connect – Project H.E.A.T

Submission Response Document[1]

Fill in this form as your submission to the challenge. You are welcome to use additional forms/ areas of information, should it be applicable to your submission.

INTRODUCTION: This submission proposes an expansion of the excellent Project H.E.A.T. strategy for (1) scalability throughout the SADC region; (2) integration of all seventeen SDGs in a holistic approach that emphasizes their critical interdependencies, and the centrality of SDG4 – "*Inclusive, Equitable, Quality, Lifelong Learning for All*". The Regional Connect Education Challenge Brief correctly identifies the critical skill sets demanded by the emerging Fourth Industrial Revolution (4IR)[2], and summarises them into the fundamental categories of: (a) how to deliver them? (interactive learning games) (b) the design/desired outcomes of such learning: (i) improved literacy, communication and comprehension; and (ii) improved capacities for complex problem solving, creativity and innovation, and critical thinking, all of which depend on strong foundations in mathematics and science; (3) the proposed extension/expansion suggests a multi-stakeholder approach that leverages the actual and potential strengths of current national, bilateral and multilateral agencies and institutions active in development via the SDGs.

Realizing effective collaboration, communication, coordination, and cooperation (the vital 4C's) within a multi-stakeholder global community with numerous often competing agendas and interests, is extremely difficult; the architects of the SDGs, and the Millennium Development Goals (MDG) that preceded them, recognised these difficulties, and introduced SDG17: "*Strengthen the means of implementation and revitalize the global partnership for sustainable development*", with SDG9: "*Industry, Innovation and Infrastructure*", providing the innovative technological platforms and tools needed to reduce these complexities and to build a path towards achievement of this ambitious yet achievable objective. The Fourth Industrial Revolution (4IR) is technological, the ICT segment of SDG9 provides the vital communication paths within and between the vast web of interconnected actual and artificial intelligent (AI) human/machine interfaces and nodes. But, as technology races ahead towards unimaginable opportunities, and threats, far too many global citizens are being left behind. History suggests

[1] Submission by the SADC ICT4SDG Team, Johannesburg, South Africa, Friday 31 January 2020.
[2] See top ten 4IR skill sets summarized in paragraph 3-page 8/29 in https://www.sakan.org.za/Docs/ICT4SDG4.pdf

that those left behind become the enemies of progress, the stumbling blocks in the way of an egalitarian future in which economics and technology serves humanity, and not vice versa as current global trends and perceptions suggest.

This proposed expansion of the Regional Connect Education Challenge is an attempt to address the development needs of the whole SADC population of 345 million (year 2018), especially its population living in poverty: (a) 180 million SADC citizens live below the absolute international poverty line of US$1.90 PPP per day (average 52%, range 0.5% of the population in Mauritius, rising to 80% in Madagascar) [3]; (b) approximately 120 million children (35% of the population) are disproportionate victims of poverty - up to 80% of the SADC child population survive on less than US$1.90 PPP per day: 75% in the Zambezia province of Mozambique; 65% in South Africa, 81% in South Africa's Limpopo province; (c) Exceptionally poor educational outcomes for children living in poverty, heavily influenced by extreme societal inequalities, and reinforced by the well-documented evidence of irreversible brain damage suffered by children living in poverty[4]. The latter is further reinforced by stagnant rural economic growth and rapid urbanization, the growth of urban "squatter settlements" where violence and child/gender abuse has become endemic.

Multi-stakeholder collaboration is extremely complex and difficult to manage, as are the challenges that such collaboration is intended to resolve, but the consequences of doing nothing far outweigh the complexities and costs of such collaboration. Details of the wide range of implementation options for an effective multi-stakeholder approach are clearly beyond the scope of this submission, and must therefore be deferred to consultations with each participating stakeholder, including all stakeholders participating in this Regional Connect Education Challenge. The range of interventions must cut across all SDGs, with SDG4 – Education, providing a common platform and anchor.

The purpose of this submission is to seek an audience with representatives of the Regional Connect Education Challenge, as suggested by Finland's Ministry of Foreign Affairs in their response to our first inquiry of December 2019. The submission clearly does not meet the criteria for consideration in the current call for proposals, it is a request to begin a high-level dialogue of how the current efforts can be strengthened for sustainability and scale in all SADC countries, and ultimately, beyond SADC. The information that follows is necessarily limited by this fundamental difference in approach to sustainable development throughout the SADC region.

[3] Derived from World Bank Poverty Data available at http://api.worldbank.org/v2/en/topic/11?downloadformat=excel, and recent SADC reports.

[4] Research evidence at e.g. Sheri Hall, Cornell University 2009; Susan Kelley, Cornell University 2016; and "*Neurological disorders in adulthood stemming from early childhood deprivation*": https://www.pnas.org/content/pnas/117/1/641.full.pdf

GENERAL INFORMATION

Challenge Sector of Submission	All related to the H.E.A.T. initiative, integrating all related ICT4SDG possibilities.
Problem Area Solving For	All 17 SDGs, especially SDG4 and ECD for SADC children living in poverty.
Location of solution to be implemented	Progressively in all SADC countries and their provinces, depending on capability & capacity.
Submission/ Project Name	SADC ICT4SDG
Company Name (Pvt If Submitting Privately)	Pvt.
Email Address	(1) walter@sakan.org.za (2) eckart.zollner@jasco.co.za
Cell Number	+27 83 640 4012 | +27 82 990 3460
Project Members Names and email addresses	Walter Brown: walter@sakan.org.za Eckart Zollner: Eckart.zollner@jasco.org.za Ataico Diallo: info@easytechict.com
Location of Team members	South Africa

a. TEAM OVERVIEW

a. Skill sets and tool proficiencies

Skills, strengths and knowledge the team has that will contribute to the successful execution of the proposed project.

The following provides very brief profiles of the team members involved in this initiative, who have cumulated a total of one hundred years of service to the African ICT industry. Details of their individual qualifications and experience are not directly relevant to this call for proposals, but will be provided as part of the proposed multi-stakeholder discussions requested.

Ataico Diallo:

Mr Ataico Diallo, a South African citizen born in GUINE West Africa, is fluent in both English and French, and adds an important African regional dimension and entrepreneurial spirit to the SADC ICT4SDG team. Ataico founded AFRISAT ICT (Pty) Ltd in 2002, and held the post of Chief Executive until the company's closure in 2012. The SME company expanded from just two employees in 2002, to 45 in 2012.

Ataico's 18-years of experience in the ICT industry has earned him degrees in Business Administration and Leadership and Management, which equipped him well to serve as the vice chairperson of the Black Information Technology Forum (BITF) in Mpumalanga,

South Africa, the main aim of which was to propel Black African individuals into the mainstream of the ICT industry. Ataico's leadership skills led to invitations and contracts to conduct several leadership seminars, including significant contracts to lead the New Partnership for Africa (NEPAD)'s Youth Development Programs, and similar seminars for the Junior Chamber International (JCI) South Africa. Ataico gained much respect for his social contributions to both charities and the small and micro business sectors. He currently runs the "Sharing Our Hope Ministry" in White River, formerly called Kangwane in the Mpumalanga Province of South Africa.

Eckart Zollner

Head of Business Development at JASCO (Pty) Ltd

Eckart emigrated from Germany to South Africa in 1982 and started his career in the Telecommunication sector for Siemens in 1990. He managed the implementation of digital exchange projects for Siemens before moving to the field of analogue and digital mobile networks in 1992. After the implementation of GSM networks across Africa, he joined a South African mobile product development and manufacturing company and set up sales and distribution across Africa, Asia and Latin America. He left in 2007 to start his own SME consulting business, and after 4 years, he joined Jasco in 2011 and became responsible for the subsidiary NEW TELCO SA, dealing in the establishment of carrier neutral POP's and services across Southern Africa and Europe. Since 2013 Eckart has expanded his role at Jasco as Head of Business development working in the fields of power solutions, security solutions, carrier infrastructure solutions as well as managed IT services.

Walter Brown

Walter Brown is a retired former ICT engineer and executive with more than fifty years of professional experience in the African ICT space. Born in Zimbabwe in 1944, Walter graduated at London South Bank University in 1968, and spent the rest of his career developing African ICT networks and their supporting policy and regulatory frameworks. His work was undertaken in various private and public ICT companies in Africa and the USA, the International Telecommunication Union (ITU), and SADC. Following his retirement from the South African Communications Forum in 2016, Walter continues his ICT advocacy work on a voluntary basis. Walter is currently researching the relationships between ICT and each of the seventeen Sustainable Development Goals as they apply to South Africa. He has published several academic and application-oriented papers internationally and in several African countries, the most recent being a voluntary

advocacy-related intervention comprising a submission to the South African Competition Commission's Inquiry into the Data Services Market. The full submission is available on the Competition Commission's website at http://www.compcom.co.za/wp-content/uploads/2019/08/Walter-Brown.pdf, and its impact on the inquiry's output is captured in the final report available at http://www.compcom.co.za/wp-content/uploads/2019/12/DSMI-Non-Confidential-Report-002.pdf.

b. Previous projects

Experience in related fields regarding relevant/ adjacent industries

Not applicable to this submission, details will be provided to each participating stakeholder as necessary.

c. Team technical and domain expertise

- *Qualifications / level of schooling*
- *Other entrepreneurial experience*
- *Skills the team would like to learn overall to ensure the success of their project as a business (This will be used to develop tailored content for your team, should you be a winner of the challenge)*

Not applicable to this submission, details will be provided to each participating stakeholder as necessary.

b. TEAM MOTIVATION TO WIN THE CHALLENGE

Write a short motivation (approx. 100 words) on why your team deserves to win the challenge, and if you do, how you would use the resources given in the programme to take your project to the next level.

MOTIVATION: This submission is not intended to compete directly or indirectly in the challenge. The underlying motivation is however directly related to the challenge – the development and implementation of a multi-stakeholder supported initiative that will integrate the numerous national, bilateral, and multilateral activities and funds that are aligned to specific Sustainable Development Challenges in SADC countries, in a way that enables full "bottom-up" inclusion, ownership and participation, and scales to meet the extremely complex development needs of the SADC region as a whole, and its individual member states. Such participation will if possible, include the winners of this challenge as building blocks for large scale expansion and sustainability.

THE SUBMISSION INFORMATION

This whole section is not directly applicable to this submission, but the key factors stated or implied will be central to the discussions and design criteria with individual participating stakeholders as the SADC ICT4SDG vision unfolds.

a. **The context of the problem you are trying to solve – location, current events, the importance of solving it.**

   The problem statements are captured in the statistical data presented in the conclusions of this submission – tackling the full range of sustainable development challenges in SADC through education (all STEM subjects especially applied to ECD), technology, and multistakeholderism within the framework of SDG9 and SDG17.

b. **What your solution is**

   There is no "one-size-fits-all" solution, the multidimensional nature of human development demands a mix of numerous strategies and possible solutions, which are consistent with the interdependencies of all SDGs, and the preferences and focus areas of the multi-stakeholder partnerships that will be established within the framework of SDG17.

   A short introduction of the range of options/solutions and challenges considered in the context of South Africa is provided in the related submission to South Africa's Competition Commission's Data Services Market Inquiry, and its linked references. These will be developed further taking into account the specific needs, capabilities, and capacities of participating SADC countries and stakeholders, as the SADC ICT4SDG vision unfolds.

   Describe your solution in as much detail as possible, including:

   - *Purpose of your proposal*
   - *How it works*
   - *Resources needed for project to work; including relevant costing and partners*
   - *The sustainable development goal/s your solution contributes to, and how*
   - *Possible time-lines*
   - *Targeted industries*
   - *End users / beneficiaries of the solution*
   - *Income for the solution*
   - *How the solution is sustainable*

c. Where in the start-up lifecycle is your solution?

Are you a start-up, or established business.

d. What makes it innovative?

How was innovation used to create or optimise this proposal? What makes this idea better than others, and how does the team plan to ensure it remains relevant post implementation.

e. Anticipated end results of your solution

How the project participants see the outputs, outcomes and impact of the project post implementation. List all possible positive and negative impacts; along with strategies to counter any negative effects, should there be any.

f. Your view on the judging of your project

Section not relevant to this submission.

CRITERIA	DESCRIPTION	Your score (1-5)
Solution answers the challenge brief question	Solution is relevant to at least one of the chosen problem areas, and ultimately works towards enhancing the selected industry. Challenge/s solved for must be stipulated in submission	
Contribution to Sustainable Development Goals (SDGs)	Does the solution satisfy at least one SDG goal based on the UN's outcomes. Should it be a different goal to what is stipulated in the brief, it must be motivated.	
Ease and sustainability of implementation, with all possible impacts considered	An implementation strategy must be included, with sustainability and ease of the strategy noted. All potential positive and negative impacts of implementation must also be considered	
Feasibility of solution	The solution is physically possible within it's environment, with no additional R&D required to ensure the success of implementation	
Viability of solution	The solution can be used in a business model, and can be profitable.	
Team capability and intent	The team is passionate and dedicated to the solution; and are able to solve problems effectively	

g. What external resources or expertise do you feel is needed to ensure your solution can be created into a sustainable, high impact business?

The team is well positioned to bring relevant partners into the project as and when required, and as the multi-stakeholder support community expands. All team members have extensive contacts in the ICT, education, training, content and medical sectors to align an integrated solution approach in accordance with the requirements that were developed from the ground up approach as described above. We expect that the ground up approach will identify varying requirements across different communities, and we will adjust the deployment of resources and the integration of relevant skills to meet the identified need on the ground.

h. What would you take part in to take your business/ idea to the next level? Choose up to 3

- Training
- Incubation
- Business support
- Technological research support

i. Supporting documents

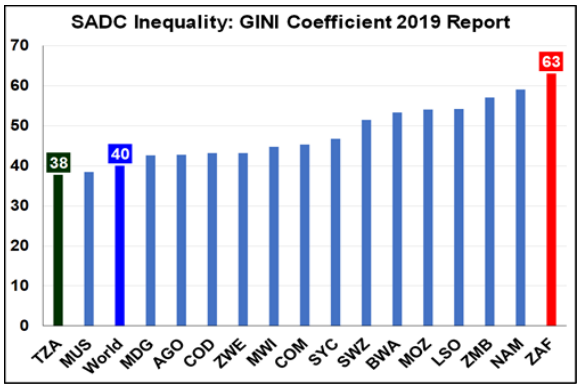
These are optional, should you want to include images/ sketches/ studies/ business cases or other documents in your proposal.

CONCLUSIONS: The High-level Challenges for SADC: The Triple Threats of Inequality; Poverty; Unemployment, which impact all SDGs and all SADC countries in varying degrees.

We conclude our request for further discussions with the following self-explanatory graphic representations of the challenges faced by the majority of SADC countries, which this proposal seeks to address. These can/must be considered as the highest-level challenges, the high-level needs that impact the achievement of all seventeen SDGs, and which must shape the intervention strategies and programmes designed to meet those Sustainable Development Goals. We also include a graphic summary of the process we recommend, based on the current international model of ICT development initiated by all nations through the International Telecommunication Union (ITU) in the World Summit on the Information Society (WSIS). This proposed revision of the WSIS model represents our opinion of how technology can be positioned to serve people first, instead of current popular perceptions that our species is shaped by technology (see e.g. Homo technologicus), and by the economic advantages that technology enables (see e.g. OECD discussion of Homo economicus). This is especially pertinent in this 4IR era wherein technology will have immense, irreversible impact on how humans live. How should SADC countries respond, especially through the

vital domain of education, which must prepare future generations (children) for the massive uncertainties of today and the near future, for which their parents are poorly equipped?

1. Income Inequality within and between SADC countries:



Source: World Bank GINI Coefficient 2018

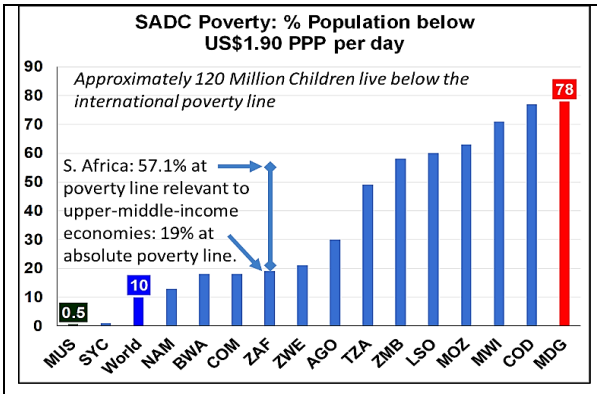
SUMMARY

- 57 countries worldwide exceed the international alert GINI of 40. 87.5% of SADC countries exceed this limit. At 63**, South Africa has the highest GINI coefficient of all 156 economies with valid reports**
- 12 of the most equal economies with GINI less than 30 are former Soviet Bloc countries, 7 are Nordic nations;
- Mauritius and Tanzania are the only SADC nations with GINI less than 40.

Extreme income and related resource inequalities are the principal drivers of social instability – revolutions, civil and global wars. Inequality is both cause and effect of poverty – is education an elixir?

Inequalities in capabilities, and therefore income and access to other resources, are normal in the human species, but extreme inequalities are immensely destructive, as history has so frequently demonstrated, and continues to demonstrate today. Critical recent references include analyses, opinions and researches by leading global authorities like Professors Walter Scheidel[5] (highly pessimistic) and Joseph E. Stiglitz[6] (optimistic use of technology).

2. Poverty in SADC Countries



Source: World Bank Poverty Data 2018

SUMMARY

- Total Population (2018): **345 Million**
- Total Population living below US$1.90 PPP per day: **180 Million (52%)**
- Highest: **78% Madagascar**: Lowest**: 0.5% Mauritius**
- Leading Economy (South Africa): **19% at US$1.90 PPP per day: 57.1% at US$5.50 PPP per day** (applicable international poverty line for South Africa's economic development)

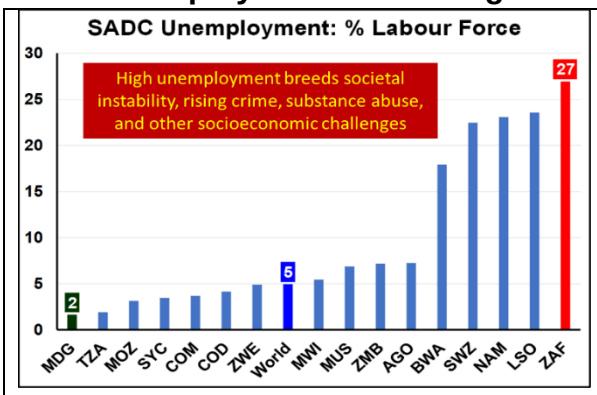
The consequences of poverty on Access to Education, Outcomes of Education, and Impact on National Growth, are severe. How can we reverse this threat by focusing primarily on SADCs future, the children of the poor majority of SADC's citizens?

Poverty is both a cause and effect of Inequality, a tragic phenomenon that impacts every sustainable development challenge. People living in poverty, especially children, can be both cause and victims of all SDG challenges, including climate change and environmental degradation, e.g., over grazing for survival. Short discussion of this phenomenon in the

[5] Professor Walter Scheidel traces the (pessimistic) consequences of inequality from the stone age to today in the video documentary "***The Great Leveller***", available at https://www.youtube.com/watch?v=-0qsQux6zeI;
[6] Professor Joseph E. Stiglitz, Nobel laureate economist provides a more optimistic view of how technology can be positioned to erode and prevent extreme inequality: "***The Great Divide"***: https://www.youtube.com/watch?v=woerUgtufUo

context of South Africa, the leading SADC economy, are available via the links ICT4SDG1 – Poverty; and ICT4SDG2 – Zero Hunger.

3. Unemployment: Percentage of total labour force



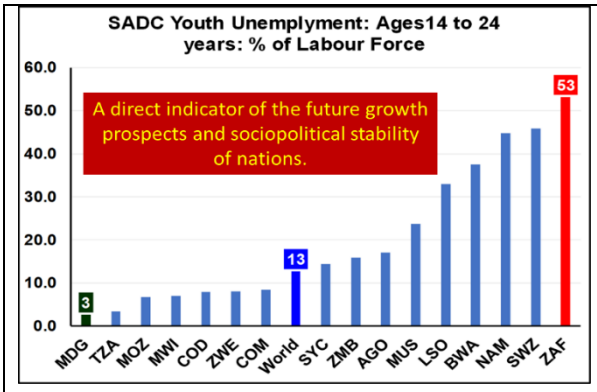
Source: World Bank Employment Data 2018

SUMMARY

- South Africa is a global leader in unemployment within the 189 nations with valid employment reports;
- 12 SADC countries show reasonable employment statistics. The concern must change to the quality of employment – is it 4IR ready?
- It is vital, and urgent, to focus attention on the critical skill sets for the 4IR, as this "SAIS Regional Connect Education Challenge" does.

The challenge: how to impart vital 4IR skills: Critical Thinking; Complex Problem Solving; Literacy, Comprehension, Communication, to all 120 million poor SADC children from the earliest possible age?

4. Youth Unemployment: A looming disaster for SADC?



Source: World Bank Employment Data 2018

SUMMARY

- South Africa, the leading SADC economy, has the highest youth unemployment of all 190 economies with valid reports;
- The very wide variation within the 16 SADC nations suggest that much more research and analysis are needed;
- Such research and analysis are best conducted, and the research results implemented, as part of the intervention strategy – an expanded "Challenge".

Youth unemployment: an indicator of a nation's future prospects. The complex interplay between education, the economy, the sociocultural environment, must be incorporated in the "Challenge".

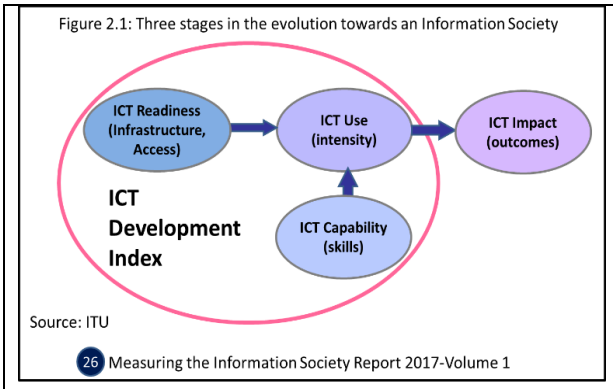
Unemployment is considered by many reputable thinkers as one of the most serious existentialist threats facing humanity today. Youth unemployment already raises its threat levels in both developed and developing nations, and SADC is not immune. South Africa, a leading continental and SADC regional economic powerhouse, is especially at very high risk – South Africa is the global leader in unemployment, for both adults and youth. The reality is that too many jobs are both unrewarding in monetary terms, and unfulfilling in emotional terms, and are often dehumanizing in their social impact, but remain vital for survival in this age of Homo economicus. And yet, there is a growing body of evidence that the concepts of labour and work taken for granted today, are relatively recent phenomena that are not natural consequences of being human. An example of the global debates taking place in this 4IR age of automation is John Hagel's impressive lecture at Germany's Singularity University's "Future of Work Summit of 2017" – can technology replace mundane unrewarding work and

thus restore our humanity? Can SADC countries begin to think about the long-term implications of technological advances on the world of work, and "restore" the region's humanity, starting with the 120 million SADC child population, using 4IR technologies anchored on ICT-based communication and learning platforms?

The multi-stakeholder SDG initiative proposed is a vision for such a future for SADC – a very long-term vision that must start now if future disaster is to be averted.

5. A Review of the WSIS ICT Development Process

The Standard ICT Development Model

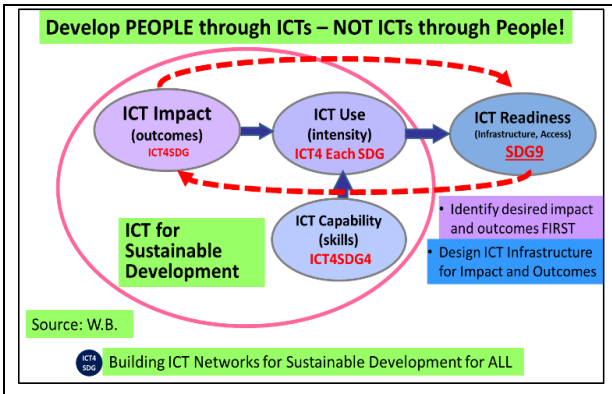


Source: ITU MISR 2017

SUMMARY

- Build ICT Infrastructure and Services based on and driven by Technological Advances and Opportunities, e.g. evolution of mobile ICT systems from 1G to today's 5G;
- Build skills capability to follow technological advances;
- Intensify ICT usage through formal education and training and self-driven commercial/industrial education and training;
- Enjoy the economic and social contributions of modern ICT infrastructure and services;
- Develop protective mechanisms for the growing abuse of ICT infrastructure and services

The Proposed Revision: Turn the process upside-down



Source: The SADC ICT4SDG Project Team

SUMMARY

*"**You can't solve problems by using the same kind of thinking that you used to create them"*** Albert Einstein – 1879 to 1955

- Begin with the socioeconomic imperatives – what do people, especially future generations, need to survive and prosper into the future?
- Review available technologies, invent new technologies, and build technological infrastructures to meet these needs;
- Redesign social systems, intensify appropriate and highly focused education systems, all based on these technological opportunities, especially those already available in the 4IR.

The annual Measuring the Information Society Reports (MISR) published by the International Telecommunication Union (ITU) since 2009 as required by the World Summit on the Information Society (WSIS), is itself undergoing significant changes, driven by the inexorable march of human ingenuity and its 4IR technological evolution. The proposed revision is one way of restoring the human side of the equation – building a future in which technology serves humanity, and not vice versa. This must begin with SADC's child population, Early Childhood Development of the Technological Kind.