

**THEME**

# 4TH INTERNATIONAL ICT FOR AFRICA 2012 CONFERENCE REPORT, KAMPALA, UGANDA

**“Africa’s E-Inclusion: Defying the Odds and  
Leading the Way in Global ICT Innovation”**



## International Conference on ICT for AFRICA 2012

International Center for  
Information Technology and Development



March 21-24th, Kampala, Uganda

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## **1. ABOUT THE INTERNATIONAL CONFERENCES ON ICT4AFRICA**

The International Conference on ICT for Africa is an annual event that brings together stakeholders of the educational and industrial sectors in Africa, with the aim of reflecting on how to transfer, diffuse and adopt the Information and Communication Technologies (ICTs) within the African context; the innovation and development of ICT solutions for and within this context; impacts of ICT on society and of society on ICT; and other relevant normative, empirical, and theoretical concerns of ICT development, implementation, strategy, management and policy that are distinctive to Africa and associated developing economies.

The Conferences target Government Organizations, None Government Organizations, Telecommunications Industry, the private sector and the general public. Participants to the Conference include but not limited to; scholars, IT professionals, policy makers, researchers, entrepreneurs, mobile applications developers, cloud Application developers, computer software developers, IT hardware and Software vendors, health care professionals and Indigenous traditional healers/herbalists among others.

The conference was initiated four (4) years ago by the International Centre for Information Technology and Development (ICITD). The previous conferences held in Cameroon (2008, 2009) and Nigeria (2010) were a success as it attracted many academicians, practitioners, researchers and policy makers from within the African continent and across the globe.

## **2. ICT4 AFRICA CONFERENCE 2012**

The 4th International Conference on ICT for Africa was hosted by Makerere University Business School, Kampala-Uganda at the behest of ICITD. The Conference was held at Imperial Royale Hotel, Kampala-Uganda from the 21-24, March 2012.

Makerere University Business School is a leading Business and Management Education Institution in the East African region. The International Centre for Information Technology and Development (ICITD) is one of the institutions MUBS is privileged and pleased to collaborate with.

The conference's objective was to highlight the synergy of collaboration between African countries and other developing countries, and between African countries and the developed countries towards ICT advancements and also towards development solutions for Africa. It creates a forum where participants can disseminate their research to a wide audience of scholars and practitioners of ICT in Africa and beyond.

### **2.1 Conference Venue**

Imperial Royale Hotel was the Venue for all conference activities except Doctoral Consortium which was held at Makererere University Business School, Bugolobi Annex Conference Hall. The Doctoral Consortium was held on March 21, 2012, while Main conference was held from 22<sup>nd</sup>-23<sup>rd</sup> March 2012.

### **2.2 Conference activity schedule**

Conference Activities were scheduled as follows;

- Day One (Wednesday March 21, 2012) –Doctoral Consortium
- Day Two (Thursday March 22, 2012) – Paper presentations
- Day Three (Friday March 23, 2012) –Paper presentations, business plenary and panel discussions
- Day Four (Saturday March 24, 2012) – ASICT Congress and Excursion

## 2.3 Conference theme

The theme of the conference was; *“Africa’s E-Inclusion: Defying the Odds and Leading the Way in Global ICT Innovation”*.

### 2.3.1 Subthemes

The conference was organized under seven subthemes as listed below;

- i. ICT in Healthcare
- ii. Theoretical Computing & Software Development
- iii. ICTs, National Growth & Global Development
- iv. ICT, Education and E-Learning
- v. ICT, Entrepreneurship and Business
- vi. Electronic Government, Communication and Public Sector Reform
- vii. Web Security, Privacy, and Risk Management

## 3. DAY ONE (WEDNESDAY MARCH 21, 2012)

Mr. Onen Patrick Ezaga was the day manager.

### 3.1 Doctoral Consortium

A total of Eighteen (18) papers were submitted for the Doctoral Consortium and seventeen (17) PhD students presented their papers on Wednesday March 21, 2012 in four parallel sessions. The presentations were done before a panel of eighteen Professors in the field of research and ICT. These Doctoral students were given comments on how to improve their papers. The Doctoral students also shared experiences with other students and Professors and developed networks to help propel themselves through their programs.

#### 3.1.1 Doctoral Consortium Program

The Doctoral consortium activities were conducted as follows;

8:00 - 8:30am	Registration	
8:30 - 9:00am (Plenary)	Welcome: <b>Prof. Waswa and Prof. Mbarika</b> Opening/ Introduction – <b>Chair, Prof. S.O. Ojo</b>	
9:00 – 10:00am	<b>Keynote Lecture: Dr. Shawndra Hill</b> <i>How to get a PhD - Formulating a topic, conducting research and writing the dissertation</i>	
10:00 – 10:20am	Coffee Break	
10:20am – 2:20pm	<b>Parallel Session 1</b>  <b>Chair:</b> Prof. Cosmas Nwokefor <b>Co-Chairs:</b> Dr. Peter Meso Dr. John Effah Prof. S.O. Ojo Dr. Shawndra Hill Dr. Oswald D’avergne	<b>Parallel Session 2</b>  <b>Chair:</b> Dr. Yolanda Rankin <b>Co-Chairs:</b> Dr. Jimmy Macharia Dr. Chanika Jones Dr. Jarrett Landor Dr. Wen-I Chang Dr. Mathieu Kourouma

	Dr. Bangaly Kaba Dr. William Shu Dr. Kehbuma Langmia	Prof. Mathias Fonkam Prof. Enoch Tanjong Mr. Ivon Alcime
12:20 - 1:20pm	<b>Lunch Break</b>	
<b>Plenary 1:30 – 2:30pm</b>	<b>Chair: Prof. Ntayi</b>	
	<ul style="list-style-type: none"> <li>• Fundamental steps in writing dissertation – <b>Prof. Cosmas Nwokeafor</b></li> <li>• Case Study in Information Systems - <b>Dr. John Effah</b></li> <li>• The research proposal: Preparing the proposal for qualitative and quantitative research - <b>Dr. Chanika Jones</b></li> </ul>	
2:30 - 2:45pm	<b>Coffee Break</b>	
2:45 – 4:00pm	<b>Parallel Session 3</b>	<b>Parallel Session 4</b>
	<b>Chair:</b> Dr. Enoch Tanjong <b>Co-Chairs:</b> Dr. Mathieu Kourouma Dr. Bangaly Kaba Prof. Cosmas Nwokeafor Dr. Peter Meso Dr. William Shu Dr. Jarett Landor Prof. Mathias Fonkam Dr. Kehbuma Langmia	<b>Chair:</b> Dr. Chanika Jones <b>Co-Chairs:</b> Dr. John Effah Dr. Wen-I Chang Prof. S. O. Ojo Dr. Shawndra Hill Dr. Yolanda Rankin Dr. Oswald D’avergne Dr. Jimmy Macharia Mr. Ivon Alcime
<b>Plenary 4:00 – 5:00pm</b>	<b>Chair: Dr. William Shu</b>	
	<ul style="list-style-type: none"> <li>• Tips and Strategies for Effective Research – <b>Dr. Jarrett Landor Ngemi and Dr. Oswald D’avergne</b></li> <li>• Selecting a research area or topic - <b>Dr. Jimmy Macharia</b></li> <li>• Ethics and the Research Process - <b>Dr. Peter Meso</b></li> <li>• Managing Cyber Infrastructures Ethics and Crime - <b>Mathieu Kourouma</b></li> </ul>	
5:00 – 5:30pm	<b>Closing Remarks - Prof. Terry Bryd and Prof. Yolanda Rankin</b>	

### 3.1.2 List of papers presented at Doctoral Consortium

The Following papers were presented during the doctoral consortium.

Name	Topic
	<b>Session 1 (10:20am – 12:20pm)</b>
Fomboh Julius Fombutu	Exploring Critical Success Factors (CSFs) In Implementing ICT Education Projects In Schools: The Case Of Multimedia Resource Centres
Joshua Rumo A. Ndiege	Absorptive Capacity And IT Adoption Strategies Within Kenyan SMEs
Lucas Mimbi	Investigating The Role Of Information Technology In Resolving Governance Challenges In A Transition State – The Case Of Tanzania

Makolo Angela	Computational Inference Technique For Mining Structured Motifs
Iheanetu Olamma	Application Of Machine Learning Techniques In The Development Of A Model Of Igbo Morphology
<b>Session 2 (10:20am – 12:20pm)</b>	
Amanuel Zewge	Designing An Architecture For Delivering Distributed Agricultural Information Services, And ICT Diffusion And Transfer For Developing Countries
Claude Ernest Njoya	The Involvement Of ICT Tools In Improving The Quality Of Learning/Teaching
Owolabi Abimbola Basiru	Adoption And Implementation Of Change Management As Part Of Successful ICT Project Management
Sebbowa Dorothy	Using Emerging Technologies To Transform Pedagogy In Higher Education; A Case Of Makerere University
Flora Mpazanje	Exploring The Phenomenon Of Participatory Design In ICT4D Project Implementation In Rural Communities: A Critical Discourse Analysis
<b>Session 3 (2:45 – 4:00pm)</b>	
Njoya Daouda	Educational Integration Of ICT In Education System ‘Functionalist’: A Case Study Of Settlements In Cameroon Panaf
Sikali Laurence Annie	Integration Of ICT In The Education Of The Young Pygmy Girl In The South Region Of Cameroon.
Walter S. Wanyama	Topic: Investigating the Impact of Emerging Technologies for Community Health Workers in Rural Areas of Kenya
<b>Session 4 (2:45 – 4:00pm)</b>	
Ayorinde, Ibiyinka Temilola	Dynamic Formal Organizational Ontology
Mbogo Marion	A Model Of Management Accounting Practices For SMEs To Match The Challenge Of Electronic Transactions
Ukpe Kufre Christopher	Topic Analysis On The Impact Of ICT On Socio Economic Growth And Development In Nigeria
Johan Hellström	Mobile Hype? The role of mobile technology in improving transparency, accountability and participation

#### 4. DAY TWO (THURSDAY MARCH 22, 2012)

##### 4.1 Official opening ceremony , paper presentations, panel discussions

Mr. Patrick Onen Ezaga was the day Manager

#### PLENARY SESSION (8:00 – 8:50am)

##### SESSION 1

<b>Hall:</b>	<b>SUNFLOWER</b>	
Time	Activity	Presenter(s)
8.00 – 8.15am	Opening remarks from Chair, Local Organizing Committee	Dr. Joseph Ntayi and Dr. Robert Isabalija
8.15 – 8.50am	Key Note address	Hon. Darren Mire Dr. Whitfield Rani Prof. Terry Byrd

<b>PARALLEL SESSIONS 1 (8:50 - 10:10)</b>		
<b>SESSION 1(A):</b>	<b>ICT IN HEALTHCARE</b>	
<b>Hall:</b>	<b>PRIMROSE</b>	
Chair: Dr. Grace Nambatya Kyeyune		Co – Chairs: Dr. Oswald D’auvergne
Activity	Presenter(s)	
Behavioral Change: Content Analysis Of Students’ Online Discussions In Hiv/Aids Education	Joseph Kizito Bada and Jarkko Suhonen	
Some Notable E-Health Developments	Marc Nyssen, Ronald Buyl and Verbeke Frank	
Mobile Public Health Surveillance Tool for an African Rural Community	Mark Muwanguzi and Seleman Ngwira	
Business Modeling - The Recipe For E-Health Success In Africa	Ton Am Spil and Björn Kijl.	
ACT for birth – Uganda	Dr. Naamala Hanifah Sengendo.- Save the Children	
SMS Solutions to Care for and Retain HIV-Exposed Infants	Jeff Grosz-Country Director, Clinton Health Access Initiative (CHAI) & Mr. Charles Kiyaga-The National Early Infant Diagnosis of HIV Coordinator at MOH.	
10.10 – 10.30am	<i>Conference Tea Break</i>	<i>Irene Namutebi</i>
<b>SESSION 1(B)</b>	<b><i>Sub-theme: THEORETICAL COMPUTING &amp; SOFTWARE DEVELOPMENT</i></b>	
<b>Hall :</b>	<b>LILY A</b>	
<b>Chair: Prof. Mphahlele Maredi</b>		<b>Co – Chairs: William S. Shu Ukpe Christopher</b>
Activity	Presenter(s)	
Application Of Operational Semantics In Programming Language	Temilola Ayorinde	
Towards The Tracker Model: A Coordinating Module For Independent Cooperating Tasks	William S. Shu	
STGEMS: Computational Inference Technique For Motifs Discovery	Angela Makolo, Ezekiel Adebisi, Adenike Osofisan	
Fuzzy Association Rule Mining Expert-Driven (Farme-D) Approach To Knowledge Acquisition	Olufunke Oladipupo, Charles Uwadia and Charles Ayo	
10.10 – 10.30am	<i>Conference Tea Break</i>	<i>Irene Namutebi</i>
<b>SESSION 1C</b>	<b><i>Sub-theme: ICTS, NATIONAL GROWTH &amp; GLOBAL DEVELOPMENT</i></b>	
<b>Hall:</b>	<b>LILY B</b>	
<b>Chair: Dr. Phillip Shero</b>		<b>Co – Chairs: Prof. Peter Meso Julius Fomboh</b>
Activity	Presenter(s)	
I C T Development and Poverty Reduction	Adamu Mshelia.	
ICT A Versatile Tool To Minimize Failure Rate Among Final Year Secondary Schools Students In Africa (Nigeria As A Case Study)	Nureni . A. Yekini, Olawale . N. Lawal, Agnes .K. Akinwole and Muhammad .M. Rufai.	
The Determinants Of Mobile Phone Ownership At Household Level In Uganda	Joseph K. Ssewanyana	
Access To Internet Facilities In Rural Based Urban Areas.	Joseph Wanuume Munuulo.	



Topic Analysis On The Impact Of ICT On Socioeconomic Growth and Development	Kufre Ukpe and Kibily Samake.
10.10 – 10.30am	<i>Conference Tea Break</i> <i>Irene Namutebi</i>

### PARALLEL SESSIONS 2 (10:30am – 1:10pm)

SESSION 2(A)	<b><i>Sub-theme: ICT , EDUCATION AND E-LEARNING</i></b>	
Hall:	<b>SUN FLOWER</b>	
<b>Chair: Prof. Dr. Josephine Nabukenya</b>	<b>Co-Chairs: Maswikaneng Solly Claude Njoya</b>	
Activity	Presenter(s)	
Handing Over Ownership Of Schools To Learners	Nomusa Dlodlo, Jp Tolmay and Promise Sthembiso Mvelase	
Identifying Key Strategic Issues Influencing Effective Use Of ICT In Higher Institutions Of Learning; A Case Of ERP Systems	Billy Mathias Kalema, Oludayo. O Olugbara and Ray M. Kekwaletswe	
Challenges of e-Learning in Developing countries: The Uganda context	Josephat Oroma	
Factors Influencing The Diffusion Of Learning Management Systems By Instructors In Higher Education	Dr Jimmy Macharia and Prof Emmanuel Nyakwende	
Adoption of social media tools by Lecturers in teaching in Ugandan higher institutions of learning	Galaige Joy	
Design and Development Of Video Game By Teenage Children For HIV/Aids Preventive Education In Uganda	Joseph Kizito Bada	
Using Open Educational Resources In Teaching; Uganda Case Study	Dorothy Sebbowa	
Integration of ICTs in the Education of the young pygmy girl in the South Region of Cameroon	Sikali Laurence	
1.10 – 2.00pm	<i>Conference Lunch Break</i> <i>Keynote: Internet Speech Technology</i> <i>- Dr. Khan and Mr. Tyson Chisambo</i>	

SESSION 2B	<b><i>Sub-theme: ICT, ENTREPRENEURSHIP AND BUSINESS</i></b>	
Hall:	<b>LILY A</b>	
<b>Chair: Dr. Agnes Rwashana</b>	<b>Co-Chairs: Dr. Robert Isabalija Sikali Lawrence</b>	
Time	Topics	Presenter(s)
	Impact Of ICT Used Within Smes In Eldoret, Kenya	Joshua Ndiege, Ntombovuyo Wayi and Marlien Herselman
	ICT Usage and Market Information Needs Of Gambian Horticultural Farmers	Wen-I Chang
	Situated Improvisation In Low Risk Information Technology Projects In Smes	Nixon Ochara Muganda and Eric Wachira
	Sme Adoption Of Enterprise Systems In Sub-Saharan	Femi Adisa and Stephen Robert Isabalija

Africa: A Clarion Call To Action		
Optimization Of Liquidity In Commercial Banks – A Simulation Investigation	John Ngubiri and Daniel Ochakacon	
Re-Profiling Developing Country Culture For E-Business Appropriation: The Case Of Funeralsinghana.Com	John Effah	
A Literature Review On The Influence Of Mobile Transactions On Management Accounting	Marion Mbogo	
Information Communication Technology and Poverty Eradication In Nigeria	Aminat Abdul-Salaam.	
Exploring the phenomenon of participatory designing in ICT4D in rural communities: A critical discourse analysis	Flora Mpazanje	
1.10 – 2.00pm	<i>Conference Lunch Break</i>	
<b>SESSION 2C</b>	<b><i>Sub-theme: ICT , EDUCATION AND E-LEARNING (2)</i></b>	
<b>Hall:</b>	<b>LILY B</b>	
<b>Chair: Prof. Sunday O. Ojo</b>	<b>Co-Chairs: Mr. Robert Kyeyune</b>	
Time	Topics	Presenter(s)
	Encouraging Building Standards and Quality Assurance - An Expert System Case Study	Apkar Salatian and Arthur Ume
	Access To Web-Based Distance Learning In Tanzania: The Case Of Higher Learning Institutions In Kilimanjaro Region	George Matto, Luka Njau and Benson Ndiege
	Uses and Gratifications Of Web 2.0 Among Learners - A Case Of South African Higher Education	Emmanuel Howe and Raymond Kekwaletswe
	An Analysis Of E-Learning Information System Adoption In Ugandan Universities; Case Of MUBS	Geoffrey Kituyi Mayoka and Robert Kyeyune
	Strategic Approach To Distance Education In Developing Countries	Olayele Adelakun and Adekunle Okunoye
	A library in your pocket: E-Books for higher Education in E.African context: The case of Living Stone International University	Phillip Shero and Mary Manana
	Information System Characteristics and Mobile Bulletin Board Usage	Henry Ngatchu and Damen Ngatchu
	L'Utilisation des Technologies de L'Information et de la Communication (TIC) pour Scolariser les Enfants des Zones Nomades du Mali	Aicha Walet Mohamed
1.10 – 2.00pm	<i>Conference Lunch Break</i>	
<b>SESSIONS 3B</b>	<b>PANEL SESSION</b>	
<b>HALL</b>	<b>SUNFLOWER</b>	
<b>Chair: Prof. Cosmas Nwokefor</b>		
Time	Topic	Presenters
	Government, not the private sector, should be responsible for providing Universal Access to Telecommunications to citizens.	Prof. Chuka Onwumechili Mr. Ivon Alcime. Dr. Kehbuma Langmia Attorney Angela Minor
<b>SESSIONS 3C</b>	<b>AJIS BOARD MEETING</b>	

HALL	LILY A	
Time	Topic	Presenter(s)
African Journal of Information Systems (AJIS) Editorial Board Meeting		Prof. Solomon Negash and Prof. Peter Meso

#### 4.2 Official Opening ceremony (Thursday March 22, 2012 at 11:00am)

The table below details the program for the official opening ceremony

OFFICIAL OPENING		
Hall:	SUN FLOWER	
Chair: Prof. Adekunle Okunoye	Co-Chair:	
Time	Activity	Presenter(s)
10:30am	Presentation on African Traditional Medicines and ICTs.	Dr. Grace Nambatya Kyeyune.
11:00am	The Role of ICTs in Tax Administration, URA's Experience	Commissioner Domestic Taxes, URA; Mr. Moses Kajubi.
11:30am	<b>Arrival of</b> Hon. Dr. Ruhakana Rugunda, Minister of ICT	Prof Colin Sentongo, Hon. Daren Mire, Dr. Rani Whitfield, Dr. Emdad Khan, Prof. Waswa Balunywa, Prof. Victor Mbarika.
12:00pm	Prof. Waswa Balunywa invites the Minister to give his opening speech.	
12:30pm	Vote of thanks from the Conference Chair.	Prof. Waswa Balunywa, Prof. Victor Mbarika and Hon. Darren Mire, Dr. Colin Sentongo.
12:40pm	Panel Discussion – Challenges of Managing College/Faculty of ICT in Higher Institutions in Africa	Prof. Cosmas Nwokeafor, Prof. Ojo and Prof. John Ngubiri

#### 4.3 Opening Speech - Dr. Ruhakana Rugunda, Minister of ICT, Uganda

The Official Opening ceremony was graced by Hon. Dr. Ruhakana Rugunda, The Ugandan Minister of ICT who represented H.E. President Yoweri Kaguta Museveni, the President of the Peoples Republic of Uganda. The conference was officially opened on Thursday March 22, 2012 at 11.00am at Imperial Royal Hotel, Sun flowers Hall.

The Minister was welcomed by Dr. Colin Ssentongo (Chairman Council, MUBS), Hon. Darren G. Mire (Chairman Board of Supervisors, Southern University), Prof. Waswa Balunywa (Conference Co-Chair/Principal, MUBS), Prof. Victor W.A. Mbarika (Conference Chair/Director, ICITD/President, ICTU), Prof. Adekunle Olusola Okunoye (Conference Co-Chair/Professor, Xavier University, USA).

The ceremony was preceded by a Panel Discussion on Challenges of Managing College/Faculty of ICT in Higher Institutions in Africa by Prof. Adekunle Olusola Okunoye, Prof. Cosmas Nwokeafor and Prof. Sunday O. Ojo. Presentations were also made by Dr. Grace Nambatya Kyeyune on African Traditional Medicines and ICTs and The Commissioner Domestic Taxes, Uganda Revenue Authority (URA); Mr. Moses Kajubi on the Role of ICTs in Tax Administration, URA's Experience.

Keynote addresses were made by Honorable Darren G. Mire, Dr. Rani Whitfield and Dr. Grace Kyeyune Nambatya on ICT usage and dissemination in various sectors such as education, health care and telemedicine.

In the President's speech (*See Annex 1*) read by Hon. Dr. Ruhakana Rugunda delivered a speech emphasized Government's commitment in extending ICT accessibility and usage in the country to better serve the citizens. He stressed the fact that the Government is striving to roll out ICT in the country to improve communication and also to improve on sectors like health and education. He highlighted the need for Research and Development in the Area of ICT and Traditional medicine. He thanked Dr The Ministry of Health and in particular Dr. Nambatya Grace Kyeyune – Director of Research, Natural Chemotherapeutics Research Institute for coordinating the mosquito larviciding and other bilateral efforts in traditional medicine. The president in his speech observed that ICT can be utilized for working with other countries such as India and china (which recently sent a delegate to assess technical capacity building needs of (NCRI) in standardizing Ugandan traditional medicine. He appreciated all efforts from bilateral partners that are targeted at bringing about the use of ICT in African Traditional Medicines.

He thanked the Organizers of the conference and The Principal, Makerere University Business School for hosting a conference of this magnitude in Uganda. The Minister declared the conference officially open on Thursday March 22, 2012 at 12.30pm.

Prof. Waswa Balunywa and Prof. Victor W.A. Mbarika thanked the Minister for honoring the invitation to officially open the conference.

#### **4.4 Appreciation to the conference Sponsors and collaborators**

The Principal also took the opportunity to thank individuals and Sponsors and collaborators of ICT4Africa 2012 conference in their various Categories. The conference Chair conveyed heartfelt gratitude to the sponsors for contributing to the success of the ICT4Africa 2012 conference.

##### **4.4.1 Platinum Sponsor:**

- The Host, Makerere University Business School (MUBS)
- Third World Academy of Sciences (TWAS)

##### **4.4.2 Gold Sponsors:**

- Uganda Revenue Authority (URA)
- Google Uganda

##### **4.4.3 Silver Sponsors:**

- Open Access Database for Uganda (Knoema)
- Uganda Goes Online (Ugo)

##### **4.4.4 Other sponsors:**

- International Centre for Information Technology and Development (ICITD), USA
- Southern University and Agricultural and Mechanical College (SUBR), Baton Rouge, Louisiana, USA
- The ICT University (ICTU), USA
- African Association of Information Communication Technology (ASICT)

- PCtech Magazine
- TRAC.fm
- Broadband Company
- National Science Foundation (NSF), USA

Finally, the International delegates had an opportunity to take a group photo with the Guest of Honor.

## 5. DAY THREE (FRIDAY MARCH 23, 2012)

### 5.1 Paper presentations, business plenary and panel discussions program

Mr. Bosco Amerit Comrade was the day manager

<b>SESSION 6 (8:30 – 9:50)</b>	
<b>SESSION 6A</b>	<i>Sub-theme: Panel Session</i>
<b>Hall:</b>	<b>SUNFLOWER</b>
<b>Chair: Prof. Solomon Negash</b>	<b>Co-Chair: Moyo Sibonile</b>
<b>Time</b>	<b>Topics</b>
8.30 – 9.10am	Meet the Editors
9.10 – 9.50am	Let Computer Science be: Circumscribing Computer Science for Teaching, Application or Propagation
9.50 – 10.20am	<i>Conference Tea Break</i>
<b>SESSION 6B</b>	
<i>Sub-theme: Panel Session</i>	
<b>Hall:</b>	<b>LILY A</b>
<b>Chair: Dr. Shawndra Hill</b>	<b>Co-Chair: Dr. Nixon Muganda Ochara</b>
8.30 – 9.10am	E-Skilling Africa: Becoming Globally Competitive in the Knowledge Economy
9.10 – 9.50am	Opportunities for E-Learning in Uganda: Results of a KAP Assessment
9.50 – 10.20am	<i>Conference Tea Break</i>
<b>SESSION 6C</b>	
<i>Sub-theme: Panel Session</i>	
<b>Hall:</b>	<b>LILY B</b>
<b>Chair: Dr. Jude Lubega</b>	<b>Co-Chair: Dr. Yolanda Rankin</b>
<b>Time</b>	<b>Topic</b>
8.30 – 9.10am	Open Data
9.10 – 9.50am	Issues in Open Source Adoption and Implementation: Lessons Learned in African Higher Education Institution
9.50 – 10.20am	<i>Conference Tea Break</i>
<b>SESSION 7 (10:20am – 1:10pm) Business Plenary</b>	
<b>Hall:</b>	<b>SUNFLOWER</b>
<b>Chair: Komminist Weldemariam</b>	<b>Co-Chair: Nleya Sindiso</b>
<b>Time</b>	<b>Topics</b>
10.20– 10.35am	openafrica.org, <a href="http://knoema.com">http://knoema.com</a>

10.50–11. 05am	Consumers Affairs Manager ZICTA
11. 05–11.20am	UGO
11.20– 11.35am	TRAC.FM
11.35– 11.50am	PC Tech
11.50–12.05pm	Google Uganda
12.05– 2.20pm	Gujarat (India) Model of Development – Bridging the Digital Divide
12.20– 2.35pm	Designing An Architecture For Delivering Distributed Agricultural Information Services For Developing Countries
12:35- 12:50pm	Does it matter? Women entrepreneurs and mobile phone usage in business. A case of Owino Market
12.50 – 2.00pm	<i>Conference Lunch Break</i>

## 6. DAY FOUR (SATURDAY MARCH 24, 2012)

### 6.1 Day four program

PLENARY SESSION		
SESSION 10		
Hall:	SUNFLOWER	
Time	Topics	Presenter(s)
9.00 – 10.30am	African Society for ICT (ASICT) Congress	Dr. Adekunle Okunoye
10:30-5:00pm	<i>Sight Seeing to Jinja source of the Nile, Mabira forest, and Namugongo Martyrs Shrine</i>	<i>Walugembe Ahmed/Samali Mlay</i>

### 6.2 African Society of Information Communication Technology Congress (ASICT)

The quarter day African Society of Information and Communication Technology (ASICT) Congress was held on the day of the conference (Saturday March 24, 2012). The congress brought together ICT professionals both in academia and industry and was driven to increase members to the Society. Participants were encouraged to join the Society in order to strengthen ICT in Africa. The Chairman stressed that Africa should write her own ICT story, and this can only be done if they work as a team in collaboration. The Congress culminated in membership registration.

### 6.3 Excursion

Interested conference participants were taken for an excursion at an additional fee of \$50. The places that were visited were; the source of the River Nile, the Namugongo Christian Shrine and Mabira natural forest. The excursion was done on the last day of the conference after the ASICT meeting starting at 11am.

## 7. SUMMARY OF CONFERENCE PROCEEDINGS

### 7.1 Papers and Panels

A total of sixty seven (67) papers and six (6) panel discussions were scheduled for presentation; out of which fifty five (55) papers were presented and six (6) panels were held. The paper presentation and panel discussions were conducted on Thursday and Friday March 22-23, 2012. Some of the invited participants could not make it to the conference for various reasons hence the disparity in numbers.

## 7.2 Business Plenary session

A Business plenary session was held for industry practitioners whereby participants; most of whom were sponsors presented their papers on Friday March 23, 2012. These papers were in the area of ICT and its applicability in different areas within industry. A total of seven (7) papers were presented during the business plenary session.

## 7.3 Conference sessions and paper presentations

A total of fifty five (55) papers were presented during the conference. Below is a summary of the number of papers presented according to conference sessions.

**Table 1: Conference sessions**

Session	No of papers Programmed	No of papers presented
Doctoral Consortium	18	17
ICT in Healthcare	10	9
Theoretical Computing & Software Development	9	7
ICTs, National Growth & Global Development	6	6
ICT, Education and E-Learning	16	13
ICT, Entrepreneurship and Business	11	9
Electronic Government, Communication and Public Sector Reform	9	6
Web Security, Privacy, and Risk Management	6	5
Panel Discussions	6	6
Business Plenary	7	7
<b>Total</b>	<b>98</b>	<b>85</b>

## 7.4 Number of participants

The conference attracted over two hundred local, regional and international participants from 21 countries all throughout the four conference days.

## 7.5 Keynote addresses

Keynote addresses were made by Honorable Darren G. Mire (Chairman Board of Supervisors, Southern University, and Baton Rouge, USA), Dr. Rani Whitfield (Southern University, Baton Rouge, USA), Dr. Grace Kyeyune Nambatya (Director of Researcher, Natural Chemotherapeutic Research Laboratory, and Uganda) and Dr. Emdad Khan (California, USA). The speakers gave keynote addresses on ICT usage and dissemination in sectors of education, health care, telemedicine and internet speech respectively.

## 7.6 Keynote Lectures

Keynote Lectures were conducted on Wednesday March 21, 2012 during the Doctoral Consortium. The lectures were presented by various facilitators mainly in the areas of research and ICT. The lectures are presented in Table 2 below;

**Table 2: Keynote Lectures**

Lecture	Facilitator
How to get a PhD – Formulating a topic, conducting research and writing the dissertation	Dr. Shawndra Hill
Fundamental steps in writing dissertation	Prof. Cosmos Nwokefor
Case Study in Information Systems	Dr. John Effah
The Research proposal: Preparing the proposal for qualitative and quantitative research	Dr. Chanika Jones
Selecting a research area or topic	Dr. Jimmy Macharia
Ethics and the research process	Dr. Peter Meso
Tips and Strategies for Effective research	Dr. Jarrett Landor Ngemi and Dr. Oswald D’Avergne
Managing cyber infrastructures Ethics and Crime	Dr. Mathieu Kourouma

## 7.7 Countries represented

A total of twenty one (21) countries from 4 continents namely; Africa, Asia, Europe and North America were represented at the conference. Below are countries that were represented.

- |             |                  |               |
|-------------|------------------|---------------|
| 1. Belgium  | 8. Ghana         | 15. Swaziland |
| 2. Botswana | 9. India         | 16. Taiwan    |
| 3. Burundi  | 10. Kenya        | 17. Tanzania  |
| 4. Cameroon | 11. Netherlands  | 18. Uganda    |
| 5. Canada   | 12. Nigeria      | 19. USA       |
| 6. Ethiopia | 13. Russia       | 20. Zambia    |
| 7. France   | 14. South Africa | 21. Zimbabwe  |

The participants will be encouraged to attend and participate in the forth coming 5<sup>th</sup> ICT4Africa 2013 Conference to be held in Zimbabwe next year.

## 7.8 Award giving ceremony

The Conference Chairs presented the following people with awards in recognition for their contribution towards ICT development and the conference;

- Local organising committee – In recognition for work well done in organising and coordinating the ICT4Africa 2012 conference.
- Prof. Adekunle Okunoye (conference co-Chair) – in recognition for his continuous support towards the ICT4Africa conferences.
- Prof. Peter Meso (former Chief Editor, AJIS) - for his continued support towards ICT development and publication in Africa
- Prof. Solomon Negash (New Editor in Chief, AJIS) - for his continued support towards ICT development and publication in Africa
- Dr. Robert Isabalija – for his outstanding research contribution at the ICITD
- Asst. Professor Abinwi C. Nchise - for his outstanding research contribution at the ICITD
- Prof. Cosmos Nwokefor – for his outstanding research in ICT for Development
- Prof. Waswa Balunywa (Principal, MUBS) – for his distinguished support to ICT development in Africa
- Dr. Emdad Khan - for his outstanding research in ICT for Development
- Sponsors – were given certificates of appreciation for their financial support of the conference



- k) All participants – given certificates of participation for their participation and paper presentation at the conference

## 7.9 African Journal of Information System Meeting (AJIS)

The conference participants were addressed about the African Journal of Information Systems (AJIS) by the Editor in Chief - Prof. Solomon Negash. He encouraged the conference participants to submit their papers to the AJIS, which is a blind peer-reviewed journal. The journal only focuses on papers on ICT in Africa or those that impact on Africa, with both academic and industry paper publications. The format for the papers to be submitted for the journal can be accessed from [www.ajisonline.com](http://www.ajisonline.com). There are no charges on the authors and the paper reviewers are volunteers from different countries. Conference participants were requested to register as volunteer paper reviewers.

## 8. ICT4AFRICA 2013, BULAWAYO, ZIMBABWE

The Conference Chair announced that the 5<sup>th</sup> ICT4Africa 2013 Conference will be held in Bulawayo, Zimbabwe and will be hosted by the National University of Science and Technology (NUST), Zimbabwe and the Government of Zimbabwe.

Eng. Sam Kundishora (Permanent Secretary, Ministry of ICT, and Zimbabwe) reiterated that the Government of Zimbabwe has expressed interest and pledged support to host the ICT4Africa 2013 conference. Zimbabwe has a lot of potential especially in the Education sector and the Ministry of ICT.

Mrs. Moyo Sibonile (Head of Department, Computer Science - National University of Science and Technology, Zimbabwe) accentuated the pledge from the University to host the next conference. She was optimistic that papers to be presented at the ICT4Africa 2013 will be double what were presented at the ICT4Africa 2012 conference. Her conclusion remark was that;

- a) There is need to design ICTs in the African context
- b) There is need to develop academic capacity to replace brain drain
- c) There is need to move away from customizing to designing ICT in Africa.

## 9. CHALLENGES FACED

The main challenges that were faced were;

- a) Some of the invited participants did not attend the conference, therefore impacting on the program
- b) There were inadequate funds to run all the conference activities.
- c) Some participants confirmed their participation a few days to the conference, creating a continuous need to alter the conference program till a few hours to the conference.
- d) Participants remitted their conference fees at the start of the conference, therefore most service providers had to be paid during and after the conference, distracting the organisers from conference coordination.
- e) Some of the conference materials were delivered late (during the conference) due to the late confirmation and payment by participants.

f) Frequent and late changes in the programme affected proper scheduling of activities

## 10. RECOMMENDATIONS

The organisers for the subsequent conferences should;

- i. Start the organising process early enough to cater for all the preparations in time
- ii. Contact potential sponsors months before the conference, preferable on a face-to-face basis
- iii. Certify that participants confirm their participation and pay the conference fees at least two weeks to the conference
- iv. Ensure that conference materials are prepared at least a week prior to the conference.
- v. Devise means of getting more participants from Asia which was represented by very few participants despite the ICT craze there. The means should also guide to get participants from South America that was not represented at all.

## 11. CONCLUSION

All the core activities of the conference were run within the planned four days. Information was disseminated and knowledge was shared adequately. Many participants registered with the ASICT, widening its membership. There was a positive feedback from the conference participants who greatly appreciated the opportunity to meet people of a shared interest from so many diverse countries, the prospect to network and to learn from one another, and the chance to explore ideas. Consequently the conference was successful in meeting its goals.

The Organising Committee conveys its gratitude to all the participants and sponsors of the 4<sup>th</sup> ICT4Africa 2012 conference and entreats them to extend the same support to the ensuing conferences. The next conference will be held in Zimbabwe in March 2013 and is already eagerly awaited.

## 12. SPECIAL THANKS

Special Thanks go to the Following local Conference organizing committee members who worked tirelessly thought the year to ensure that the conference is a success. Special thanks also go to the Operational Committee that was involved in the day to day operations of the conference.

Sno.	Committee	Members
1	Local Conference Organizing Committee Membership	Dr. Joseph Ntayi/Chairperson and Co-Chair Mr. Moya Musa /Deputy Chair Person Ms. Serina Ateenyi Ms. Regis Namuddu Mr. Peter Odoki Mr. Kituyi Geofrey Mr. Kasse John Paul Ms. Samali Mlay Ms. Prossie Kagoloby Ms. Sheilla Kasujja Ms. Robinah Akodo Mr. Fred Luganda Mr. Charles Olupot/Secretariat
2	Day Managers	Ezaga Patrick Matama Rogers

		Ntamu Dianah Amerit Comrade
3	Rapporteurs	Samali Mlay Kituyi Geoffrey Mayoka Kasse John Paul
4	Conference Administrators	Olupot Charles Irene Namutebi Najjingo Erinah Nagujja Hajara Emmanuel Semanda
5	Secretariat	Nabyangwa Sophie Annet Bukenya Kaala Ruth Remmy Namutangula
6	ICT Support	Kigundu Mohammed Bahemuka Ashraf Winnie Akiror
7	Ushers	Sagal Victoria Aliza Fatumah Balungi Olivia Mukisa Madrine Basuuta Maureen Sumaia Namuyingo Kenneth Emotu
8	Drivers	Tondo Mohammed Luutu George Nkata Japheri
9	Health Care	Dr. Amina Tamale Sister Cathy

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## APPENDIX I

### SPEECH FOR HIS EXCELLENCY, THE PRESIDENT OF THE REPUBLIC OF UGANDA ON THE OPENING OF THE 4<sup>TH</sup> ICT CONFERENCE FOR AFRICA'S TRADITIONAL MEDICINE AND ICT SUMMIT, 2012

Principal, Makerere University Business School  
Heads of other Academic institution,  
Invited Guest and Participants  
Ladies and gentlemen

Information and Communication Technology (ICT) for Africa conference is an annual event that brings together stakeholders in educational and industrial sectors in Africa to share experiences. The aim of the ICT conference for Africa is to reflect on how to transfer, diffuse and adopt ICT within Africa on innovation and development. This conference is also an opportunity for us to reflect on how ICT has impacted the African society and the level of ICT development, implementation, strategies, management and policies that are distinctive to Africa.

I would like to thank the host and organizers of the 4<sup>th</sup> ICT conference for Africa in Kampala, Uganda, particularly Prof Waswa Balunywa; Principal of Makerere University Business School. The theme for this year's conference is **“Africa's E-inclusive; defying the odds and leading the way in global ICT innovation”**

This year, the international conference on ICT for Africa's traditional medicine and ICT summit 2012 is focusing on highlighting the synergy of collaboration between African countries and other developing countries, more particularly developed countries towards ICT advancement and development for Africa

A case in point in the Ugandan situation is well exemplified through the current partnership created: Between Uganda, Egypt, Cuba Israel in an effort to establish scientific evidence about larvicides developed in developed/developing countries but evaluated in Uganda (in this regard an underdeveloped Partner) for purposes of consideration for rational use in the fight against Malaria.

This is a scenario exemplifying synergies built through collaboration to utilize ICT to advance development in terms of rationally selecting standardized and scientifically validated products through application of ICT to influence policy on Malaria Control through availing effective Larviciding products to support the integrated Vector Control Management Strategy (IVM) intended to compliment the other interventions, e.g. i.e. Timely diagnosis and treatment, use on Longlasting Insecticide Treated Nets (LLITN's) and Indoor Residue Spray (IRS). ICT utilization is visible here through innovative research engaged in bringing forth products ready for testing in the Ugandan environment.

There is capacity building to the Ugandan human resource and infrastructure as well as scientific equipment of the Laboratories engaged in the program. The programme will inevitably lead to knowledge building platforms as diverse as the affiliations of stakeholders (Herbalists, entomologists, chemists, pharmacists, zoologists, etc..)

District political and technical leaders, local communities up to household level

Units get engaged in dialogue at different levels to effect the following:

- Stakeholder mapping

- Appreciative inquiries
- Cost benefit evaluation
- Owning up to the intervention
- Understanding the challenge e.g. of Malaria at hand
- Overall benefit is successfully mitigating a common enemy in this case Malaria

Synergy of collaboration here is two way; Bilateral partners get a market for their products while Uganda benefits from the research knowledge which when internalized, could later be diffused for application to process other indigenous resources mainly in the traditional systems to produce innovative products.

Friendships are nurtured and the partnering countries learn more about each other as knowledge is exchanged across boundaries.

The conference has brought together participants from Baton Rouge, Louisiana, USA; University of Benin; Bells University of Technology, Covenant University and University of Buea in Cameroon; MUBS, Makerere University college of computing and information technology, Mbarara University of Science and Technology, Uganda national Health organization and Natural Chemotherapeutics Research Institute, Ministry of health in Uganda and many others.

This conference will allow researchers and academician to disseminate their research finding to wider audience of scholars and practitioners of ICT particularly in the sectors of herbal medicine, agriculture, climate change, business, education, media, governance, health, youth and gender.

In this context, ICT involves use of computer and phones for audio and videoconferencing and availing libraries to community for accessing information etc.

The focus of this year conference is on ICT for Africa's traditional medicine and traditional medicine is as old as mankind. The 50<sup>th</sup> session of the WHO regional committee for Africa recognized the importance of traditional medicine in 2000. In fact, the World Health Organization estimates that 80% of the populations in developing countries continue use traditional medicines to meet their health care need. For many people, particularly those living in rural areas this is the only available, accessible and affordable source of health care.

In 2001, in Lusaka Zambia, African Heads of State and Government declared that the period 2001-2010 be the decade of African Traditional Medicine. During the decade, a decision to observe African traditional medicine day was made. Since the year 2003, Uganda has been commemorating African traditional medicine day. Currently African Union and WHO are re considering another decade of African traditional medicine day. ICT can help share information on African traditional medicine day.

### **Bill on Indigenous and Complementary Medicine**

During the decade, more than half of the 46 member states of the WHO region including Uganda have formulated policies and regulatory frameworks on traditional medicine. In fact the government of Uganda through the Ministry of Health drafted a bill on indigenous and complementary medicine in 2002. The objectives of the bill include:

- To define indigenous and complementary medicine in relation to modern medicine.
- To establish a Council of indigenous and complementary medicine practitioners.
- To provide registration of practitioners and practices.

- To provide minimum standards to be maintained in the practice.
- To provide for financial provisions including provision of funds for the council
- Provide for offences against acts and making regulations against the acts.

The bill has been reviewed by the Ministry of Justice and there are some amendments to be incorporated. I am informed that Ministry of Health has reviewed the comments and waiting for a Certificate of Financial Implication to be issued by Ministry of Finance to enable the bill get clearance from the Ministry of Justice then be submitted to Cabinet for consideration. I believe that this conference will come out with ICT related suggestions to assist in validation and subsequent implementation of the bill.

The Government of Uganda through Uganda National Council of Science and Technology will formulate a Policy on Indigenous Knowledge. This policy will protect intellectual property of scientist and traditional health practitioners, who are the custodians of indigenous knowledge. ICT can play a role in protection of intellectual knowledge.

### **Research and development**

Scientific research is important in development of traditional medicine. The government of Uganda has established by act of parliament of 2009, Uganda National Health Research Organization. This is an umbrella organization for health research bringing together: Uganda Virus institute (UVRI), Uganda Cancer Research Institute (UCI), Natural Chemotherapeutics Research Institute (NCRI) and the Tropical Diseases Research Institute (TDRI). The government will operationalise this organization to strengthen health research. I believe, ICT will be able link researchers and research institutions involved in traditional medicine research and also strengthen their collaborations with other organization as it leads to creation of knowledge sharing platforms.

A number of countries including Uganda are conducting research on traditional medicine for treatment of malaria, HIV/AIDS, diabetes, sickle cell anemia and hypertension. In Uganda, scientists at the Natural Chemotherapeutics Research institute and the College of Veterinary Medicine and college of Natural Sciences of Makerere University are producing scientific facts on traditional medicine. Besides, the Government of Uganda has given lee way for herbal medicines to be assessed for mosquito larviciding, a programme I've initiated in the Ministry of Health. I directed the Minister of Health to coordinate the implementation of this programme through a National Task Force supported by the Technical Coordination Committee chaired by Dr Nambatya Grace Kyeyune – Director of Research, Natural Chemotherapeutics Research Institute. Larviciding product from other countries; namely, Cuba, Israel and Egypt are being tried in Uganda for establishing scientific evidence regarding efficacy and safety for eventual use to mitigate the Malaria burden in combination with the already existing interventions. Therefore, ICT can improve sharing of the scientific facts and partnerships among the researchers and Bilateral partners.

### **Development of local production of herbal medicines**

There is a lot of potential of ICT in industrialisation and commercialization of herbal medicine. Uganda is rich in important medicinal plants such as *Warbugia ugandensis*, *Prunus africana*, *Aloe species*, *Moringa oleifera* that can be developed into commercial product that can improve the economy of Uganda. The government of Uganda will finance creation of incubation centres that transform scientific researches in traditional medicine into commercial products that can transform the economy of this country. The National Drug Authority has already developed guidelines for regulation of herbal medicine products and

ICT can be used to building the capacity of stakeholders in the formulated guidelines for regulation. ICT can play a role in enhancing the industrialization of herbal medicines.

### **Partnerships**

There are partnerships among research institution in traditional medicine and between countries. In Uganda, I am happy that NCRI and academic research institutions are in partnership in traditional medicine. ICT will play a role in strengthening these partnerships. There is proposed partnership with countries such as India to build the capacity of Ugandan in the area of traditional medicine. In the year 2011, the government of Republic of India contacted the Ministry of Health to recommend one official to participate in a workshop on traditional medicine at the institute of Ayurveda in India. The permanent Secretary, Ministry of Health recommended Dr. Grace Nambatya Kyeyune as Director of Natural Chemotherapeutics Research institute to participate. I would like to thank the Indian government for building the capacity of Uganda in area of traditional medicine. Since, Indian government has managed to standardize their traditional medicine (Ayuverda): ICT can be utilized for working with other countries such as India and china (which recently sent a delegate to assess technical capacity building needs of (NCRI)in standardizing Ugandan traditional medicine. All these efforts from bilateral partners are highly appreciated.

### **Capacity building**

There is need for improved awareness on the role of herbal medicine in improving health and livelihood among many people. I understand countries such as Ghana and Nigeria have established courses at tertially level to train their medical herbalist and Guinea, Sierra Leone and Tanzania have indicated to offer courses in complementary and alternative medicine. The Ministry of education and Ministry will consider developing courses in traditional medicine as a way of supporting Institutions like Makerere and Mbarara Universities already towing this line to build the capacity of traditional health practitioners and our young generation.

ICT will be very important in this area of building capacity of Uganda. Use of ICT can be a good strategy to teach the young generation about important herbal medicine in Uganda and in other countries.

### **Conclusion**

Last but not least, I wish to emphasize that the role of ICT in the development traditional medicine and I urge the Minister of Health to expedite the bill on indigenous and complementary medicine to have it tabled to Cabinet. I also call upon the Ministry of Finance to allocate a vote to operationalize Uganda National Health Research organization (UNHRO).

I wish you fruitful deliberation. With this few remarks, I declare the 4<sup>th</sup> ICT conference on Africa opened.

Thank you