

COMMUNICATION SYSTEMS IN AFRICA

WEEK THIRTEEN: Information Communication Technology (ICT) and the Effect of Internet in Africa.

Learning Outcomes



1. Understand an overview of ICT and the Effect of Internet in Africa.
2. Explain the Growth and Impact of Information and Communication Technologies in Africa: The case of Nigeria.
3. Analyze Human Rights and Information Communication Technology in Africa.

Overview of Information Communication Technology and the Effect of Internet in Africa.

According to Melia (2019), new digital technologies are expected to have a huge impact on developing countries' prospects for economic development. This lecture will focus on digitization that will revolutionize communication in social, political, cultural, and business transactions in many ways: **Digital technologies** may help provide real-time information to farmers in remote areas; they enable poor people to use mobile banking services financial services; they allow firms in isolated locations to trade with international partners. Generally, they reduce a wide range of transaction costs and they may be used to make economic transactions transparent, reduce the scope for corruption and hold public service providers accountable.

At the same time, **digitization** enables automation at an unprecedented scale, thereby making millions of routine jobs redundant, and it enables the emergence of oligopolistic platform economies, some of which have led to an unprecedented accumulation of wealth among the super-rich and undermined welfare-oriented societal regulation. Policymakers thus need to understand the opportunities and threats emerging from the wide range of digital innovations to be able to accelerate and broaden their positive effects while ensuring smart regulations to minimize the negative effects (Melia, 2019).

According to Razzano (2016), the media can be seen as important agents of free expression, and the Internet and Communications Technologies (ICT) have provided an interesting area of both opportunity for, but also threats to, traditional 'news'. From a rights perspective, attempts

by states to clamp down on new media can be seen as a notable freedom of expression concern. **Bloggers and online journalists** are increasingly relevant media agents for many members of the public. However, alongside traditional media harassment, these new expression agents have been subject to unduly harsh treatment by states. In Ethiopia, for example, 2014-2015 saw increasingly repressive actions taken against online journalists and bloggers:

The Zone 9 bloggers arrested in April 2014 were charged with terrorism in July 2014 and subsequently subjected to a series of sham trials through mid-2015. In July 2015, two of the imprisoned Zone 9 bloggers were unexpectedly released and acquitted of all charges, which observers attributed to U.S. President Barack Obama's official visit to the country later that month. The four remaining Zone 9 bloggers were acquitted in October. Nevertheless, five other critical voices and bloggers who were arrested in July 2014 and charged with terrorism remain in prison. During the numerous Zone 9 trials throughout 2014– 2015, several supporters were temporarily arrested for posting updates and pictures of their trials on social media via mobile devices (Freedom House, 2015)

Despite these threats, online media is of growing significance on the continent. The Internet provides a platform for massive engagement, accessible by people who may ordinarily have been removed from popular discourse. While the digital divide raises our awareness to concerns about how language can exclude people from accessing content (discussed in more detail later), it may at the same time be used to advance indigenous cultural expression if the issues around access can be engaged (Razzano, 2016).

The online space also presents particularly useful tools to journalists for advancing journalism the rise of **open data journalism** allows investigative journalists to harness open data for revealing and pertinent news (DataJournalism.com). Online marketing strategies and social media platforms can be used effectively and cheaply to broaden a journalist's online audience and must be considered, within the African context, given burgeoning mobile connectivity. Also, social media can facilitate debate with audiences, as there is a degree of anonymity that encourages participation. There are also strategies to offset some of the security risks endemic to working online for journalists and citizens, for example, anonymous browsing can be facilitated through the simple and free installation of the 'Tor' software, which can be used to allow for unmonitored research (<https://www.torproject.org/index.html.en>).

Freedom of expression is not unfettered. Rights can be justifiably limited, and freedom of expression in particular has specific limitations in relation to hate speech and speech that incites violence, throughout the African continent. The International Covenant on Civil and Political Rights (to which several African states are signatories) in Article 20, precludes any advocacy to the incitement of violence, though not expressly only within the context of speech (Razzano, 2016). Commonly referred to as hate speech, this form of ‘expression’ is viewed as too harmful to be justifiably free. As Pierre De Vos (2015 cited in Razzano, 2016), noted:

[Hate] speech has no value. It does not enlighten. It does not help us to think critically about how better to live in the world.

Hate speech is very relevant within the online space, as social media and online forums can be havens for hate speech – fuelled by the anonymity of the forum. There has been a notable gender crisis in the abuse of women perpetuated through the Internet – through the use of threatening language, imagery and other forms of harassment. The perceived ‘neutrality’ of the web is in many ways farcical: ‘some users are more equal than others’ Buni and Chemal (2014 cited in Razzano, 2016)

There are a variety of ways in which hate speech is specifically exercised against women online – one legal review discovered that 90% of ‘revenge porn’ cases (where intimate photographs are publicly circulated to shame the victim) are perpetuated against women. Another study noted that 89% of domestic violence programs reported victims experiencing some form of technology-based abuse (Buni and Chemal, 2014 cited in Razzano, 2016). Female staff of the website ‘Jezebel’ wrote an open letter to their parent company, requesting the development of blocking tools against specific Internet Protocol addresses, to assist with the deluge of sexually violent posts placed to harass users. What is disturbing is that these technologies in fact help ‘to increase violence against women, not just mirroring it’ (Buni and Chemal, 2014 cited in Razzano, 2016). The laws are often slow to adapt to these new threats to the human rights of citizens. The nature of such a space complicates attempts at legal intervention:

...a multiplicity of different actors could be involved in the creation and dissemination of hateful content: creating or sourcing it; publishing it; developing it; hosting it or otherwise facilitating its dissemination, accessibility or retrievability (McGonagal, 2013).

According to Razzano (2016), freedom of expression is not just about media and speech, as it also includes consideration of personal or self-expression. **Online and virtual spaces** are forums for self-expression, and an interesting segue (uninterrupted transition) in this area has been considering how the law can regulate virtual worlds and characters created for online gaming, while respecting free expression The question must become: How can the law adapt to such alien environments within a human rights framework?

What happens in virtual worlds, however, has real-world effects both on players and non-players, and governments will have important interests in regulating those real-world effects for reasons that are unrelated to the suppression of free expression (Balkin, 2004).

Leading from this, legal intervention in the online space should not automatically be considered a violation, as it may be necessary for the protection of the fundamental rights we hold most dear (Razzano, 2016).

The Growth and Impact of Information and Communication Technologies in Africa: The case of Nigeria.

A. Entertainment

The internet provides lots of entertainment facilities such as sports, free games, streamed audio and videos, which are being explored by Nigerians (Locksley, 2009). For instance, some Nigerians that are lovers of football depend on such entertainment sites for checking results of football matches. Other listen to music, watch video and other entertainment shows on internet. Some also download free local and foreign films and music through the Net. Furthermore, some radio and television stations in Nigeria have their signal streamed so that people can monitor them at anytime and anywhere. Besides, Nigerians use internet to book flight and make hotel reservations (Alimi and Popoola, 2015).

B. Educational Purposes

The internet or simply the Net has various applications for educational purposes. It provides learning platforms such as Virtual Classrooms, Webcasting and online educational videos (Oblinger, D. G. and Oblinger, J. L., 2005). Moreover, Nigerians do use the Net to search for international scholarships as well as to secure admission overseas. Also, some Nigerian universities with well-developed websites where

students can register online, download study materials and check their results for the semester, use the internet for educational purposes. These uses buttress observed impacts of internet in Nigeria educational sector. Actually, never before in human history before the invention of the internet did such a valuable resource been available to students at little or no cost (Alimi and Popoola, 2015).

C. *Research*

In Nigeria, both working class and students use the internet for research purposes. There are certain research institutes in Nigeria that have 24 hours connection to the Net. Furthermore, tertiary institution students across the country like other parts of the world do depend on the Net to get information for their projects (Ureigho, Oroke, and Ekruyota, 2006; Yusuf, M. O. and Yusuf, H. T., 2009). In addition, some students have online groups where they discuss and solve academic related matters (Alimi and Popoola, 2015).

D. *Business Transaction*

The internet provides Nigerians the convenience of shopping anytime and anywhere. Through the internet, Nigerians have better access to information and wider selection of goods and services. Prices can be compared online before making purchases. This has made internet the major tool uses by Nigerians to keep track of their financial trends, search for loans, check account balance, and perform other necessary financial tasks (Koskosas, 2003). All Nigerian banks are connected to the Net and customers can withdraw at any part of the nation. Furthermore introduction of Automated Teller Machines (ATMs), enabled by the internet has eased banking operations. (Alimi and Popoola, 2015).

E. *Information*

The internet leverages our ability to find, manage, and share information. The Net is an essential medium from which Nigerians search for the latest information around the world. Live news and other information are accessible through the Net. Also, Nigerians depend partially on the Net to read both local and foreign newspapers (Locksley, 2009). Furthermore, majority of the media houses depend on the internet to get latest information so as not to broadcast stale news to their audiences. Even some newspaper companies in Nigeria are currently using the internet to transfer the news to be printed

from their headquarters to the remote branches so that the paper can be printed there so as to save time and transportation cost. With these impacts in mind, our survey question was designed to get responders usage of the internet in obtaining up-to-day information. (Alimi and Popoola, 2015).

F. *Chatting and E-mail*

The internet access has become an integral part of Nigerians' lives. It is currently the new medium of communicating with families and friends across the world. With the introduction of internet enabled mobile phones and iPods, Nigerians can now chat at anywhere and anytime (Locksley, 2009; Idowu, B., Ogunbodede, E., and Idowu, B., 2003). As a matter of fact, majority of students equally use the internet through chatting and email application for online dating (Alimi and Popoola, 2015).

Human Rights and Information Communication Technology in Africa

Personal Privacy

Personal privacy is the human rights idea that considers an individual's personal life an area of sanctity, worthy of rights protection. Looking at classical human rights enunciations, the Universal Declaration of Human Rights refers in Article 12:

No one shall be subjected to arbitrary interference with his privacy, family, home or correspondence, nor to attacks upon his honour and reputation. Everyone has the right to the protection of the law against such interference or attacks.

There is a strong link between the private space and the person in the quotation above. However, in the Internet age, privacy has become a particularly notable area of concern in relation to the protection of a person's own data (Razzano, 2016).

National Security and Cyber Security

National security is a regulatory sphere increasingly used by states to justify limitations on human freedoms. National security concerns have also been used to justify laws, which legitimize communications interception to a significantly intrusive degree. There is a legitimate concern for the security of persons in relation to online forms of crime. Increased Internet connectivity, while for many reasons positive, comes with consequent risks, and online crime is one of them. The actual cost from cybercrime to

the global economy has been stated as ‘more than US\$445 billion’ (Tamarkin, 2015). Considering the region in particular:

Africa [is] becoming a cybercrime safe harbour because of increased Internet availability at lower costs, a rapidly growing Internet user base and a dearth of cybercrime laws on the continent. Cybercriminals in Africa are not only using techniques such as the 419 scam or advance fee fraud that originated in Nigeria, but are also deploying more advanced and ‘lucrative forms of cybercrime that involve the use of botnets, remote access Trojans, and banking/finance-related malware’(Tamarkin, 2015).

Not only is personal information easily intercepted, but the anonymity of the Internet makes prosecution a challenge (hampered further by issues of jurisdiction). The ability of the Internet to organize disparate groups could obviously also apply to criminal groups.

Internet Governance

Internet governance refers to the development and application of shared norms and principles by all stakeholders, which seek to shape the evolution and use of the Internet. There are international initiatives that seek to play a role in this, given the manner in which the Internet obliges us to reconsider traditional ideas around ‘jurisdiction’. The World Summit on the Information Society and Internet Corporation for Assigned Names and Numbers are examples, but of course there are domestic and regional trends that feed into Internet governance as well. Because of its broad definition, it could consider content regulation, filtering, jurisdiction, naming conventions, etc. It is therefore a sound start to an investigation on trends as a broad catchall before we turn to more specific concerns in relation to access (Razzano, 2016).

Domestic attempts at governance, which have more directly interfered with freedom, have occurred as well. In 2011, when former President Hosni Mubarak shut down the Internet and cell phone access in Egypt during the ‘Arab Spring’ through collusion with three major telecoms companies — Vodafone, Mobinil and Etisalat (Makinnon, 2015). This Act was later declared ‘unconstitutional’, resulting in fines on the basis that the interventions were done without the appropriate attendant court orders.

Infrastructure and Net Neutrality

At its most practical, when we think of access to the Internet, issues around the physical infrastructure of the Internet come to mind. Just because it's a technical issue, does not mean that there are not human rights issues worth reflecting on of importance for the African continent. The law finds a way to infiltrate these areas, and regulation of the telecommunications sector has a significant impact on both the cost of, and access to, the Internet. State monopoly of infrastructure may have a real impact on people's ability to communicate (Razzano, 2016).

Digital Migration

'Digital migration' is a catchphrase that has dominated headlines across the world. It involves the international transition from analogue television to digital terrestrial broadcasting, which changes the manner in which signal is distributed to televisions. The transition gives a clearer signal, improved provision of content and choice, a better utilization of frequencies, as well as user interface benefits. A significant benefit as well for the African content is the 'digital dividend', which refers to the amount of additional radio spectrum created by the move (Razzano, 2016).

The International Telecommunications Union set June 2015 as the 'deadline' for migration, but many African countries struggled to meet this deadline given funding and infrastructural challenges. Yet, Tanzania demonstrated some best practice in relation to the process. Not only did it beat the deadline, it completed the challenge in just over two years (comparatively, the United Kingdom took almost two decades). The human rights implications of digital migration are significant. Migration is an important concern for access, not just for Africa, but globally. If the process is mismanaged in a national context, large portions of the population will resultantly be left without access to their televisions. This lack of 'access' has implications, both directly on the rights of access, and also in relation to the other substantive rights affected by being disconnected (Razzano, 2016).

One influence on the question of access is the cost of set-top boxes – the device used to read convert digital signals into analogue for televisions that do not yet have a digital function. It was noted, specifically within the Ugandan context that for citizens to afford televisions with digital receivers would merely serve as an additional cost that prohibits access, in a context in which the digital divide sees 25.5% urban Ugandans with televisions compared to 2.6% of rural Ugandans with access.⁸⁰ There is the opportunity for states to subsidize the cost of these boxes within their migration policies, but that still has obvious cost implications for the nation as a whole (Razzano, 2016).

There are also lesser thoughts about risks that digital migration may directly contribute to. In South Africa, in a direct acknowledgment of the cost implications for trying to implement a digital migration policy, National Treasury announced Cabinet’s approval of increased expenditure for associated projects of around ZAR 1 billion. Problematically though, project spending is easily misallocated or subject to corrupt tender practices, which will be a growing area of concern as expenditure incrementally increases (Razzano, 2016).

Further, in Kenya, during the early days of transition, difficulties abounded (Mwiti, 2015). It is not just the physical process that presents challenges, but also how the manner of digitization may allow for more significant intervention. Because the Kenyan Broadcasting Corporation was potentially going to be the sole distributor, as a centralized model had been decided on to ease costs, some critics had raised concerns about the increased power the broadcaster had to interfere with the distribution of content (Burgess, 2009)

Interestingly too, areas of intellectual property (and their association to various applicable human rights spectrums) may be impacted, World Intellectual Property Organization (1998). This is because digital content is often regulated in a significantly different way to analogue, and contradictions or confusions may consequently occur (Muheebwa, 2015). That is probably one of the most important flags: will national laws

be able to adapt quickly, cohesively and in a considered manner to deal with digital content and broadcasting?

Inequality and the Digital Divide

Substantively underscoring human rights tenets is the idea that, to ensure the full respect of human dignity inherent to each person, people should be treated equally. Kantian philosophy has served as a profound source of inspiration for conceptualizing the concept of human dignity, identifying three core components:

1. That every human, by birth, is imbued with dignity;
2. This dignity and worth stems from the fact, that we are rational and moral agents; and
3. Because humans have this worth, there is naturally an obligation of ‘beneficence’ to one another. (Rachels, 1986).

This is important, for instance, the African Union Declaration on Human and Peoples Rights recognizes the right to be treated equally by the law – equality between persons requires more than that, bearing both horizontal and vertical elements. What does this mean for the rise of the Internet and technology access on the African continent? It means that one the greatest substantive areas of concern must be to consider the right to equality, in both problem thinking and solution design, politically and practically.

It is this focus on equality (and inequality) that obliges discussion in more detail of the ‘digital divide’. This divide refers to the differential access to Internet and telecommunications between persons. It adds an additional axis of inequality for those who have little and is starkly realized on the African continent in a broader context which sees Sub-Saharan Africa as the least developed region of the world, in terms of life expectancy, school enrolment ration, income and under-nourishment (Fuchs and Horak, 2008). Alongside socio-political impacts, there is an economic impact. One estimate suggests 99.9% of e-commerce will take place only in the developed regions of North America, Europe and Asia Pacific (Dholakia, and Kshetri, 2005). The digital divide grows as a concern, not just as an additional form of deprivation, but also as this deprivation prevents the attenuation of other disadvantages that access may have

assisted with. Differential access has technical roots. As a 2008 ICT Access Survey summarily noted:

Broadband access across sub-Saharan Africa is still nascent, but with increased roll out of fixed wireless services such as CDMA and Wimax this is beginning to change. The high cost of computers and the low uptake of them by households suggest that limited mobile Internet usage is more likely, though currently far too expensive for generalized use. Only South Africa had any significant uptake of ADSL and mobile HDPSA services...but with ADSL offerings emerging in the dynamic Kenyan and Nigerian markets...

Internet penetration is uneven across the continent, though public access appears to be more pervasive in West and East Africa, most particularly Benin, Burkina Faso, Cameroon, Senegal, Nigeria, Tanzania and Kenya. However, with low home-PC penetration rates across the continent, private access remains very limited, very expensive and way below the critical mass required for it to impact significantly on the economy and society...[I]n the Southern African region the primary point of access to Internet services for many people is at work or school. This is certainly the case for Botswana, Namibia, South Africa and Zambia.

One of the reasons for the high cost of Internet services on the continent is the exceptionally high cost of international bandwidth. (Gillwald and Stork, 2008).

We must, however, understand a 'lack of access' not just being due to physical access to a computer, or a lack of Internet connection, or even merely due to cost, but that issues such as language also have a pertinent role to play. English literacy stands as a significant inhibitor to many on the continent, as the majority of Internet content is still anglicised. These sorts of factors also contribute to the understanding that, while problems of access have technical aspects, structural problems are at the source of the digital divide. This means that policy solutions which focus merely on economic aspects of policy to address technical concerns, fail to adequately improve the divide. In Ghana, for instance, the liberalization of telecommunications markets at the suggestion of the World Bank and International Monetary Fund, envisioned for improving access, still sees a low level of Internet users, given their income and poverty gap (Fuchs and Horak, 2008).

There are both international and national dimensions to the digital divide. At the international, the differences between developed and developing countries are marked

(Dholakia, and Kshetri, 2005). South Africa is the least connected than any other upper middle-income country, yet the most connected on the African continent. Domestically, only one in three people are Internet users, but two thirds of that number are daily users. The profile of those users demonstrate too how privilege and access intertwine: 76% of the users live in urban areas and 63% are employed or in education, with 65% educated to at least High School level (De Lanerolle, 2012).

The problem of the divide can be assisted (but not solved) by additional initiatives that also recognize the divide when exploring technology and accountability. For instance, in Liberia, a project funded by the Accountability Lab recognized that, while political information was readily available online, differential access meant that this did not truly equate to ‘availability’ for all people. The initiative therefore sought to translate the information available simply and clearly through the low-tech solution of a painted daily billboard in a prominent town square. (Urdaneta, 2013)

The divide needs to be addressed because, as noted by former UN Secretary- General Kofi Annan in 1999:

Three days from now, the world’s population will pass the six billion mark. Five out of those six billion live in developing countries. For many of them, the great scientific and technical achievements of our era might as well be taking place on another planet ... The capacity to receive, download and share information through electronic networks, the freedom to communicate freely across national boundaries – these must become realities for all people ... These people lack many things: jobs, shelter, food, healthcare and drinkable water. Today, being cut off from basic telecommunications services is a hardship almost as acute as these deprivations, and may indeed reduce the chances of finding remedies to them (Fuchs and Horak, 2008).

Summary



With the spread of fast internet and the emergence of newer technologies, such as distributed ledgers or platform economies, newly undertaken research will need to establish whether the positive trajectory depicted here will continue in the future, or whether Fourth Industrial Revolution technologies will bring about a different set of challenges.

The internet has really changed everything in Nigerian, African and the rest of the world. Considering growth brought to education sector by the Net, it is obvious Nigeria educational sector cannot stand the test of time without the internet. Also, the impact of internet in sending and receiving of e-mail has indeed changed the postal services in Nigeria with the internet giving Nigerians the opportunity to send and receive instant messages across the world. Similarly, internet has indeed contributed positively to Nigerians business transactions. The uses of electronic data have enabled Nigerians to do business at anytime and anywhere. Different banks' customers can withdraw their money at any part of the country as a result of impact of internet on Nigerians banking system. Also, the introduction of the Net enable ATM has drastically reduced the queue in banks across the country as well as in other parts of the world.

The Internet intersects across all aspects of our lives and across all human rights. Thus threats to freedom of expression and access to information online can occur through a variety of legislative and practical interventions. The broad arena of threats is further made difficult by the piecemeal regulation of the Internet, and complicated by the obvious difficulties of jurisdictional space. It is a new frontier – and a new frontier of profound importance for the African continent.

REFERENCES

Alimi, I. A. and Popoola, J. J. (2015). *The Growth and Impact of Information and Communication Technologies in Africa*. International Journal of Electronics and Electrical Engineering Vol. 3, No. 1, February, 2015

Balkin, J. (2004). *Virtual Liberty: Freedom to Design and Freedom to Play in Virtual Worlds*. Faculty Scholarship Series. Paper 239, available at: http://digitalcommons.law.yale.edu/fss_papers/239.

Buni, C., and Chemal, S. (2014) *The Unsafety Net: How social media turned against women*. The Atlantic, at: <http://www.theatlantic.com/technology/archive/2014/10/the-unsafety-net-how-social-media-turned-against-women/381261/>, accessed 01.02.2016.

Burgess, J. (2009) *Throwing the Switch: Challenges in the Conversion to Digital Broadcasting* (Washington DC: CIMA) at 21.

DataJournalism.com *Where journalism meets data* <http://datajournalismhandbook.org/>.

De Lanerolle, I. (2012) *The New Wave: Who connects to the internet, how they connect and what they do when they connect* (South Africa: Wits Journalism, University of Witwatersrand) at 7.

- De Vos, P (2015). *Freedom of Hate Speech? No, Thanks*, Daily Maverick, available at: <http://www.dailymaverick.co.za/opinionista/2015-02-26-freedom-of-hate-speech-no-thanks/#.VdrYzkW1z4Q>, accessed 07.09.2015.
- Dholakia, N. and Kshetri, N. (2005) *Digital Divide to Digital Dividend*, available at: SSRN: <http://ssrn.com/abstract=847186>,
- Freedom House (2015). *Freedom on the Net: 2015* (Washington DC, Freedom House).
- Fuchs, C. and Horak, E. (2008) *Africa and the digital divide* Telematics and Informatics 25 (2008) 99–116
- Gillwald, A. and Stork, C. (2008) *ICT Access and Usage in Africa*, available at: http://www.researchictafrica.net/publications/Towards_Evidence-based ICT_Policy_and_Regulation_-_Volume_1/RIA%20Policy%20Paper%20Vol%201%20Paper%202%20-%20ICT%20Access%20and%20Usage%20in%20Africa%202008.pdf, accessed 02/02/16 at 31.
- Idowu, B., Ogunbodede, E., and Idowu, B. (2003). *Information and communication technology in Nigeria the health sector experience*. Journal of Information Technology Impact, vol. 3, no. 2, pp. 69-76, 2003.
- Koskosas, I. (2003). The pros and cons of internet banking: A short review. Business Excellence and Management, vol. 1, no.1, pp. 49-58. 2011.
- Locksley, G. (2009) “The media and development: What’s the story,” The World Bank, vol. 15, no. 1, pp. 1-30, 2009.
- MacKinnon, R et al. (2015) *Fostering freedom online: the role of Internet intermediaries* (France: UNESCO) at 94.
- Melia, E. (2019). *The impact of information and communication technologies on jobs in Africa*. Discussion Paper / Deutsches Institut für Entwicklungspolitik.
- McGonagal, T. (2013) *The Council of Europe against online hate speech: Conundrums and challenges*. Background paper for Polish Government and Council of Europe conference, The hate factor in political speech – Where do responsibilities lie? Warsaw, 18-19.9.2013, pp. 4-6, 28-29.
- Muheebwa, H. (2015) *Digital Migration Brings New Intellectual Property Challenges*, available at: <http://www.ip-watch.org/2015/06/16/digital-migration-brings-new-intellectual-property-challenges/>, accessed 02.02.16.
- Mwitit, L. (2015) *Lies, damn lies, and statistics: 15 big facts about the digital migration war in Africa*, available at: <http://mgafrica.com/article/2015-02-24-by-the-numbers-15-bighugestaggering-facts-about-digital-migration-in-africa>, accessed 02.02.16.

Oblinger, D. G. and Oblinger, J. L. (2005). Educating the Net Generation. [Online]. Available: <http://www.educause.edu/educatingthenetgen>

Rachels, J. (1986) “Kantian Theory: The Idea of Human Dignity”, available at: http://public.callutheran.edu/~chenxi/phil345_022.pdf, accessed 02.02.16.

Razzano, G. (2016). *Human Rights and Information in Africa: A reflection on trends*. Fesmedia Africa, Friedrich-Ebert-Stiftung. Windhoek.

See also article 19 of the International Covenant on Civil and Political Rights and the UN Human Rights Committee General Comment No. 34, adopted in 2011, which states that Article 19(2) of the ICCPR includes the right of access to information held by public bodies.

Tamarkin, E (2015). *The AU’s cybercrime response: A positive start, but substantial challenges ahead*. In ISS Policy Brief 73, January 2015.

Urdaneta, J. (2013) *Liberia: A Journalist, a Blackboard, Some Chalk and Open Government*, available at: <https://www.globalintegrity.org/2013/06/liberia-low-tech-billboards/>, accessed 02.02.16.

Ureigho, R. J. Oroke, G. U., and Ekruyota, G. O. (2006). *The impact of internet usage: A case study of delta state (Nigeria) tertiary institutions*. Scientific Research and Essay, vol. 1, no. 2, pp. 054-056, 2006.

World Intellectual Property Organisation (1998) Intellectual Property and Human Rights (Geneva: WIPO), available at: http://www.wipo.int/edocs/pubdocs/en/intproperty/762/wipo_pub_762.pdf, accessed 01.02.16.

Yusuf, M. O. and Yusuf, H. T. (2009). *Educational reforms in Nigeria: The potentials of information and communication technology (ICT)*. Educational Research and Review, vol. 4, no. 5, pp. 225230, 2009.