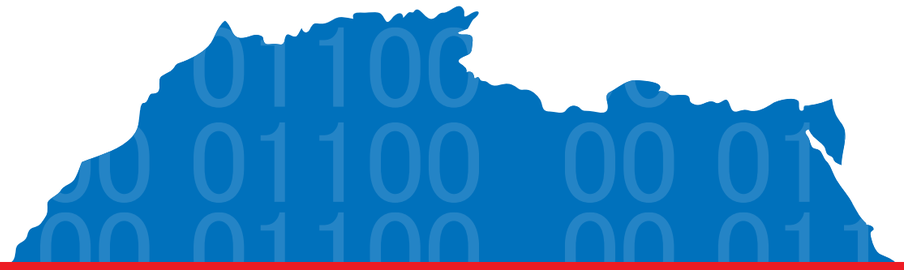
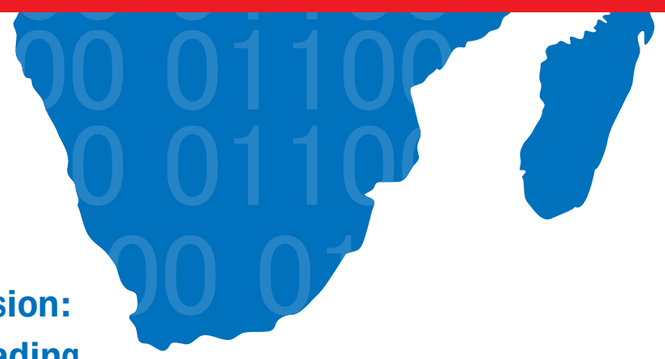


INTERNATIONAL CONFERENCE ON

ICT FOR AFRICA 2012

PRESENTED BY MAKERERE UNIVERSITY BUSINESS SCHOOL
IN CONJUNCTION WITH ICITD



THEME: "Africa's E-inclusion: Defying the Odds and Leading the way in Global ICT Innovation"

Hosted by Makerere University Business School (MUBS) in collaboration with the International Centre for Information Technology and Development (ICITD)

Design and Printed by Essar Publisher
contact 0712567033 / 0703674586, Email: charleswafula95@yahoo.com

CONFERENCE PROGRAM

(Short version)

4TH INTERNATIONAL CONFERERENCE

ON ICT FOR AFRICA 2012

MARCH 21-24

IMPERIAL ROYALE HOTEL,

KAMPALA-UGANDA

*H*osted by Makerere University Business School (MUBS) in collaboration with the International Centre for Information Technology and Development (ICITD)

INTERNATIONAL CONFERENCE ON
ICT FOR AFRICA 2012

d'éducation. Après les indépendances, les timides efforts déployés dans le cadre des nouveaux Etats se sont avérés des échecs cuisants parce qu'inadaptés au mode de vie, à la vision et à la compréhension du monde, de l'éducation par ces communautés.

Si l'on veut à présent consolider l'unité nationale et construire des véritables nations modernes, il faudra alors envisager des actions concrètes intégratives, notamment, en matière de prise en compte de la question de l'éducation de ces communautés. Dont le premier pas consiste à résoudre la problématique de la scolarisation des enfants nomades

which proposed herewith to extend mobility and personalisation concepts on Pay-TV services

This paper presents design of a novel security architecture integrating mobile and broadcasting technologies in the Pay-TV system. The security architecture proposed herein is a state-of-the-art solution to tackle well-known problems challenging current Pay-TV systems including but not limited to interoperability amongst service providers, relatively high cost of the service deployment, the security compromise, limited interactivity and bespoken services offered to subscribers. It also proposes the Follow-me service that enables subscribers to access their entitlements via an arbitrary set-top box. It will also present the design of a novel security architecture integrating mobile and broadcasting technologies in the Pay-TV system. The security architecture proposed herein is a state-of-the-art _Mobile Integrated Conditional Access System_ (MICAS) solution to tackle well-known problems challenging current Pay-TV systems including but not limited to interoperability amongst service providers, relatively high cost of the service deployment, the security compromise, limited interactivity and bespoken services offered to subscribers. It also proposes the Follow-me service that enables subscribers to access their entitlements via an arbitrary set-top box.

A Library in Your Pocket: Electronic Books for Higher Education in the East African Context: The Case of Livingstone International University

Author(s):

PhillipShero, LivingStone International University, Uganda

MaryManana, LivingStone International University, Uganda

Abstract:

In response to recent calls for faster and more deliberate integration of technology to the education sector in East Africa, this research proposal describes a qualitative case study method to explore introduction of electronic books and e-book readers into a university in Uganda. The proposed method calls for an in-depth study of the first semester of a new programme. This study is unique in that it proposes to analyze the experience of students, faculty members, and support staff in the first programme of its kind in Uganda. ICT researchers and administrators in the higher education sector should find this proposed study beneficial as an extension of the knowledge and understanding of reception, use, and integration of technology in a real-world setting.

L'utilisation Des Technologies De L'information Et De La Communication (TIC) Pour Scolariser Les Enfants Des Zones Nomades Du Mali

Author(s):

Aicha WaletMohamed, ICITD, United States

Abstract:

Les sociétés pastorales et nomades dont l'apport économique, culturel, social, politique est indéniable restent encore globalement marginalisées et peu prises en compte dans les stratégies nationales de développement. Ces sociétés subissent une déstructuration et une paupérisation croissante. Leur système éducatif traditionnel adapté pourtant à un environnement de plus en plus précarisé sous le double effet des catastrophes naturelles et de l'homme, est ignoré, et dans certains cas méconnu...

Longtemps, y compris pendant l'occupation coloniale, ces communautés pastorales et nomades sont restées en marge des processus dits modernes

CONFERENCE PROGRAM

DAY ONE - WEDNESDAY 21, 2012

DAY MANAGER: Rogers Matama

Plenary Session (11.00 – 12.00pm)	
Chair – Dr. Joseph Ntayi	
VENUE: MUBS Bugolobi Campus (Annex)	
TACTIVITY	PRESENTERS
Fundamental steps in writing dissertation	Prof. Cosmos Nwokeafor
Case Study in Information Systems	Dr. John Effah
The Research proposal: Preparing the proposal for qualitative and quantitative research	Dr. Chanika Jones
12.12.20pm	*Coffee break*
DOCTORAL CONSORTIUM	
Doctoral Consortium Parallel Session 3 (12.20-1.20pm)	
Venue: MUBS Bugolobi Campus (Annex)	
Activity	**Chair** : Prof. Enoh Tanjong
Doctoral Consortium Sessions3	Co-Chairs: Dr. Mathieu Kourouma Dr. Bangaly Kaba Prof. Cosmos Nwokeafor Dr. Peter Meso Dr. William Shu Dr. Jarret Landor Prof. Mathias Fonkam Dr. Kehbuma Langmia
Doctoral Consortium Parallel Session 4 (12.20-1.20pm)	
Venue: MUBS Bugolobi Campus (Annex)	
Activity	Chair : Dr. Chanika Jones

Doctoral Consortium Session 4	Co- Chairs: 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
Plenary (1.20-2.00pm)	
Chair – Dr. William Shu	
VENUE: MUBS Bugolobi Campus (Annex)	
TACTIVITY	**PRESENTERS**
Selecting a research area or topic	Dr. Jimmy Macharia
Ethics and the research process	Dr. Peter Meso
Tips and Strategies for Effective research	Dr. Jarret Landor Ngemi and Dr. Oswald D'Avergne
Managing cyber infrastructures Ethics and Crime	Dr. Mathieu Kourouma
Closing remarks	**Prof. Yolanda Rankin**

Integration of Information and Communication Technologies in the Education of the Young Pygmy Girl in the South Region of Cameroon

Author(s):

Sikali Laurence, ICT-University, United States

Abstract:

The rapid development of technologies has played a key role in the evolution of the world. No single domain of life has been left aside by ICTs, to the extent that we can no longer do without them. In this trend, ICTs have entered the world of trade, healthcare, management, administration, industries, as well as the education system which has witnessed a significant modernization of its methods. The worldwide proliferation and great expansion of new technologies, led the government of Cameroon to decide, more than a decade ago, to start introducing information and communication technologies into the education system. While everybody is making efforts to adopt ICTs because they have proven very effective all over the world, Cameroon's education system still seems to be lagging behind. Therefore, a process is underway: the reform of the education system that must henceforth integrate the use of ICTs in the teaching/learning practice. In fact, the integration of ICTs in schools is the materialization of a presidential initiative dated February 10, 2001 in his traditional address to Cameroonian youths. Therefore, it is in 2001 that government's action was translated into concrete facts, notably through the creation of Multimedia Resource Centres and computer halls in high schools of major towns in Cameroon. The project was then transmitted to the Ministry of National Education in 2002.

E-Inclusions and It Policy: Transformative Frameworks for the 21st Century Professions in Nigeria

Author(s):

B.J. Bamgbade, Forestry Research Institute of Nigeria (FRIN), Nigeria

Abstract:

The overbearing impact of ICT on other professions the world over needs no emphasis in repositioning, re-organizing, re-inventing and re-engineering the traditional systems of operations in Nigeria as it relates to globalization. The contributions of ICT to governance, commerce, education research, medicine and in making life easier for mankind are germane to the present study. The paper reviews the relevance of ICT tremendous influence and contributions to accomplishment in various organizations and businesses. It also suggested relevant recommendations to government, corporate entities and stakeholders on why ICT should be fully embraced, deployed and implemented and the enforcement of IT policy to letters, in Nigeria.

Security Architectures in Mobile Integrated Pay-TV Conditional Access System

Author(s):

Abimbola Owolabi, National Open University of Nigeria, Nigeria

Abstract:

This paper will present the design and describes the advantage of the state-of-the-art _Mobile Integrated Conditional Access System_ (MICAS) concerning interoperability, personalisation, security and operational costs in Pay-TV systems. The Message Handling Subsystem is proposed and outlined together with *Follow-Me* service,

Abstract:

The identification of motifs from organisms with peculiarities in their genomic sequence like malaria parasite (Plasmodium falciparum) is of utmost importance in motif discovery research. P. Falciparum, a single celled parasite is the cause of the most severe form of malaria which exacts a heavy toll of illness and death - especially amongst children and pregnant women. The treatment and control of malaria has become more difficult with the spread of drug-resistant strains of the parasite. Therefore, understanding the detail biology of P.falciparum attained by the identification of the proteins involved in its gene regulatory mechanism is fundamental in the effort to combat the disease. This paper presents the development of a computational inference algorithm, Suffix Tree Gene Enrichment Motif Searching (STGEMS) for mining motifs in organisms with challenging sequences. The algorithm utilized the suffix tree, achieving a significant speed up in the run time and an improved sensitivity by incorporating the gene enrichment analysis using hypergeometric scoring function in its similiarity check mechanism. STGEMS was tested with four sets of genes from the intraerythrocytic development cycle of malaria parasite P.falciparum. A validation test was conducted by comparing its empirical runtime with five popular motif discovery tools namely: MEME, WEEDER, RISOTTO, EXMOTIF, and GEMS. STGEMS outperformed these motif discovery tools in terms of speed of execution and accuracy of prediction. A further Proof of the sensitivity of STGEMS was achieved by implementing the similarity check mechanism of the popular MOGAMOD algorithm and comparing their result. STGEMS recorded remarkable sensitivity over MOGAMOD.

Running-Karp-Rabin Greedy String Tilling Algorithm (RKR-GST) based System for Determining Similarity between Textual Digital Documents

Author(s):

OlumideLonge, Int. Centre for Information Technology & Development, United States

KolawoleOladipupo, University of Ibadan, Nigeria

Abstract:

Deliberate or inadvertent replication of digital documents occasioned by the volume of digital resources made available on the world wide-web and the ease with which they can be copied without degradation in quality and content has emerged as one unintended consequence of the internet. With the dire consequences associated with such practices in the academic, research and social entertainment circles, research must continue to focus on educating scholars on the implications of such activities and provide measures for early detection. We designed and implemented a system tagged "KatchPlaiger" using standard Object Oriented design approach and the Java Programming language. The system employ string pattern matching to determine similarities between two textual digital documents. The software implements the Running-Karp-Rabin Greedy String Tilling algorithm (RKR-GST) and generates a similarity score which is represented as a percentage that is indicative of the degree of similarity that exists between digital documents. A visual representation in the form of a graph for easy understanding is also provided. Preliminary tests using students source codes and the essay assignments show very promising results.

PLENARY SESSION		
SESSION 2	OFFICIAL OPENING	
Hall:	PRIMROSE	
Chair: Dr. Samuel Ssejaaka		
Time	**Activity**	**Presenter(s)**
2.00 – 2.20pm	Panel Discussion – Challenges of Managing College/Faculty of ICT in Higher Institutions in Africa	Prof. Adekunle Okunoye, Prof. Cosmas Nwokeafor, Prof. Ojo and Prof. John Ngubiri
2.20 – 2.40pm	**Arrival of H.E. President Yoweri Kaguta Museveni**	**Prof Colin Sentongo, Hon. Daren Mire, Dr. Rani Whitfield, Dr. Emdad Khan, Prof. Waswa Balunywa, Prof. Victor Mbarika, Dr. Grace Nambatya and Prof. Venansius Baryamureeba**
2.40 –2.55pm	Presentation on African Traditional Medicines and ICTs.	Dr. Grace Nambatya Kyeyune
2.55 – 3.10pm	The Role of ICTs in Tax Administration, URA's Experience	Commissioner Domestic Taxes, URA; Mr. Moses Kajubi.
3.10-3.30pm	Goodwill message from sponsors	Sponsors
3.30 – 4.10pm	**Opening speech from the President of the Democratic Republic of Uganda**	**H.E. President Yoweri Kaguta Museveni**
4.10 - 4.30pm	Vote of thanks from the Conference Chair.	Prof. Victor Mbarika and Hon. Darren Mire
5:00pm	Meeting of the Program Committee and Track/ Session Chairs	Mr. Moya Musa

DAY TWO- THURSDAY 22, 2012

VENUE: IMPERIAL ROYALE HOTEL

DAY MANAGER: Patrick Onen Ezaga

PLENARY SESSION (8:00 – 8:50am)		
SESSION 3		
Hall: PRIMROSE		
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 addresses	Hon. Darren Mire, Dr. Whitfield

PARALLEL SESSIONS 1 (8:50 - 10:10)	
SESSION 3(A):	*ICT IN HEALTHCARE*
Hall: PRIMROSE	
Chair: Dr. Grace Nambatya Kyeyune	Co – Chairs: Dr. William S. Shu

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.
The Design of an M-Technology Based Intervention for Outpatient Adherence in Nigeria		Senanu Okuboyejo, Nicholas Ikhu-Omoregbe and Victor Mbarika
10.10 – 10.30am	***Conference Tea Break***	***Ms. Serina Ateenyi/Irene Namutebi***

SESSION 3(B)	*Sub-theme: THEORETICAL COMPUTING & SOFTWARE DEVELOPMENT*
Hall :	LILY A
Chair: Prof. Mphahlele Maredi	Co–Chairs: Dr. Oswald D'auvergne/Ukpe Christopher

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 Adebiyi, 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	***Conference Tea Break***	***Ms. Serina Ateenyi/Irene Namutebi***

nature of investments were considered to be large and capital intensive, and inevitably, project implementation did not rely on improvisation alone, but also on more structured and rationalistic methodologies, such as the systems development lifecycle.

Mobile Health (mHealth) approaches and lessons for increased performance and retention of community health workers in low- and middle-income country settings: A landscape analysis

Author(s):

KarinKallander, Malaria Consortium Africa, Uganda

Abstract:

Mobile health (mHealth) integrates health service provision with use of mobile technology, using applications for information sharing, awareness raising and collection of health record data. In this review, six mHealth themes were examined using information from peer-reviewed journals, websites and reports. We consider lessons from mHealth projects focusing on low- and middle-income countries, in particular those which may be used to increase coverage and quality of community health workers who diagnose and treat sick children. Results show that one-way or two-way communication using SMS or data transfer are the most widely used applications. Key challenges include having to move from mHealth pilots to national scale, often resulting from lack of national ministry involvement and evidence of cost and effectiveness. With establishment of true partnerships between all sectors involved, including the industry, mHealth has great potential to deliver increased health services to rural communities by improving worker performance and systems effectiveness.

Exploring the phenomenon of participatory designing in ICT4D in rural communities: A critical discourse analysis

Author(s):

Flora Mpazanje, The University of Cape Town, South Africa

Abstract:

In this paper literature purports that the phenomenon of participation in designing and development of rural community ICT4D projects is meant to improve project results. However, results do not seem to have improved even after the ICT4D domain adopted participation in its project initiatives. This research study posits that the phenomenon of participation in rural community ICT4D project initiatives is still misunderstood, illusive and wrongly applied resulting into failures. This research study seeks to understand how the phenomenon of rural community participation in ICT4D projects manifests itself. It seeks to understand how the different stakeholders understand and enact participation in rural community ICT4D projects. The study will be qualitative and critical while being cross-sectional. Results from the study are expected to be relevant for both theory and practice. The study is meant to span through a period of three years.

STGEMS: A Computational Inference Algorithm for Motif Discovery

Author(s):

Angela Makolo, University of Ibadan, Nigeria

Ezekiel Adebiyi, Covenant University, Nigeria

Adenike Osofisan, University of Ibadan, Nigeria

phones particularly for rural people.

Fuzzy Association Rule Mining Expert-Driven (FARME-D) Approach to Knowledge Acquisition

Author(s):

OlufunkeOladipupo, Covenant University, Nigeria

CharlesUwadia, Covenant University, Nigeria

CharlesAyo, Covenant University, Nigeria

Abstract:

Fuzzy Association Rule Mining Expert-Driven (FARME-D) approach to knowledge acquisition is proposed in this paper. This is proposed as a viable solution to the challenges of sharp boundary problem and rule-based unwieldiness in building a fuzzy rule-based expert system, especially in medical domain. This paper presents an overview of FARME-D as an approach which integrates domain expert opinion into the existing Fuzzy Association Rule Mining concept to extract relevant rules which correspond with the expert perception of the domain. The fuzzy models would be based on expert opinion about the data description. The proposed approach is committed to modelling of comprehensible Fuzzy Rule-Based Expert Systems. It also aimed at providing a platform for instant update of the knowledge-base in case new knowledge is discovered. The insight to the new approach strategies and underlining assumptions, the structure of FARME-D and its integration with Fuzzy Expert System standard architecture are well presented. Also, the modalities for the validation of the FARME-D approach are discussed.

Situated Improvisation in Low Risk Information Technology Projects in SMEs

Author(s):

Nixon Ochara Muganda, University of Pretoria, South Africa

Eric Wachira, University of Nairobi, Kenya

Abstract:

Improvisation, derived from the Latin word "improviso" is defined as "situated performance where thinking and action occur simultaneously and on the spur-of-the-moment" (Ciborra, 1999). This concept elevates the ability to perform or provide something on the spur of the moment by stressing personal creativity, flexibility and expertise that are necessary for the improviser. Both expertise and creativity are needed to be able to react swiftly and in a suitable manner that fits in with all the relevant aspects of a certain situation (Verjans, 2005). Improvisation, just like other approaches to systems development, has the objective of creating a useful and sustainable information systems (Peterson, 1998).

Improvisation studies by Ciborra et al (1996; 1997, 2000) are based on empirical studies of mostly open ended and highly tailored technologies such as groupware, intranets and the Internet. These studies focused on the use and ongoing accommodation of such customisable technologies that are so general at the user front (Orlikowski, 1996). Other studies, such as Amany (2006) present the improvisation argument in the implementation of a highly rigid structured technology. The investigation focuses on whether the implementation of such technology represented by Enterprise Resource Planning (ERP) accommodates the improvisation argument, which contrasts with Ciborra's research on malleable open-ended technology. In a majority of these improvisation studies on IT projects, the

SESSION 3C	*Sub-theme: ICTS, NATIONAL GROWTH & GLOBAL DEVELOPMENT*
Hall:	**LILY B**
Chair: Dr. Phillip Shero	**Co – Chairs:** Prof. Peter Meso/Julius Fomboh

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.	Prof. Waswa Balunywa and Joseph Wanuume Munuulo
Topic Analysis On The Impact Of ICT On Socio-economic Growth and Development	Kufre Ukpe and Kibily Samake
10.10 – 10.30am *Conference Tea Break*	***Ms. Serina Ateenyi/Irene Namutebi***

PARALLEL SESSIONS 2 (10:30am – 1:10pm)	
SESSION 4(A)	***Sub-theme: ICT , EDUCATION AND E-LEARNING***
Hall:	**PRIMROSE**
Chair: Prof. Dr. Josephine Nabukenya	**Co-Chairs:** Maswikaneng Solly/ Claude E. Njoya

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 if 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	***Conference Lunch Break*** ***Keynote:*** **Internet Speech Technology – Dr. Khan and Mr. Tyson Chisambo**	***Ms. Serina Ateenyi/Irene Namutebi***
SESSION 4B	***Sub-theme: ICT, ENTREPRENEURSHIP AND BUSINESS***	
Hall:	**LILY A**	
Chair: Dr. Agnes Rwashana	**Co-Chairs:** Mr. Moya Musa / Temilola Ayorinde	
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 Africa: A Clarion Call To Action	Femi Adisa and Stephen Robert Isabalija
	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	***Conference Lunch Break***	***Ms. Serina Ateenyi/Irene Namutebi***

SESSION 4C **Hall:**	***Sub-theme: ICT , EDUCATION AND E-LEARNING (2)*** **LILY B**	
Chair: Prof. Sunday O. Ojo	**Co-Chairs:** Mr. Robert Kyeyune/ Adamu Mshelia	
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

INTERNATIONAL CONFERENCE ON
ICT FOR AFRICA 2012

The role of rural telephone networks on rural development in Gezira State

Author(s):

AhmedAbdel Rahman, University of Gezira, Sudan

Abstract:

Rural telephone networks in Sudan are part of the process through which rural people are becoming more linked together and with most parts of the country and the rest of the world. Telephones are means of exchanging social information, particularly to maintain contact with scattered family members and keep them in touch. Experience with telephone services has shown the potential for rural people benefits from various development services such as agricultural, health and education services. Field surveys were used to collect data from 120 respondents in the Gezira State in 2008/2009 growing season selected from a total of 120000 tenants distributed in eight agricultural extension areas in the Gezira State by using the simple random sampling technique. The collected data were statistically analyzed and interpreted using percentage and frequency distribution. The results showed low percentage of people using telephone calls to contact with agricultural health and educational services. It can be concluded that the relatively high cost of buying and using mobile phones negatively influenced the frequency of contacts of respondents particularly their use for agricultural services needed. In addition the absence of telephones access to health and educational services negatively influenced the frequency of contacts. Thus more efforts should be paid by telephone service companies of the Sudan to provide telephone access to health and educational services in addition to use more advanced technology in operating telephone networks in order to reduce cost of buying and using mobile

Abstract:

This paper uses the term "tools" to include the computer hardware, software, and connectivity that we lump together under the title Information and Communication Technology (ICT). The paper provides an overview of area of application of ICT in education with particular references to use of ICT to teach subjects in Secondary Schools towards better performances in the final year examinations among students of Senior Secondary Schools in Africa. Section 1 discusses the concept of ICT; section 2 literature review discusses educational goal, issues in ICT for Africa development, educational policy formulation in Nigeria, community education in Nigeria and quality control to quality assurances in education; section 3 of the paper discusses the research methodology as in research framework- which is based on design of computer software refers to as expert tutor system by author to teach a topic in Biology (Reproduction system), research methodology-compares expert program tutors designed by the researchers and face-to-face classroom teaching; section 4 presents finding and analyses of the results; section 5 discusses the result and give critical analyses; section 6 gives the conclusions based on Implication of the expert tutor design on educational practice, policy and Future research directions.

ICT Development and Poverty Reduction

Author(s):

Adamu Mshelia, Federal Polytechnic Nasarawa, Nigeria

Abstract:

In today's technology driven economy, information and communication technology plays a unique role in fostering innovative, creativity and competitiveness in all sectors of economy. There are essential for addressing key societal challenges supporting progress in the field of science and technology.

to encourage the future adoption of a market information system for rural farmers.

Information Communication Technology and Poverty Eradication in Nigeria

Author(s):

Aminat Abdul-Salaam, Federal College of Educa, Nigeria

Abstract:

Poverty is multi-dimensional. It is characterized by lack of purchasing power, exposure to risk, malnutrition, high mortality rate, low life expectancy, insufficient access to social and economic services and few opportunities for income generation. This paper examines the role of ICT in eradicating poverty in Nigeria. The paper began by examining the concept poverty. It also gave the state of poverty in Nigeria. ICTs development in Nigeria was also attempted. Several ways in which ICT can help eradicate poverty were also examined. Challenges of adopting ICT for poverty eradication were also highlighted.

An Enhanced Inter-Process Communication Model for Distributed Systems

Author(s):

Ranti Famutimi, Bowen University Iwo, Osun State, Nigeria

H Soriyan, Obafemi Awolowo University, Ile Ife, Nigeria

A Ajayi, Obafemi Awolowo University, Ile Ife, Nigeria

Abstract:

Tremendous development in technology has made available fast and inexpensive processors, and progresses in communication technology also brought about the availability of affordable and highly proficient computer networks. Prominent among these is the distributed network systems. This paper identified different inter-process communication (IPC) tools used in distributed systems and proposes an enhanced model for the Remote Procedure Call (RPC) based IPC to improve the performance of information management systems that are based on traditional (normal) remote procedure call for accessing file servers. The performance parameters are the response time and the throughput. The proposed enhanced remote procedure call model was designed such that tasks are not implemented immediately, but are first examined to determine the weight of the tasks (query) and then allocate rank to the query. The rank obtained will be used to determine the node that will implement the query. The enhanced model was evaluated with the traditional remote procedure call and it was found to be better in performance when using response time and throughput as parameters.

ICT A Versatile Tool to Minimize Failure Rate among Final Year Secondary Schools Students in Africa (Nigeria as a Case Study)

Author(s):

Nureni . A.Yekini, Yaba College of Technology, Nigeria

Olawale . N.Lawal, Yaba College of Technology, Nigeria

Agnes .K.Akinwole, Yaba College of Technology, Nigeria

Muhammad .M.Rufai, Yaba College of Technology, Nigeria

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	***Conference Lunch Break***	*Ms. Serina Ateenyi/Irene Namutebi*

PARALLEL SESSIONS 8 (2:00 - 4:00pm)		
SESSION 8A	***Sub-theme: ELECTRONIC GOVERNMENT, COMMUNICATION AND PUBLIC SECTOR REFORM***	
Hall:	**SUNFLOWER**	
Chair: Prof. Enoh Tanjong	**Co-Chair:** Dr. Joseph K. Ssewanyana/	Dr. Kehbuma Langmia
Topics		**Presenter(s)**
ICT As A Conduit To Development Communication In The Nigerian Media Systems: A Review Of Nigeria Television Authority (NTA) Role In National Development		Cosmas Nwokeafor
An Innovative ICT-Based Approach To Planning and Managing Large-Scale Complex Development Interventions With A View To Increasing Transparency and Accountability In Non-Profit/ Charity Organizations		Klaus Merckens, Bijan Kafi and Stephan Wismann
Leveraging IT to enhance governance in transitional Tanzania: a conceptual Framework		Lucas Mimbi and Michael Kyobe
Campaigning Online: The 2011 South African Local Government Election		Wallace Chigona, Yamkela Siwendu, Katlego Sebate and Frank Makoza
Reengineering The Electoral Process Using A BPR Approach: A Case Of Uganda Electoral Commission		John Paul Kasse and Moya Musa
E-Courts: The Road To Justice		Talwant Singh, Adekunle Okunoye and Naseemuddeen Aboobacker
Slow But Steady Progress Versus Leap Frogging: An E-Government Dilemma In Africa		Hossana Twinomurinzi and Nkhangweni Rambau
Proposing Integrative Model to Understand Digital Inequality: Helping a Least Developed Economy Country to take Advantage of Digital Opportunities		Bangaly Kaba
Implementation of an Inclusive E-Democracy System in Sub-Saharan Africa		Charles Ayo, Victor Mbarika and Aderonke Oni

SESSION 8B	***Sub-theme: WEB SECURITY, PRIVACY, AND RISK MANAGEMENT***	
Hall:	**LILY A**	
Chair: Dr. John Ngubiri	**Co-Chair:** Dr. Wen-I Chang/Njoya Daouda	
Topics		**Presenter(s)**
The Unintended Effects Of ICT: A New Search For Solution		Chanika Jones and Hassan Mahadallah

Security Architectures In Mobile Integrated Pay-TV Conditional Access System	Abimbola Owolabi
Multi-Web Page Summarization and Presentation Using Pair-Wise Bipartite Graph	Theresa Omodunbi and Abimbola Soriyan.
Proposed Security Framework Of Virtualization: Related Risks and Countermeasures	Zamikhaya Mapundu, Marredi Mphahlele and Solly Maswikaneng
Building A Viable Solution For Curbing Identity Fraud	Vivian Nwaocha
Running-Karp-Rabin Greedy String Tilling Algorithm (RKR-GST) based System for Determining Similarity between Textual Digital Documents.	Longe, O.B. & Kolawole Oladipupo
SESSION 8C	***Sub-theme: ICT IN HEALTHCARE (2) and THEORETICAL COMPUTING & SOFTWARE DEVELOPMENT (2)***
Hall:	**LILY B**
Chair: Dr. William Shu	**Co-Chair:** Dr. Robert Isabalija
Topics	**Presenter(s)**
Using mobile phones to improve delivery and uptake of Medical Male Circumcision: Experiences from North Tanzania	**Bas Hoefman, Text-to-Change**
Mobile Health (Mhealth) Approaches and Lessons For Increased Performance and Retention Of Community Health Workers In Low and Middle-Income Country Settings: A Landscape Analysis	Karin Kallander
A General Architecture For Intensive Care Unit Tele-Monitoring	Apkar Salatian and Arthur Ume
Videoconferencing: An Integrated Tool To Improve Communication Channel For Old Patients	Zamikhaya Mapundu, Prof Js Van Der Walt Van Der Walt and Thierry Simonnet
Ipv6 Neighbour Discovery Optimization For Low Power Personal Area Networks	Joseph Munuulo Wanuume
Design and Implementation Of A Parser With Error Correction and Recovery (A Case Study Of Java Programming Language)	Temilola Ayorinde, Aderonke Sakpere and Olusola Adekunle.
NYQUIST and Shannon Study In Dataflow and Communication	Okumbor N. Anthony and Okoronkwo Ijeoma.
An Enhanced Inter-Process Communication Model For Distributed Systems	Ranti Famutimi, H Soriyan and A Ajayi

SESSION 5A	**PARALLEL SESSION**	
HALL	**PRIMROSE**	
Chair: Prof. Cosmas Nwokeafor	**Co-Chair:** Michael Niyetegeka	
Time	**Topic**	Presenters
4:20 - 6:00pm	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

SME Adoption of Enterprise Systems in Sub-Saharan Africa: A Clarion Call to Action

Author(s):

FemiAdisa, Copenhagen business school, Denmark

Stephen RobertIsabalija, Makarere University, Uganda

Abstract:

This paper discusses the need for IS research with a focus on SME adoption of enterprise systems in the context of Sub-Saharan Africa. Previous IS research into general adoption in several developing countries have shown that local context play a significant role in the successful implementation of any information system. SMEs constitute a majority of all organizations in most Sub Saharan economies, thus their importance to the socioeconomic development and empowerment of the region cannot be overemphasized. However, the absence of literature and focused research into factors that influence enterprise systems adoption and use that are particular to this region represents a huge gap for both researchers and practitioners. This call to action paper will attempt to present the implications of this deficiency and outline areas where future research can be most beneficial to stakeholders.

Identifying Key Strategic Issues influencing Effective Use of ICT in Higher Institutions of Learning; a Case of ERP Systems

Author(s):

Billy Mathias Kalema, Tshwane University of Technology, South Africa

Oludayo. O Olugbara, Tshwane University of Technology, South Africa

Ray M. Kekwaletswe Tshwane University of Technology, South Africa

Abstract:

The major objective of this paper is to discuss key success factors influencing effective use of enterprise resource systems (ERP) within higher institutions of learning. The paper suggests forty six factors which are analyzed by the principle component analysis (CPA) and the resulting thirty seven factors are integrated into the cross impact analysis for classification. From the results of cross impact analysis this paper analyzes and suggests possible alternatives which management could take in case any factor or set of factors dominate during the implementation or use of the ERP system.

ICT Usage and Market Information Needs of Gambian Horticultural Farmers

Author(s):

Wen-I Chang, Department of Agribusiness Management, National Pingtung University of Science and Technology, Taiwan

Abstract:

Horticulture is emerging in Gambia. The establishment of a horticultural market information system may help enhance the marketing efficiency and farmers' income. This study selected three common horticultural crops, tomato, mango, and cashew nut, to investigate the marketing risks, ICT usage and information needs of 450 farmers from West Coast Region, North Bank Region, and Central River Region in Gambia. The results showed the farmers were most vulnerable to price fluctuation and product perishability. Radio, television, and mobile phone have been widely accessible and used by rural farmers. They needed useful information related to costs of inputs, new varieties and technologies, and prices of products. A pictorial and vocal service with icons and diversified dialects as well as alternative portable power sources may also be essential

marization by presenting a temporary web page to the user. Text difference function was used to characterize the web pages and extract salient sentences for summary. A pair-wise bipartite graph was used to compare sentences within different web pages where web pages are paired and compared to generate a summary. News articles were used to test the study. Google news search engine was used to harvest URL links used for the research and temporary web page was generated which summarizes the content of the links given on Google page based on the user query about news. All the information in the summary was extracted from the web pages retrieved from Google. It was discovered that number of sentences extracted is less than half of the sentences in the document input. Even though multi document summarization has been a contemporary issue in natural language processing community, this research proffers a way to tackle this.

Campaigning Online: The 2011 South African Local Government Election

Author(s):

WallaceChigona, University of Cape Town, South Africa

YamkelaSiwendu, University of Cape Town, South Africa

KatlegoSebate, University of Cape Town, South Africa

FrankMakoza, University of Cape Town, South Africa

Abstract:

This paper presents a study on analysis of websites of South African political parties during the 2011 Local Government Elections. The study was aimed at determining what functions political parties were employing online and how these functions were delivered. The study also analysed the differences between parliamentary and non-parliamentary parties and whether major parties outperform minor parties. The study used quantitative and partly qualitative data to analyse 16 South African political parties' websites. The results showed that political parties were mainly using their websites as a means for providing information to the electorate. Additionally, the results indicated that parliamentary parties utilised their website more than non- parliamentary parties. The study provides useful insights on the way political parties use their websites

Nyquist and Shannon Study in Dataflow and Communication

Author(s):

Okumbor N. Anthony, Dept of Computer Science, Delta State Polytechnic, Otefe-Oghara, Nigeria

Audu-War Samuel-Chai, Dept of Computer Science, Benue State Polytechnic, Ugbokolo, Nigeria

Emmanuel-Okereke Ijeoma, Computer Professionals Registration Council of Nigeria, Nigeria

Abstract:

In this paper we study a very important question on how fast we can send data, in bits per second, over a channel. In data transmission, data rate depends on three factors: the bandwidth available, the levels of signals we can use, and the quality of the channel the level of the noise. The paper presents two theoretical formulas developed to calculate the data rate: one by Nyquist for a noiseless channel, another by Shannon for a noisy channel. For a noiseless channel, the Nyquist bit rate formula defined the theoretical maximum bit rate, and the Shannon capacity, determined the theoretical highest data rate for a noisy channel. Using both limits, in practice, we need to use both methods to find what bandwidth of what signal level we need, the paper derives this by showing some examples. This equation allows us to precisely determine the information carrying capacity of any signal channel.

SESSIONS 5B	**AJIS BOARD MEETING**	
HALL	**LILY A**	
Time	**Topic**	**Presenter(s)**
4:20–6:00pm	African Journal of Information Systems (AJIS) Editorial Board Meeting	Prof. Solomon Negash and Prof. Peter Meso
DAY THREE - FRIDAY 23, 2012		
VENUE: IMPERIAL ROYALE HOTEL		
DAY MANAGER: Bosco Amerit Comrade/Michael Niyetegeka		
SESSION 6 (8:30 – 9:50)		
SESSION 6A	Sub-theme: Panel Session	
Hall:	**SUNFLOWER**	
Chair: Prof. Solomon Negash	**Co-Chair:** Moyo Sibonile	
Time	**Topics**	**Presenter(s)**
8.30 – 9.10am	Meet the Editors	Peter Meso
9.10 – 9.50am	Let Computer Science be: Circumscribing Computer Science for Teaching, Application or Propagation	William Shu *et al.*
9.50 – 10.20am	*Conference Tea Break*	*Ms. Serina Ateenyi/Irene Namutebi*
SESSION 6B	Sub-theme: Panel Session	
Hall:	**LILY A**	
Chair: Dr. Shawndra Hill	**Co-Chair:** Dr. Nixon Muganda Ochara	
8.30 – 9.10am	E-Skilling Africa: Becoming Globally Competitive in the Knowledge Economy	Hossana Twinomurinzi
9.10 – 9.50am	Opportunities for E-Learning in Uganda: Results of a KAP Assessment	Ally Krupar
9.50 – 10.20am	*Conference Tea Break*	*Ms. Serina Ateenyi/Irene Namutebi*
SESSION 6C	***Sub-theme: Panel Session***	
Hall:	**LILY B**	
Chair: Dr. Jude Lubega	**Co-Chair:** Dr. Yolanda Rankin	
Time	**Topic**	**Presenter**
8.30 – 9.10am	Open Data	Vladmir Bougay/Celestine Katongole
9.10 – 9.50am	Issues in Open Source Adoption and Implementation: Lessons Learned in African Higher Education Institution	Mathiam Fonkan *et al.*
9.50 – 10.20am	*Conference Tea Break*	*Ms. Serina Ateenyi/Irene Namutebi*
SESSION 7 (10:20am – 1:10pm) ***Business Plenary***		
Hall:	**SUNFLOWER**	

Chair: Komminist Weldemariam	Co-Chair: Nleya Sindiso	
Time	**Topics**	**Presenter(s)**
10.20– 10.35am	openafrica.org, http://knoema.com	Vladmir Bougay/Celestine Katongole
10.50–11. 05am	Consumers Affairs Manager ZICTA	Mr. Katwamba Mwansa
11. 05–11.20am	UGO	Boaz Shani
11.20– 11.35am	TRAC.FM	Salim Kinyiri /Wouter Djikstra.
11.35– 11.50am	PC Tech	Mr. Mucunguzi Albert
11.50–12.05pm	Google Uganda	Ham Namakajjo
12.05– 2.20pm	Gujarat (India) Model of Development – Bridging the Digital Divide	Mr. Pankaj Phadnis
12.20– 2.35pm	Designing An Architecture For Delivering Distributed Agricultural Information Services For Developing Countries	Komminist Weldemariam, Amanuel Zewge, Henok Sahilu, Adolfo Villafiorita and Mesfin Belachew
12:35- 12:50pm	Does it matter? Women entrepreneurs and mobile phone usage in business. A case of Owino Market	Shakirah Nagujja and Mariam Naiwumbwe
12.50 – 2.00pm	*Conference Lunch Break*	*Ms. Serina Ateenyi/Irene Namutebi*
PLENARY SESSION *CLOSING CEREMONY*		
SESSION 9		
Chair: Dr. Francis F. Tusubira, Chairman NITA Board		
Hall:	**SUNFLOWER**	
Time	**Topics**	**Presenter(s)**
2.00-2.15pm	Introducing Uganda ICT Association	Michael Niyetegeka
2.15 – 3.00pm	Award giving – Prof. Waswa Balunywa to welcome the Chairman NITA Board and Minister of ICT to hand over awards	Hon. Dr. Ruhakana Rugunda – Minister of ICT, Uganda
3.00 – 3.30pm	Way forward and 2013 Conference Hosting Presentation	Prof. Victor Mbarika, Mr. Sam Kundishora, and Mrs. Sibonile Moyo
3.30 – 3.45pm	Closing remarks	Prof. Adekunle Okunoye
3.45 – 4.20pm	Closing Speech	Hon. Dr. Ruhakana Rugunda – Minister of ICT, Uganda
4.20PM	*Cocktail and Entertainment (Cultural gala)*	*Serina Ateenyi/ Irene Namutebi*
DAY FOUR - SATURDAY 24, 2012 VENUE: IMPERIAL ROYALE HOTEL		
DAY MANAGER: Mrs. Martha Abeja Ekure		
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	*Sight Seeing*	*Maurine Basuta/Erina Najingo/Samali Mlay*

history of human civilization. It has brought about a sea change in all fields of human activity. It has resulted in enhanced efficiency, productivity and quality of output in every walk of life. The information technology is advocated in the western countries for the last two or three decades, but hardly any worthwhile effort has been made till recently, particularly, in judicial administration of courts in developing countries. There is an immediate need for exposing legal profession, judicial fraternity and court management to the updated computerized technology so as to render speedy justice with better legal outputs.

Optimization of Liquidity in Commercial Banks – A Simulation Investigation

Author(s):

JohnNgubiri, Makerere University, Uganda

DanielOchakacon, Makerere University, Uganda

Abstract:

Commercial banks use money both as a raw material and as a product. They aim at maximizing profits by optimal utilization of the money of their clients in their custody. It is common for customers from one bank to order a payment to a customer in another bank. In practice, this becomes an inter bank transaction. Commercial banks settle transactions among themselves in the central bank using the inter-bank settlement systems. The requests for payment come at different times in different amounts both of which are not predictable to the commercial bank. Since the originating customer is aware there is enough money on the account, it is prudent that the payments are made without delay. Banks are therefore required to keep enough liquidity in the central bank so that claims on them are settled on a real time basis. Banks incur penalties in case they fail to meet their obligations real-time. However, liquidity in the central bank does not attract any interest, it is therefore of utmost importance for a commercial bank to keep enough liquidity in its branches so as to maximize income. It also have to keep enough in the central bank to minimize penalties. In this paper, we use live traces from a commercial bank and simulate the inter-bank transactions and investigate ways net return on liquidity can be maximized. We show that starting with a large balance on a settlement account does not guarantee a penalty free day. This is despite the fact that the incoming and outgoing payments may as well have a difference far less than the opening balance. We further show that deferring of payments by a short time (1 hr) does not necessarily reduce the penalties suffered. We further show that allowing intraday negative balance does not pause a liquidity danger as the subsequent receipts tend to make it positive.

Multi-Web page Summarization and Presentation using Pair-wise Bipartite Graph

Author(s):

Theresa Omodunbi, Obafemi Awolowo University, Ile-Ife, Nigeria

Abimbola Soriyan, Obafemi Awolowo University, Nigeria

Abstract:

With the increasing large volume of data on the web, users find it difficult and time consuming to get the exact information needed from the web. It is rare and surprising to find information needed on a web document; series of related web pages are explored to get detail information of a particular topic in question. There is a need to develop a system to retrieve and summarize information needed to the user as query is being posed to the search engine. This study is based on summarization of web documents based on query posed by the user. The research tackles the problem of multi document sum-

Abstract:

Among the numerous diffusion studies conducted in recent years, the survey of Learning Management System (LMS) use in Africa conducted in 2008 by United Nations, Educational, Scientific and Cultural Organization (UNESCO), highlighted the rather low use of formal Learning Management Systems (LMSs) in universities, colleges and schools across much of the African continent. Consequently, since the problem of technology rejection and under-utilization is common, the purpose of this study was to empirically test a dynamic, more complete, and parsimonious technology acceptance model (DTAM) that institutions of higher education can use in the deployment of LMS to increase the adoption and diffusion of these technologies by university instructors for teaching and learning. The study used a cross-sectional survey questionnaire distributed to a sample of 109 university instructors distributed in 16 universities in Kenya. The result showed that perceived resources, availability of ICTs, university leadership, perceived ease of use (PEOU), and LMS relevance are among the top five dominant characteristics that significantly and directly impacted instructors' intention to use and actual usage of LMS. DTAM was empirically proved to be stable by a number model statistical indices including Normed Chi-Square=

A Literature Review on the Influence of Mobile Transactions on Management Accounting

Author(s):

Marion Mbogo, United States International University, Kenya

Abstract:

The rapid growth of mobile transactions has changed the way firms and consumers currently interact and are becoming increasingly important not only in determining the success or failure of the technology- based transactions but also decision making, control and planning with respect to the interactive flow of information. Traditional conceptions of management accounting practices have changed in the face of increased use of the mobile transactions. Previous research has concentrated more on mobile banking and consumer perspective of mobile payments but relatively little scholarly research has been carried out on the effect of the mobile transactions on management accounting practice. This paper presents a research agenda which aims to help academics and practitioners achieve a better understanding of the impact that mobile transactions have on management accounting practices. The findings of the literature review suggest that the majority of previous empirical studies have mainly focused on describing changes in management accounting practices and the resulting from mobile transactions rather than focusing on the effect of the changes of mobile transactions on the management accounting practices. The paper presents a research agenda which aims to help academics and practitioners achieve a better understanding of the influence that mobile transactions may have on management accounting practices.

E-Courts: The Road to Justice

Author(s):

Talwant Singh, Delhi District Courts, India

Adekunle Okunoye, International Center for IT and Development(ICITD), United States

Naseemuddeen Aboobacker, ABU DHABI TERMINALS, United Arab Emirates

Abstract:

Computerization of judiciary is one of the important ingredients of judicial reforms. Technological Developments in the field of information and introduction of computers have made a turning point in the

INTERNATIONAL CONFERENCE ON
ICT FOR AFRICA 2012

LIST OF ABSTRACTS

Towards the Tracker Model: A Coordinating Module for Independent Cooperating Tasks

Author(s):

William S. Shu, University of Buea, Cameroon

Abstract:

In order to extract, coordinate and use information from tools that independently but collectively transform or interpret data for various purposes, such as in the debugging of optimised programs, we propose the Tracker Model that defines an implementation architecture used to fulfil a possibly higher order objective. We envisage this model as applicable to a collection of independent tools such as those often found in business process re engineering, and in web-based applications and services. Fundamentally, we require that diverse application domains be uniformly handled and that evaluations be computationally closed. That is, for the latter, the relative order of data collection (from tools) and interpretation should not give different results for the same set of intermediate data.

ICT as a Conduit to Development Communication in the Nigerian Media Systems: A Review of Nigeria Television Authority (NTA) role in National Development

Author(s):

Cosmas Nwokeafor, Bowie State University, United States

Abstract:

Mass media plays a very unique mobilizing, information disseminator, influencing and agenda-setting roles in the development of any nation. In Nigeria, for instance, the Nigerian Television Authority (NTA) which is one of the leading electronic medium in the continent of Africa has been instrumental in the dissemination of detailed information regarding various issues of pertinent importance to the citizens of Nigeria. NTA as an integral part of ICT uses its ability to reach a large audience on a timely manner to play the role of (1) mobilizing human resources by substituting new norms, attitudes, and behaviors for old ones in order to stimulate increased productivity in the city and local levels respectively. It also plays the role of (2) an image builder and a vehicle that rewards as well as extends gratifications to its targeted audience. As an agenda-setter, NTA (3) exerts tremendous influence over Nigerian audience and uses their influencing opportunity to mold their minds and significantly influences the flow of news and information. In view of the numerous responsibilities that the mass media in the case of this study, Nigerian Television Authority (NTA) plays as harbingers of agricultural, community, social, cultural, political, economic, youth and innovative information, it significantly assists tremendously in creating awareness through consistent dissemination of information and news that would gear towards national development in Nigeria.

Handing over ownership of schools to learners

Author(s):

Nomusa Dlodlo, CSIR - Meraka Institute, South Africa

Jp Tolmay, CSIR - Meraka Institute, South Africa

Promise Sthembiso Mvelase, CSIR - Meraka Institute, South Africa

Abstract:

Education is not only about the interaction that happens in class between the learner and the teacher, but also about producing a holistic citizen. This can be achieved through a constructivist approach to learning. Constructivism is a theory that says that people construct their own understanding and knowledge of the world, through experiencing things and reflecting on those experiences. In the classroom constructivism usually means encouraging students to use active techniques such as experiments and real world problem-solving to create more knowledge.

This research develops a concept and systems architecture for roping in learners to participate in the management of their schools through adopting technology and a constructivist approach to learning. Learners participate in the management of the state of the infrastructure, availability of resources, discipline, maintenance of school grounds, etc. They report on these management issues to a central database which can be accessed by school inspectors in the Department of Basic Education (DBE) for decision-making.

The technology reported on in this research is based on integrating the Mobicents platform, Ushahidi platform and cell phone technology. The learners take photos of management-related events that require improvement in their schools, such as the poor state of infrastructure, lack of resources, unhygienic state of facilities, incidences of indiscipline, poor maintenance of grounds, etc. using their cell phones. These photos are forwarded to the Ushahidi server for access by school inspectors in the DBE. The Ushahidi uses social media and mobile communications to collect information which is then placed on Google Maps to give a visual picture of the state of affairs.

IPV6 Neighbour Discovery Optimization for Low Power Personal Area Networks

Author(s):

Joseph Munuulo .W, Makerere University Business School, Uganda

Abstract:

Neighbour discovery is a protocol used in IPV6 to learn about the existence of other nodes and routers connected on the same network. It allows nodes residing on the same link to discover the existence and learn about their neighbours. It is through this process that nodes on the network can effectively communicate with each other.

However, because the IPv6 low power personal area networks (6LoWPANs) are lossy in nature, with low transmit power, low bit rate, short range, small frame sizes, low bandwidth, limited memory and low computing power, some optimizations and extensions to Neighbour discovery are useful for the wide deployment of Ipv6 over low powered and lossy networks such as 6LoWPANs.

This paper proposes an improvement to the Mobile IPv6 soft hand off for the 6LoPANs [9] where during node registration, the node should be able to select the optimum path from the many router advertisement messages received from all the sink nodes in range based not only on the sink node with the highest Radio signal strength indicator but also on route congestion before registration with any sink node as the preferred router for forwarding packets from the host nodes.

INTERNATIONAL CONFERENCE ON
ICT FOR AFRICA 2012

tive behavioral change intervention to prevent HIV/AIDS infection.

Challenges of e-Learning in Developing Countries: The Ugandan Context

Author(s):

JosephatOroma, Tumaini University, Tanzania

Abstract:

Uganda introduced universal primary education (UPE) in 1997 and the country witnessed a tremendous increase in enrolment in primary schools countrywide, which increased drastically the student to teacher ratio, classrooms congestion, forcing schools to study in sessions (morning and afternoon) for all classes. The high enrolment of primary schools resulted in high primary graduates over flooding secondary schools countrywide. This problem spilled to the universities. As a strategy to overcome the large number of students in classes, several university adopted distance education, and integrated information and communication technologies (ICT) to facilitate the process. This adoption of ICT utilization was interfaced by numerous challenges and constraints. This paper therefore reports on the challenges that universities and higher education institutions (HEI) face as an upshot of large classes consequential from large admission of students and the initiatives incorporated to overcome the limitations to realize a full potential of ICTs in the education enterprises in Uganda.

Design and Development of video game by teenage children for HIV/AIDS Preventive Education in Uganda

Author(s):

Joseph Kizito Bada, University of Eastern Finland Joensuu Campus, Finland

Jarkko Suhonen, University of Eastern Finland Joensuu Campus, Finland

Erkki Sutinen, University of Eastern Finland, Joensuu Campus, The School of Computing, Finland

Abstract:

In this paper we present the design and analysis of video drama game developed by high School students for HIV/AIDS preventive education in Uganda. The drama designed by students is based on constructivist approach of learning where students construct stories and poems based on real World problems and experiences. We recorded and analyzed the drama game using qualitative approach. The result of drama analysis shows that students actively participate in dramatized HIV/AIDS preventive education. The HIV/AIDS drama education uses edutainment principle in which learning takes place in form of funs. The actors construct knowledge by simulating real world events in local culture while the learners acquire knowledge through listening, observing and responding to different emotions of the actors. We developed the recorded video into movie with narratives.

Factors Influencing the Diffusion of Learning Management Systems by Instructors in Higher Education

Author(s):

Dr. JimmyMacharia, United States International University, Kenya

Prof EmmanuelNyakwende, North West University, South Africa

local cultures, empirical evidence on how such adaptation is achieved is limited. This study employs the interpretive case study approach in information systems and actor-network theory to present an e-business formation involving a small online Funeral Web Portal in Ghana. The findings demonstrate the positive dimensions of a developing country culture and how it can serve as an enable of e-business innovation. The paper argues that e-business is not essentially Western but highly malleable to varied cultural contexts. Developing country entrepreneurs and researchers are encouraged to pay attention not only to the negative but also the positive aspects of local cultures and their contribution to e-business innovations.

Application of Operational Semantics in Programming Language

Author(s):

TemilolaAyorinde, UNIVERSITY OF IBADAN, IBADAN., Nigeria

Abstract:

Programming is a major tool for computerization and there is need to understand its basics; the how, the effects and the assertions. The people in the computing field especially, computer scientists are to be good programmers who can solve the problems of people around them seeing that people have diverse needs of different software. But this actually seems not to be the case as most computer scientists prefer to use application software instead of building software by themselves. This study discusses operational semantics as one of the basics that needs to be well understood by everyone in the computing field so as to understand the nifty gritty of programming and be good programmers who will be able to solve the problems of the people around them since most existing software don't really meet the specific needs of the people. Formal semantics is a tool in computer science that demonstrates how to use semantics for validating prototype implementations of programming languages, for verifying analyses used in more advanced implementations of programming languages and for verifying useful program properties including information about execution time. This study also illustrates the operational semantics of the arithmetic and Boolean expression "While".

Behavioral change: Content Analysis of Students' online Discussions in HIV/AIDS Education

Author(s):

Joseph KizitoBada, University of Eastern Finland Joensuu Campus, Finland

JarkkoSuhonen, University of Eastern Finland Joensuu Campus, Finland

ErkkiSutinen, University of Eastern Finland, Joensuu Campus, The School of Computing, Finland

Abstract:

In this research we conducted an experiment to assess the viability of online discussions by secondary school students for sexual behavioral change. We enrolled students aged 13 to 18 years from 3 secondary schools in online lessons in which they exchanged views on HIV prevention through discussion forum. We then used content analysis method, a qualitative approach, to analyze students' online discussions. This was followed by the use of component-based influence model to extract the key points from students' discussions. The analysis results show that students prefer abstaining from premarital sex as safe option of avoiding HIV infection. They further mentioned risky factors such as alcohol consumption, peer pressure to have sex, and idleness as major problems that lure teenagers into AIDS infection. We conclude that the use of online discussion forum by secondary school is an effec-

Impact of ICT used within SMEs in Eldoret, Kenya

Author (s)

Joshua Ndiege, Department of Information System University of Fort Hare, South Africa

Ntombovuyo Wayi, Department of Information System University of Fort Hare, South Africa

MarlienHerse lman, Department of Information System University of Fort Hare, South Africa & Meraka Institute, CSIR, Pretoria, South Africa

Abstract:

A number of SMEs in developing countries are slowly but steadily beginning to embrace the use of ICT. With such proliferation of ICT in SMEs, it is critical that the much anticipated positive impact from such investments is realized. This has, however, not been true for many SMEs in developing countries, largely because many ICT solutions used within the SMEs in developing countries do not adequately address the unique needs of the SMEs. As a result, many have ended up frustrated with their ICT investments.

Our findings from the study reveal low positive impact of ICT on the SMEs. Most SMEs experienced very minimal changes that could be tied to the adoption of ICT. In the study, we identify factors that are responsible for the low impact of ICT on the SMEs and recommend actions that can be taken to ensure the adopted ICT brings positive impact to the SMEs.

Some Notable e-health developments

Author(s):

Marc Nyssen, Vrije Universiteit Brussel, Belgium

RonaldBuyl, Vrije Universiteit Brussel, Belgium

VerbekeFrank, Vrije Universiteit Brussel, Belgium

Abstract:

The field of information and communication technologies (ICT) in health care, now called e-health, is coming to maturity. This is demonstrated by several "real world" accomplishments that will hopefully demonstrate the benefits of ICT in health for all those involved, not the least society and the patients at large. In this article, we will highlight the technical and the profession-specific building blocks, on which e-health applications are based, give a few examples of typical realizations and discuss the evolving political context.

Slow but Steady Progress versus Leap Frogging: An E-government Dilemma in Africa

Author(s):

Hossana Twinomurinzi, Department of Informatics, University of Pretoria

Nkhangweni Rambau, Department of Informatics, University of Pretoria

Abstract:

It is now accepted that ICT can play a significant role in making governments in Africa more efficient and effective. However, the success of e-government initiatives is far and wide in Africa. The overall reality is that despite every African country having a sophisticated e-government strategy and in many instances a dedicated ministry for ICT, e-government has not added any real value. Theory and literature on strategy suggest that ownership of strategy is significantly influential to strategy implementation. The people who are tasked with implementing strategy must be able to understand and interpret the strategy in order for them to create suitable and workable plans. This paper therefore investigated in the qualitative-interpretive paradigm the appe-

tite for ownership of e-government strategy among a convenient sample of twelve government Chief Information Officers (CIO) in South Africa. South Africa has a robust e-government strategy whose three main driving values are to lower costs, increase productivity and achieve citizen convenience. The findings reveal a low ownership of the e-government strategy among the CIOs. The results are important for the research and practice of e-government in Africa. For practice, the results reveal the importance of African countries placing a greater emphasis on slowly and steadily growing their CIOs to take ownership of e-government strategies rather than advancing even more sophisticated ones. African countries typically lose sight of the fact that their western counterparts were first successful at creating ownership of their strategies before moving up to more sophisticated strategies. For research, the paper shows the greater importance of adopting qualitative approaches to investigating e-government in African countries in preference of quantitative approaches. Qualitative approaches are ideal for unearthing the subtle cultural and contextual intricacies that face those responsible for implementing and diffusing e-government in Africa.

The Unintended Effects of ICT: A New Search For Solution

Author(s):

Chanika Jones, Southern University and A & M College, United States

Hassan Mahadallah, Southern University and A & M College, United States

Abstract:

The recent explosion of Information and Communications Technologies (ICT) challenges the understanding of the world's academic community. Social scientists, who study the subject, are baffled by the wanton spread, not to mention the destructive effects, of this technology. Likewise physical scientists are bewildered by the adaptability and the multiplicity of its uses. Neither the social nor the physical sciences are capable of assessing the true nature and impact of this phenomenon. This is why it is difficult to deal with the spinoff effects of ICT, such as cyber crimes, human trafficking, piracy and child pornography. What is the best way to address these ICT-related problems? How can we curb the illegal and inappropriate uses of ICT systems and devices?

This paper focuses on some of the unintended consequences of ICT and presents a platform for subsequent empirical investigation. While it is true that ICT has improved the efficiency and efficacy of many routine activities, it has also led to the emergence and advancement of some international crimes. Virtually every facet of modern life is haunted by crime syndicates who tout new communications technologies. More specifically, this paper addresses the impact of ICT on human trafficking, piracy, and cyber crime. It is widely held that these specific international crimes are generally facilitated by ICT. Therefore, there is an urgent need to advance research beyond dialogue of development and devise appropriate public policy that can effectively address these ICT-related problems.

Encouraging Building Standards and Quality Assurance - An Expert System Case Study

Author(s):

Apkar Salatian, American University of Nigeria, Nigeria

Arthur Ume, American University of Nigeria, Nigeria

Abstract:

There is a lack of building expertise and standards in Africa with many construction contracts going to foreign companies. To overcome these challenges, an expert system could be developed which could

INTERNATIONAL CONFERENCE ON
ICT FOR AFRICA 2012

but could not provide solutions to the errors, neither do they try to correct the errors. Paying attention to a compiler that can recover a program from a syntax error by suggesting in a precise manner to the programmer the direct causes of error and given suitable recommendation will help the programmer to concentrate on the logic of the program. Hence, this study investigates the behavior of compilers in connection to error handling and correction and implements a parser, a component of a compiler that improves on the way the existing compilers handle syntax error in the source code. This is done by identifying errors in the source code, suggest the solution and recover the program from compilation error by correcting the source code. Java programming language is chosen as a case study and the parser implementation is carried out using C++ and C# (C Sharp).

Information System Characteristics and Mobile Bulletin Board Usage

Author(s):

HenryNgatchu, University of Buea, Cameroon

DamenNgatchu, University Institute of The Diocese of Buea, Cameroon

Abstract:

Mobile communication is one of the fastest growing technology of our time. Taking a close look at the international telecommunication union statistic reports, the growth in use of mobile telephony has out performed any other communication technology. Communication in general has been responsible in defining the boundaries of communities and societies globally. From small indigenous regions where communication is limited to a small community sharing a common language, to the global village created by the world wide web, where communication is exclusive to a virtual on-line community, it follows that communication is key to the existence of any society. Bulletin boards have played a major role in communication within a community as a component of an information system for that community. Over the years, bulletin boards have grown in sophistication, from a basic paper based, through the electronic bulletin board to now mobile bulletin boards. The use of Mobile Bulletin Boards (MBBs) is an emerging practice amongst institutions and individuals. They are predictably an integral part of the social and working lives of citizens of the next decade. The study of the nature and use of mobile bulletin boards has immense practical and academic values. The objective of this study is to examine the relationship between information system characteristics and the adoption of MBBs, based on the design theory of emergent knowledge process (Markus et al 2002). The results of this study can contribute to the fields of information system design and MBB research. In this work, we open up the concept of a mobile bulletin board and propose a methodology to study the relationship between the characteristics of information systems and the uptake of this new information and communication technology.

Re-Profiling Developing Country Culture for E-Business Appropriation: The Case of Funeralsinghana.Com

Author(s):

John Effah, University of Ghana Business School, Ghana

Abstract:

The purpose of this study is to understand the affordance of developing country culture to e-business appropriation. Within the developing country e-business literature, the negative aspect of local cultures to e-business appropriation is highlighted. However, less is known about its positive aspects and contribution to making the innovation work locally. Although some authors have called a fit to

tributed to a number of issues including power shortages, high costs of the internet, poor infrastructure, absence of equipment, low technical literacy, uneven spread of the technology, low penetration of technologies among others. This has only served to worsen the digital divide in these places. In this study, We set out to determine Internet access, usage and proliferation in the rural based urban areas of Uganda using Iganga, Mayuge, kaliro, Bugiri and Namutumba Districts as a case studies.

Methodology.

The study used a blend of both quantitative and qualitative approaches. Data collection was done through in depth interviews with the owners of the internet cafés. Our data collection instrument was the questionnaire issued to the internet users. A total of 300 questionnaires were issued and 285 were returned signifying a response rate of 95% and SPSS was used as a tool for data analysis.

Findings

Findings suggest that internet access is concentrated in the town centres and in a few government offices as well as Non-Government offices. Usage is limited to basics like checking email and reading sports news while a few people used the internet to transact business especially buying cars on line. It was also found out that the internet was used mostly by students and a few government employees.

An Analysis of E-learning Information System Adoption in Ugandan Universities; Case of MUBS

Author(s):

Geoffrey Kituyi Mayoka, Makerere University Business School, Uganda

Robert Kyeyune, Makerere University Business School, Uganda

Abstract:

This study examined e-learning failures and adoption problems in Ugandan universities based on Rogers & Shoemaker's Diffusion of Technological Innovation Theory. Makerere University Business School (MUBS) was used as a case study, where two systems i.e. KWEL and eMUBS System were surveyed. A self-administered questionnaire was given to 200 respondents who comprised of MUBS academic staff, administrative staff and students. The results were analyzed using SPSS and findings indicated that while the Assistant Lectures and Lecturers have adapted to the technology, Professors were reluctant to adopt. On the students' side, the results indicated that although students are aware of the technology, many of them are not comfortable using it citing issues of accessibility and availability of the required resources to use the technology. From the findings, a number of recommendations have been made for faster adoption and use of e-learning at MUBS and other universities.

Design and Implementation of a Parser with Error Correction and Recovery (A Case Study of Java Programming Language)

Author(s):

Temilola Ayorinde, University Of Ibadan , Nigeria

Aderonke Sakpere, University Of Ibadan , Nigeria

Olusola Adekunle, University Of Ibadan , Nigeria

Abstract:

Compiler has been a wonderful tool for the programmer. It plays a fundamental role in the central activity of computer science – preparing problems for solution by computer. Despite the advantages of compilers, a lot of time is being spent in compiling codes and in tracing, detecting, recovering from errors. Most compilers identify errors in source code

infer from an in-built knowledge base incorporating a universally accepted set of building standards and guidelines to interpret captured data from building sites. In this paper we propose a case study an expert system called ABSTRACTOR which analyses the historical voluminous high frequency and noisy data generated by the monitors of a building for the purposes of summarisation and identifying faults as part of a building state assessment. ABSTRACTOR consists of 4 sub-systems: data filtering which is used to remove noise; interval identification to generate trends (intervals of time where the data is either increasing, decreasing or steady) from the filtered data; interpretation which performs summarisation and building state assessment by applying rules from a knowledge base sub system to overlapping trends to identify faults.

An innovative ICT-based approach to planning and managing large-scale complex development interventions with a view to increasing transparency and accountability in non-profit/ charity organizations

Author(s):

KlausMerckens, CIWI GmbH, Germany

BijanKafi, CIWI GmbH, Germany

Stephan Wismann, CIWI GmbH, Germany

Abstract:

Most international development projects, even the most complex ones, are frequently managed and accounted for using ICT tools that are not fit to the task. In the face of global developments such as the Paris Agenda or Accra Declaration, the widespread use of in-transparent and unreliable technological tools for activities that involve the spending of billions of tax payer money, remains astonishing. The reason for this is that the technological representation of any given project in all its different perspectives at the same time is technologically exceptionally hard to translate into a flexible management approach that satisfies international standards of good management practice or good accounting practice. Semi-professional or adapted tools usually do not go this far. This paper outlines the technological approach to designing an ICT tool that allows the management of complex, multi-stakeholder, multi-country, multi-currency development projects that go beyond the characteristics of regular accounting tasks. Tackling the issue of a multi-perspective realistic representation of development projects' financial and operative levels through a technological tool holds the promise of greatly improving procedural (internal) transparency and accountability in implementing non-profit organisations and enabling better resource efficiency.

Business Modeling: The Recipe for E-Health Success in Africa

Author(s):

Ton Am Spil, University of Twente, Netherlands

Björn Kijl, University of Twente, Netherlands

Abstract:

The world has a new disease: successful e-health pilots that are ended before the actual product or service commercialization phase. It is an epidemic disorder that seems to spread rapidly. This paper searches for a remedy against this disease. By exploring five successful cases where e-health went beyond the pilot phase, we hope to explorer some best practices that may show Africa the way to implementing sustainable e-health innovations. We reached the following results. Theoretically, we found that e-health business model designs can help in explaining the success of specific e-health service innovations but we also found that these models mostly neglect the actual effort needed to

create value. When analyzing the cases, we see that the business model concept is often applied in a too late stadium (post ante) and focuses too much on efficiency and not so much on e.g. user experience quality or convenience. These efficiency goals are mostly not met. Practically, we found communalities in the successful projects that can help making future e-health initiatives more successful and sustainable based on which we conclude that the usage of ex ante business model designs that include human capacity, motivation and effort will improve the chance of sustaining e-health initiatives. In Europe, this can be regarded as a luxury challenge but in Africa this is a necessity.

Using Mobile Learning to enhance Interactivity in University Pedagogy

Author(s):

Dorothy Sebbowa, Makerere University, Uganda

Abstract:

The study set out to explore the possibilities of using mobile phone forums to enhance teacher- student interaction in University pedagogy.The study employed a case study design purposively taking second year history education students from Makerere University. The study was solely qualitative and involved responses obtained from students' engagement with the forum on the mobile application winksite. Study findings revealed that mobile phone forums increase interactivity between teachers and students in a supportive,reflective and collaborative way. The study recommended that, it is imperative to educate both the teachers and students about the significance of using mobile phones as a way of facilitating interactivity and collaboration in the learning process.

Videoconferencing: An Integrated Tool to Improve Communication Channel for Old Patients

Author(s):

Zamikhaya Mapundu, Tshwane University of Technology, South Africa

Prof Js Van Der Walt Van Der Walt, Tshwane University of Technology, South Africa

Prof Thierry Simonnet, ESIEE Paris, France

Abstract:

Presently there is a shift in Telecommunication domain, thus from old telephone network service: Public Switched Telephone Network (PSTN) to Internet Voice over Protocol (VoIP) network. In recent years, it has been tested and approved that it is not only data and audio that can be transmitted over Internet Protocol (IP) Network, video as well can be transmitted using existing standard of video codec' [13]. Operational infrastructure simplification, integration possibilities and costs reduction of communication service are various advantages offered by VoIP and this phenomenon is playing a major role in telecommunication developments [2]. Several solutions can be considered to provide a trust relationship and tele-care for communication to elderly patients affected by pre-Alzheimer disease; this also involves the improvement of reducing their medical care costs and travelling costs. This can be accomplished by reinforcing a home sanitary by medical professionals and family caregivers whereby a Videoconferencing tool (Voice and Video over IP) will act as a solution. This tool will be helpful for elderly patients to have connection with their families. This paper portrays how VoIP solution can be used to advance communication processes by means of integrating and testing the existing Open-Source Tools.

for IS4A. Lastly, we propose architecture for a distributed service delivery with the aim of achieving a platform with qualifying characteristics such as aggregated services and multi-channel service delivery based on ICTD best practices and open standards.

A General Architecture for Intensive Care Unit Tele-Monitoring

Author(s):

ApkarSalatian , American University of Nigeria, Nigeria

ArthurUme, American University of Nigeria, Nigeria

Abstract:

Intensive Care Unit (ICU) Tele-monitoring is the use of information technology to monitor ICU patients at a distance. ICU Tele-monitoring is most beneficial for populations living in isolated communities and remote regions where there is shortage of trained critical care physicians and nurses to manage highly complex patients safely and efficiently. By performing analysis, in this paper we propose a low-cost ICU Tele-monitoring architecture to allow historical and real-time data from the monitors of a rural ICU to be transmitted and received by an expert in another location anywhere in the world to provide advice remotely. Our system is based on the Model-View-Controller software architecture and uses the internet as the form of communication.

The Determinants of Mobile phone Ownership at Household Level in Uganda

Author(s):

Joseph K. Ssewanyana, Makerere University Business School, Uganda

Abstract:

Mobile phones have evolved from simple communication tools that support voice and text to service delivery platforms with new features of email, internet, radio, camera among many others. This trend has been accompanied with increasing mobile phone penetration or subscription across all countries. The factors that influence the ownership of mobiles especially at household level have not been fully established yet. The paper is based on data collected by the Uganda Bureau of Statistics (UBOS) in a cross-sectional survey covering 6800 households for the period 2008-2010. The findings indicate that ownership of mobile phone is not only influenced by income, age, education, occupation, and household location, there are other determinants that include marital status of the household head; cultural norms, household size, and social capital among others that also influence ownership of mobile phones.

Access of Internet Facilities in Rural Based Urban Areas

Author(s):

Prof. Waswa Balunywa, Makerere University Business School, Uganda

Joseph Wanuume, Makerere University Business School, Uganda

Abstract:

Internet access in developing countries has been skewed in nature. It has seen the urban areas well connected and covered with the internet services especially among the elite and business class while the rural urban areas have been left out. Uganda has been no exception. For the rural urban areas that have internet access, it is poor in terms of speeds and usage is very dismal and a preserve for a few. Spread is also limited to the town centres with in a very small radius. This can be at-

chitecture proposed herein is a state-of-the-art solution to tackle well-known problems challenging current Pay-TV systems including but not limited to interoperability amongst service providers, relatively high cost of the service deployment, the security compromise, limited interactivity and bespoken services offered to subscribers. It also proposes the Follow-me service that enables subscribers to access their entitlements via an arbitrary set-top box. It will also present the design of a novel security architecture integrating mobile and broadcasting technologies in the Pay-TV system. The security architecture proposed herein is a state-of-the-art _Mobile Integrated Conditional Access System_ (MICAS) solution to tackle well-known problems challenging current Pay-TV systems including but not limited to interoperability amongst service providers, relatively high cost of the service deployment, the security compromise, limited interactivity and bespoken services offered to subscribers. It also proposes the Follow-me service that enables subscribers to access their entitlements via an arbitrary set-top box.

Strategic Approach to Distance Education in Developing Countries

Author(s):

Olayele Adelakun, DePaul University, United States

Adekunle Okunoye, Xavier University, United States

Abstract:

This paper presents a strategic approach to distance education development in developing countries (DC) based on the return driven strategy (RDS) framework. There are eleven tenets in the return driven strategy framework, but this research only focuses on four tenets that we believe are most relevant to distance education development in a developing country – (1) Fulfill Otherwise Unmet Customer Need, (2) Target Appropriate Customer Groups, (3) Partner Deliberately, and (4) Map and Redesign Processes. Distance education is simply defined as a learning environment in which instructors and students are physically separated. E-learning is a part of distance education based on this definition. The quality and success of distance education is hypothesized to be enhanced if it is strategically designed and implemented based on the four tenets.

Designing an Architecture for Delivering Distributed Agricultural Information Services for Developing Countries

Author(s):

Komminist Weldemariam, Fondazione Bruno Kessler, Italy

Amanuel Zewge, Adama University, Ethiopia

Henok Sahilu, Faculty of Computing and Informatics, Haramaya University, Ethiopia

Adolfo Villafiorita, Fondazione Bruno Kessler, Italy

Mesfin Belachew, E-Government Directorate, Ministry of Communication & Information Technology, Ethiopia

Abstract:

Agriculture in developing countries is transforming in many dimensions. New players, relationships and policies are influencing how smallholders and other actors in the agriculture supply-chain process. Several ICT-based information systems for agriculture (IS4A) have been proposed with the goal of providing access and use of information and knowledge in such supply-chains process. In this paper we present the result of a study that identifies the limitations of existing IS4A with respect to service coverage, rural accessibility, delivery channels, open standards, and long-term sustainability among others. We then present a roadmap for the development of IS4A that includes the identification of relevant stakeholders in agricultural sector, their roles and requirements

Reengineering the electoral process using a BPR approach: a case of Uganda electoral commission

Author(s):

John Paul Kasse, MUBS, Uganda

Moya Musa, MUBS, Uganda

Abstract:

Reengineering the electoral process using a BPR approach: a case of Uganda electoral commission

Mobile Public Health Surveillance Tool for an African Rural Community

Author(s):

Mark Muwanguzi, Tshwane University of Technology, South Africa

SelemanNgwira, Tshwane University of Technology, South Africa

Abstract:

The use of ICT in the various industries such as health, learning and education, in Africa is still lagging behind most developed nations. Reasons such as the unwillingness of government organizations, poor ICT infrastructure, high implementation costs and the conservative minds of most Africans are holding back this ICT revolution. With the use of ICT in these industries, delivery of services can be brought closer to the people that normally do not get these services such as those in rural African areas. With the use of ICT, a doctor anywhere in the world can diagnose and treat a patient in a rural area in Africa. In this paper, we focus on mobile public health surveillance, which is the collection of patient information in order to make informed evidence based decision making. We analyze the current mobile health systems being used in Africa giving their benefits and draw backs and finally propose a mobile surveillance system that tackles some of these issues

Leveraging IT to enhance governance in transitional Tanzania: a conceptual Framework

Author(s):

LucasMimbi, University of Cape Town, South Africa

MichaelKyobe, University of Cape Town, South Africa

Abstract:

The international community associates poor political and economic development with governance crisis in transition states. Following the quest for democracy and good governance by the international community, many former socialist states are compelled to adopt capitalism and free enterprise systems. While these reforms have swept the Eastern Europe and Africa, this transition has also created many governance challenges in transition states and limited scientific studies have examined these challenges. This paper attempts to bridge this gap by examining governance practices, and challenges faced in transition states. With the potential of IT to reinvent government towards good governance, the paper proposes a conceptual model of how IT can be effectively leveraged to enhance good governance in a transition states, i.e., Tanzania. The proposed conceptual model is based on the premise that the process of leveraging IT to achieve good governance requires balancing of the relationship between IT, state and organizational practices and influencing (internal & external) factors. Specific and testable propositions are also developed for future empirical research.

Building a Viable Solution for Curbing Identity Fraud

Author(s):

Vivian Nwaocha, National Open University of Nigeria, Nigeria

Abstract:

The development of personal computers and the Internet have transformed the way individuals conduct business. This explosion has led to an increased uncertainty in the genuineness of the accessing party. Studies have revealed that identity fraud is a worldwide issue that requires urgent attention. Banks and consumers loose several billions to fraudsters. This study seeks to establish a secure solution for curbing identity fraud as well as the critical factor that determine the solution's acceptance. A common trend in most identity-fraud-prone transactions is the use of a keypad, for this reason, this research focuses on keypad data entry and proposes a biometric solution. A key shortcoming with current authentication methods is the use of external identifiers that are prone to theft. A biometric keypad that supplements the present external identifiers is proposed, prototyped and evaluated. The results indicate that a biometric keypad is a viable solution for combating identity fraud.

Access to Web-Based Distance Learning in Tanzania: The Case of Higher Learning Institutions in Kilimanjaro Region

Author(s):

George Matto, Moshi University College of Cooperative and Business Studies, Tanzania

Luka Njau, Moshi University College of Cooperative and Business Studies, Tanzania

Benson Ndiege, Moshi University College of Cooperative and Business Studies, Tanzania

Abstract:

This study examined the current availability and access level to Web-Based Distance Learning (WBDL) in the higher learning institutions in Kilimanjaro region, Tanzania. Data were collected using questionnaires, observations and formal discussions with key informants. Findings show that only the Open University of Tanzania and the Moshi University College of Co-operative and Business Studies among the five surveyed institutions are currently offering distance learning courses, the latter offering it to a very limited number of programmes. It was further revealed that none of the surveyed institutions offer WBDL courses. Reasons being insufficient fund to establish and run the programme, computer illiteracy among learners, limited access to internet, low speed of internet connectivity, shortage of qualified experts, and unsuitability of the programmes, among others. This study calls for deliberate investment in the programme by the government and other stakeholders to utilize the convenient opportunities offered by the WBDL that other in-campus programmes can not suffice among other recommendations as detailed in this report.

Uses and Gratifications of Web 2.0 among Learners - A Case of South African Higher Education

Author(s):

EmmanuelHowe, Limkokwing University of Creative Technology, Swaziland

RaymondKekwaletswe, Tshwane University of Technology, South Africa

INTERNATIONAL CONFERENCE ON
ICT FOR AFRICA 2012

Abstract:

Web 2.0 usage has become increasingly popular amongst learners in the higher education environment, recently in South African higher institutions. Web 2.0 enables learners to interact, share information in varied learning contexts, as they face different learning challenges in their quest to achieve personalized learning. The purpose of this study was to explore the needs learners seek to gratify through the utilization of Web 2.0 and whether these needs are satisfied. The Uses and Gratifications theory was used as an underpinning theory. Unlike most of the adoption frameworks, U&G focuses on the individual as a unit of analysis. Empirical data was gathered through face-to-face interviews and a questionnaire .The findings show the different responses from learners as they utilize the different Web 2.0 applications to achieve personalized learning. This paper aims to contribute to the effect that these Web-based tools may provide personalized support in a learning environment.

Videoconferencing: An Integrated Tool to Improve Communication Channel for Old Patients

Author(s):

Zamikhaya Mapundu, Tshwane University of Technology, South Africa

Prof Js Van Der Walt Van Der Walt, Tshwane University of Technology, South Africa

Prof Thierry Simonnet, ESIEE Paris, France

Abstract:

Presently there is a shift in Telecommunication domain, thus from old telephone network service: Public Switched Telephone Network (PSTN) to Internet Voice over Protocol (VoIP) network. In recent years, it has been tested and approved that it is not only data and audio that can be transmitted over Internet Protocol (IP) Network, video as well can be transmitted using existing standard of video codec' [13]. Operational infrastructure simplification, integration possibilities and costs reduction of communication service are various advantages offered by VoIP and this phenomenon is playing a major role in telecommunication developments [2]. Several solutions can be considered to provide a trust relationship and tele-care for communication to elderly patients affected by pre-Alzheimer disease; this also involves the improvement of reducing their medical care costs and travelling costs. This can be accomplished by reinforcing a home sanitary by medical professionals and family caregivers whereby a Videoconferencing tool (Voice and Video over IP) will act as a solution. This tool will be helpful for elderly patients to have connection with their families. This paper portrays how VoIP solution can be used to advance communication processes by means of integrating and testing the existing Open-Source Tools.

Security Architectures in Mobile Integrated Pay-TV Conditional Access System

Author(s):

Abimbola Owolabi, National Open University of Nigeria, Nigeria

Abstract:

This paper will present the design and describes the advantage of the state-of-the-art _Mobile Integrated Conditional Access System_ (MICAS) concerning interoperability, personalisation, security and operational costs in Pay-TV systems. The Message Handling Subsystem is proposed and outlined together with *Follow-Me* service, which proposed herewith to extend mobility and personalisation concepts on Pay-TV services

This paper presents design of a novel security architecture integrating mobile and broadcasting technologies in the Pay-TV system. The security ar-