

Global Innovation and Strategy Center

Communications Channels in the Sahel Using Mauritania, Mali, Niger, and Chad as a Case Study



University of Nebraska-Lincoln
Spring 2007
Project 07-01

Christopher Kerr
Brett Pettit
Keith Roland
Christopher Steffens
Maggie Tunning
Adrian Whitsett

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

This is not the opinion of USSTRATCOM or the Department of Defense.
This is an informative briefing only to document Intern research.

REPORT DOCUMENTATION PAGE					Form Approved OMB No. 0704-0188	
The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.						
1. REPORT DATE (DD-MM-YYYY) MAY 2007		2. REPORT TYPE FINAL REPORT		3. DATES COVERED (From - To) JANUARY 2007 - MAY 2007		
4. TITLE AND SUBTITLE Communications Channels in the Sahel Using Mauritania, Mali, Niger, and Chad as a Case Study				5a. CONTRACT NUMBER N/A		
				5b. GRANT NUMBER N/A		
				5c. PROGRAM ELEMENT NUMBER N/A		
6. AUTHOR(S) Christopher Kerr Brett Pettit Keith Roland Christopher Steffens Maggie Tunning Adrian Whitsett				5d. PROJECT NUMBER 07-01		
				5e. TASK NUMBER		
				5f. WORK UNIT NUMBER		
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) USSTRATCOM Global Innovation and Strategy Center (GISC) Intern Program 6805 Pine Street Omaha, NE 68106				8. PERFORMING ORGANIZATION REPORT NUMBER		
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) USSTRATCOM Global Innovation and Strategy Center (GISC) 6805 Pine Street Omaha, NE 68106				10. SPONSOR/MONITOR'S ACRONYM(S) USSTRATCOM - GISC		
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)		
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.						
13. SUPPLEMENTARY NOTES						
14. ABSTRACT This report focuses on communications methods that are currently effective in the Sahelian African countries of Mauritania, Mali, Niger, and Chad. Attention is also given to methods of communication that have a high probability for success in the future based on economic and educational development, increased access to modern forms of communication, and advancements in technology. The four countries were selected for the case study with the intent that any findings could be extrapolated to other lesser developed regions in the world. Effective communication methods in less developed regions are important for humanitarian reasons during a crisis, countering propaganda disseminated by terrorist groups, and for furthering business and political interests around the world. The report's recommendations include alternatives for immediate, intermediate, and long-term implementation. Several recommendations focus on Muslim youth in particular due to the fact that Islam is the predominant religion in the four case countries and the median age of inhabitants ranges from 15.8 to 17 years.						
15. SUBJECT TERMS Pan Sahel, Mauritania, Mali, Niger, Chad, communication, advertising, propaganda, billboard, radio, censorship, indigenous communication methods, storytelling, Nollywood, mobile phone, Internet, comic books, Africa, technology, Islam						
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON	
a. REPORT	b. ABSTRACT	c. THIS PAGE			Dr. John G. Hudson II	
U	U	U	UU	107	19b. TELEPHONE NUMBER (Include area code) 402-398-8034	

This page intentionally left blank

Table of Contents

TABLE OF CONTENTS	3
ACRONYMS.....	4
EXECUTIVE SUMMARY.....	5
INTRODUCTION.....	6
COMMUNICATION IN THE SAHEL	8
THE SAHEL	10
<i>MODERATE, AFRICANIZED ISLAM</i>	10
<i>PERCEPTIONS OF THE WEST</i>	11
<i>MAURITANIA</i>	11
<i>MALI</i>	12
<i>NIGER</i>	13
<i>CHAD</i>	14
THIRD PARTY INTERESTS	15
COMMUNICATION OPTIONS IN THE SAHEL.....	20
<i>RADIO</i>	20
<i>RECORDED AUDIO</i>	21
<i>TELEVISION</i>	23
<i>PRINT MEDIA</i>	24
<i>MOBILE PHONES</i>	26
<i>DIGITAL MEDIA</i>	33
<i>TRADITIONAL ARTS AND PARTICIPATORY COMMUNICATIONS</i>	34
<i>POPULAR ARTS AND FILM</i>	37
INFORMAL COMMUNICATION NETWORKS.....	39
<i>TRANSPORTATION NETWORKS</i>	39
<i>COMMUNITY CENTERS</i>	41
<i>BLOGS</i>	47
FINDINGS.....	48
RECOMMENDATIONS	49
PROPOSED ADDITIONAL RESEARCH.....	55
APPENDIX.....	57
WORKS CITED.....	96
ABOUT THE INTERNSHIP PROJECT.....	106
ABOUT THE AUTHORS.....	107

Acronyms

AISI	African Information Society Initiative
AOLIM	Al-Qaeda Organization in the Land of the Islamic Maghreb
ASDAP	Soutien au Développement des Activités de Population
CLIC	Community Learning and Information Center
CMC	Community Multimedia Centres
FUC	United Front for Democratic Change
GDP	Gross Domestic Product
GSPC	Salafist Group for Call and Combat
ICT	Information and Communication Technology
IGO	Inter-Governmental Organization
IMN	Islamic Movement of Nigeria
ISP	Internet Service Provider
NGO	Non-Governmental Organization
ODA	Official Development Assistance
PRADO	Programme des Adolescents
PSI	Pan-Sahel Initiative
RBGAN	Regional Broadband Global Area Network
RMI	Radical Militant Islam
TfD	Theatre for Development
USG	United States Government

Executive Summary

This report focuses on communications methods that are currently effective in the Sahelian African countries of Mauritania, Mali, Niger, and Chad. Attention is also given to methods of communication that have a high probability for success in the future based on economic and educational development, increased access to modern forms of communication, and advancements in technology. The four countries were selected for the case study with the intent that any findings could be extrapolated to other lesser developed regions in the world. Effective communication methods in less developed regions are important for humanitarian reasons during a crisis, countering propaganda disseminated by terrorist groups, and for furthering business and political interests around the world.

Due to the undeveloped infrastructure, poverty, and the low literacy rates in the region, the majority of communication is done through aural methods and the cultures have a longstanding tradition of storytelling. It was also found that any information conveyed will achieve maximum retention if presented in an entertaining way. The report's recommendations include alternatives for immediate, intermediate, and long-term implementation. An evaluation of multiple mediums of communication throughout the four countries was conducted to find the best methods to distribute information. These mediums were then ranked based on repeatability, access, entertainment value, credibility, cost per user, censorship, and feasibility. The basis for the following recommendations (and others) is further explained in the report:

- Use of recorded audio will be the most inexpensive, repeatable, and entertaining option
- Billboards will allow short, simple, repetitive messages
- Radio offers tremendous reach, but options between national and community radio will differ significantly by country and region. Censorship is also a large complicating factor
- Participatory communication that incorporates indigenous forms of communication are very credible
- Identification and partnerships with key communicators/persons of influence will allow dissemination and increased credibility of messages
- Nigeria's film industry, "Nollywood," is a potential avenue for communication
- Mobile phones are increasing in use, especially SMS text messaging
- Internet usage is minimal in these countries, but holds tremendous potential. There will likely be a convergence of mobile phones and the Internet in the future, especially in Africa
- Digital media offers many opportunities for educational purposes, as well as communication methods in the future.

Introduction

Africa, often referred to as the "dark continent," is misunderstood by much of the Western world. As the second largest continent, Africa contains a population of more than 876 million people, who belong to many ethnic and linguistic groups.¹ Popular images of Africa include Saharan sunsets, exotic wildlife, and nomadic tribes. Africa at present, as seen through a Western lens, is a continent of poverty, disease, and corruption. News organizations have brought Africa to the front page, increasing attention to the crisis in Darfur and the HIV/AIDS epidemic. Governments recognize the geopolitical and strategic importance of the continent, rich in natural resources and a new breeding ground for terrorists. As celebrities and companies garner support for humanitarian assistance, Africa's visibility has risen. However, despite many efforts and much attention, Africa continues to remain an ambiguous continent.

Despite increased attention to Africa, it is still the poorest continent in the world. In contrast to previous decades and due to increases in information communications technologies (ICTs), Africans have a greater awareness of their economic conditions relative to the rest of the world. This awareness of their situation can breed disenchantment, despair, and resentment. Africa is still highly reliant on global aid, and most states are not self-sufficient.

Though literacy rates are rising among young Africans, educational systems remain hindered by a lack of funding. For many students public education is not free; they must pay for uniforms, supplies, and school fees. These costs often force parents to either withdraw their children from school or send them to religious schools free of charge. Even in areas where the state is providing educational services, many families opt to send their children to Islamic schools.

Africans are more acutely aware of the positive benefits made available by increased levels of technology. While many Africans are utilizing ICTs in innovative ways for business and personal reasons, the majority on the continent lack the resources needed to acquire them.

The United States has had important humanitarian, geopolitical, and natural resource interests in Africa for some time. Recently, the continent has become even more important to the United States.

It used to be a kind of cruel joke twenty years ago when some of us tried to pretend Africa might rise to the level of a strategic interest, but thanks to the oil deposits we're finding every day in and near Africa, I can say with a straight face 30 per cent of our oil will come from there, and I promise you it is a strategic interest.
-- Acting Assistant Secretary of State for African Affairs Charles Snyder.²

¹ World Bank. Africa Development Indicators 2006. Washington: International Bank, 2006.

² International Crisis Group. "Islamist Terrorism in the Sahel: Fact or Fiction." (31 March 2005) 25.

In fact, on Feb. 6, 2007, the Bush Administration announced that a new military command, U.S. Africa Command (AFRICOM), will be established by Sept. 30, 2008, signifying the growing importance of the continent.³ While the Deputy Assistant Secretary of Defense for Africa Affairs, Theresa Whelan, says, “This isn’t about a scramble for the continent,”⁴ the United States military has played an active role on the continent for decades and is only now establishing a stand-alone command.

An estimated two-thirds to three-quarters of U.S. foreign direct investment in Africa has been energy related.⁵ According to the African Oil Policy Initiative Group, U.S. energy companies have invested around \$45 billion towards the extraction of African oil reserves and plan to put another \$50 billion to work.

In November 2002, the U.S. State Department announced the Pan-Sahel Initiative (PSI) to assist Mali, Niger, Chad, and Mauritania in detecting and responding to suspicious movement of people and goods across and within their borders through training, equipment, and cooperation. PSI’s goals support two U.S. national security interests in Africa: waging the war on terrorism and enhancing regional peace and security. According to State Department officials, the Sahel region of Africa has become important in the global security arena. Stability in the Sahel is currently threatened by a number of factors, including remoteness, porous borders, proximity to known terrorist groups, large marginalized and/or disenfranchised populations, and exclusion from political processes.⁶

Africa's new place on the global agenda and increasing interest in the Sahel necessitate a comprehensive study of the region. Governments and organizations seeking to interact with people in the Sahel must identify and evaluate communication channels. In addition, they must consider the cultural contexts of the region to better understand how to integrate messages within the local cultures.

This study will identify ways to disseminate credible information in Sahelian Africa, using Mauritania, Mali, Niger and Chad as a case study. Many of the recommendations made in this report will apply to communications in the region in general. A few recommendations are focused on Muslim youth in particular due to the fact that Islam is the predominant religion in the four case countries and the median age of inhabitants ranges from 15.8 to 17 years.

³ Crawley, Vince. “New U.S. Military Command Reflects Africa’s Growing Importance.” 12 Feb. 2007. 17 Feb. 2007

<<http://usinfo.state.gov/xarchives/display.html?p=washfileenglish&y=2007&m=February&x=20070212163151MVyelwarC0.4182855>>.

⁴ Crawley, Vince. “New U.S. Military Command Reflects Africa’s Growing Importance.” 12 Feb. 2007. 17 Feb. 2007

<<http://usinfo.state.gov/xarchives/display.html?p=washfileenglish&y=2007&m=February&x=20070212163151MVyelwarC0.4182855>>.

⁵ African Oil Policy Initiative Group (AOPIG). “African Oil: A Priority for U.S. National Security and African Development.” 2002.

⁶ “Conflict in the Africa Region.” USAID Conflict Management. 6 Feb. 2007 <http://www.usaid.gov/our_work/cross-cutting_programs/conflict/support/afr.html>.

Communication in the Sahel

In the most basic terms, communication is the exchange of information. The information may be a simple idea or a complex message, but communication occurs when the information travels from one source to another. Systems of communication include interpersonal communication (communication among people), telecommunication (communication at a distance by electronic transmission), and mass communication (communication that reaches a large audience through the use of media).⁷ The effectiveness of each method of communication varies according to the nature of the message, its sender and the recipient.

According to Silvia Balit, author of 'Communication for Isolated and Marginalized Groups Blending the Old and the New,' "Communication and culture are closely interwoven. Communication is a product of culture and culture determines the code, structure, meaning and context of the communication that takes place."⁸ This idea holds true especially in Africa. Because African social histories are thousands of years old, successful communication within Africa depends largely upon consideration for the cultures present within its communities. Whereas a Western communicator is most familiar with modern forms of communication, such as cell phones and e-mail, many of the impoverished nations of Africa cannot rely on technology for a constant source of information. Because of this disparity, governments and organizations seeking to communicate with Africa must look inward, into the community structures of the specific countries to better understand how people communicate within the region.

The diversity of Africa is apparent in its countless modes of communication. Non-verbal traditional uses of communication include instruments, tribal marks, textile patterns, beads, and hairstyles.⁹ Verbal communication not only constitutes plain speech of simple statements, but also proverbs, riddles, narratives, and song,¹⁰ as well as the use of drama and ritualized performance arts. "People are music crazy," said Dr. Mary Jo Arnoldi, curator of African ethnology at the Smithsonian National Museum of Natural History. As one of Mali's biggest exports, music is often full of social messages like women's issues, family, AIDS, etc. Malians listen to rap, but the lyrics are more positive than Western rap music. Dr. Arnoldi said the beat is similar to Western rap, but there is not a culture of disrespect that goes with it.¹¹

Modern forms of communication include telephones, cellular phones, television and the Internet. While all are present in Africa, the penetration rate is lower in Africa than in more developed regions. Many Africans admire Western technologies, but the reality is that most lack the financial capital to adapt their lifestyles to them. Urban centers are

⁷ Oreh, O. "Modes of Communication." *African Cultural Development*. Ed. Ogbu Kalu. (Enugu: Fourth Dimension Publishers, 1980) 96.

⁸ Balit, Silvia. "Communication for Isolated and Marginalized Groups Blending the Old and the New." 2004. 13 March 2007

<http://www.fao.org/sd/dim_kn1/docs/kn1_040701a2_en.pdf>.

⁹ Oreh 98-104.

¹⁰ Oreh 107.

¹¹ Arnoldi, Mary Jo. Personal interview with Maggie Tunning and Adrian Whitsett. 15 March 2007.

more likely to benefit from advances in technologies, as they have more wealth and better developed telecommunications infrastructure.

Although modern communication systems are few and concentrated in urban areas, their reach is often widespread due to the flow of information from the urban to rural areas and among villages.¹² Malians call this flow along lines of transportation *radio con-con*, and their word-of-mouth communication method is much more reliable than the Western game of "telephone," due to the traditional nature of the custom.¹³ Modern technologies are also shared to maximize their reach. For example, a village may have only one black and white television, but the entire village will gather together at a community center or central meeting place to watch a news program. In much of Africa, mobile phone use appears to follow a similar pattern; it is not uncommon for one person in a community to have a mobile phone and set up shop to send and receive text messages for other community members.¹⁴

*The mass do not now take their opinions from dignitaries in Church or State, from ostensible leaders, or from books. Their thinking is done for them by men much like themselves, addressing or speaking in their name, on the spur of the moment... - John Stuart Mill*¹⁵

As globalization connects people across continents, practices of retrieving information are expected to conform to the latest technologies. However, in PSI countries communication is under-developed by Western standards. Western development organizations seeking to communicate with Africa in the 1940s through the 1960s adopted a unidirectional flow of information from the 'expert' sources to the 'lay' receivers, and participatory development by local communities was considered slow, inefficient and often unlikely.¹⁶ The Western approach to communication relied on 'big media,' like radio, television and newspapers, because these modes of communication reach the highest number of people within the shortest possible time.¹⁷ Unfortunately, because these organizations did not consider African values and cultural norms, they failed to recognize the actual ineffectiveness of such mediums with African people. Development agencies today are beginning to recognize the importance of integrating cultural identities within communication and programs. According to Ismail Serageldin of the World Bank, "The clarity of that cultural identity and its evolving continuity are essential to create an integrated and integrating cultural framework. . . . Indeed, the lessons of failure in Africa frequently can be traced to the absence of such institutions."¹⁸ "To envisage a development policy without giving priority to the protection of the

¹² Beaubien, Jason. Personal interview with GISC Interns. 18 Jan. 2007.

¹³ Arnoldi, Mary Jo. 15 March 2007.

¹⁴ Davis, Shawn. Personal interview with Maggie Tunning and Adrian Whitsett. 14 March 2007.

¹⁵ Mill, John Stuart. "On Liberty." (London: Longman, Roberts and Green, 1869).

¹⁶ Musa, Bala A. "Popular Theatre and Development Communication in West Africa: paradigms, processes and prospects." *African Theatre for Development: Art for Self-Determination*. Ed. Kamal Salhi. (Exeter: Intellect, 1998) 137.

¹⁷ Musa. 137.

¹⁸ Altbach, Philip G. and Salah M. Hassan, eds. *The Muse of Modernity: Essays on Culture as Development in Africa*. (Trenton: Africa World Press, Inc., 1996).

cultural and natural heritage would be to condemn the population . . . and irreversibly sign away their future.”¹⁹

As governments and organizations seek to communicate in the Sahel, they will identify which avenues of traditional and modern communication are currently successful at transmitting information. As countries modernize, the exchange of information may reflect technological advancements, and governments and organizations must consider and evaluate the effects of these methods on the communication structures of the region.

The Sahel

The Sahel, Arabic for ‘shore’, is located where the southernmost part of the Sahara Desert ends. Stretching from the Atlantic to the Indian Ocean, the Sahel is 4,300 miles long and between 185 to 700 miles wide. According to *Africa: the companion to the PBS series*, “Like a high-water mark that advances and retreats with the tides, the Sahel has moved north and south with the climatic changes that have changed the Sahara from bone-dry desert to savanna and back again over the millennia.”²⁰

The northern areas of Mauritania, Mali, Niger, and Chad are part of the Sahara Desert. They lack ready access to water and, for this reason, are sparsely populated. The Sahel becomes more populated as the desert turns into grassland. Agriculture and livestock production occurs in these rural areas of the Sahel. Farmers grow food staples like African wild rice, millet, and sorghum. Herders raise goats, sheep, and cattle. Fishing also occurs where there are lakes and rivers.²¹

Moderate, Africanized Islam

Islam has been “Africanized” in the Sahel, meaning that Black Muslims have fused their pre-Islamic traditions and practices with Islamic teachings.²² Islam practiced here is more moderate than is typical of North Africa and the Middle East. In the book *The History of Islam in Africa*, the difference is clearly defined:

The concept of “radical Islam” in many Muslim communities in West Africa... has taken on a new meaning that is concealed below the layers of the rivalry characteristic of the 1950s. Radicalism has lost part of its violent and sectarian connotations, conveying more and more the idea of the “original” creed – that is, the practice by the first generation of Muslims.²³

19 De la Rose, Philippe Garcia. “Protecting the Cultural Heritage: a Tool for Development.” What Museums for Africa? Heritage in the Future. (Paris: ICOM, 1992).

20 Reader, John. Africa. (Washington: National Geographic Society, 2001) 174.

21 Reader 174.

22 Chand, David. Personal interview with GISC Interns. 1 Feb 2007.

23 Levzion, Nehemia and Randall L. Pouwels. Eds. The History of Islam in Africa. (Athens: Ohio University Press, 2000).

However, in recent years radical Islamic schools, such as those teaching Wahhabi beliefs, are being set up in Africa with the goal of gaining a dominating influence over their students.²⁴ Radical Militant Islam (RMI) groups are using the uninhabited lands of the Sahel for training grounds, and the high level of poverty lends itself to the radicalization of Muslims in the region.²⁵

Some credit for maintaining a moderate form of Islam can be given to the practice of more tolerant Sufi Islam adhering to Maliki legal traditions. Niger, the poorest country in the world, has managed to avoid becoming a hotbed for RMI activity by maintaining a certain division between religion and state.²⁶ As a result of such attitudes, practices and policies, the majority of Sahelian Africans do not strongly identify with RMI movements found throughout the rest of the Islamic world.

Perceptions of the West

Very little survey data is available for this region due to the large size, harsh climate, lack of interest, and lack of infrastructure. Data from Mali, Nigeria, and Senegal collected in the Pew Global Attitudes Report of 2002 suggests that the majority of respondents view Western economic and cultural influences favorably.²⁷ However, many Africans view American governmental influence with suspicion.²⁸ Any communication with Muslims will have to be presented in a way that does not offend their sensibilities and is not counterfactual to their own beliefs. Communication with this group should be done using an organization or individual who shares the same worldview and will be listened to as a credible source of information. Also of note is the 2006 Gallup polling of 10,000 Muslims around the world. When asked what the West could do to improve relations with Muslims around the world, “the most frequently heard reply was not for the West to stop being free and prosperous, but instead that it should, “respect Islam.”²⁹ Polling data also revealed that there was widespread support for a model of government that embraced, “both religious principles and democratic values.”³⁰ Clearly, the Western viewpoint toward a separation between Church and State is not held as widely in the Muslim world and should be considered when criticizing governmental structures.

Mauritania

Mauritania, an Islamic Republic, is located on the west coast of northern Africa and is bordered by Mali to the east and to the south. The Sahara Desert covers much of the country, causing the majority of the population to live in the port cities of Nouakchott and

24 Chand, David. Personal interview with GISC Interns. 1 Feb 2007.

25 Laremont, Ricardo and Hrach Gregorian. “Political Islam in West Africa and the Sahel.” *Military Review*. Jan.-Feb. 2006.

26 “Islamist Terrorism in the Sahel: Fact or Fiction?” *International Crisis Group*. (31 March 2005) I,4.

27 Pew Global Attitudes Project 2002.

28 Tayler, Jeffrey. *Angry Wind: Through Muslim Black Africa by Truck, Bus, Boat, and*

Camel. (New York: Houghton Mifflin, 2005); Notes from interviews with Dr. David de Chand, Jason Beaubien, and Tu Dang.

29 Mogahed, Dalia. “Understanding Islamic Democracy” *Gallup Organization*. Spring 2006

30 Same

Nouadhibou as well as along the Senegal River in the southern part of the country. The country consists of an Arab-Berber population in the north and a black African population concentrated in the south. Ethnic tensions between the two main groups and the claim that slavery has continued despite the official ban in 1981 are the biggest social issues facing Mauritania. Arabic and French are most widely spoken followed by numerous African languages. The country held its first democratic election in March of 2007.

Mauritania's population is 100% Muslim. There are 1.45 million people under the age of 14 – 46.8% of the total population.³¹ The population is divided into African and Arab Muslims: the Arab Muslims are the power elite.³² Mauritania is still trying to gain a better reputation with the rest of the Muslim world³³ due to the fact that the government has a history of harshly suppressing many Islamist activities perceived as radical.³⁴

Mauritania's economy depends heavily on drought-prone agriculture and over-exploited coastal fishing in one of the richest fishing areas in the world.³⁵ Future increases in living standards will rely heavily on offshore oil and natural gas extraction, which began in 2006.

Under previous leadership, government media censorship was high. Opposition access to newspaper publications, radio, and print media was limited. The government shut down an FM relay of Radio France Internationale as recently as 2000 for negative reporting; the ban has since been lifted.³⁶ Following the 2005 military coup in Mauritania censorship slightly decreased. Mauritania increased its ranking on the World Press Freedom Index from 127 out of 167 in 2005 to 77 out of 168 for 2006.³⁷

Mali

Mali is a landlocked country located east of Mauritania and west of Niger. The country is divided into three natural zones: the southern, fertile Niger River basin; the central, semiarid Sahel; and the northern, arid Sahara. The Niger River is important for Mali because its hydroelectric facilities produce 60% of the country's electricity.³⁸ The majority of the population lives in the south with a high concentration in the capital city of Bamako. Although French is the official language, roughly 80% of Malians speak Bambara. Since 1992, the country has been a democracy. The second president was voted into office in 2002.³⁹

³¹ CIA World Factbook. 15 March 2007. 20 March, 2007 <<http://www.cia.gov/cia/publications/factbook>>.

³² Dang, Tu. Personal interview with Adrian Whitsett. 13 March 2007.

³³ Dang, Tu.

³⁴ "Islamist Terrorism in the Sahel: Fact or Fiction?"

³⁵ "Country Profile: Mauritania." BBC Online. 20 April 2007. 24 April 2007 <http://news.bbc.co.uk/2/hi/africa/country_profiles/791083.stm>

³⁶ "Country Profile: Mauritania."

³⁷ "Worldwide Press Freedom Index 2005." Reporters without Borders. 3 April 2007 <http://www.rsf.org/rubrique.php3?id_rubrique=554>.

³⁸ CIA World Factbook.

³⁹ "Country Profile: Mali". BBC Online. 2 January 2007. 28 March 2007 <http://news.bbc.co.uk/2/hi/africa/country_profiles/1021454.stm>.

Islam in Mali is moderate and tolerant. Women do not generally wear veils and are allowed to participate in economic, social, and political activity. Mali is constitutionally secular, and the government respects the right to freedom of religion. Foreign missionaries, both Muslim and non-Muslim, are tolerated, and relations between religions are generally benevolent.⁴⁰ The population of Mali is roughly 12 million people and 90% are Muslim. Mali has 5.64 million people under the age of 14 – 48% of the total population.⁴¹

Radio is the primary form of mass communication in Mali. Some radio stations are accused of being pro-government, though government-controlled radio stations are officially autonomous. Foreign radio programs are accessible through local media, and foreign television is available in Bamako through cable and satellite transmission. Internet access is unrestricted, but few people have the income to afford computers and Internet access. Print media includes more than 40 private newspapers and journals published in French, Arabic, and other languages; new publications can be started easily. The government permits a broad range of opinions, including those critical of the state.⁴²

Niger

Located east of Mali, Niger is in the north central part of Africa. The northern 80% of the country is desert, and the remaining southern portion is savanna. The majority of people in Niger speak French, Arabic, or Hausa. The Nigerian constitution, written in 1999, allows for presidential and legislative multi-party elections. This practice has increased stability within a country that has been under strict military rule since its independence. Slavery was officially banned in 2003, but similar to Mauritania, thousands remain in a state of forced labor.

As the poorest country in the world⁴³, Niger faces frequent food crises and increasing conflict between agricultural sectors. The area is drought-prone, and its main export, uranium, is subject to price fluctuations. Due to low literacy levels, radio is the primary form of media within Niger. Although the state controls much of the nation's broadcasting, private radio broadcasts are on the rise. Radio France and the BBC World Service are accessible in the capital, Niamey, and in the south central cities of Maradi and Zinder. The country has a government-run daily newspaper and a handful of private papers, some strongly partisan.⁴⁴

40 Library of Congress. "Mali Country Profile." Jan. 2005. 16 Jan. 2007 <<http://lcweb2.loc.gov/frd/cs/profiles/Mali.pdf>>.

41 CIA World Factbook.

42 CIA World Factbook.

43 "Demographic Trends." UN Human Development Report. 2006. 22 Feb. 2007 <<http://hdr.undp.org/hdr2006/statistics/indicators/44.html>>.

44 "Country Profile: Niger." BBC Online. 17 January 2007. 28 March 2007 <http://news.bbc.co.uk/2/hi/africa/country_profiles/1054396.stm>.

Islam in Niger is divided into two categories, “one steeped in mystical, subjective Sufi practice; the other adhering to stricter, Saudi/Wahhabi-inspired fundamentalism.”⁴⁵ In addition to fundamentalist organizations from within the country,⁴⁶ the Nigerien government has experienced attacks from radical Islamic organizations based in northern African countries. The population of Niger is roughly 12.5 million and is 80% Muslim. Niger has 5.9 million people under the age of 14 – 46.9% of the total population.⁴⁷

Chad

Chad lies between Niger and Sudan in north central Africa. Africa’s fifth largest nation contains more than 200 different ethnic groups with Muslims concentrated in north and east and Christians and Animists occupying the south. Though more than 100 languages are spoken in Chad, Arabic (Turku) has emerged as the common trade language in addition to French.

Chad held its first presidential election in 1996, but it was widely seen as fraudulent. Civil strife and power struggles continue. Tension exists between the Arab-Muslims in the north and the Christian and Animists in the south.⁴⁸ In April 2006, rebels attacked the capital, N’djamea, in an attempt to overthrow the president, Idriss Deby.⁴⁹ In addition, Chad is currently home to 200,000 Sudanese refugees, with most of them residing along the country’s eastern border. The crisis in Sudan’s Darfur region has the potential to exacerbate ethnic and religious tensions in the surrounding area.

Subsistence farming and cotton production make up the greater part of Chad’s economy. The country became an oil-producing nation in 2003 with the completion of a \$4 billion pipeline linking its oilfields to terminals on the Atlantic coast. In December of 2005, the government moved to relax a law controlling the use of oil money, which caused the World Bank to temporarily suspend loans to the country.⁵⁰

Radio is the major form of communication in Chad. The state controls airwaves and prohibits dissenting views. Non-profit groups run private radio stations despite high licensing fees and close official scrutiny. The only television station is state-owned, and coverage favors the government. Criticism of the government flows through private newspapers that circulate freely N’Djamena, but the papers have little impact among the largely rural and illiterate population.⁵¹

According to a study of Islam in the Sahel, “The majority of Chadian Muslims adhere to a moderate branch of mystical Sufism known as the Tijaniyya, which incorporates some

⁴⁵ Laremont and Gregorian 32.

⁴⁶ Such as the Association of Islamic Groups and Culture and the Niger Islamic Association.

⁴⁷ CIA World Factbook.

⁴⁸ U.S. Department of State. “Background Note: Chad.” Sept. 2006. 14 March 2007 <<http://www.state.gov/r/pa/ei/bgn/37992.htm>>.

⁴⁹ “Chad cuts Sudan ties after attack.” BBC News. 14 April 2006. 12 March 2007 <<http://news.bbc.co.uk/2/hi/africa/4909650.stm>>.

⁵⁰ “World Bank Suspends Loans to Chad.” BBC News. 6 Jan. 2006. 12 March 2007 <<http://news.bbc.co.uk/2/hi/business/4588412.stm>>.

⁵¹ “Country Profile: Chad.” BBC Online. 16 Feb. 2007. 28 March 2007 <http://news.bbc.co.uk/2/hi/africa/country_profiles/1068700.stm>.

local African religious elements. Only a minority of the country's Muslims are considered fundamentalist".⁵² Chad has the lowest Muslim population percentage of the four countries in this report. Out of a population of almost 10 million, only 51% are Muslim. Like the other countries in this report, Chad has a young population; 4.7 million Chadians are under the age of 14 – 48% of the total population.⁵³

Third Party Interests

The United States is not the only country with interests in the region. France, China, NGOs and IGOs, Shi'a and Sunni organizations, Nigeria, and Sudan have competing and complementary interests in Africa. One must keep this information in mind when implementing any sort of communication within the Sahel.

France

Mauritania, Mali, Niger, and Chad are former French colonies and were granted independence in 1960.⁵⁴ Africa remains the largest recipient of French foreign aid, and strong cultural ties remain between France and francophone Africa.⁵⁵ Reuters correspondent Nina Brenjo believes that "competition from other countries vying for Africa's attention and resources makes the traditional *la francophonie* - the language, culture and shared history with its former colonies - "a harder sell".⁵⁶ Despite lingering animosity regarding French colonialism, "France is the devil they know,"⁵⁷

In 2005, France distributed just over \$10 billion in official development assistance (ODA) worldwide, with the majority going to Africa. The country contributes more ODA than the United States in all case study countries with the exception of Chad (\$52 to \$55 million). France ranked 4th, 2nd, 2nd, and 1st in ODA for Chad, Mauritania, Mali, and Niger, respectively.⁵⁸ With strong cultural, language, and financial ties, France is still active in the Sahel.

China

With a long history of activity in Africa, China has enjoyed an increased presence in recent years. African states are largely responsible for China's election to a permanent

⁵² Laremont and Gregorian 32.

⁵³ CIA World Factbook.

⁵⁴ CIA World Factbook.

⁵⁵ 40th anniversary book of the African Development Bank Accessed 4/25/2007.

⁵⁶ Brenjo, Nina. "Is France Losing its Grip on Africa?" Reuters Foundation AlertNet. 19 Feb. 2007. Accessed 17 Apr. 2007.

⁵⁷ Russell, John. Phone interview with Christopher Kerr and Brett Pettit. 14 Feb. 2007.

⁵⁸ Organisation for Economic Co-operation and Development, 30 November 2006.

seat on the UN Security Council in 1971; of the 76 votes obtained by China, 26 were from African countries.⁵⁹ Chinese authorities estimate that 78,000 Chinese workers are currently in Africa. Other estimates that include descendents can range up to 500,000 for the Chinese diaspora.⁶⁰

Major exports to China from Africa include oil and cotton (with Mali and Chad being major cotton producers). Chinese direct investment in Africa reached \$107 million in 2003, more than 100 times the amount invested in 1991.⁶¹ Presently, an estimated 700 Chinese firms hold investments in Africa totaling more than \$6 billion. The recent Forum on China-Africa Cooperation, held in Beijing and attended by all 48 African countries with diplomatic ties to China, enabled another round of new investments totaling \$1.9 billion. These investments include infrastructure and natural resource-related projects.⁶² As of 2005, Africa accounted for 28% of China's imported petroleum. Chinese oil companies are currently active in Niger, Mauritania, and Mali, and may be active in Chad in the near future.⁶³

Trade between Africa and China has increased at a rapid pace - from \$3 billion in 1995 to around \$40 billion in 2005. The Chinese government stated that it hoped to increase trade to \$100 billion by 2010. Many African governments view China's "policy of non-interference in other countries' internal affairs" as a welcome contrast to the additional requirements and oversight of investments from Western countries. However, critics have decried the practice of hiring Chinese instead of African workers as well as Chinese firms' lax safety and environmental standards. Large quantities of Chinese imports flood African markets and impact the competitiveness of the African textile industry.⁶⁴

China has recently expressed a willingness to diversify a significant portion of its more than \$1 trillion foreign currency reserves into different investments. According to a Strategic Forecasting Incorporated analysis:

They would not need to necessarily only invest in liquid investments. As an example, the total foreign investment in all of Africa in 2006 was only \$38 billion. China could easily increase that number by investing in oil projects, farmland, mining, and other infrastructure projects that would guarantee it sources for the materials, commodities, and food that a growing economy is going to need.⁶⁵

⁵⁹ Sahel and West Africa Club. "Atlas on Regional Integration in West Africa." Dec. 2006. 13 March 2007 <<http://www.oecd.org/dataoecd/31/37/37944348.pdf>> 2.

⁶⁰ Sahel and West Africa Club 9.

⁶¹ Harsch, Ernest. "Big Leap in China-Africa Ties." *African Renewal* 20.4 (2007) 3.

⁶² Harsch, Ernest. "Big Leap in China-Africa Ties." *African Renewal* 20.4 (2007) 3.

⁶³ Sahel and West Africa Club 11.

⁶⁴ Sahel and West Africa Club 2.

⁶⁵ Maudlin, John. "China and the Hedge Fund Dragon." *FrontLine Weekly Newsletter* 9 March 2007.

NGOs & IGOs

Many influential aid and development organizations are working in conjunction with and independent of national governments in the Sahel. These include international organizations (i.e. UNICEF, African Union), government institutions (i.e. USAID), private sector supporting organizations (i.e. Fairtrade), training and research centers (i.e. joint MIT/University of Nairobi project), financial institutions (i.e. IMF, World Bank), development consulting firms (i.e. Deloitte Touche Tohmatsu Emerging Markets), information providers (i.e. development newsletters/journals), grant foundations (i.e. Bill and Melinda Gates Foundation), and civil/societal organizations (i.e. religious groups).

Many Muslim and Christian-affiliated groups operate in the region as well. According to the International Crisis Group report, “Islamist Terrorism in the Sahel: Fact or Fiction,” Islamic NGOs first established a presence in the Sahel in the 1990s. Although the following list is not exhaustive, major Islamic NGOs operating in the region are the World Islamic Call Society (Libya), African Muslims Agency (Kuwait), Islamic Relief (UK), International Islamic Relief Organization, the humanitarian arm of the Muslim World League (Saudi Arabia), Islamic African Relief Agency (Sudan), Al Mountada (UK and Saudi Arabia), World Association of Muslim Youth (Saudi Arabia), and the International Federation of Red Cross and Red Crescent Societies.⁶⁶

The International Crisis Group report indicates that members of Islamic NGOs “tend to group all non-Islamic NGOs together.”⁶⁷ Furthermore, some Islamic intellectuals have accused Western NGOs in the Sahel of being an extension of Western governments whose main goal is to maintain political and economic control of the region. Much of the local population may share this viewpoint as well:

EU and major bilateral donors including France, Germany, and the U.S. should make special efforts to avoid funding overtly Christian NGOs in this region, and to ensure that programming is oriented toward participatory projects in which community input will help to ensure that they are not perceived as importing Western biases through the back door.⁶⁸

The report concluded that credibility of NGOs and IGOs may be affected by how religiously biased they are perceived to be and should be a major consideration when communicating in the Sahel.

Sunni Organizations

The vast majority of Muslims in the Sahel are Sunni. Traditionally, the Islam practiced in the region does not exhibit the virulence found in the Middle East or Horn of Africa.⁶⁹

⁶⁶ “Islamist Terrorism in the Sahel: Fact or Fiction?” 25.

⁶⁷ “Islamist Terrorism in the Sahel: Fact or Fiction?” 12.

⁶⁸ “Islamist Terrorism in the Sahel: Fact or Fiction?” 12.

⁶⁹ McVicar, Mike. Personal interview with GISC interns. 8 Feb. 2007.

Several radical Sunni groups, however, have tried to take advantage of the porous borders and poverty in order to establish a presence in the region.

For example, the Algerian Salafist Group for Preaching and Combat (GSPC) has carried out kidnappings and attacks on Western targets in Algeria. In 2003 its leader Hassan Hattab pledged allegiance to al-Qaeda. After violent confrontations with Algerian troops in the late 1990s, GSPC was forced into the Saharan desert. They made multiple forays into the northern regions of the PSI countries. In 2004, the Chadian army confronted GSPC and killed 43 of its members.⁷⁰

GSPC was succeeded by the Al-Qaeda Organization in the Land of the Islamic Maghreb (AOLIM). In December 2006, Nigerian authorities arrested several collaborators of AOLIM. Three men were charged with, among other things, training and indoctrinating at a camp in Agwan, Niger.⁷¹

Sunni groups have opened Islamic schools, or *madrassas* and *kalwas*. Saudi Arabia is the primary financial backer of such projects, but other Sunni states and institutions throughout the Islamic world also contribute.⁷² In many cases, these *madrassas* and *kalwas* can be attractive to poverty-stricken communities because they offer a free education to children who could otherwise not afford school fees and books.⁷³ These *madrassas* are not necessarily a bad thing as they bring an education to children who may not receive it otherwise. Many *madrassas* put into place by Saudi Arabia are teaching the rigid orthodox variety of Islam which is of concern for other governments around the world.⁷⁴ Despite these concerns, it is important for policymakers to recognize the unintended consequences of any harsh public condemnation of *madrassas*. According to Alexander Evans of the British Foreign and Commonwealth Office:

They should encourage modernization but avoid insisting on secularization, which would be taken as a declaration of war on Muslim education. They should seek to stimulate conversation and competition among *madrasahs* while allowing them their freedom. Attempting to change *madrasahs* through compulsion and control is unlikely to deliver positive results.⁷⁵

While recognizing that Islamic schools offer the potential for a negative influence on youth, they also present a tremendous opportunity to ensure that future leaders in the Muslim world view the West in a favorable light.

⁷⁰ "Islamist Terrorism in the Sahel: Fact or Fiction?"

⁷¹ "Islamist Terrorism in the Sahel: Fact or Fiction?"

⁷² Chand.

⁷³ Chand.

⁷⁴ Nasr, Vali. Interview with PBS Frontline. 25 Oct. 2001. 24 April 2007 <<http://www.pbs.org/wgbh/pages/frontline/shows/saudi/interviews/nasr.html>>.

⁷⁵ Evans, Alexander. "Understanding Madrasahs: How Threatening Are They?" *Foreign Affairs* 85 no1 9-16 Ja/F 2006

Shi'a Organizations

Although the overwhelming majority of Muslims in the Sahel are Sunni, Shi'a actors are actively communicating and proselytizing in the region. The primary source of Shi'a influence and finance in the Islamic world is Iran. Iranian oil and natural gas revenues are used to support Shi'a groups throughout the Muslim world, including Africa.

Of great concern to the PSI countries is the Islamic Movement of Nigeria (IMN) led by Sheikh Ibraheem Yaqoub Zakzaky. One expert on militant radical Islam compared the organization's rhetoric and aims to those of Hezbollah in Lebanon. IMN's website contains writings of Iranian and Nigerian sheiks encouraging Shi'a cooperation and degrading Western presence in the Islamic world. This group is active in the Hausa-dominated northern regions of Nigeria. While the IMN is not currently active in the PSI countries, there are significant numbers of Hausa in the Sahel, particularly in southwestern Niger.⁷⁶

Although Hezbollah operates mainly in Lebanon, the Iranian-supported group also has a presence in Africa. Some wealthy Lebanese expatriates and businesses throughout Africa have channeled funds to Hezbollah. Hezbollah is also suspected of operating both legal and illegal business enterprises on the continent.⁷⁷ While radical Shi'a organizations currently have little influence in Mauritania, Mali, Niger, and Chad, developments from other parts of the continent indicate that their influence is growing.

Nigeria

Nigeria is the largest economic and political power in West Africa. Nigeria's oil reserves supply the country with revenues far greater than any other state in the region. According to the World Bank, Nigeria's GDP was \$99 billion in 2005 compared to a total combined GDP of \$15.9 billion for Mali, Mauritania, Niger, and Chad.⁷⁸ Because of this economic wealth and political strength, Nigeria has traditionally played a major role in pan-African organizations.⁷⁹ Linguistic, cultural, and ethnic ties further link Nigeria with its neighbors. Because of Nigeria's dominant role in the region, the country acts as a hub for disseminating information, entertainment, and ideas.⁸⁰

⁷⁶ McVicar.

⁷⁷ Levitt, Michael. "Hezbollah Finances: Funding the Party of God." *Terrorism Financing and State Responses: a Comparative Perspective*. Feb. 2005. 13 March 2007 <<http://www.washingtoninstitute.org/templateC06.php?CID=772>>.

⁷⁸ World Bank.

⁷⁹ Akande, Laolu. "Diplomats Decry Nigeria's Declining Influence in the African Union." *The Africa Sun Times*. 20 April 2006. 13 March 2007 <http://www.africansuntimes.com/37/index.php?ast/news/diplomat/nigeria_s_rapidly_declining_influence_in_africa>.

⁸⁰ Harding, Frances. Presentation and personal interview with GISC interns. 15 Feb. 2007.

Sudan

The government of Sudan plays various roles in PSI countries. The federal government in the north financially supports the spread of Islamic schools throughout the region. Furthermore, universities in Khartoum train teachers for *madrassas* throughout the Sahel.⁸¹

Although Chad and Sudan share cultural and ethnic bonds, the two countries currently have an unstable relationship. The two neighbors accuse each other of supporting rebel groups that are hostile to the current regimes. The main rebel group supported by Sudan is the Front Unique pour le Changement Démocratique au Tchad (FUC). The FUC is suspected of being involved in the ongoing crisis in Darfur, where approximately 200,000 refugees have poured into eastern Chad. Increasing the complexity of the situation, one ethnic group targeted in Darfur is the Zaghawa, of which Chadian president Idriss Déby is a member.⁸² Without this crisis being resolved, communicating in Chad will be significantly more difficult.

Communication Options in the Sahel

Radio

Radios are the dominant method of transmitting and receiving information in Mali, Mauritania, Niger, and Chad. This is especially true in the rural areas where, according to Food and Agricultural Expert Jean-Pierre Ilboudo, "Community radio is Africa's Internet. It reaches our most important audience -- the illiterate and hungry."⁸³ Radios are relatively cheap and do not rely on a constant supply of electricity. Some even have hand cranks and solar power capabilities that can keep the radio running without the use of batteries. Each country has at least one main government controlled radio station. Programs are subject to a high degree of censorship by the government and individuals speaking on programs. Malian and Nigerien national stations are less censored than those in Chad and Mauritania.⁸⁴

While the governments of PSI countries control the main radio station that broadcasts the FM signal, short-wave radio and community radio stations in rural areas are not generally subject to this kind of censorship.⁸⁵ The stations are still susceptible to censorship though. For example, in January 2007, a reporter for a community radio station in Chad

⁸¹ Chand.

⁸² "Islamist Terrorism in the Sahel: Fact or Fiction?"

⁸³ "Rural Radio: Africa's Internet." Food and Agriculture Organization of the United Nations. 18 Dec. 2001. 4 April 2007
<<http://www.fao.org/News/2001/011205e.htm>>.

⁸⁴ "Worldwide Press Freedom Index 2005."

⁸⁵ It is important to note that most of the research information about these countries only takes into account the FM signal broadcasted by the government. Thus, the majority of data is incomplete when it comes to the full amount of radio dispersion within the region.

was arrested for “a lack of tact in the way he reports ‘sensitive news liable to endanger national cohesion.’”⁸⁶ The Chadian government banned all radio stations, private and state-owned, from reporting on ‘sensitive subjects.’ Programming on these stations is controlled by community groups that decide where the station houses go and what is being presented on air. Mali in particular has supported a trend in community radio. As of 2005, there were 86 community-based radio stations out of 110 privately owned stations in Mali. NGOs and welfare organizations have set up station houses for these radios. Local residents use the stations and report on the daily activities around their villages and communities. Individuals in the rural areas of these countries listen to and help produce content at community radio stations.

NGOs and other aid organizations give communities the hardware and training needed to run their station. According to the program manager for the project at Africare, the stations set up in Mali use suitcase radios that can transmit about 50-150km. Africare allows the community to determine programming content on these stations.⁸⁷ These stations facilitate communication among local villages.

Other programs that reach both the rural and urban areas of PSI countries are Radio France⁸⁸ and Voice of America – French Service.⁸⁹ Radio France runs on the multi-channel stations controlled by the government, while VOA French Service is usually heard on shortwave in these countries.⁹⁰

The relatively low cost of radio programming is one of the main reasons why radio is such a dominant force in the spread of information throughout the PSI countries. Grace Githaiga, the director of EcoNews Africa, points out that, “Neither the creators nor the consumers of radio content need to be able to read or write, due to the oral nature of the radio.”⁹¹ Furthermore, she notes that radio programs are not expensive to listen to or make. Radio is not only a useful tool to pass along information; it is also a form of entertainment. Songs, even ones that pass along information about health issues, families, women’s issues, etc. are entertaining to the listener. This entertaining presentation makes information retention greater for the listener. The ability to transcend low literacy rates gives radio an opportunity to reach a wider audience in Africa than many other forms of communication.

Recorded Audio

Other than radio, recorded audio is the communications medium that is most commonly used in the Sahel. The predominant media used are cassette tapes, but compact discs are

86 “Community radio journalist held for past two days by gendarmes in southern town.” Reporters Without Borders. 2 Feb. 2007. 17 April 2007.
<http://www.rsf.org/article.php3?id_article=20895>.

87 Jeter, Malaika. Personal interview with Maggie Tunning and Adrian Whitsett. 14 March 2007.

88 Radio France. <<http://www.radiofrance.fr/>>.

89 Voice of America News. <<http://www.voanews.com/french/>>.

90 Dia, Idrissa. Personal interview with Adrian Whitsett. 15 March 2007.

91 Madamombe, Itai. “Community radio: a voice for the poor.” Africa Renewal Vol. 19, #2, 2005. 08 March 2007

also found.⁹² These recordings include religious messages, audio letters, and West African music. Mali has a particularly rich musical history, and its popularity extends well throughout the continent. Many people have access to cassette tapes because they are inexpensive and widely distributed. Players are also broadly available, either in individual households, communal areas, or vehicles. Electricity is not necessary, for many players are powered by batteries.

Religious groups in the Sahel, both Christian and Muslim, distribute recorded audio in an effort to spread messages. Recording prayers or sermons onto cassette tape is an inexpensive way for religious groups to proselytize to illiterate populations.⁹³ A recent incident in Mauritania provides evidence of how recorded audio is being used for religious promotion and the attempts at state control of such messages. The U.S. State Department's 2005 Country Report on Human Rights Practices for Mauritania noted that "[i]n December transitional government authorities arrested a British subject and held him for several days for reportedly distributing a cassette tape with Christian content. The former and transitional governments viewed any attempts by Christians to convert Muslims as undermining society; however, the former and transitional governments also restricted suspected Islamic extremists."⁹⁴

Development organizations also have recognized the widespread use of cassette tapes, and have incorporated them into projects as a means of communication. For instance, the United Nations Development Programme (UNDP) introduced an HIV/AIDS awareness contest in 1999 entitled *Scenarios from The Sahel: Working in Partnership to Stop AIDS*. Young participants throughout the region submitted stories whose themes dealt with various aspects of the disease.

In order to include the illiterate population, the contest accepted and encouraged the use of visual media. Project organizers soon discovered that audio media could also be utilized, for in many parts of the Sahel 'cassette letters' are commonplace. Instead of written letters, recorded audio is used by many illiterate people as a means of correspondence.⁹⁵

Nevertheless, as in the West, recorded audio in the Sahel is used primarily for music. The whole of West Africa has a rich musical history, listened to throughout the continent and Diaspora. The music, much like the population as a whole, is extremely diverse. The styles range from oral narratives to traditional stringed and percussion instruments. Mali and Senegal in particular have produced many artists who have earned popular acclaim. Some, such as Amadou & Mariam, Ali Farka Touré (Mali), and Baaba Maal

92 Dang, Tu. Department of State. Personal interview with Maggie Tunning and Adrian Whitsett. 15 March 2007.

93 Gospel Recordings Nigeria. Global Recordings Network. 2 April 2007

94 U.S. Department of State. "2005 Country Reports on Human Rights Practices, Mauritania." 8 March 2006. 2 April 2007
<<http://www.state.gov/g/drl/rls/hrrpt/2005/61581.htm>>.

95 United Nations Development Programme: HIV and Development Programme. "The Scenarios Conest." *Scenarios from the Sahel*. 1999. 2 April 2007
<http://www.undp.org/hiv/publications/sahel/chp2_3_a.htm>.

(Senegal) have achieved international success.⁹⁶ The main audiences, however, are local populations who listen to their music primarily on cassette tapes.

There are many advantages to utilizing recorded audio as a means of communication in the Sahel. Cassette tapes are extremely inexpensive to produce. The low production costs translate to affordable prices for the average citizen of the Sahel. Because of their transportability, cassette tapes are widely and easily distributed in taxi ranks, stores, and informal commerce networks that handle both legal and pirated recordings. In addition, the tapes are listened to in many locations throughout the region: in urban centers, rural villages, homes, businesses, vehicles, mosques, or anywhere else a battery-powered player can be placed. Finally, cassettes have a high entertainment value. The content offers the audience a reason to listen to the recorded message potentially numerous times.

The main disadvantage of using recorded audio as a method of communication is the availability of a player. However, as the project leaders of *Scenarios from The Sahel* discovered, many people have access to the required technology so this is not a serious impediment.

Television

Televisions and the means to receive a signal are expensive. In the poor countries of the Sahel, television viewing is mostly limited to the urban centers of the countries (i.e. Bamako, Nouakchott, Timbuktu, Niamey, and Ndjamena). The programming varies through the PSI countries, but programming tends to revolve around rural development, official meetings, and sports events. Soap operas are also popular. In rural areas, the lack of television is not necessarily a hindrance; instead televisions serve as a gathering point for the community. In many rural areas, people get together to watch soccer matches and other programs.⁹⁷ After the students of the ‘Visual Griot’ program⁹⁸ were visited by the President of Mali in Bamako, the entire village gathered around the television owned by one student’s family. This kind of congregation is also common in urban areas, where the penetration rate of televisions is only as high as 3.1%.⁹⁹

Each country has one national station, which the government censors and controls. Most viewers get their information from these stations. However, wealthy individuals can get other programming via satellite.

In the 1990s, a mass media campaign of information, education, and communication promoting safe sex and condom use was tested in Mali.¹⁰⁰ During this period of multi-form broadcasting (radio and television), the Association Malienne pour la Protection et

96 Coomey, Chris. “Brave New World” Seattle Weekly. 14 June 2006.

97 Beaubien, Jason. Personal Interview with GISC interns. 18 Jan. 2007.

98 See Appendix L – Resources to discover African Culture in Washington, D.C.

99 See Broadcast Media Table, Appendix D.

100 Kane, Thomas, “The impact of a family planning campaign in Bamako, Mali.” Studies in Family Planning. 01 Sept 1998

<<http://macece.bizland.com/FHS2006/Readings/family%20planning%20campaign.doc>>.

la Promotion de la Famille, the Ministry of Health, a private family planning association, and a contraceptive marketing project¹⁰¹ observed significant changes in the attitudes of the people who saw the commercials and listened to the songs on the radio¹⁰². The main reason for this change is that while the researchers were using broadcast technology to get messages across, they did it in an entertaining way that captured the attention of the audience.

Even though some informative programming was successful in effecting change in the region, the limitations of television make it a relatively ineffective way to reach a wider audience.

Print Media

Newspapers

Newspapers, magazines, billboards, and other forms of print media are concentrated in the urban areas across the Sahel. Low literacy rates and lack of distribution channels are the main contributing factors to the lack of print media in the rural areas. However, news and information from print media are often disseminated by mobile phone text message or word-of-mouth to the rural areas.¹⁰³ Figure 2.1 lists the estimated newspaper circulation numbers for Chad, Mali, Mauritania, and Niger.

	Daily Newspaper Circulation (per 1000 people)¹⁰⁵	Literacy Rates¹⁰⁴
Chad	0.2 (1998)	26%
Mali	1.0 (1996)	19%
Mauritania	0.5 (1995)	51%
Niger	0.4 (1995)	29%

Figure 2.1

Like radio, government censorship plays a large role in the print media industry. The degree of censorship varies greatly by country. Mali's print media are among the least censored in Africa. The country has laws that call for harsh penalties for slandering public officials, but they are rarely enforced. In Chad, private newspapers that are critical of the government circulate freely in the capital, N' Djamena, but they rarely reach the rural areas. Niger has a small number of government and independent papers, and the majority is strongly partisan. Mauritania's government exhibits the most influence on

¹⁰¹ Social Marketing for Change (SOMARC), see previous footnote

¹⁰² See Appendix M for full information on the campaign.

¹⁰³ Beaubien.

¹⁰⁴ "Demographic Trends." UN Human Development Report. 2006.

¹⁰⁵ MSN Encarta Online 2007. Accessed 04/25/2007 < <http://encarta.msn.com/>>.

print media in this region. In the past, they have banned material that “undermines” Islam or is perceived to be a threat to national security.¹⁰⁶

In order to circumvent the high government control, individuals have found innovative ways to get their message to the public. One such example is Awatif Ahmed Isshag, a 24 year old woman from Sudan. Since the age of 14, she has been publishing a handwritten community newsletter about local events, arts, and religion. Once a month, she pastes her newsletter to a large piece of wood that she hangs from a tree. More than 100 people a day stop to read her latest letter. “It’s the best because this magazine shows what is really happening in Darfur,” said Mohammed Ameen Slik who lives nearby. The local media does not cover the issue of Darfur. “‘We hear about it when one child dies in Iraq, but we hear nothing when 50 children die’ in Darfur said Isshag.”¹⁰⁷

As discussed earlier, those who are literate read the paper and then verbally communicate the information to other people, increasing the overall coverage of the newspaper. Although literacy rates have steadily risen in Niger and Mauritania, they have remained low in Chad and Mali.¹⁰⁸ In order for newspapers to gain popularity, literacy rates will have to increase, distribution channels will have to improve, and publication must cater to a greater variety of languages.

Some newspapers have begun to post articles online as Internet access becomes more prevalent in PSI countries.¹⁰⁹ This practice has increased the range of circulation, but has been hindered by the Internet infrastructure that is currently present.

Comic Books

Comic books are an emerging form of media. They are a good avenue for reaching youth due to their entertainment value and their ability to reach children with little education. One noteworthy example considering the large number of Muslims in PSI countries is recently formed Teshkeel Comics. Based in Kuwait, Teshkeel Comics publishes *The 99*, the world’s first comic-book series whose superheroes are based on Islamic culture. Each month, 16,000 copies of *The 99* are distributed in Bahrain, United Arab Emirates, Egypt, Jordan, Kuwait, Oman, and Qatar.¹¹⁰ *The 99* is in its infancy, and the distribution network will likely spread into other countries of Northern Africa.¹¹¹

“There is an unmet demand for popular culture based on Islamic and Arabic history that’s crying out to be filled. It is compelling for kids to have heroes who speak, act, and look like them,” states Teshkeel COO and former Director of Marketing and Creative Services at Marvel Entertainment, Sven Larsen. All of the characters are Muslim, but not all are

106 “Country Profile: Mauritania.”

107 Sanders, Edmund, “A Darfur Tree is Her Newsstand.” Los Angeles Times. 4 March 2007. 6 March 2007

<<http://www.latimes.com/news/nationworld/world/la-fgnewshound4mar04,0,4420036.story?coll=la-home-headlines>>.

108 “Mauritania: Youth Literacy Rate.” Globalis. 2003-2007. 13 March 2007 <http://globalis.gvu.unu.edu/indicator_detail.cfm?country=MR&indicatorid=41>.

109 “Mauritania Newspapers.” Online Newspapers. 1995-2007. 13 March 2007 <<http://www.onlinenewspapers.com/mauritan.htm>>.

110 Kesting, Piney. “The Next Generation of Superheroes.” Saudi Aramco World 58 (Jan/Feb. 2007).

111 Email from Sven Larsen, COO Teshkeel Comics

Arabs. There are also black characters and about half of the heroes are female. The characters collaborate to solve problems with a message of tolerance and acceptance.

Comic books provide a good avenue for reaching the youth of the region. They are entertaining and contain multiple pictures, allowing children who cannot read another way to obtain a message from the pages. *The 99* also promotes Islamic values such as strength, honor, truth, mercy, invention, generosity, wisdom, and tolerance. The characters collaborate to solve problems with a message of tolerance and acceptance.

Billboards

Billboards are another form of print media that are primarily located in urban areas. They increase brand awareness and provide an opportunity for reinforcing a message. Billboards require long term planning, and they are not cost effective for a one time event.¹¹² Some companies have also found innovative ways to advertise and improve infrastructure conditions in an effort to improve their public relations. For example, a billboard in South Africa was built that has an advertisement on the front and contains 10 solar panels on the back to generate 5,800 watts of power.¹¹³ The electricity is then used to provide power to a nearby school. This is an effort to increase credibility from the source by helping improve infrastructure.

Mobile Phones

“The phone is now the center of innovation.” Mark Anderson - Strategic News Service¹¹⁴

There are more than 2.4 billion mobile phone users worldwide with 1,000 new customers added every minute. Developing countries make up 59% of the 2.4 billion users which makes mobile phones the first telecommunications technology in history to have more users in the developing countries than in the developed world.¹¹⁵

A 2005 study by the Centre for Economic Policy Research and backed by UK mobile phone giant Vodafone found higher rates of economic growth in developing countries with high mobile phone penetration. According to the study, a developing country which had an average of 10 more mobile phones per 100 people from 1996-2003 would have enjoyed per capita GDP growth that was .59% higher than an otherwise identical country.¹¹⁶

112 McDanel, Mike. “The SKINNY on Billboards.” National Business Association Website. 21 March 2007.

<<http://www.nationalbusiness.org/nbaweb/Newsletter2005/2034.htm>>

113 Rich, Sarah. “Beneficial Billboards.” World Changing website. 30 November 2006. 13 March 2007. <http://www.worldchanging.com/archives/005465.html>

114 La Monica, Paul. “VCs Discuss the Next Big Things.” CNN Money. 30 June 2006. 13 March 2007

<http://money.cnn.com/2006/06/30/magazines/fortune/brainstorm_vc/index.htm>.

115 Eagle, Nathan. “Entrepreneurial Programming and Research on Mobiles” W3C Workshop on the Mobile Web in Developing Countries. 5-6 Dec. 2007. 2 Feb.

2007 <<http://www.w3.org/2006/07/MWI-EC/Presentation/eprom.pdf>>.

116 Butler, Rhett. “Cell Phones May Help ‘save’ Africa.” 11 July 2005. 8 Feb. 2007

To date, Africa has not followed the Western model of step-by-step telephone technological progression. Many consumers have gone from not having a telephone to purchasing a mobile phone due to the lack of infrastructure for landline phone service.

Mobile phones have become a status symbol; this is reflected by the growth of users across the continent. The latest data for mobile phone use in Mauritania, Mali, Niger, and Chad is listed in Figure 3.1.

Country	Population	Fixed Line Phones	Mobile Phones	Percentage of Population w/ Mobiles
Mauritania	3,200,000	41,000	745,600	23%
Mali	11,700,000	75,000	869,600	7%
Niger	12,500,000	24,000	300,000	2%
Chad	10,000,000	13,000	210,000	2%

Figure 3.1¹¹⁷

Mobile phones provide an easy, portable way to communicate over long distances. They can be used to send and receive information through speech, text messaging SMS, or Internet connectivity. This is especially important with the lack of permanent phone lines in the area. There are just three landlines per 100 Africans and most are expensive and unreliable.¹¹⁸ Xan Rice from The Times Online claims that mobile phones are showing up everywhere including “rural villages never touched by telephone lines and even remote refugee camps such as Kakuma in northern Kenya, where text messages and irritating ring tones are now as much a part of life as food handouts.”¹¹⁹

The vast majority of mobile phones in this area operate using pre-paid phone cards. This eliminates the need for a bank account or credit check, and individuals can purchase more time as needed without the commitment of a long-term contract. Selling phone cards has also become a popular way to make money for many small business owners, women, and even youth.¹²⁰

The increasing numbers and high visibility have transformed mobile phone cards into a prime location for delivering short, repetitive messages. Companies have begun to place images or commemorate events onto phone cards much like a miniature billboard.

Mobile phones have sparked innovation and development. Businessmen, farmers, and laborers are finding ways to increase profits through mobile phones as well. They can check fish and grain prices from a handful of markets to find the best prices and eliminate

<http://news.mongabay.com/2005/0712-rhett_butler.html>.

117 CIA World Factbook.

118 Rice, Xan. “Phone revolution makes Africa upwardly mobile” Times Online. 4 March 2006. 8 Feb. 2007 <<http://www.timesonline.co.uk/article/0,,32068420,00.html>>.

119 Rice.

120 See Appendix 20 for phone card distribution chain

unprofitable journeys to the market.¹²¹ Others are providing their phone numbers to potential employers and moving on to other possibilities when they previously had to wait at places of employment until a job arose. Mobile phones have created entrepreneurs, especially women, who purchase mobile phones and use them to sell phone services to other villagers on a call by call basis. This business allows them to receive a small profit while the village benefits from an instant increase in communication. Another example of innovation is found in the banking industry. Many poor people do not have a bank account, making the transfer of money a slow and expensive process. With a mobile phone, the user purchases airtime of the desired amount at a local shop and then sends the code for the phone time via text message to the person they are sending the money to. This person then sells the code to a local merchant in exchange for cash, making airtime a form of currency. The entire transaction can be completed in a matter of minutes.¹²²

In the future, mobile phones may also help bridge the gap in the region for Internet connectivity. The high price of computers and the poor main line infrastructure make mobile phones the most cost effective and accessible means for Internet access.

The major disadvantage of mobile phone communication is the cost. Many people cannot afford a mobile phone when the average person is making less than \$2 a day.¹²³ They might want a mobile phone because of the communication advantages and the status of owning one, but food and other necessities will likely take precedence over purchasing new technology. Mobile operators in Europe and the United States usually subsidize handsets because users sign long-term contracts, but the majority of the users in Africa do not sign contracts.

Another disadvantage is the lack of electricity throughout much of Africa. Mobile phone batteries need to be charged, and this becomes very difficult if villages lack reliable electricity. Without access to power, a mobile phone is useless.

In order to reduce these disadvantages, creative innovations have surfaced in the region from both private companies and from everyday users. For example, many groups have created codes that correspond to the number of rings from a phone call, so that the users can get information without using costly airtime.

The overall price of mobile phones is also declining due to increased competition within the area. Recently, Motorola won a contract to supply up to 6 million handsets for less than \$40 per phone in Africa.¹²⁴ This competition has also led to new innovations within the industry. Motorola has recently built a low-cost handset that has a standby time of

¹²¹ Butler.

¹²² Oyewola, Olusola. "Mobile Phone Airtime - A Virtual Currency in Nigeria." *Mobile Africa*. 11 Jan. 2007. 7 March 2007
<<http://www.mobileafrica.net/a84.htm>>.

¹²³ "Demographic Trends." UN Human Development Report. 2006

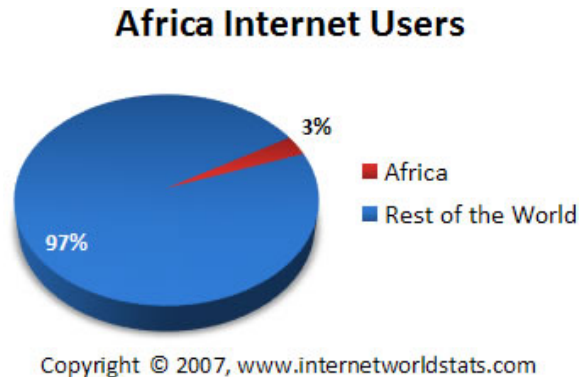
¹²⁴ Butler.

two weeks in order to limit the effect of sporadic electricity. Roadside vendors have also been known to charge mobile phones with car batteries for a small fee.¹²⁵

Internet Connectivity & Use

“Given their massive adoption and widespread use, as well as the recent technological advances in their computational power, mobile phones are ideal substitutes for the personal computer throughout the continent.” Nathan Eagle – MIT¹²⁶

Connection to the Internet allows every user to act as a sender, receiver, narrowcaster, and broadcaster through the World Wide Web. This technology has massive implications for the way people communicate and has changed the economic and political landscapes in the developed world, where it has enjoyed reasonable penetration of 68% in North America and 35.9% in Europe. Penetration rates in Africa, on the other hand, are in the 3% range and have less impact when compared to the developed world.¹²⁷



The Internet and its use in Africa are of such importance because of the Internet's transformational effects on communication, education, economic development, and many other important areas. The Internet also has the potential to be a tremendous enabler of rural development. According to the Food and Agricultural Organization (FAO), the Internet can:

- Reduce the isolation and marginalization of rural communities;
- Support bottom-up articulation of development needs and perceptions, thereby encouraging community participation;
- Facilitate dialogue among communities and those influencing the communities, such as government officials, development agencies, educators, and many more;
- Coordinate local, regional, and national development efforts for increased effectiveness and efficiency;
- Provide information, knowledge, and skills training.¹²⁸

Often referred to as “The Digital Divide,” nowhere is the gap between Internet access and non-access more pronounced than when looking at Africa in comparison to the rest of the

¹²⁵ Oyewola.

¹²⁶ Eagle.

¹²⁷ Internetworldstats.com, statistics downloaded 24 March 2006

¹²⁸ “Overcoming the Digital Divide.” Information Technology Journal 6.2 (2007). 171.

world. Reasons for this include: poor infrastructure such as a lack of functioning electrical, phone, and cable lines; poor literacy rates; and the high cost of information technology such as computers, routers, and software. Physical infrastructure is poor, and the high speed data transmission lines that connect Africans with other continents are lacking (in number and capacity) as Figure 4.1 shows.

These are the poorest countries on the poorest continent and this is very apparent when looking at physical infrastructure as shown in Figure 4.1. Africa as a continent contains only 3% of the total Internet users in the world. As the below chart shows, the PSI countries make up a miniscule amount of that 3%. Even compared to Sudan, not well-known for being on the cutting edge of technology, these four countries combined make up less than 5% of Sudan's total users, which only has 7.8% penetration.

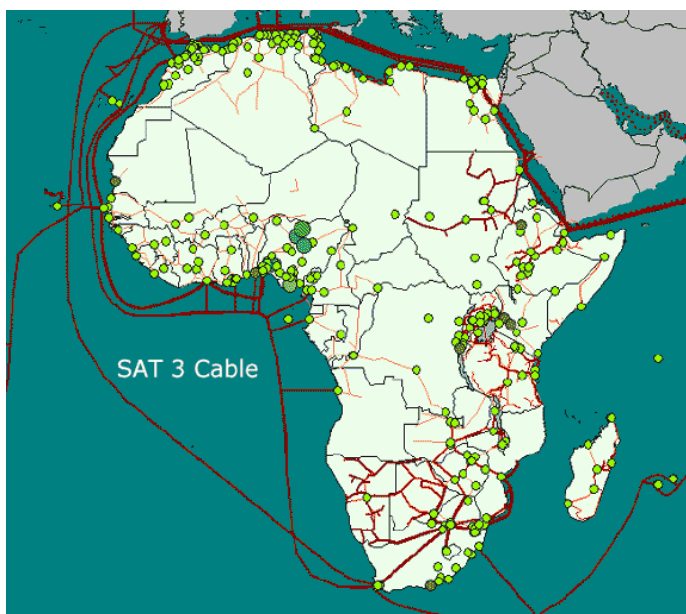


Figure 4.1
STATE OF INTERNET INFRASTRUCTURE: SAT-3 Undersea Fiber Submarine Cable and Inland Networks overlaid with distribution of African tertiary education institutions.¹²⁹ The map depicts the high-data lines connecting to Africa and the Universities within Africa. As can be seen, Mauritania, Mali, Niger, and Chad are lacking in physical infrastructure as well as higher educational institutions that one might normally use to access the Internet.

According to the All-Africa Internet Guide, Internet access in Chad was established in 1997, but it remains undeveloped and has only one Internet service provider (ISP) and

“very few reliable Chad-based Web pages.”¹³⁰ Mali suffers from an undeveloped telephone network, which negatively impacts Internet connectivity, but the network is currently undergoing improvements. Several ISPs currently exist that allow access for the price of a local telephone call. Mauritania also suffers from a poor telecommunications network, but the country does enjoy five ISPs for private subscription. Web content is developing at a rapid rate, relatively speaking, and this content is predominantly in French. Niger has one ISP that provides service to the capital, Niamey. Although the country has had Internet connectivity since 1996, development has been slow. The Web country codes of Chad, Mali, Mauritania, and Niger are td, ml, mr, and ne, respectively.

¹²⁹ International Development Research Center

¹³⁰ “The All Africa Internet Guide.” 14 March 2007 <<http://www.goafrica.co.za/>>.

INTERNET USAGE STATISTICS FOR AFRICA

	Population (2007 Est.)	Internet Users Dec-00	Internet Users, Latest Data	% Population (Penetration)	(%) Users in Africa	Use Growth (2000- 2007)
Chad	8,915,381	1,000	35,000	0.40%	0.10%	3400.00%
Mali	10,914,989	18,800	60,000	0.50%	0.20%	219.10%
Mauritania	2,959,592	5,000	14,000	0.50%	0.00%	180.00%
Niger	12,533,242	5,000	24,000	0.20%	0.10%	380.00%
Sudan	36,618,745	30,000	2,800,000	7.80%	8.50%	9233.30%
TOTAL AFRICA	933,448,292	4,514,400	32,765,700	3.50%	100.00%	625.80%

Source: Internetworldstats.com, downloaded Feb.
2006

Figure 4.2

Admittedly, the current state of the Internet in the Sahel is appalling. There are many reasons to be optimistic about the future potential for the Internet though. Several experts on Africa that were interviewed explicitly stated that Africans, and especially the youth, are aware of the Internet and desire access to it. African commentators have been blunt regarding the Internet's potential benefits for Africans. For example, Akyaaba Addai-Sebo writes:

Africa cannot afford to be left behind! ...What we see before us is a quantum leap from rotary, fixed-line phones to wireless hand-held phones with far greater possibilities for services in education, health, agriculture, and business to be delivered over video conferencing.¹³¹

Innovative NGOs and private organizations have worked to facilitate access to the information contained on the Internet for even the most remote regions in the Sahel. While high-speed access, such as what Western Internet users are used to, are largely unavailable (with the possible exception of South Africa), most areas can access the Internet via satellite. This access is prohibitively expensive and still rather slow in relative terms, but it is access to the Internet nonetheless. IESC Geekcorps, a nonprofit organization that seeks to promote stability and prosperity in the developing world through information and communication technology, has been working with USAID in Mali since 2004 with the purpose of bringing Internet access to rural community radio stations. They developed a "Desert PC," which is custom designed for the harsh, rugged desert environment of northern Mali and consumes 1/10th of the power of a regular computer. This low power consumption makes it especially suited for charging by solar panels. Geekcorps' press release states that after they "developed the Desert PC, the team developed a new low-cost Internet access model using Internet service from Regional Broadband Global Area Network (RBGAN) small satellite transceiver systems. They disabled graphics and installed lo-band to reduce bandwidth consumption by 5-

¹³¹ Addai-Sebo, Akyaaba. "Internet Telephony: Africa's Brave New Future." *New African* (May 2005) 45.

20%, reducing the cost of RBGAN service (which is billed per kilobyte) by 80-95%.”¹³² The staff from the local community radio station was subsequently enabled to access the Internet and then inform the locals about information relevant to them via the radio. This is one of many innovative ways that groups are enabling access to the Internet and its information in the Sahel.

Several positive developments in other countries suggest that rapid advances can be made with the appropriate government policies, business and technological acumen, willpower, and financial backing. Rwanda was recently cited as a potential model for Africa by John Gage, Sun Microsystems’ chief researcher.¹³³ Sun is working with Boston entrepreneur Greg Wyler, who recently purchased Rwandatel, renamed it Terracom, and is wiring the country for mobile phone and Internet access. Spiegel Online reporter Hilmar Schmundt states, “Terracom has launched one of the world’s most state-of-the-art wireless networks in Rwanda, one of Africa’s poorest countries. The network allows anyone with a wireless connection to log on to the Internet at any time. Wyler has also installed fiber-optic cables linking about 50 schools, a handful of hospitals and university institutes in the country.”¹³⁴ (Web Access for all Rwandans) Terracom is doing this using only three non-Rwandans as employees. Success stories such as Terracom could encourage other African governments to adopt policies that will help enable greater Internet access in the future.

Just as areas that lacked landlines for phone access migrated to mobile phones rather than incurring the cost of fixed lines, developing countries will bypass fixed Internet lines in favor of wireless access to the Internet. Many Africans’ first Internet experience may occur on a Web-enabled phone running a browser platform developed by African programmers who understand the unique needs and obstacles that African Internet users will face.

The World Wide Web Consortium headed by Tim Berners Lee (an inventor of the Internet) and comprised of 435 members that include a veritable who’s who of IT (Cisco, Sun Microsystems, Microsoft, Google, etc.), is actively participating in projects and developing standards to facilitate the bridging of the digital divide. From a humanitarian and business perspective, the members see a market that needs to be addressed. Examples include the One Laptop per Child (OLPC) program¹³⁵, Microsoft’s mobile operating system, and other potential ideas such as MIT’s program to train African mobile web-browser programmers at African universities¹³⁶. Many intelligent and motivated individuals and groups are working to bridge “The Digital Divide.” If the rate of technological change in the recent past in Africa is indicative of the pace of

132 Berg, Matt. “IESC Geekcorps to Receive Tech Museum Award in Economic Development Category.” 30 Sept. 2006. 7 Feb. 2007

<<http://mali.geekcorps.org/2006/09/30/geekcorps-to-receive-tech-museumaward/>>.

133 “Rwanda a Model for Africa?” CNN Money. 30 June 2006. 5 April 2007

134 Schmundt, Hilmar. “Web Access for All Rwandans.” Spiegel. 29 Dec. 2006. 19 March 2007

<<http://www.spiegel.de/international/spiegel/0,1518,457000,00.html>>.

135 See Appendix F.

136 See Appendix F.

technological progress going forward, then a 5-10 year timeframe for significant improvements in access and data speeds would not be unreasonable.

There are differences in the way that people use phones and text messaging. Ravi Jain at Google said that other than cost and other limitation, text messaging faces other issues than those previously found while talking:

...low levels of literacy mean that relying on text alone as a medium is unlikely to succeed for significant parts of the population. The diversity of users within developing countries, even those with relatively small populations, is often significantly greater than in industrialized countries, with differences in language as well as marked regional and cultural attributes.¹³⁷

The examples of innovative mobile phone usage suggest that as technology advances and costs come down, the mobile phone will be the medium that most people in developing countries use to access the Internet.

Digital Media

"One of the misconceptions about computers and kids is that kids need training, they need to be taught how to use a computer. There's overwhelming evidence over 40 years that that is not the case." –Walter Bender, Head of OLPC Software and Content Development¹³⁸

Using digital media to disseminate messages and information in the Sahel is a future possibility. Because technology in the region is underdeveloped, digital media is not currently an effective vehicle for message transmission. Still, in conjunction with programs seeking to increase the level of technology in the Sahel, distributing digital media to inform, educate, and entertain is a long-term possibility.

Conceivably, organizations could cheaply purchase secure digital (SD) cards and universal serial bus (USB) thumb-drives as increases in available technology decrease the prices of currently available devices. The units are available for fewer than ten dollars, and bulk orders of devices may cost very little. Developing areas with access to emerging technologies may be cheaply flooded with devices, ensuring that each child would gain access to a file either with a hard memory device or, as technology levels increase, with a wireless file transfer.

Organizations may put a variety of programs on these devices



¹³⁷ Jain, Ravi. "The Mobile Web in Developing Countries." W3C Workshop on the MobileWeb in Developing Countries. 5-6 Dec. 2006.

¹³⁸ Lamb, Gregory. "A Closer Look at What the \$100 Laptop Will Be." *Christian Science Monitor*. 29 Jan. 2007. 8 Feb. 2007

<<http://www.csmonitor.com/2007/0129/p13s01-stct.html>>.

to help spread a selected message. Suggestions include virtual website snapshots that give the illusion of surfing an informative web site without requiring a live Internet connection (i.e., taking a virtual picture of an entire news Web site at any particular moment and then making a file out of it). Other educational files could contain selected messages and educate children through lessons, games, and other entertaining applications.

Moulin¹³⁹, a fully interactive, offline version of the entire French Wikipedia, is an excellent example of the potential this method of dissemination contains. Geekcorps managed to fit over 400,000 articles into an .iso or CD file only 554 MB large. Files such as Moulin could easily fit onto digital media memory devices, allowing organizations to provide many people with great amounts information.

Countries in the region are already gaining access to advanced technology. Nigeria, for example, recently received a shipment of OLPC Laptops after its government pledged to and paid for one million of the laptops.¹⁴⁰ Unfortunately, one can safely assume that many countries of the Sahel will be among the last to receive OLPC laptops. The \$100-150 price tag of the laptops is still prohibitive for governments in the selected region.

Advances in available cell phone technology in the area provide another possible medium for the spread of messages via digital media. In addition to distributing digital media memory devices, free download services could be made available to cell phone users in the region for the download of applications containing the selected message.

Traditional Arts and Participatory Communications

The term “traditional arts” encompasses many different forms of communication, including drama, dance, storytelling, and song. These methods of communication have important cultural implications and value. They are very visual, but also rely on oral communication. Because written communication is not an option for much of the population, communication methods based on oral transmission and traditional arts have become extremely reliable and credible over time. When speaking about communications in pre-industrialized societies, social anthropologist Ernest Gellner commented on how ideas are spread through traditional arts in highly illiterate communities: “Even without writing, societies can ‘freeze’ ideas, or at least phrases, by ritual incantations which preserve patterns and make them normative.”¹⁴¹

The major form of what we might consider “art as communication” depends on the country and ethnic group considered. For example, Mauritanian women express their life experiences through a praiseful form of poetry called *taasu*.¹⁴² In the Segu region of

¹³⁹ Accessible at: <http://www.moulinwiki.org/>

¹⁴⁰ Hassounah, Khaled. “Nigerian Students Power Up Their Laptops.” CNET NEWS. 11 April 2007. 12 April 2007 <http://news.com.com/2300-1041_3-61750251.html?tag=ne.gall.pg>.

¹⁴¹ Gellner, Ernest. *Nationalism*. (Detroit: Phoenix Press, 1997) 17.

¹⁴² Wise, Christopher, Ed. *The Desert Shore: Literatures of the Sahel*. (Boulder: Lynne Rienner Publishers, Inc., 2001) 127.

Mali, the youth are active in Puppet Theater.¹⁴³ In spite of this diversity, research indicates that there are social norms throughout the Sahel that are evident in each variety of performance art.

Importance of Traditional Arts

Sahelian societies are hierarchical with specified roles for each individual. Traits like age, gender, family lineage, and profession determine an individual's role in society. Interaction between individuals requires codified behavior. While this is true with any society, it is more pronounced in the Sahel because high illiteracy rates require dependence on inter-personal forms of communication. Thus, role playing in a fictionalized drama is a natural extension of the actions performed on a daily basis.¹⁴⁴ In addition, role-playing offers a mechanism in which the actors can briefly escape their social position and obtain a greater status. Among the lower strata of the social hierarchy, performance art is particularly important. Many contemporary forms and applications of traditional performance and arts reveal the true character of African society, for they are produced outside the purview of distant government observers and elites.¹⁴⁵

A second theory for the social importance and popularity of traditional art, and drama in particular, in PSI countries is the importance of social ceremonies. Special occasions such as weddings, births, and funerals are celebrated or lamented through ritual performances. These ceremonies help illustrate the multiple functions that performance arts embody. They are not only important for communication, but they also play a vital role in Sahelian societies for educational and entertainment purposes.¹⁴⁶

A common element in many forms of communication is the incorporation of performing arts. When a message is presented in a familiar and entertaining way, an audience will be much more receptive.¹⁴⁷ Thus the effectiveness of each message communicated through performance art depends on the geographic area. What is effective in urban areas may not be accepted or even possible in rural areas. Accordingly, while there are many possibilities in which to include traditional arts into communications avenues, the medium must be culturally and geographically appropriate.

Theatre for Development

In order to reach rural populations, development agencies in Africa have tried to utilize the popularity and familiarity of traditional arts. One such method that has proven effective in many developing parts of the world is participatory communication. Participatory communication is primarily "an interactive process, allowing the

143 Harding, Frances, Ed. *Performance Arts in Africa: A Reader*. (London: Routledge, 2002) 174.

144 Stoller, Paul. "Signs in the Social Order: Riding a Songhay Bush Taxi." *American Ethnologist* 9.4 (1982) 750-762.

145 Barber, Karin. "Popular Arts in Africa." *African Studies Review* 30.3 (1987)..

146 Harding, Frances. Presentation and personal interview with GISC interns. 15 Feb. 2007.

147 Harding, Frances. Presentation and personal interview with GISC interns. 15 Feb. 2007.

community to express its problems and learn about itself. This ensures that the development processes initiated will reflect the perceptions and realities of the rural community.”¹⁴⁸

One technique that utilizes the methodology of participatory communication is Theatre for Development (TfD). Agencies have employed TfD in Africa for various educational purposes, including HIV/AIDS, female genital mutilation, and agricultural practices.¹⁴⁹ TfD is village or community-specific. Each project requires actors familiar with local culture and language, local participants, and 8 to 14 days to implement. The aim of TfD is to stage a fictionalized account of local concerns, incorporating traditional means of communication such as song, dance, and storytelling. “Very often, the vehicle is culture – a whole gamut of visceral practices which are integral to the life systems of a particular group of people, through which existence is understood.”¹⁵⁰

There are six steps in the Theatre for Development process. First, TfD participants interview villagers. This step builds respect and confidence between the actors, while also identifying local wants, needs, and concerns. Second, a storyline based on a specific area of daily life is identified. Third, the story is fictionalized. This step adds the entertainment dimension, but also ensures that anonymity of the villagers is protected. Fourth, performers from the local community are recruited to participate. Fifth, the audience and its issues are defined. Sixth, the drama does not instruct concrete ways of resolving the issue. Rather, it promotes interaction with the audience.¹⁵¹

Many advantages to utilizing participatory communication as an avenue of communication exist. Unlike many forms of mass media, it enables the communicator to reach rural populations. Indeed, the rural areas are the primary audience for participatory communication performances. Participatory communication does not require technology or infrastructure. Therefore, actors can perform as soon as they are trained.

By performing in villages using native language and actors, the message communicated gains credibility often lost with modern media. The performances incorporate local forms of traditional art, providing entertainment to the audience. Dr. Frances Harding, an African theatre expert, has indicated that the use of such methods is a highly effective way of communicating with rural populations.¹⁵² In addition, the participatory nature of the dramas offers an interpersonal method of communication. In contrast to mass media that communicates solely in a one-way, top-down fashion, participatory communications can reach large portions of the population while avoiding the high costs associated with mass media.

148 Balit, Silvia. “Communication for Isolated and Marginalized Groups Blending the Old and the New.” 2004. 13 March 2007

<http://www.fao.org/sd/dim_kn1/docs/kn1_040701a2_en.pdf>.

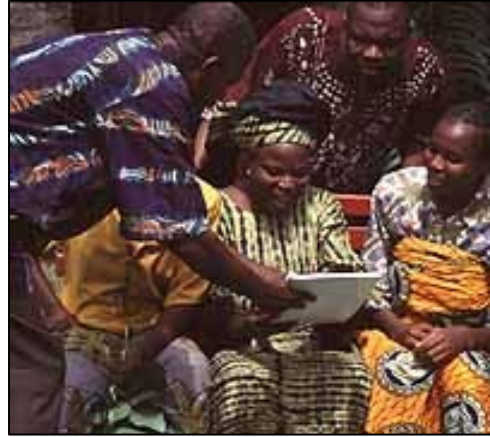
149 Tearfund international learning zone. 21 March 2007 <<http://tilz.tearfund.org/>>.

150 Harding, Frances, Ed. *Performance Arts in Africa: A Reader*. London: Routledge, 2002.

151 Harding, Frances. Handout. “Theatre and video for development.” 15 Feb. 2007.

152 Harding, Frances. Presentation and personal interview with GISC interns. 15 Feb. 2007.

Despite the benefits of participatory communication, several drawbacks are evident. First and foremost, actors must be trained in the method. These actors must be indigenous to the areas where the performances are to be held, for they must be knowledgeable of the local language and culture. Once a participatory communication group is formed and trained, each performance requires up to two weeks. This method is very time consuming. In addition, it cannot reach large audiences at once: each performance is village-specific. Because of the hierarchical nature of these Sahelian societies, permission must be granted from national and local officials to conduct performances. If one official in the chain is hostile to the group or message, participatory communications cannot proceed. Finally, results are difficult to quantify. The audience may absorb the message and enjoy the entertainment, but that does not necessarily lead to changed attitudes and behavior.



Theatre for Development encourages community participation, increasing the entertainment value and receptiveness of messages. Source: <http://tilz.tearfund.org/1>

Popular Arts and Film

In addition to centuries old traditional methods, a modern form of entertainment and communication has arisen in African societies, namely film and videos. These popular arts borrow and incorporate aspects of traditional performance arts, but are rooted in modern African urban society. Shortly after colonial independence from France in 1960, the era witnessed rapid social change and created a new urban class. The entertainment and communications techniques developed by this new class combined both traditional and modern aspects. Because they are centered in urban areas, popular arts such as music, films, and videos have the ability to incorporate various cultures that are found in the city into the message presented. Furthermore, since they can be distributed through numerous methods of modern mass media, popular arts have become extremely accessible and mobile.¹⁵³

Popular arts have taken many forms since their inception in African cities. One such example is the African film industry. The effectiveness of cinema as a communication tool was identified early in the 20th century. In the two World Wars of the past century, war propaganda films were a vital tool for warring nations.¹⁵⁴ In its benign forms during peacetime, cinema is used for cultural reinforcement, education, and commerce promotion.¹⁵⁵

¹⁵³ Barber, Karin. "Popular Arts in Africa." *African Studies Review* 30.3 (1987).

¹⁵⁴ Taylor, Philip M. *Munitions of the Mind*. Manchester: Manchester University Press, 1990.

¹⁵⁵ Owens-Ibie, Nosa. 2007. "How Video Films Developed in Nigeria." 15 Nov. 2006. 12 March 2007.

<http://www.nollywood.net/Essays/p2_articleid/126/p2_page/3>.

In the past, most African films were produced in the Francophone countries. The number of theater-released movies was limited because the costs of recording on 35 mm film are prohibitively high. Theater closings throughout African cities point to a decline in the popularity of big-screen cinema. Despite this decline, a biannual African film festival, Fespaco, is staged in Ouagadougou, the capital of Burkina Faso.¹⁵⁶ In 2005 the city opened a film school with the intent of training future African filmmakers.¹⁵⁷

In contrast to big-screen cinema, a film industry known as “Nollywood,” the “Hollywood” of Nigeria, and based on home video, has seen considerable growth in production and sales in the past decade. Most of the movies are produced in Nigeria, although other countries such as Ghana and Kenya also produce films. An estimated 300 producers annually release between 500 and 1000 films.¹⁵⁸ Nollywood films have become wildly popular throughout the continent and among the African diaspora.

Nollywood films are very inexpensive to produce in comparison to big-screen movies; an average Nollywood film requires just 10 days and \$15,000. Editing and music are done on home computers. Films are not released in commercial theaters; rather, they go straight to DVD or VHS. In Nigeria, roughly 30 new films are released to video shops per week. Each movie is sold for approximately \$2, making them affordable to a large proportion of the population.¹⁵⁹ Nollywood films can also be purchased and accessed through various websites, such as izognmovies.com and nollywood.com.

Nollywood films often use sensationalized and clichéd themes. The movies are primarily geared toward commercial appeal and profit. Common storylines are sex, violence, intrigue, and conflict. Some movies address moral and religious questions. Critics often bemoan the lack of attention on cultural themes and foresee a niche for such movies. As to date however, action and dramatic films are successful at producing profits.¹⁶⁰ Nollywood videos are filmed mainly in English. Because the official European language in Mali, Mauritania, Niger and Chad is French, most Nollywood films do not have suitable audiences in the four countries. Some movies, however, are filmed in dominant African languages of Nigeria. For example, some are filmed in Hausa, an ethnic group and language that is found throughout the Sahel.

Apart from language barriers, another obstacle to the continued spread of Nollywood and other African films into the Sahel is poverty. The movies require certain forms of technology including, at the least, a television and a video player. The lack of electricity further hampers the availability of African films. Because of these limitations, Nollywood has been and remains a product of the African city. Those with the means to produce and view the movies are primarily found in urban centers.¹⁶¹

¹⁵⁶“Africa’s top film festival opens.” BBC News. 25 Feb. 2007. 12 March 2007 <<http://news.bbc.co.uk/2/hi/africa/6394133.stm>>.

¹⁵⁷ “Burkina Faso gets new film school.” BBC News. 1 March 2005. 12 March 2007 <<http://news.bbc.co.uk/2/hi/africa/4305449.stm>>.

¹⁵⁸ “This Is Nollywood.” <<http://www.thisisnollywood.com/nollywood.htm>>.

¹⁵⁹ “This Is Nollywood.”

¹⁶⁰ Owens-Ibie.

¹⁶¹ Okome, Onookome. “The Popular Art of African Video-Film.” 2001. 12 March 2007

<http://www.nyfa.org/archive_detail_q.asp?type=3&qid=45&fid=6&year=2001s=Summer>.

The impact of cinema on certain areas of Africa is indisputable. The sheer volume of Nollywood movies that are produced annually attests to its importance. The industry will likely continue to grow in the near future. However, many people in Mali, Mauritania, Niger, and Chad do not have the means to regularly view Nollywood movies. Language and poverty currently are the two greatest impediments to future growth in the viewing of films in the Sahel.

Informal Communication Networks

Informal networks are entities whose primary function is not to necessarily spread messages. However, when the networks are used in unison with the channels identified earlier, messages can be spread more effectively.

Transportation Networks

Transportation infrastructure in the region is very underdeveloped and time-consuming. Roads and waterways are the primary channels of transportation. However, not all roads and waterways are available for motorized transport year-round as seasonal changes drastically affect the ability of people and goods to travel. Oftentimes non-motorized means are used. Train travel is limited to the few hundred kilometers of track in northern Mauritania. There are airports throughout the region, but air travel is much too expensive and impractical for the vast majority of Africans in the region.¹⁶² Figure 5.1 provides statistics that demonstrate the lack of development of the transportation networks in the Sahel. The transportation networks can be divided into three general areas: ancient trade routes, urban centers, and rural areas.

¹⁶² See Appendix G for maps of transportation infrastructure for Mauritania, Mali, Niger, and Chad.

	Chad	Mali	Mauritania	Niger
Roads - year	2005*	2005*	2002	2005*
Total km	33,800*	14,545*	7,720	74,565*
Paved km	450	3,397*	830	3,677*
% Paved	1.35	23.36*	10.75	4.93*
Road vehicles - year	1992	2001**	2000	2000**
Passenger	8,720	18,900**	12,200	57,800**
Commercial	12,350	31,700**	18,700	41,000**
Major Waterways				
Total km	4,800	2,106**	220	300**
All year km	2,000	0**	220	0**
% All year	41.67	0**	100	0**
Railroad km	0*	4,164*	704**	0*
Airports	5*	25*	26*	6*

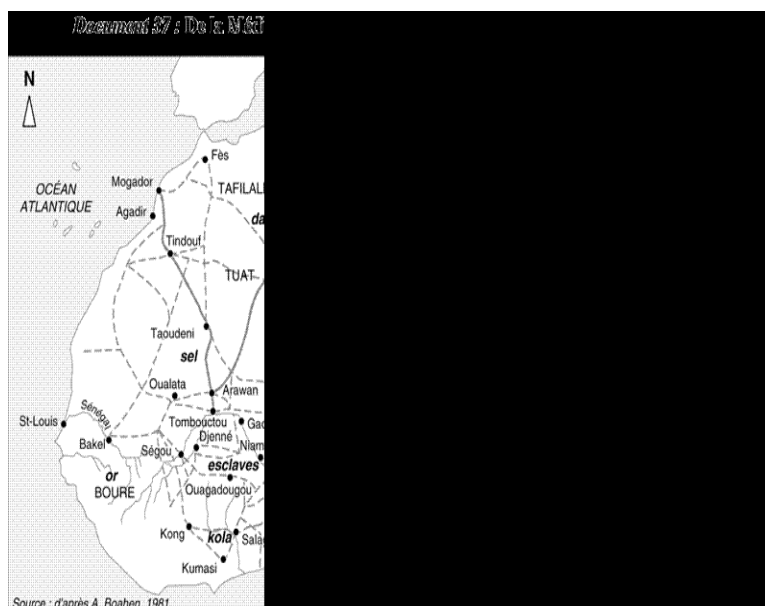
* Organization for Economic Co-operation and Development

** www.nationsencyclopedia.com/Africa/index.html

Figure 5.1

Ancient trade routes spanning the Saharan desert are still utilized by merchants, pilgrims, and nomadic people, particularly the Tauregs.¹⁶³ Over 3,000 miles of road stretch from Nouakchott in the west to Cairo in the east connecting sub-Saharan Africa with the greater Islamic world. Established transit points, outposts, and settlements dot the routes.¹⁶⁴ Many of the modern paved roads follow the ancient trade routes. The Trans-Saharan Highway project is underway, and will connect Algiers, Algeria with Lagos, Nigeria. The original project expanded to include routes into Mali, Niger, and Chad.¹⁶⁵

Evidence suggests that Radical Militant Islam (RMI) groups are operating along these long-established commercial lines of travel.¹⁶⁶ Nomadic individuals using these traditional routes are likely susceptible to RMI influence due to their cultural affiliation with Islam as well as



Source : d'après A. Boahen, 1981.

Figure 5.2. Map of ancient routes in the Sahara desert. From Global Issues Report 31 January 2006.

¹⁶³ Dang, Tu. Personal interview with Adrian Whitsett. 13 March 2007.

¹⁶⁴ "Trade Routes in Africa Used by Militant Radical Islam (Part 1 of 3)." Global Issues Report 31 January 2006.

¹⁶⁵ "Trade Routes in Africa Used by Militant Radical Islam (Part 2 of 3)." Global Issues Report 1 March 2006.

¹⁶⁶ "Trade Routes in Africa Used by Militant Radical Islam (Part 2 of 3)."

their social and economic marginalization.¹⁶⁷ In addition to RMI groups, other groups engaging in illegal activities - such as human, arms, and drug trafficking - use the routes.

Several types of mass transportation exist in the urban areas of Mauritania, Mali, Chad, and Niger. Buses, 18-seat taxis, covered pickup trucks, and motorcycles are readily found in large cities. Typically vehicles congregate in a central area, known as a taxi rank or *gare routière*. The taxi ranks and vehicles themselves are points where potential audiences gather. These areas also serve as a market place, where local residents scurry about trying to sell food, clothing, music, etc. Public transport vehicles are classified into two categories: formal and informal. The formal sector is comprised of vehicles that belong to a union or association. The informal sector refers to privately owned vehicles.¹⁶⁸

In rural areas, public transportation vehicles are less prevalent due to poor roads and high transit fares. The primary forms of transport in rural areas are non-motorized, such as walking and animal power. Because these methods of transport are often highly inefficient and time-consuming, various projects have been launched to improve rural transportation.¹⁶⁹

The general lack of transportation infrastructure presents a serious challenge to spreading messages or information in the Sahel. Nonetheless, transportation networks are important for communication in several ways. Taxi drivers and passengers pass on information as they travel between locations.¹⁷⁰ Passengers are also exposed to billboards and advertisements on the roadways and in the taxi ranks.

Community Centers

A community center, by definition, is “a building or group of buildings for a community's educational and recreational activities.”¹⁷¹ Beyond the formal description, however, the idea of a community center encompasses more than a formal infrastructure. A community center requires only a central location, whether this location is home to physical buildings or not. People of all ages gather at community centers, and their accessibility is crucial to their patronage and success. Both urban and rural areas throughout the Sahel can access community centers, which are often implemented by aid organizations and maintained by local populations. Three basic types of community centers are: support centers, youth centers, and telecentres. They serve multiple purposes

167 “Trade Routes in Africa Used by Militant Radical Islam (Part 2 of 3).”

168 Notes from Interview, Mary Jo Arnoldi and The World Bank SSATP Working Paper No. 54, Urban Mobility, March 2001. In Bamako, World Bank SSATP Working Paper No. 54, Urban Mobility notes that “[t]ransportation is provided mainly by two private companies, SOTRACA (Bamabus) and STUB (Tatabus). The SOTRACA fleet consists of large-capacity vehicles, while STUB operates 40-seat minibuses. Informal sector operators supplement these services. These include Peugeot 404 covered trucks (*durunis*) and 18-seat Toyotas (*sotramas*). In 1998, there were an estimated 510 *durunis* and 2,000 *sotramas*.” Pg. 8.

169 World Bank Sub-Saharan Africa Transport Policy Program and The World Bank Technical Paper No. 525, Improving Rural Mobility, 2002.

170 Arnoldi, Mary Jo. Personal interview with Maggie Tunning and Adrian Whitsett. 15 March 2007.

171 “community center.” Merriam Webster Online Dictionary. 2007. 20 March 2007 <<http://www.m-w.com/dictionary/community%20center>>.

to encourage social and community development, some of which include: providing basic needs (food, shelter, etc...), offering basic education (improving literacy), offering non-formal education through sports, and other activities (drama, photography, etc...), and implementing technology. Community centers vary in their structures and services, but they all exist for the purpose of meeting at least one need of the community they serve. Regardless of what a community center provides, each promotes dialogue among community members and possibly a greater community.

Support Centers

Support centers provide the most basic needs for a village and its surrounding areas. These centers primarily serve families and children. Typical services include food, transit shelter, basic and vocational training, and health clinics. Like a modern homeless shelter in the United States, support centers in Africa offer basic care for struggling families and aim to help families escape poverty and become self-sufficient. Aid organizations establish these centers and often train local inhabitants to help staff them.

SOS Children's Villages, an independent NGO working for community development around the world, has implemented a comprehensive system of support centers in Africa. Its activities focus on neglected and abandoned children and orphans, as well as struggling families. The actual 'villages' exist to care for children and assist socially and economically disadvantaged families. The villages usually include additional types of centers, including schools, vocational training centers and medical clinics. Overall, 552 facilities are present on the continent, and they have 645,400 beneficiaries.¹⁷²

In 1987, the first SOS Children's Village in Mali opened in Sanankoroba, 30 km from the capital, Bamako. It consists of 13 family houses for a total of 130 children, a village director's house, an administration building and a small ward. Each house has a vegetable garden and fruit trees so that each family can be as self-sufficient as possible. A library, sports ground, and a kitchen are also available for the school children to use.

The region around Sanankoroba is marked with grinding poverty and the risk of child abandonment is high, so SOS Children's Villages Mali decided to implement a family strengthening program. Material help, counseling in health and education, scholarships, and vocational training are offered. A second village in Mali opened in June 1994. It is situated in Sévaré, in the Socoura district, about 20 km from the town Mopti.¹⁷³

In Niger, SOS Children's Village Niamey is just outside the center of town, in the Dar-es-Salam area, about 20 kilometers from the international airport. It includes ten family houses that can provide homes for up to 100 children, a village director's house, and an

172 "Statistics of Facilities." Chart. SOS Children's Villages. Jan. 2006. 6 March 2007 <http://www.sos-childrensvillages.org/cgi-bin/sos/jsp/retrieve.do?lang=en&site=ZZ&hNav=show&nav=6.2&cat=622_facilities_and_activities&BV_SessionID=@@@@2098626993.1174963936@@@&BV_EngineID=cccaddkgliihicfngcfkmdhkhdfj.0>.

173 "Mali: SOS Children's Villages in the Country." SOS-Kinderdorf International. 6 March 2007 <http://www.sos-childrensvillages.org/cgi-bin/sos/jsp/wherewehelp.do?BV_SessionID=@@@@1318576145.1174962936@@@&BV_EngineID=cccaddkgliihicfngcfkmdhkhdfj.0&lang=en&site=ZZ&hNav=show&nav=2.3&ct=486919>.

administration building with a medical center. The SOS Children's Village also has a small gymnasium where the children can play and a football ground, refurbished with the financial support of FIFA.¹⁷⁴

In Chad, SOS Children's Village N'Djamena is situated outside of the town of the same name, the capital of Chad, which has more than 530,000 inhabitants. The SOS Children's Village has twelve family houses, the director's house, a house where the organization's employees can be accommodated during their various training courses, an administration area, a workshop, and a multi-purpose hall (for the village's various activities). It opened in March 2005 and can house up to 120 children.¹⁷⁵

UNICEF sponsors similar support centers. One example is a nutrition and rehabilitation center in Gourcy, Burkina Faso, a Sahelian country facing problems like malnutrition and high child mortality rates. At these centers, mothers are taught how to prepare therapeutic food - a mixture of ingredients such as millet, corn, and peanuts - to feed their children. The centers also provide children and their mothers with immunization for malaria, as well as pre-natal and neo-natal care. UNICEF and its partners provide resources and train healthcare workers for the centers. UNICEF stresses the importance of having child nutrition services for mothers available at the community level so that mothers don't have to leave their families and travel long distances to reach feeding centers.¹⁷⁶

UNICEF sponsors 22 projects in the Sahel encompassing agriculture, food aid, nutrition, and health.¹⁷⁷ From July through December 2005, 325,000 children in Niger benefited from UNICEF-supported feeding programs with recovery rates of about 90 %. UNICEF also was able to distribute 4,259 tons of UNIMIX porridge, over 42 tons of therapeutic milk, and 166 tons of Plumpy'nut, a vitamin-rich peanut paste, to their therapeutic feeding centers. Whereas the World Food Program primarily operates food distribution programs, UNICEF focuses on helping children by giving their mothers advice on improving child nutrition. UNICEF representative Souleymane Diallo estimated that approximately 200,000 children in Mauritania are malnourished, and poor nutrition is the underlying cause of half of all child mortality in the country. At the UNICEF sponsored community centers, moderately malnourished children are fed twice a day with a locally prepared mix of corn, sugar, oil and milk.¹⁷⁸

174 "Niger: SOS Children's Villages in the Country." SOS-Kinderdorf International. 6 March 2007 <http://www.sos-childrensvillages.org/cgi-bin/sos/jsp/wherewehelp.do?BV_SessionID=%40%40%40%401318576145.1174962936%40%40%40%40&BV_EngineID=ccccaddkgliihekcfngcfkmdhkhdfj.0&site=ZZ&lang=en&nav=2.3&c=11557&ct=13767&v=0>.

175 "Chad: SOS Children's Villages in the Country." SOS-Kinderdorf International. 6 March 2007 <http://www.sos-childrensvillages.org/cgi-bin/sos/jsp/wherewehelp.do?BV_SessionID=%40%40%40%401318576145.1174962936%40%40%40%40&BV_EngineID=ccccaddkgliihekcfngcfkmdhkhdfj.0&site=ZZ&lang=en&nav=2.3&c=11557&ct=13042&v=0>.

176 Li, Kun. "Regional director visits community-based child nutrition centres in Burkina Faso." UNICEF. 3 August 2006. 6 March 2007 <http://www.unicef.org/infobycountry/burkinafaso_35202.html>.

177 Crowe, Sarah. "As the 'hunger season' begins in Niger, UN nutrition appeal offers hope for Sahel." UNICEF. 28 March 2006. 6 March 2007 <http://www.unicef.org/infobycountry/niger_31940.html>.

178 Willemot, Yves and Brahim Ould Isselmou. "Funds needed urgently to fight [malnutrition](#) in Mauritania." 4 May 2006. 6 March 2007 <http://www.unicef.org/infobycountry/mauritania_33777.html>.

In Mali, UNICEF also sponsors support centers in Bamako for girls escaping rape, forced marriage, sexual and physical abuse, and exploitation. The centers provide shelter, teach girls essential life skills, provide literacy training, and help them find other employment. They receive more than 1,000 girls aged 13 to 20 each year.¹⁷⁹

Youth Centers

Youth centers support the positive development of local children. Between 40% and 49% of each Sahelian country's population is under the age of 15.¹⁸⁰ Youth centers address the needs of youth by offering recreation and education and often providing food and basic care. Youth center leaders often provide basic education to improve literacy. They also offer non-formal education through sports, workshops and other activities. Youth centers use activities like soccer, volleyball, drama, music, dance, and photography to teach children life skills, health information, and other important topics.

In short, youth centers exist to bring comfort and amusement to children while improving their socio-economic conditions. The idea of a youth center does not necessarily mean a physical center, but rather a common purpose that draws youth together. The work of NGOs and other aid and development agencies has addressed the necessity of youth centers to remediate the current conditions. The youth population of communities benefit from programs designed specifically for them. Because these centers offer various services and activities, they may possibly avert Muslim youth from association with militant groups.

In 1955, FIFA initiated a program entitled Football for Hope that according to FIFA President Joseph S. Blatter, uses the "positive power of football (the American game of soccer) as a catalyst" to create a better world. FIFA uses football-related activities and development programs to defend children's rights, spread the message of peace, protect the environment, combat discrimination, and promote good health. Since the program's inception, football-for-development programs have been conducted all around the world, including many countries in Africa, the first continent to benefit from the programs. The core idea is that football can bring relief to the local population, especially in the developing world where it is the undisputed number one sport, and contribute to development if combined with a professionally and methodically devised educational program.¹⁸¹

To spread a message or increase education with this program, a teacher/coach of a football program incorporates learning into sports participation. For example, Grassroots Soccer, a charitable organization registered in 2002, uses football to specifically combat HIV/AIDS. Developed lesson plans use football to teach children about HIV/AIDS. One lesson plan, for example, takes the form of a "Find the Ball Game." In this game, participants stand shoulder to shoulder in two lines facing each

179 Bakker, Nisha. "A UNICEF-supported centre in Mali helps young women in distress." UNICEF. 20 June 2006. 6 March 2007 <http://www.unicef.org/infobycountry/mali_34617.html>.

180 "Demographic Trends." UN Human Development Report. 2006. 22 Feb. 2007 <<http://hdr.undp.org/hdr2006/statistics/indicators/44.html>>.

181 Mission, goals and programmes of the FIFA Football for Hope movement. Zurich: FIFA.

other, and try to guess who has the ball, which represents HIV/AIDS. In the meantime, the other team passes a ball behind their back. This game teaches children that you can not identify HIV/AIDS infected people, and the only way to know HIV status is through testing. Teachers will tell students where they can get tested.¹⁸²

In areas with widespread poverty, football is a common, unifying source of recreation. Dr. David de Chand, Associate Professor of political science at the University of Nebraska-Omaha and former executive director of the South Sudan Institute of Peace and Development in South Sudan, attested to football's popularity in the region and suggested that its appeal to young people make it an effective way to garner attention and support from those audiences. Football is a universal language almost everyone understands and enjoys.¹⁸³

Countless other programs and community centers target children. The Soutien au Développement des Activités de Population (ASDAP), based in the capital city of Bamako, sponsors the Programme des Adolescents (PRADO) office, located in the depot of the Ségou bus station in Mali. This is a center that provides contraceptives and reproductive health services to adolescents in the small city of Ségou and its surrounding rural region. Other ASDAP supported centers exist in rural and urban areas such as Koulikoro and Koutiala. Fatoumata Traoré Toure, ASDAP president, recognized the crucial need for such centers: "We started as a pilot project for a year with support from the Centre for Development and Population Activities. We trained peer educators, and we found that it was an excellent approach." Education depends on peer educators, who are youth selected from the villages to receive training in counseling and other educational activities. The PRADO peer educators organize discussion groups in their neighborhoods, often as part of an informal gathering with traditional mint tea. In addition to the depot center services and discussion groups, ASDAP provides audio cassette tapes and a magazine as tools to facilitate learning and discussion.¹⁸⁴

Telecentres

Telecentres are the community centers of the future. A telecentre is an integrated facility that houses information and communication technologies (ICTs) - including television, video, facsimile, telephone, and computers with Internet connectivity.¹⁸⁵ The telecentre idea was first developed in 1985 in Velmdalen, Sweden, and has since matured as it traversed the globe. Facilities that use and integrate different information and communication technologies are the most modern type of telecentre and are known as multipurpose telecentres. The simplest form of a telecentre offers a few telephones and lacks access to the World Wide Web. More advanced centers can provide more modern services, including telephones, fax machines, printers, scanners, cameras, overhead

182 "Grassroots Soccer Curriculum." Grassroots Soccer. 2002-2006. 8 Feb 2007

183 Chand, David. Personal Interview. 25 Jan. 2007.

184 Robinson, Elizabeth. "Programmes for Adolescents: Peer Educators in Mali." Family Health International Network. 2000. 8 March 2007
<http://www.fhi.org/en/RH/Pubs/Network/v20_3/NWvol20-3MaliPeerEd.htm>.

185 Etta, Florence, ed. Information and communication technologies for development in Africa: Volume 2, The Experience with Telecentres. (Ottawa: International Development Research Centre, 2003) 13.

projectors and computers connected to the Internet. Telecentres have a variety of other formal names including: telecottage, telekiosk, teleboutique, phone shop, infocentre, digital clubhouse, multi-purpose access centre, community technology center, multi-purpose community centre, community media centre, and many more.

Policymakers around the world have made efforts to promote universal access to ICTs in Africa since the early 1990s.¹⁸⁶ In 1996, the Conference of African Ministers of Social and Economic Planning requested the UN Economic Commission for Africa set up a "high-level working group" to chart Africa's path to the global information highway. As a result, the African Information Society Initiative (AISI) created a framework document which was adopted by the Ministers of Planning. Since its beginning, over 40 African countries have endorsed the AISI and its activities. In addition, the international development community, national governments, public telecom operators, and private telecom service providers have shown interest and support for the telecentre concept.

Multipurpose telecentres are largely the products of development agencies, which have recognized their validity and utility.¹⁸⁷ Riccarda Zezza, Nokia Community Involvement Area Manager for Europe, Middle East, and Africa said:

Technology is an enabler. Throughout our community involvement projects worldwide, we have seen that no hands are more creative and no thoughts are freer than those of young people. When their potential meets the opportunities offered by the right technology tools, the results can be amazing, and this is what we hope to see happening more and more.¹⁸⁸

Development agencies that have initiated such technology centers have seen their efforts met with enthusiasm. UNESCO, for example, has launched an International Initiative for Community Multimedia Centres (CMC), promoting community empowerment and addressing the digital divide by combining community broadcasting with the Internet and other technologies. Though such centers can be costly and difficult to maintain, communities are pleased with the resulting development. In an evaluation of an UNESCO sponsored CMC, a villager commented that "It is as if night has become day."¹⁸⁹

The Academy for Educational Development (AED) implemented a Community Learning and Information Center (CLIC) project through a dot-ORG Associate Award with funding from USAID and an Unlimited Potential Grant from Microsoft. The project - running from May 2003 until September 2005 - established CLICs in 13 locations in Mali. The purpose of the project was "to accelerate economic, social and political growth by providing residents in thirteen under-served Malian communities with access to easily accessible development information and affordable access to information and

¹⁸⁶ Etta. 29.

¹⁸⁷ Etta. 14.

¹⁸⁸ "Technology and Life Skills Education." International Youth Foundation Field Notes. Nov. 2006 (3).

¹⁸⁹ Creech, Heather. "Evaluation of UNESCO'S Community Multimedia Centres." 2005. 5 March 2007

<http://portal.unesco.org/ci/en/files/22129/11477736959CMC_Evaluation_Final.pdf/CMC+Evaluation_Final.pdf>.

communication technology, high-value training, and locally appropriate content.”¹⁹⁰ The project worked in several areas where local capacity, communication, infrastructure, literacy, and purchasing power were often in short supply. The national Internet service provider SOTELMA initially provided a connectivity solution, but it was ineffective and ten of the 13 CLICs switched to a VSAT connection; three used a different system provided by the local provider MEGASAT. Over the course of the project, the CLICs attracted an increasing number of users, who either paid for use of the centers or gained access through vouchers that were pre-distributed. This program has since encouraged other donors to create similar community telecentres, and an association of all such centers in Mali will facilitate the exchange of content between members.¹⁹¹ In rural Mali, these centers help individuals gain access to information that was previously limited.

In 1998, the International Telecommunication Union (ITU), the United Nations Educational, Scientific, and Cultural Organization (UNESCO), and the International Development Research Centre (IDRC) teamed up to create a multipurpose community telecentre and studied the effect it had on the local community.¹⁹² Located in the Town Hall, the telecentre occupied a total of four rooms: the training and reception area, an Internet and facsimile office, a server room, and the manager's office. The most popular services were scanning, telephone, text processing, printing, and photocopying. The purpose of these services was to get or send information on education, business or trade, and tourism. The most popular computer-related services were: word processing, training, and computer gains. Email and Internet use was low. Communication was primarily through facsimile and telephone. Two user groups accessed the telecentre - individuals and organizations. Among the individual users, 76% were male and 23.2% were female. Youth represented 48% of all users. Most users were literate. Beyond the direct benefits of the centers, users reported sharing information they received with third parties. Fourteen users reported sharing information with 68 additional people - family members, friends, clients and colleagues between the ages of 31 and 50 years.

Due to the popularity of word-of-mouth communication in the Sahel, the far-reaching effects of the information telecentre users receive has the potential to make telecentres an effective communication hub. Despite the indefinite financial sustainability of telecentres, ICTs are expected to become more popular and accessible in the future.¹⁹³

Blogs

Currently, there exist no indications that blogging is catching on in the Sahel. The GISC Interns established a blog to be used as a research tool in an attempt to facilitate discussion about the PSI countries. It was essentially an experiment in communication.

190 Academy for Educational Development. "Establishing Community Learning and Information Centers (CLICs) in Underserved Malian Communities: Final Report." 2005.

191 "Community Centers Bridge Digital Divide in Mali." USAID SUB-SAHARAN AFRICA. 2005. 8 March 2007
<http://africastories.usaid.gov/search_details.cfm?storyID=340&countryID=14§orID=0&yearID=5>.

192 Etta. 38.

193 Etta. 14.

It was not as successful as had been hoped for at the time of this writing. This lack of success is attributed to the dearth of Internet access for the general population in the region at this time. The experiment did yield valuable information about blogging in the PSI countries.

If the Internet habits of the Sahel and Africa change, blogging may be one of the first things that is accepted. Blogs are a way for any individual to broadcast (or narrowcast in this case) information and receive feedback on their postings. Blogs are a form of symmetric communication, in contrast to traditional broadcasting, which is inherently asymmetric. Presently, cyber-café in urban areas are being used to access the Internet for chat-rooms and blogging may be the next evolution of African Internet usage. It is important to note that blogs are powerful because they allow individuals the freedom to express themselves in any manner they choose. Also, blogging is perceived as being both authentic and entertaining.

As a communications tool to engage individuals and groups in the Sahel, blogging may become a viable option as Internet access increases. To be perceived as highly credible, the blog should be an organic, in-country blog that focuses on the interests of the region or community. The research blog was neither of these. The GISC Intern blog, “Communicating in the Sahel: A Case Study,” was not aimed at a specific audience,¹⁹⁴ it was not authored by someone from the PSI countries, and it was not authored in one of the dominant languages for the PSI countries. Regardless, the blog did receive a number of responses and page views¹⁹⁵ from interested individuals, just none from within the countries. Again, this is attributable to the lack of Internet access in the region and, subsequently, the different Internet usage patterns among Africans.

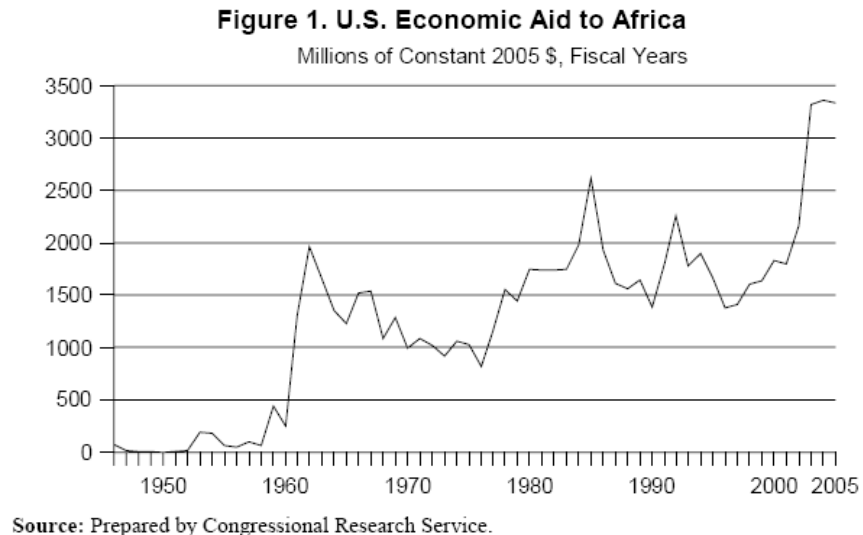
Findings

Any suggested course of action for transmitting messages or information into the Sahel would have to come from a credible source. The factors that determine whether an information source is credible or not must be determined by discovering attitudes held by the selected group rather than relying on perceptions of the group responsible for enacting a program. Data, however, is a serious deficit at this point. Short of taking a ground-level poll of what Africans in the Sahel desire, research done by organizations working for USG must take into account the attitudes and anecdotes of people who have lived and worked in the region, the sheer level of poverty that the vast majority of people in the region face, and cultural, religious, and attitudinal differences between the enormous variety of ethnic and ethno-linguistic groups in the region.

¹⁹⁴ The blog was aimed at individuals with any kind of anecdotal response or expert advice on the subject of communication within this region. The goal/hope was that it would reach individuals within the case study countries.

¹⁹⁵ A full breakdown of the site statistics from the blog is in Appendix K.

Ideas for addressing perceived security concerns must, invariably, be tied with developmental efforts in the Sahel. For people's ears to be open and minds to be receptive to new themes and messages, they need first to have satisfied primary food, shelter, and safety needs. Figure 1 displays the jagged and spiking level of economic aid that conveys the message that USG is only interested in Africa when it sees the continent as a security concern.¹⁹⁶ For the commitment to be seen as credible, the line must continue to increase and smooth out, reflecting a new attitude that a healthy and prosperous Africa is best in USG security and in moral terms.



Communicating with people in Africa and the Sahel requires a different approach than the top-down, command-and-control, condescending models that have been used in the past. Though formal education is lacking in many areas, people in the Sahel are intelligent, curious, and innovative.

Any message distributed in the area must not only be linguistically correct, but it must be culturally correct. Africans in the Sahel have a long history of different cultural practices and norms. Respecting cultural differences must take on a meaning beyond being sensitive to cultural taboos. In the business world, the importance of examining cultural information before entering a foreign market is universally accepted; the same attitude must be taken with respect to moving information and resources into a foreign country. Furthermore, for information to be optimally received, it should be presented as part of an entertainment vehicle or in a manner that will entertain as well as inform.

Recommendations

With these thoughts in mind, the project team recommends the following immediate (less than one year), intermediate (one to five years), and long-term (greater than five years) methods of communicating in the Sahel.¹⁹⁷ For most of the following recommendations, it is imperative to utilize local knowledge and resources to identify and shape the

¹⁹⁶ The first spike in aid during the 1960s corresponds with many countries receiving independence from colonial rule and the accompanying Cold War geopolitical competition. The second spike in the late 1980s is attributed to the Reagan Administration's intensification of Cold War spending. The most recent spike occurred after September 11, 2001 and can be interpreted as a response to Africa's potential as a breeding ground for terrorism.

¹⁹⁷ Each communications channel was ranked on several criteria. See Appendices I – J for scores and justifications.

entertainment portion of the recommendations (these individuals/groups have the insight and local on-the-ground knowledge).

Recommendations for Immediate Implementation

ACTION: *Produce cassettes with popular recordings and reinforcing messages.*

Cassette tapes should contain popular music tracks intertwined with sound bytes relating to a selected message. The cases and inserts can also be used as visual communication methods. Existing transportation and distribution networks should be utilized to distribute recorded audio to audiences gathered in taxi ranks and in markets.

REACH: Recorded audio can reach populations in all four countries that have access to players.

ACTION: *Produce entertaining programming for Voice of America.*

Negotiate increased VOA programming access with national governments. It is critical that programming should not only inform, but also entertain. New content should not replicate current programming styles of networks such as the BBC and Radio France. Rather, this new “infotainment” should mirror the popular community radio stations in the Sahel. Local entertainers could be recruited to assist in programming and management of, for example, radio dramas, music, and comedy shows. Content should be broadcast in languages that are spoken throughout the region. In addition to Hausa, French, and Arabic, programs should also be broadcast in Bambara to reach a wider audience.

REACH: Increased entertaining programming can reach all four countries in areas that receive shortwave radio broadcasts.

ACTION: *Over-dub existing Nollywood films. Insert short messages.*

Establish a production team to translate the most popular and positive Nollywood films into languages spoken across the Sahel.¹⁹⁸ Specifically-themed Messages could be inserted before or after the movie, but always should be entertaining as well as informative. Similar to recorded audio, packaging and inserts can serve as sources of visual communication.

REACH: Translated films can currently reach people in urban and a few rural areas with access to televisions and VCRs.

¹⁹⁸ For a listing of all languages and number of speakers in each country, see <http://www.ethnologue.com/>.

ACTION: *Distribute communications technologies to key communicators in rural areas.*

In order to disseminate messages to rural communities, distribute mobile phones, tape players, and radios to influential individuals/key communicators. Key communicators include chiefs, imams, teachers, and/or individuals working for NGOs that are identified as having longstanding relationships with the regions' inhabitants. By pairing ICTs with key communicators, messages can be distributed to a broad audience regardless of the poor infrastructure. For more information regarding the theory behind key communicators, see Appendix A.

REACH: Rural areas in all four countries,

ACTION: *Recruit and train actors for participatory communications groups.*

Partner with current groups/NGOs/universities currently conducting participatory communications models or organize participatory communications groups that can travel to rural areas and incorporate selected messages into performances if time permits. The selected message can be combined with health education, reproductive education, HIV/AIDS education, or other local issues.

REACH: Although this form of communication can be effective in urban areas, it will be most effective in rural areas when shaped around local village needs and presented as a unique form of entertainment.

ACTION: *Produce radio programs and distribute to community radio broadcasters.*

Promote community radio stations that would include programming not only concerned with local issues. Create entertaining programs that community radio broadcasters could insert into their normal programming. Deliver programs via cassette tapes.

REACH: Rural areas in all four countries, although Chad's censorship issue will make this prohibitively difficult.

ACTION: *Print messages on calling cards.*

Negotiate with mobile phone companies to advertise on calling cards. Use transportation networks and community centers as distribution points. These provide the opportunity for repetitive messages.

REACH: This can be done in both rural and urban areas in all four countries.

ACTION: *Place billboards in areas where large crowds gather, such as taxi ranks and community centers.*

REACH: This will be most effective in urban areas due to the high population density (better cost per user), but is also applicable to rural areas in all four countries.

ACTION: *Produce and/or provide funding and distribution assistance for an Islamic comic book.*

Use comic books, such as Teshkeel Comics' *The 99*, to promote positive Islamic education and improve the United States' image with the youth of the region and Muslims in general. Distribute comic books in Sahelian languages along with essential aid, i.e., food, healthcare. This method is positive, entertaining, and accessible to people with minimal literacy. In addition, comic books tie into the cultural history of utilizing story telling to transmit a message.

REACH: This can be done in both urban and rural areas in all four countries.

ACTION: *Send messages via short message service (SMS)*

Collaborate with phone companies to send mass SMS messages to mobile phone users.

REACH: This can be done in both urban and rural areas in all four countries.

Intermediate-Term (1-5 Year) Recommendations

ACTION: *Produce Nollywood-type films using local actors and producers for distribution in the PSI countries.*

Using local actors and directors, create Nollywood-style films that serve as vehicles to disseminate an intended message. In addition to the main themes, entertaining announcements can be used to relay messages before and after the movie. Packaging can be used as a communication tool as well.

REACH: Urban areas in all four countries.

ACTION: *Promote development of African ICT infrastructure.*

Grant American businesses tax credits/breaks for work they do along the lines of spreading ICT access in areas of the Sahel. Give economic incentives to American

companies to increase the technology level in the Sahel. Continue and increase collaboration between American research universities (such as MIT) and African institutions to develop innovative ways of increasing ICT access.

While we think that it is imperative that this recommendation be implemented as soon as possible, we recognize that development of an African ICT infrastructure will be more easily accomplished once more adequate transportation networks exist.

REACH: This has implications for all four countries as well as the Continent in general, but will likely occur in the urban areas before the rural areas.

Long-Term (Beyond 5 years) Recommendations

The long-term recommendations are dependent on changes and advances in technology that are unpredictable; recommendations are based on trends that are observable today. These recommendations must be continuously reevaluated and modified to reflect inevitable changes in technology. The REACH section has been omitted because it is presumptuous to predict the impact that this technology may have in bridging the geographic divide between urban and rural areas...

ACTION: *Create and distribute educational and entertainment programs for use with digital media devices (SD cards, USB thumb drives).*

As mobile phones and computers become more readily available, an opportunity will exist whereby African educational institutions will have a demand for digital learning applications to use in their classrooms and at home. By putting information on hard memory devices, youth can access updated programs despite intermittent Internet access. Laptop computers, such as those provided by the OLPC program, will allow information sharing between computers up to 1/3 mile away via a mesh network. Memory devices containing the programs could be inexpensively distributed to youth in the region. Organizations should recognize the importance of distributing applications on hard memory devices in tandem with new technologies as they are distributed. Ideally, new technologies would be packaged with data so that the first information received by people with access to new technology would contain elements of the selected message.

ACTION: *Exploit the convergence of mobile phones and the Internet.*

Facilitating the development of news and entertainment portals that cater to local interests will enable organizations to shape or at least participate in the dissemination of information through this very important future medium of information. By placing the message in such a way that it is seen by those who access a particular service or website numerous times, the message would be associated with the positive benefits of technology.

The following communications channels were found to be less effective for the Sahel region:

Television

Television is cost prohibitive for both consumers and producers in this region. Access to electricity is limited and programming is often censored. Televisions are an effective means to watch movies but not as a means to receive messages that are being broadcast over the air. Television broadcasts are censored and it is expensive to get a signal; however, even in rural areas someone might have a television and a way to play videos around which other villagers can gather.

Newspaper

Low literacy rates, poor distribution channels, and censorship hinder the effectiveness of this medium. Newspapers are distributed in a limited number of languages and many languages in the region are only spoken ones.

Proposed Additional Research

For organizations to effectively implement actions, further research must compile databases of urban and rural Muslim schools and community centers in the region. Such data will allow organizations to most effectively target their message to a desired audience.

We also recommend closely monitoring the use of satellite radio in the region. Satellite radio could be used to avoid government censorship and receivers can run on batteries. Receivers currently cost around \$99, but this price will drop as technology increases.

Additionally, researchers must examine whether the findings and recommendations of this study can be used in other regions of the Sahel, Africa, and the world.

Finally, researchers need to discover and analyze what actions third-parties are taking to disseminate complementary or competing messages into the Sahel. Such information will have an impact on the credibility and feasibility of any action selected for implementation.

This page intentionally left blank

Appendix

Appendix A – Communication Theories

Two Step Flow Theory¹⁹⁹

Influence of media messages

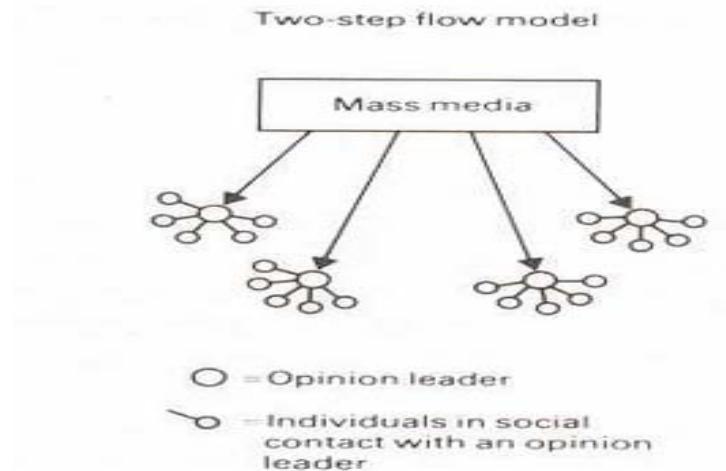
History and Orientation

The two-step flow of communication hypothesis was first introduced by Paul Lazarsfeld, Bernard Berelson, and Hazel Gaudet in *The People's Choice*, a 1944 study focused on the process of decision-making during a Presidential election campaign. These researchers expected to find empirical support for the direct influence of media messages on voting intentions. They were surprised to discover, however, that informal, personal contacts were mentioned far more frequently than exposure to radio or newspaper as sources of influence on voting behavior. Armed with this data, Katz and Lazarsfeld developed the two-step flow theory of mass communication.

Core Assumptions and Statements

This theory asserts that information from the media moves in two distinct stages. First, individuals (opinion leaders) who pay close attention to the mass media and its messages receive the information. Opinion leaders pass on their own interpretations in addition to the actual media content. The term 'personal influence' was coined to refer to the process intervening between the media's direct message and the audience's ultimate reaction to that message. Opinion leaders are quite influential in getting people to change their attitudes and behaviors and are quite similar to those they influence. The two-step flow theory has improved our understanding of how the mass media influence decision making. The theory refined the ability to predict the influence of media messages on audience behavior, and it helped explain why certain media campaigns may have failed to alter audience attitudes and behavior. The two-step flow theory gave way to the multi-step flow theory of mass communication or diffusion of innovation theory.

¹⁹⁹ Communication theories presented by the University of Twente – The Netherlands.



Source: Katz & Lazarsfeld (1955)

Scope and Application

All kinds of mass media can be researched with this theory (TV, radio, Internet).

Diffusion of Innovations Theory²⁰⁰

The adoption of new ideas, media, etc.

(Or Multi-step flow theory)

History and Orientation

Diffusion research goes one step further than two-step flow theory. The original diffusion research was done as early as 1903 by the French sociologist Gabriel Tarde who plotted the original S-shaped diffusion curve. Tarde's 1903 S-shaped curve is of current importance because "most innovations have an S-shaped rate of adoption" (Rogers, 1995).

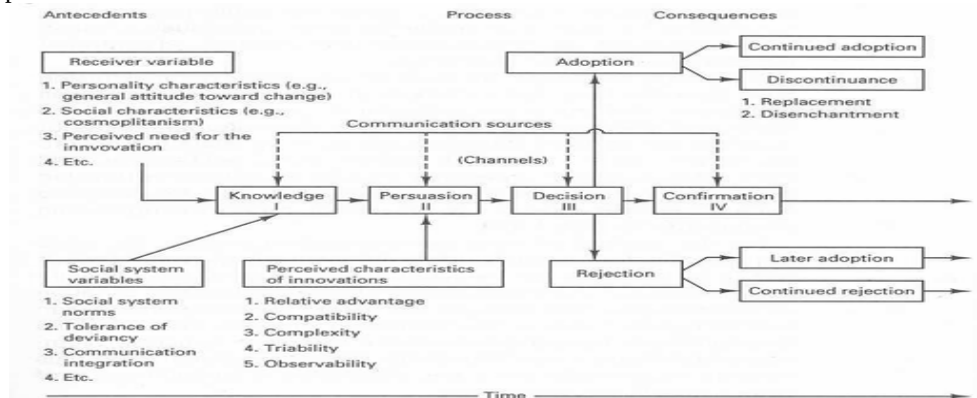
Core Assumptions and Statements

Core: Diffusion research centers on the conditions which increase or decrease the likelihood that a new idea, product, or practice will be adopted by members of a given culture. Diffusion of innovation theory predicts that media as well as interpersonal contacts provide information and influence opinion and judgment. Studying how innovation occurs, E.M. Rogers (1995) argued that it consists of four stages: invention, diffusion (or communication) through the social system, time and consequences. The information flows through networks. The nature of networks and the roles opinion leaders play in them determine the likelihood that the innovation will be adopted. Innovation diffusion research has attempted to explain the variables that influence how and why users adopt a new information medium, such as the Internet. Opinion leaders exert influence on audience behavior via their personal contact, but additional intermediaries called change agents and gatekeepers are also included in the process of diffusion. Five adopter categories are: (1) innovators, (2) early adopters, (3) early majority, (4) late majority, and (5) laggards. These categories follow a standard

deviation-curve, very little innovators adopt the innovation in the beginning (2,5%), early adopters making up for 13,5% a short time later, the early majority 34%, the late majority 34% and after some time finally the laggards make up for 16%.

Statements: Diffusion is the “process by which an innovation is communicated through certain channels over a period of time among the members of a social system”. An innovation is “an idea, practice, or object that is perceived to be new by an individual or other unit of adoption”. “Communication is a process in which participants create and share information with one another to reach a mutual understanding” (Rogers, 1995).

Conceptual Model



Diffusion of innovation model.

Source: Rogers (1995)

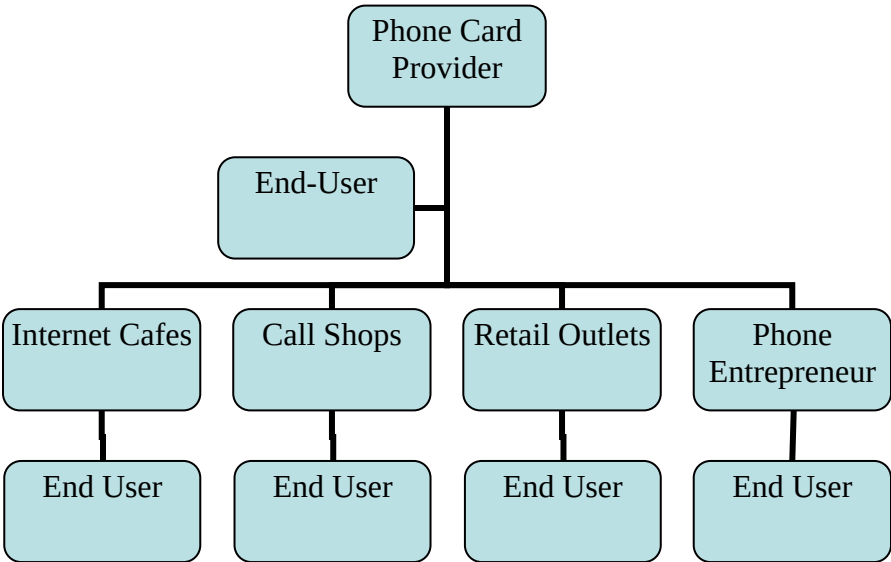
Favorite Methods

Some of the methods are network analysis, surveys, field experiments and ECCO analysis. ECCO, Episodic Communication Channels in Organization, analysis is a form of a data collection log-sheet. This method is specially designed to analyze and map communication networks and measure rates of flow, distortion of messages, and redundancy. The ECCO is used to monitor the progress of a specific piece of information through the organization.

Scope and Application

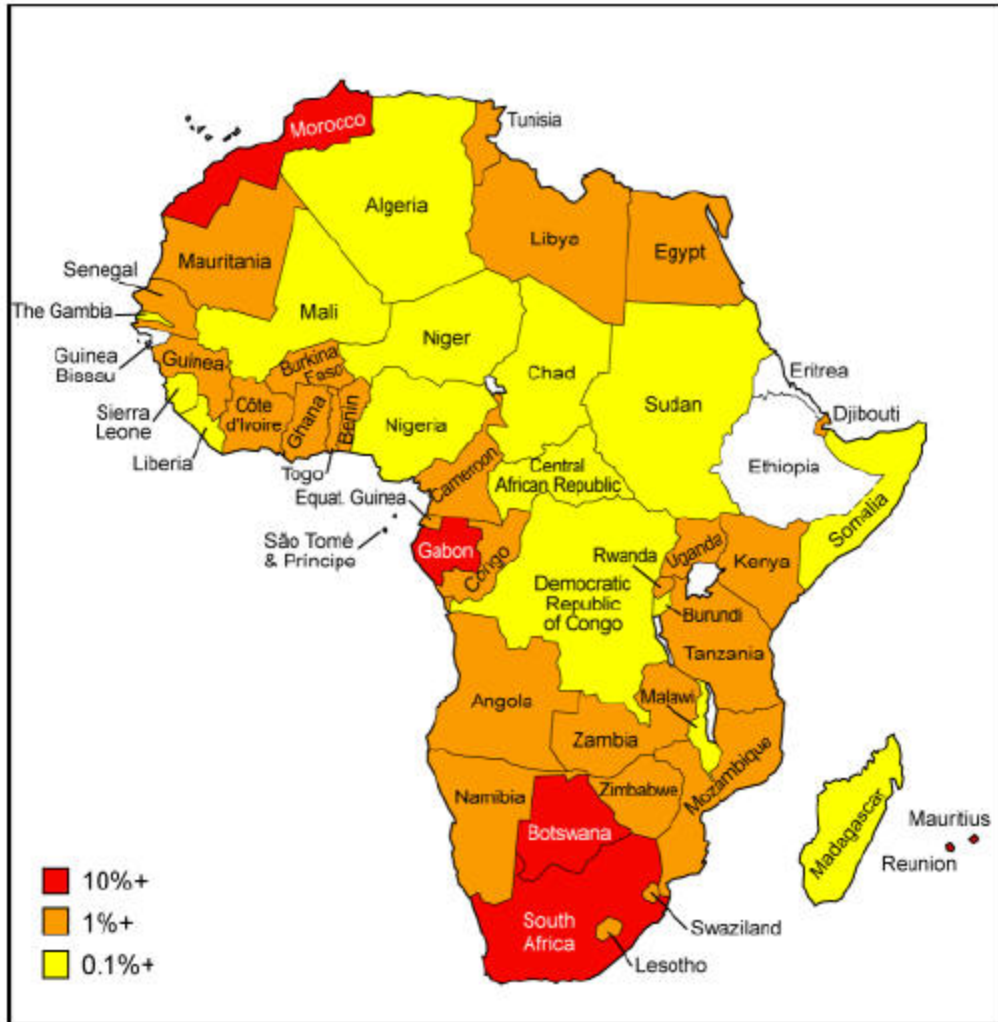
Diffusion research has focused on five elements: (1) the characteristics of an innovation which may influence its adoption; (2) the decision-making process that occurs when individuals consider adopting a new idea, product or practice; (3) the characteristics of individuals that make them likely to adopt an innovation; (4) the consequences for individuals and society of adopting an innovation; and (5) communication channels used in the adoption process.

Appendix B - Phone Card Distribution Chain



Appendix C – Mobile Phones

Mobile Phone Penetration Rates in Africa (%) - August 2004



Cellular Online

<http://www.cellular.co.za/stats/stats-africa.htm>

Appendix D – Broadcast Media

	Total amount of Televisions	Television %	Total Amount of Radios	Radio %
Mali	45,000	0.4%	570,000	4.9%
Mauritania	98,000	3.1%	410,000	12.9%
Niger	125,000	1%	680,000	5.4%
Chad	10,000	0.1%	1,670,000	16.9%

Statistical information provided by the CIA World Fact Book.

<http://www.cia.gov/cia/publications/factbook>

Television – the amount of televisions in the country

Television % - the percentage of the total population that has a television

Radio – the amount of radios in the country

Radio % - the percentage of the total population that has a radio

These figures are just a base to show how few radios and televisions there are dispersed through each country. They do not take into account how many people gather around one radio or television to listen to or watch a program.

Appendix E

Demographic Data

	Mauritania	Mali	Niger	Chad
Rank on UN Human Development Index- 2006 (out of 177 countries)²⁰¹	153	175	177	171
Population²⁰²	2,980,000	13,124,000	13,500,000	9,400,000
Urban Population²⁰³	40%	30%	17%	25%
Religions²⁰⁴	Muslim 100%	Muslim 90% Indigenous beliefs 9% Christian 1%	Muslim 80% Indigenous & Christian 20%	Muslim 51% Christian 35% Animist 7% Other 7%
Ethnic Groups²⁰⁵	Mixed Maur/black 40% Moor 30% black 30%	Mande 50% Peul 17% Voltaic 12% Tuareg and Moor 10%	Hausa 56% Djerma 22% Fula 8.5% Taureg 8%	200 distinct groups North mostly Muslim South mostly Christian & animist
Languages²⁰⁶	Arabic (official) Pulaar Soninke French Hassaniya Wolof	French (official) Bambara 80% Numerous African languages	French (official) Hausa Djerma	French (official) Arabic (official) Sara (in South) 120 different languages & dialects
Adult literacy rate²⁰⁷	51.20%	19%	28.7%	25.7%
Youth literacy rate²⁰⁸	61.30%	24.20%	36.50%	37.60%
Life Expectancy at Birth²⁰⁹	53.1 years	48.1 years	44.6 years	43.6
Total Fertility Rate²¹⁰	5.8	6.9	7.9	6.7
HIV prevalence²¹¹	0.70%	1.70%	1.10%	3.50%
Under Five Mortality Rate (per 1,000)²¹²	125	219	259	200

201 Accessible at: <http://hdr.undp.org/hdr2006/> Countries at or near 1 are considered highly developed; higher rankings denote lesser levels of development

202 Refers to the de facto population, which includes all people actually present in a given area at a given time (UNHDR 20004).

203 The midyear population of areas classified as urban according to the criteria used by each country, as reported to the United Nations (UNHDR 2004).

204 CIA World Factbook

205 CIA World Factbook

206 CIA World Factbook

207 The percentage of people ages 15 and older who can, with understanding, both read and write a short, simple statement related to their everyday life (UNHDR 2004).

208 The percentage of people ages 15–24 who can, with understanding, both read and write a short, simple statement related to their everyday life (UNHDR 2004).

209 The number of years a newborn infant would live if prevailing patterns of age-specific mortality rates at the time of birth were to stay the same throughout the child's life (UNHDR 2000-05).

210 The number of children that would be born to each woman if she were to live to the end of her child-bearing years and bear children at each age in accordance with prevailing age-specific fertility rates (UNHDR 2000-05).

211 The percentage of people ages 15–49 who are infected with HIV (UNHDR 2005).

Economic Data

	Mauritania	Mali	Niger	Chad
<i>GDP PPP</i>²¹³	\$6.901 billion	\$13.61 billion	\$10.5 billion	\$19.7 billion
<i>GDP per capita PPP</i>²¹⁴	\$1,940	\$998	\$779	\$2,090
<i>GDP Real Growth Rate</i>²¹⁵	5.50%	6.10%	7%	6%
<i>GDP Composition by Sector</i>²¹⁶	Trade, transport, & services 46% Agriculture: 25% Industry: 29%	Trade, transport, & services 28% Agriculture 18% Manufacturing 11% Livestock 10%	Trade, transport, & services 39.2% Agriculture 21.8% Government 10.4% Livestock 10.1%	Oil 33.4% Agriculture 23.9% Trade, transport, & services 23.8% Government 9.1%
<i>Labor Force by Occupation</i>²¹⁷	Agriculture 50% Services 40% Industry 10%	Agriculture 80% Industry & Services 20%	Agriculture 90% Industry: 6% Services 4%	Agriculture 80% Industry & Services 20%

212 Deaths of children under five per 1,000 live births (UNHDR 2004)

213 Gross domestic product (in purchasing power parity terms in US dollars) (UNHDR 2004)

214 Gross domestic product (in purchasing power parity terms in US dollars) divided by midyear population (UNHDR 2004).

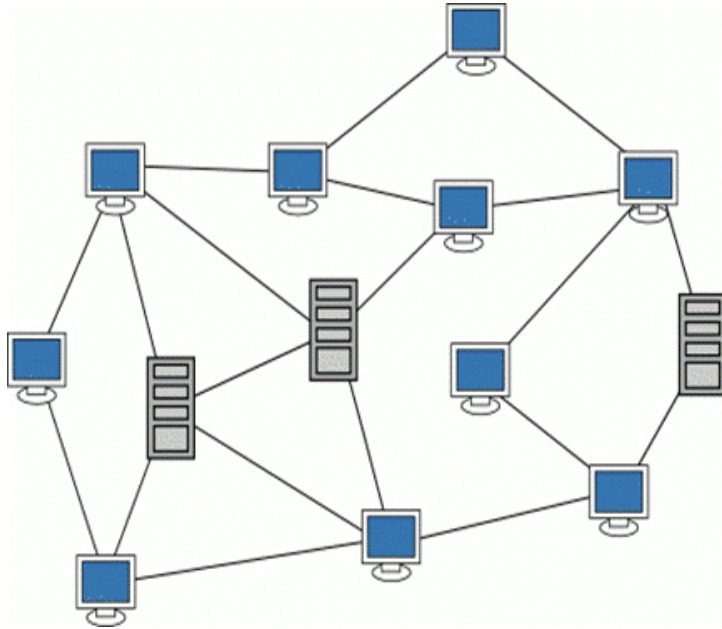
215 CIA World Factbook

216 CIA World Factbook

217 CIA World Factbook

Appendix F

Partnering with the One Laptop per Child (OLPC) movement is one way that information could be spread cheaply to the target audience. The movement seeks to put a specially-



designed laptop in the hands of every school-aged child in the lesser-developed areas of the world. By providing information on digital media to youth in the areas where laptops are distributed, selected messages or teaching programs can reach children in urban and rural areas. While the depth of message penetration depends on the purchase and distribution of laptops by third parties, distributing digital media is an inexpensive and efficient way to disseminate information. The technique is also renewable in the sense that

organizations can be easily disperse updated programs and messages using the built-in mesh network once a particular file reaches any single laptop in a particular region. The laptop creates its own mesh network (one which allows for continuous connections and reconfiguration around broken or blocked paths by "hopping" from node to node until the destination is reached) out of the box. Each machine is a full-time wireless router. Children in the most remote regions of the globe--as well as their teachers and families--will be connected both to one another and to the Internet (where possible).

The laptops themselves are extremely durable and are self-powered through a string pulley which generates 10 minutes of power for one minute of pulling. They are geared solely to children and should not present a risk for theft as they are colored and sized to appeal aesthetically and practically only to children. The technology can be considered reliable.

Screen swivels, closes, or lies flat for use as tablet, e-book, or game machine.

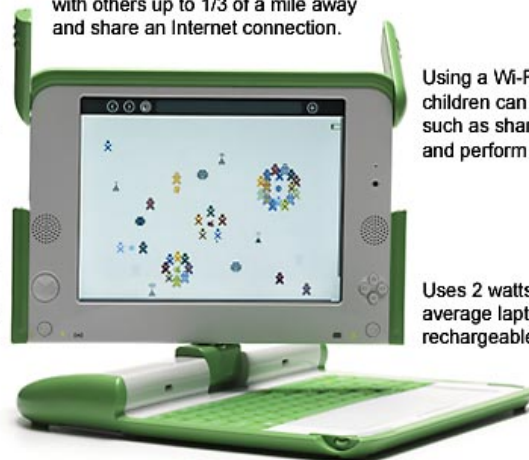
Super high-definition, 7.5 in.-diagonal screen is easily visible in daylight; designed for outdoor use.

Fold-up antennas let OX laptops link with others up to 1/3 of a mile away and share an Internet connection.

Using a Wi-Fi connection, groups of children can do activities together, such as share photos or compose and perform music.

Uses 2 watts of power (1/10th average laptop); manually rechargeable.

Rugged keyboard resists dust and dirt and will be configured for the local language.



Nathan Eagle, PhD
Research Scientist



Massachusetts Institute of Technology
77 Massachusetts Avenue, Building E15-383
Cambridge, Massachusetts 02139-4307

The MIT Design Laboratory
EPROM - Entrepreneurial Programming and Research on Mobiles
<http://mit.edu/eprom>

Mobile 857 776 3279
Email nathan@media.mit.edu
<http://web.media.mit.edu/~nathan>

EPROM: Entrepreneurial Programming and Research on Mobiles for the Developing World

Nathan Eagle^{1,2,3*}

¹MIT Design Laboratory, Massachusetts Institute of Technology, Cambridge, MA

²MIT Media Laboratory, Massachusetts Institute of Technology, Cambridge, MA

³School of Computing and Informatics, University of Nairobi, Nairobi, Kenya

*To whom correspondence should be addressed: nathan@media.mit.edu

This position paper makes the case for a mobile phone programming curriculum that will equip computer science students with the skills to design mobile phone applications specifically for the needs of people in the developing world. While mobile phones are becoming the continent's dominant computing platform, most computer science courses in Africa currently focus exclusively on programming traditional desktop computers. However, our over-subscribed pilot courses at the University of Nairobi confirmed the overwhelming demand from both students and faculty for the addition of a mobile phone programming curriculum. We are also introducing mobile phone programming courses in other universities across Africa, most recently at the GSTIT in Addis Ababa, Ethiopia. It is our belief that the creation of localized mobile services will continue to improve the economic welfare of the 1.4 billion mobile phone subscribers living in the developing world.

MOBILE PHONES IN AFRICA

Today's mobile phones are designed to meet Western needs. Subscribers in developing countries, however, now represent the majority of 2.4 billion mobile phone users worldwide. Africa, with Kenya at its forefront, is currently the fastest growing mobile phone market in the world. Over the past five years the continent's mobile phone use has increased at an annual rate of 65 percent - twice the global average. In June of 1999, Kenya had 15,000 mobile phone subscribers. By the end of 2004 the country had 3.4 million subscribers, and in the last 18 months this number has grown to over 5.6 million, despite the fact that only 200,000 Kenyan households have electricity.

According to the government's 2005 Economic Survey, Kenya's small business sector, which employs the majority of workers in the nation, created approximately 437,900 new jobs last year. The boom of mobile phones in Kenya has been credited for much of this growth. Indeed, it has been shown that adding an additional ten mobile phones per 100 people boosts a typical developing country's GDP growth by 0.6 percent.

A large part of this boost comes from the innovative use of mobile phone technology by local

For full report, visit http://www.w3.org/2006/07/MWI-EC/PC/W3C_EPROM_position_paper.pdf

Appendix G – Transportation Network Maps

*Mauritania*²¹⁸



218 University of Texas Libraries. Retrieved 04/23/2007, from http://www.lib.utexas.edu/maps/africa/mauritania_pol95.jpg

Mali²¹⁹

219 Organisation for Economic Co-operation and Development Information by Country: Mali. Retrieved 04/23/2007, from <http://www.oecd.org/dataoecd/34/23/36741457.pdf>.

Niger²²⁰



220 Organisation for Economic Co-operation and Development Information by Country: Mali. Retrieved 04/23/2007, from <http://www.oecd.org/dataoecd/33/57/36741731.pdf>

Chad²²¹



221 Organisation for Economic Co-operation and Development Information by Country: Mali. Retrieved 04/23/2007, from <http://www.oecd.org/dataoecd/37/22/36735933.pdf>.

Appendix H – Worldwide Press Freedom Index: 2006

▲ The ranking

N°	Country	Score
1	Finland	0,50
-	Iceland	0,50
-	Ireland	0,50
-	Netherlands	0,50
5	Czech Republic	0,75
6	Estonia	2,00
-	Norway	2,00
8	Slovakia	2,50
-	Switzerland	2,50
10	Hungary	3,00
-	Latvia	3,00
-	Portugal	3,00
-	Slovenia	3,00
14	Belgium	4,00
-	Sweden	4,00
16	Austria	4,50
-	Bolivia	4,50
-	Canada	4,50
19	Bosnia and Herzegovina	5,00
-	Denmark	5,00
-	New-Zealand	5,00
-	Trinidad and Tobago	5,00
23	Benin	5,50
-	Germany	5,50
-	Jamaica	5,50
26	Namibia	6,00
27	Lithuania	6,50
-	United Kingdom	6,50
29	Costa Rica	6,67
30	Cyprus	7,50
31	South Korea	7,75
32	Greece	8,00
-	Mauritius	8,00
34	Ghana	8,50
35	Australia	9,00
-	Bulgaria	9,00
-	France	9,00
-	Mali	9,00
39	Panama	9,50
40	Italy	9,90
41	El Salvador	10,00
-	Spain	10,00
43	Taiwan	10,50
44	South Africa	11,25
45	Cape Verde	11,50
-	Macedonia	11,50
-	Mozambique	11,50
-	Serbia and Montenegro	11,50
49	Chile	11,63
50	Israel	12,00
51	Japan	12,50
52	Dominican Republic	12,75
53	Botswana	13,00
-	Croatia	13,00
-	Tonga	13,00
-	United States of America	13,00
57	Uruguay	13,75
58	Fiji	14,00
-	Hong-Kong	14,00

-	Poland	14,00
-	Romania	14,00
62	Central African Republic	14,50
-	Cyprus (North)	14,50
-	Guinea-Bissau	14,50
-	Honduras	14,50
66	Madagascar	15,00
-	Togo	15,00
68	Ecuador	15,25
69	Nicaragua	15,50
70	Burkina Faso	16,00
-	Kosovo	16,00
-	Lesotho	16,00
73	Congo	17,00
-	Kuwait	17,00
75	Brazil	17,17
76	Argentina	17,30
77	Mauritania	17,50
-	Senegal	17,50
-	United Arab Emirates	17,50
80	Albania	18,00
-	Qatar	18,00
82	Paraguay	18,25
83	Timor-Leste	18,50
84	Liberia	19,00
85	Moldova	19,17
86	Mongolia	19,25
87	Haiti	19,50
88	Tanzania	19,82
89	Georgia	21,00
90	Guatemala	21,25
91	Angola	21,50
92	Malaysia	22,25
93	Comoros	22,50
-	Zambia	22,50
95	Niger	24,50
-	Seychelles	24,50
97	Morocco	24,83
98	Bhutan	25,00
-	Côte d'Ivoire	25,00
-	Turkey	25,00
101	Armenia	25,50
-	Malawi	25,50
103	Indonesia	26,00
-	Sierra Leone	26,00
105	India	26,50
-	Ukraine	26,50
107	Lebanon	27,00
108	Cambodia	27,25
109	Guinea	27,50
-	Jordan	27,50
111	Bahrein	28,00
112	Cameroon	28,25
-	Peru	28,25
114	Gabon	28,50
115	Venezuela	29,00
116	Uganda	29,83
117	Tajikistan	30,00
118	Kenya	30,25
119	United States of America (extra-territorial)	31,50
120	Nigeria	32,23

121	Djibouti	33,00
122	Thailand	33,50
123	Kyrgyzstan	34,00
124	Chad	35,50
125	Burundi	39,83
126	Algeria	40,00
127	Swaziland	40,50
128	Kazakhstan	41,00
-	Rwanda	41,00
130	Afghanistan	44,25
131	Colombia	44,75
132	Mexico	45,83
133	Egypt	46,25
134	Palestinian Authority	46,75
135	Azerbaijan	47,00
-	Israel (extra-territorial)	47,00
137	Bangladesh	48,00
-	Equatorial Guinea	48,00
139	Sudan	48,13
140	Zimbabwe	50,00
141	Sri Lanka	50,75
142	Democratic Republic of Congo	51,00
-	Philippines	51,00
144	Maldives	51,25
-	Somalia	51,25
146	Singapore	51,50
147	Russia	52,50
148	Tunisia	53,75
149	Gambia	54,00
-	Yemen	54,00
151	Belarus	57,00
152	Libya	62,50
153	Syria	63,00
154	Iraq	66,83
155	Vietnam	67,25
156	Laos	67,50
157	Pakistan	70,33
158	Uzbekistan	71,00
159	Nepal	73,50
160	Ethiopia	75,00
161	Saudi Arabia	76,00
162	Iran	90,88
163	China	94,00
164	Burma	94,75
165	Cuba	95,00
166	Eritrea	97,50
167	Turkmenistan	98,50
168	North Korea	109,00

How the index was compiled

The index measures the state of press freedom in the world. It reflects the degree of freedom journalists and news organizations enjoy in each country, and the efforts made by the state to respect and ensure respect for this freedom.

It is based solely on events between 1 September 2004 and 1 September 2005. It does not look at human rights violations in general, just press freedom violations.

Reporters Without Borders compiled a questionnaire with 50 criteria for assessing the state of press freedom in each country. It includes every kind of violation directly affecting journalists (such as murders, imprisonment, physical attacks and threats) and news media (censorship, confiscation of issues, searches, and harassment).

It registers the degree of impunity enjoyed by those responsible for such violations. It also takes account of the legal situation affecting the news media (such as penalties for press offences, the existence of a state monopoly in certain areas, and the existence of a regulatory body) and the behavior of the authorities towards the state-owned news media and the foreign press. It also takes account of the main obstacles to the free flow of information on the Internet.

We have taken account not only of abuses attributable to the state, but also those by armed militias, clandestine organizations or pressure groups that can pose a real threat to press freedom.

The questionnaire was sent to partner organizations of Reporters Without Borders (14 freedom of expression groups in five continents) and its 130 correspondents around the world, as well as to journalists, researchers, jurists and human rights activists. A scale devised by the organization was then used to give a country-score to each questionnaire. The Statistics Institute of the University of Paris provided assistance and advice in processing the data reliably and thoroughly.

The 167 countries ranked are those for which we received completed questionnaires from a number of independent sources. Others were not included because of a lack of credible data. Where countries tied, they are listed in alphabetical order. The index should in no way be taken as an indication of the quality of the press in the countries concerned.

Appendix I – Communications Channels Rankings

	National Radio				Community Radio	Participatory Communication	Film
	<i>Mauritania</i>	<i>Mali</i>	<i>Niger</i>	<i>Chad</i>			
Repeatability	4	4	4	4	5	2	5
Access	5	5	5	5	3*	3	1
Entertainment Value	3	3	3	3	3	5	5
Credibility	2	4	3	1	5	5	4
Urban/Rural Possibility	U/R	U/R	U/R	U/R	U/R	R	U
Cost per user	5	5	5	5	3	2	2
Censorship	2	4	3	1	4	4	4
Current Feasibility	2	4	3	1	3	4	1
Feasibility (1-3yrs)	3	4	3	1	3	4	3
Feasibility (>4yrs)	3	4	3	2	3	4	4
(Weighted and Current) Sum	25.5	32.5	29	22	27	30	26.5
Rank	7*	2*	4*		5*	3*	6*
(Weighted and 1-3 yr) Sum	26.5	32.5	29	22	27	30	28.5
Rank	7*	2*	4*		6*	3*	5*
(Weighted and ≥4 yr) Sum	26.5	32.5	29	23	27	30	29.5
Rank	8*	2*	5*		7*	3*	4*

	Television				Billboards	Comic Books	Mobile Phones
	<i>Mauritania</i>	<i>Mali</i>	<i>Niger</i>	<i>Chad</i>			
Repeatability	3	3	3	3	5	4	4
Access	1	1	1	1	2	1	2
Entertainment Value	5	5	5	5	1	5	4
Credibility	2	4	3	1	3	4	3
Urban/Rural Possibility	U	U	U	U	U/R	U/R	U/R
Cost per user	1	1	1	1	5	3	2
Censorship	2	4	3	1	2	4	5
Current Feasibility	1	1	1	1	4	1	2
Feasibility (1-3yrs)	1	2	1	1	4	3	3
Feasibility (>4yrs)	3	4	2	2	4	4	4
(Weighted and Current) Sum	18.5	23.5	21	16	24	26.5	25.5
Rank						6*	7*
(Weighted and 1-3 yr) Sum	18.5	24.5	21	16	24	28.5	26.5
Rank						5*	7*
(Weighted and ≥4 yr) Sum	20.5	26.5	22	17	24	29.5	27.5
Rank		8*				4*	6*

	Newspaper				Internet	Digital Media	Recorded Audio
	<i>Mauritania</i>	<i>Mali</i>	<i>Niger</i>	<i>Chad</i>			
Repeatability	3	3	3	3	4	4	5
Access	1	2	1	1	1	1	4
Entertainment Value	2	2	2	2	4	4	5
Credibility	2	4	3	1	4	4	4
Urban/Rural Possibility	U	U	U	U	U	U/R	U/R
Cost per user	4	4	4	4	1	2	5
Censorship	2	4	3	1	5	4	4
Current Feasibility	1	1	1	1	1	1	4
Feasibility (1-3yrs)	2	2	2	2	2	1	5
Feasibility (>4yrs)	2	2	2	2	4	3	5
(Weighted and Current) Sum	17	23	19.5	14.5	24	24	35.5
Rank							1*
(Weighted and 1-3 yr) Sum	18	24	20.5	15.5	25	24	36.5
Rank							1*
(Weighted and ≥4 yr) Sum	18	24	20.5	15.5	27	26	36.5
Rank					7*		1*

Each medium of communication ranked on a scale of 1 – 5 for several factors

- 1 = least desirable for communication
- 5 = most desirable for communication
- Entertainment and Credibility were given double weight
- Columns were summed to determine overall scores

Definitions

- Repeatability - the number of times that one person can receive the same message; also, how often the message would be passed along to other people
- Access - the likelihood that a person will encounter the form of message dissemination on a given day
- Entertainment Value - how the form of the message holds the interest of the viewer/listener
- Credibility - given past experiences, how accurate the information is considered by the listener/viewer
- Where - Urban, Rural, or Both
- Cost per user - Cost of spreading a message to a person, taking into account community reception
- Censorship - degree to which government controls the form of communication
- Current Feasibility - likelihood of communication form being a good way to spread a message now
- Feasibility (1-3yrs) - likelihood of communication form being a good way to spread a message in 1-3 years
- Feasibility (>4yrs) - likelihood of communication form being a good way to spread a message in 4 or more years

Appendix J – Rankings Justifications

	National Radio			
	<i>Mauritania</i>	<i>Mali</i>	<i>Niger</i>	<i>Chad</i>
Repeatability	Radio is the most used form of communication in the region.	Radio is the most used form of communication in the region.	Radio is the most used form of communication in the region.	Radio is the most used form of communication in the region.
Access	Even where radio hardware is not widespread, it is still more accessible than other ICTs.	Even where radio hardware is not widespread, it is still more accessible than other ICTs.	Even where radio hardware is not widespread, it is still more accessible than other ICTs.	Even where radio hardware is not widespread, it is still more accessible than other ICTs.
Entertainment Value	Radio can be a good form of entertainment.	Radio can be a good form of entertainment.	Radio can be a good form of entertainment.	Radio can be a good form of entertainment.
Credibility	Past governmental control affects current attitudes.	Highly decentralized form of radio gives access to many viewpoints.	In the past, radio has been highly controlled; recently, more viewpoints have been added.	Governments have been very authoritarian and still behave in this way.
Where	Urban and Rural	Urban and Rural	Urban and Rural	Urban and Rural
Cost per User	The cost is very low.	The cost is very low.	The cost is very low.	The cost is very low.
Censorship	Mauritania is highly censored, but a recent democratic election suggests greater openness in their society.	Very little content is censored in Mali; freedoms of speech levels are among the highest on the continent.	While the state controls much of Niger's broadcasting, private radio stations are allowed to function.	Chadian radio is highly censored.
Current Feasibility	Past censorship makes using radio unlikely, but recent democratic elections hold promise for increased broadcasting freedom.	Mali has few controls on its broadcasting.	Some censorship, but changes might allow greater broadcasting freedom.	Chad is highly censored for now; if the unstable government falls, using radio to spread information might be feasible.
Feasibility (1-3yrs)	If the democratic elections engender greater freedom of speech rights, radio broadcasting could be effective in Mauritania.	See Current Feasibility	See Current Feasibility	See Current Feasibility
Feasibility (≥4yrs)	See Feasibility (1-3yrs)	See Current Feasibility	See Current Feasibility	See Current Feasibility

	Television			
	<i>Mauritania</i>	<i>Mali</i>	<i>Niger</i>	<i>Chad</i>
Repeatability	While television is generally not viewed often, messages are well-remembered by viewers.	While television is generally not viewed often, messages are well-remembered by viewers.	While television is generally not viewed often, messages are well-remembered by viewers.	While television is generally not viewed often, messages are well-remembered by viewers.
Access	Very few television sets exist, and electrical infrastructures often cannot support the power demands of television.	Very few television sets exist, and electrical infrastructures often cannot support the power demands of television.	Very few television sets exist, and electrical infrastructures often cannot support the power demands of television.	Very few television sets exist, and electrical infrastructures often cannot support the power demands of television.
Entertainment Value	Television can be an excellent form of entertainment.	Television can be an excellent form of entertainment.	Television can be an excellent form of entertainment.	Television can be an excellent form of entertainment.
Credibility	Television is state-owned and favors the government.	Private stations allow for diverse viewpoints to be aired.	Private and pay television accompany state-run broadcasts.	Television is state-owned and favors the government.
Where	Urban	Urban	Urban	Urban
Cost per User	The cost is very high because of capital required for production, equipment, and broadcasting.	The cost is very high because of capital required for production, equipment, and broadcasting.	The cost is very high because of capital required for production, equipment, and broadcasting.	The cost is very high because of capital required for production, equipment, and broadcasting.
Censorship	State-ownership censors dissenting viewpoints.	Mali has very little censorship.	Some private ownership allows for non-government views to be aired.	State-ownership censors dissenting viewpoints.
Current Feasibility	Lack of access and high censorship makes television a very unlikely option.	Lack of access makes using television difficult.	Lack of access makes using television difficult.	Lack of access and high censorship makes television a very unlikely option.
Feasibility (1-3yrs)	See Current Feasibility	Access will increase while censorship should remain low.	See Current Feasibility	See Current Feasibility
Feasibility ($\geq$4yrs)	Changes in access and government censorship might make television a decent option.	See Feasibility (1-3yrs)	Access may increase while censorship should remain low.	See Current Feasibility

	Newspaper			
	<i>Mauritania</i>	<i>Mali</i>	<i>Niger</i>	<i>Chad</i>
Repeatability	Newspapers are printed daily, and those people who read them pass stories along by word-of-mouth.	Newspapers are printed daily, and those people who read them pass stories along by word-of-mouth.	Newspapers are printed daily, and those people who read them pass stories along by word-of-mouth.	Newspapers are printed daily, and those people who read them pass stories along by word-of-mouth.
Access	Low literacy rate; 2 state-run dailies and a few private daily and weeklies.	Low literacy rate; national daily, state-owned daily, and appx. 40 privately owned papers.	Low literacy rate;	Low literacy rate;
Entertainment Value	Newspaper can be a fair form of entertainment.	Newspaper can be a fair form of entertainment.	Newspaper can be a fair form of entertainment.	Newspaper can be a fair form of entertainment.
Credibility	State-ownership hurts credibility for now.	Numerous privately owned papers allow for varied viewpoints.	Government and partisan newspapers provide for extreme viewpoints.	Near-exclusive state control hurts credibility.
Where	Urban	Urban	Urban	Urban
Cost per User	The cost is low.	The cost is low.	The cost is low.	The cost is low.
Censorship	Newspapers may be banned for publishing material that "undermines" Islam or is perceived to threaten national security.	Has lack of censorship.	Moderate censorship	Highly censored
Current Feasibility	Literacy rates too low	Literacy rates too low	Literacy rates too low	Literacy rates too low
Feasibility (1-3yrs)	Better prospect as literacy and education rates increase	Better prospect as literacy and education rates increase	Better prospect as literacy and education rates increase	Better prospect as literacy and education rates increase
Feasibility (≥4yrs)	See Feasibility (1-3yrs)	See Feasibility (1-3yrs)	See Feasibility (1-3yrs)	See Feasibility (1-3yrs)

	Community Radio	Participatory Communication	Film	Billboards
Repeatability	Programs can be played multiple times.	Skits and plays can be repeated in multiple villages.	Cassettes and DVDs can be viewed multiple times.	Message will be viewed every time it is passed.
Access	Community radio stations have a short reach, but the number of stations is growing.	Hard to reach large numbers at once. Usually presented to small villages.	Very few TVs or players exist, and electrical infrastructures often cannot support the power demands of film.	Concentrated near markets, community centers, and in cities.
Entertainment Value	Community Radio can be a good form of entertainment.	Participatory Communication can be an excellent form of entertainment.	Film can be an excellent form of entertainment.	Billboards can be a poor form of entertainment.
Credibility	Local control of programming strengthens credibility.	Very credible with local participants.	Independent producers and local actors.	Dependent on whom the advertisement is for.
Where	Urban and Rural	Rural	Urban	Urban and Rural
Cost per User	The cost is moderate because capital is required for startup and maintenance.	The cost is high because of training and performance expenses.	The cost is high because of capital required for production, equipment, and distribution.	The cost is very low.
Censorship	Difficult to censor because more control is in the hands of individuals rather than government.	Difficult to censor because performances are given based on face-to-face interaction with people.	Difficult to censor because films do not require broadcasting; movies are small and easily bought, sold, and traded.	Would probably be censored so that only approved messages, i.e., health, religion, would be seen.
Current Feasibility	Broadcasting programs over AM radio is a pretty good option and precedent exists for doing so.	A comprehensive program would have great results as this form of communication is most natural to Pan-Sahel Africans.	There is not currently a wide distribution network in the four countries studied.	Can currently be placed anywhere.
Feasibility (1-3yrs)	See Current Feasibility.	See Current Feasibility.	Distribution will increase	See Current Feasibility.
Feasibility ($\geq$4yrs)	See Current Feasibility.	See Current Feasibility.	Internet will increase distribution	See Current Feasibility.

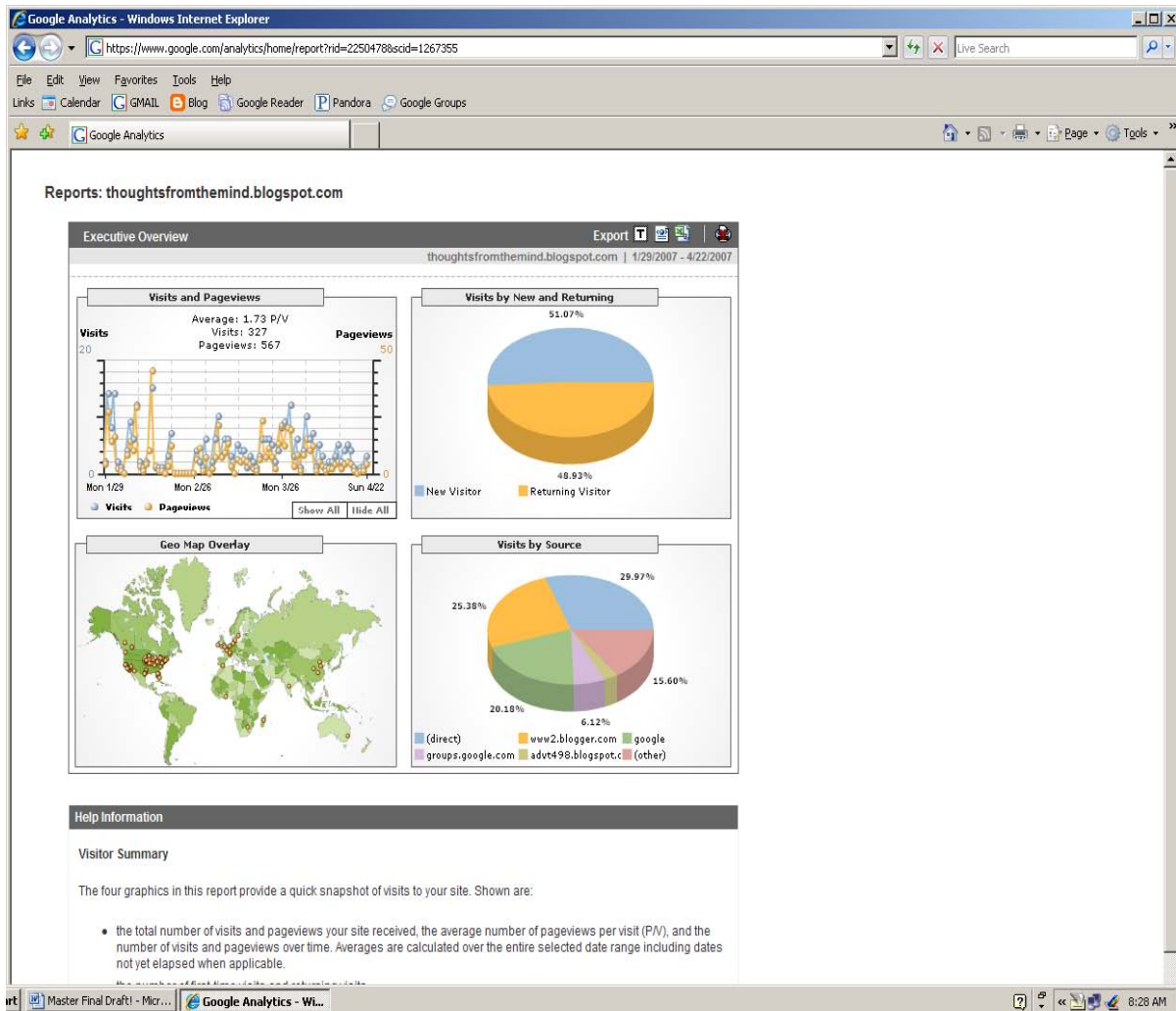
	Comic Books	Mobile Phones	Internet	Digital Media
Repeatability	Comic books can be read multiple times.	Phone cards and text messages are highly repeatable.	Websites can be visited often and updated frequently.	Applications can be accessed frequently.
Access	Low distribution and literacy rates affect accessibility.	Mobile phones are currently too expensive for many.	Lack of infrastructure makes access very low.	Lack of infrastructure makes access very low.
Entertainment Value	Comic Books can be an excellent form of entertainment.	Mobile Phones can be a very good form of entertainment.	Internet can be a very good form of entertainment.	Digital Media can be a very good form of entertainment.
Credibility	Depending on source, comic books can be seen as highly credible.	Phone companies control the message.	High degree of personal control increases credibility.	Depending on source, digital media can be seen as highly credible.
Where	Urban and Rural	Urban and Rural	Urban	Urban and Rural
Cost per User	The cost is moderate because of capital required for distribution and artists' pay.	The cost is high because of the equipment and airtime.	The cost is very high because of the required equipment and infrastructure.	The cost is high because of the required equipment and infrastructure.
Censorship	Mainly produced outside of the country; Islamic focus in comic books would not be censored, and messages are general and positive.	Nearly impossible to censor cell phone communication.	Nearly impossible to censor internet communication.	Censorship could exist if applications were used as part of a governmental program, i.e., in a school.
Current Feasibility	Currently not distributed in the four countries.	Handsets are expensive and coverage is limited.	Very limited infrastructure.	Lack of computer hardware makes this method nearly impossible in the short-term.
Feasibility (1-3yrs)	Plans to increase distribution in the region.	Cost will decrease and coverage will increase.	Infrastructure will improve, but movement will be toward mobile phone browsing.	As technology continues to grow in the region, more opportunities will be available to use digital media in devices.
Feasibility ($\geq$4yrs)	See intermediate feasibility.	See intermediate feasibility.	Convergence of the Internet and the Mobile phone will occur.	Installation of programs like OLPC would provide great vehicles for this method of information dissemination.

	Recorded Audio
Repeatability	Cassettes and CDs can be replayed multiple times.
Access	Recorded audio players are inaccessible to some, but the cassettes and CDs are very common.
Entertainment Value	Recorded Audio can be an excellent form of entertainment.
Credibility	Production of cassettes and CDs are not highly centralized.
Where	Urban and Rural
Cost per User	The cost is very low.
Censorship	Like films, very difficult to censor as the cassettes and discs are in the hands of individuals and do not require broadcasting
Current Feasibility	Abundance of tapes and players makes recorded audio viable communications channel.
Feasibility (1-3yrs)	See Current Feasibility.
Feasibility ($\geq$4yrs)	See Current Feasibility

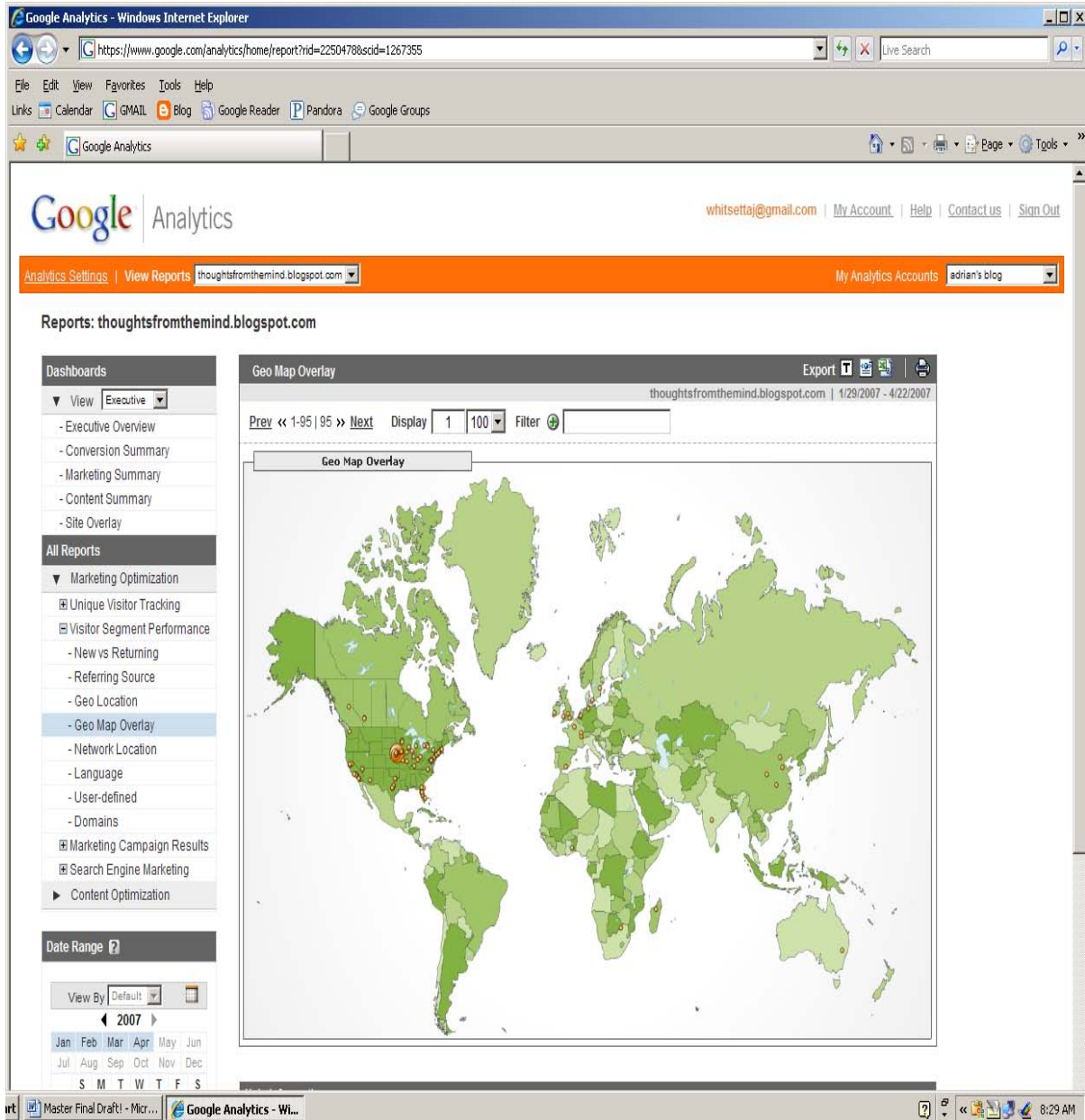
Definitions

- Repeatability - the number of times that one person can receive the same message; also, how often the message would be passed along to other people
- Access - the likelihood that a person will encounter the form of message dissemination on a given day
- Entertainment Value - how the form of the message holds the interest of the viewer/listener
- Credibility - given past experiences, how accurate the information is considered by the listener/viewer
- Where - Urban, Rural, or Both
- Cost per user - Cost of spreading a message to a person, taking into account community reception
- Censorship - degree to which government controls the form of communication
- Current Feasibility - likelihood of communication form being a good way to spread a message now
- Feasibility (1-3yrs) - likelihood of communication form being a good way to spread a message in 1-3 years
- Feasibility (>4yrs) - likelihood of communication form being a good way to spread a message in 4 or more years

Appendix K – Intern Blog Statistics from Google™ Analytics.



These are the site statistics from the Communicating in the Sahel: A Case Study of Chad, Mali, Mauritania, and Niger blog set up by the intern team. There were a total of 327 visits from 14 countries. The next page shows exactly where each individual look came from.



Appendix L - Resources to Discover African Culture and Communication in Washington DC.

Two interns traveled to the nation's capitol to better understand African culture as it pertains to communication. The following resources were invaluable to the conclusions presented in the paper.

SMITHSONIAN MUSEUM OF AFRICAN ART

The National Museum of African Art is America's only museum dedicated to the collection, conservation, study, and exhibition of African art in all its forms. It is home to the largest publicly held collection of contemporary African art in the United States. The museum moved into a new underground building on the National Mall in 1987 and features the finest African sculpture, textiles, household objects, architectural elements, decorative arts, and musical instruments. The richness of the museum's collection is drawn from many of the more than 900 cultures found throughout Africa. The museum's pavilion is a welcoming introduction to Africa, its art, peoples, and geography. Visitors are greeted with traditional and contemporary African music, as well as a film that runs continuously. The effort is devoted to improving understating of traditional and modern African arts and cultures.²²²

A current exhibition is "African Vision: The Walt Disney-Tishman African Art Collection," which runs from Feb. 15, 2007 - Sept. 7, 2008. The collection features purchases from Paul and Ruth Tishman, who began collecting African art in 1959. Eighty-eight objects, primarily west and central African masks and figures, dominate a space in the museum that is painted in a warm burnt orange and gently illuminated by scattered spotlights. Several pieces are of Malian origin - a female figure carved in wood by the Dogon peoples in the late 19th to early 20th centuries, and a female figure with a head basket for fetching water and a female figure with a child carved in wood by the Bamana peoples in the late 19th to early 20th centuries.²²³

The National Museum of African Art also houses additional extensive collections of documents relating to African art and culture. Resources in the Eliot Elisofon Photographic Archives and the Warren M. Robbins Library are available to the public for free, but they may be accessed by appointment only.

ELIOT ELISOFFON PHOTOGRAPHIC ARCHIVES

The Eliot Elisofon Photographic Archives has 300,000 photographic prints and transparencies, including 16,000 postcards from the continent. The collection's namesake pays tribute to an internationally known photographer and filmmaker, whose enduring

²²² Smithsonian Institution. Go Smithsonian. Washington: Smithsonian Business Ventures, Feb. 2007.

²²³ African Vision: The Walt Disney-Tishman African Art Collection. Washington: Smithsonian Institution, 2007.

visual record of African life from 1947 to 1972 was published in magazines such as *Life* and *National Geographic*. His projects included the *Black African Heritage Series* (1972), a four-part documentary on African arts and cultures. In 1964, Elisofon became a founding trustee of the National Museum of African Art, and upon his death in 1973, he donated his African materials to the museum, which constituted over 50,000 black-and-white negatives and photographs, 30,000 color slides and 120,000 feet of motion picture film and sound materials. The archives have grown to include over 180,000 slides and color transparencies and 80,000 black-and-white photographs. Additional major collections include over 5,000 black-and-white photographs taken by Constance Stuart Larrabee in South African between 1936 and 1983 and over 10,000 slides depicting Yoruba art and culture by Henry Drewal and Margaret Thompson Drewal. In addition to the historical collection of postcards, special collections include late 19th and early 20th century photographic albums with significant anthropological and historical research value.²²⁴

The postcard collection is as extensive as it is thanks for the efforts of Christraud M. Geary, curator of the archives from 1990 until 2003, and Stephen Grant, a former USAID Foreign Service officer. Dr. Geary specialized in the history of photography in Africa and African art and holds a doctorate degree in cultural anthropology and African studies from the University of Frankfurt-Germany. She hosted postcard exhibitions, issued publications, and helped identify photographers. Dr. Grant holds a doctorate in education from the University of Massachusetts and a master's degree in French from La Sorbonne in Paris.²²⁵ Grant donated 6,409 postcards, organized in 22 volumes by country and topic; 452 postcards, organized numerically in one box; and 2 prints organized in one box.²²⁶

For the purposes of this project, the archives director Amy Staples pulled binders of postcards from the countries Mauritania, Mali, Niger, and Chad. Mauritania had only a couple images - one of a departure of a voyage depicting men with horses carrying goods and another featuring a group of people posing near a hut. By contrast, the binders from Mali, Niger, and Chad had enough postcards to file by topics such as transportation, portraits, domestic scenes, architecture, ritual, and celebration. Many postcards are black and white images from the early 20th century. They're labeled as *cartes postales*, and some contain handwritten French in the correspondence space. Portraits include *un vieux sage d'Irelli*, specific ethnic groups, a diviner, and a woman sporting a child on her back, among others. One domestic scene illustrates tea time as men in the dessert sit together drinking tea while their camels wait in the background. There are postcards with mosques, homes with thatched straw roofs, a Bamako market, boats along the Niger River, fossils and cooking pots from Niger's national museum and school courtyards.

Many postcards were echoes of the French colonization, with French text and images reflecting the power hierarchy between the mother country and its colony. For example, one postcard from Niger featured a Taureg girl with a caption reading: "A child of the

²²⁴ "Elliot Elisofon Photographic Archives." 22 Feb. 2007 <<http://africa.si.edu/research/archives.html>>.

²²⁵ Richard, Paul. "Postcards Still Send a Message." *Washington Post*. 26 Nov. 2006: N01.

²²⁶ Smithsonian Institution Research Information System. 2001-2004. March 2007 <<http://www.siris.si.edu/>>.

mysterious veiled people of the Sahara." Images like this suggested foreign fascination with Africa - but a type of fascination that one finds with animals at a zoo. Nevertheless, the postcards still offer an illustrated history of the region. In an article for the Washington Post, Paul Richard, described the importance of the postcards to the outside world: "Everybody saw them. Together they constructed the thought-picture of Africa that filled the public mind. Today we share another perception (Darfur and Somalia, machine guns and machetes) that's as loaded with assumptions, and as incomplete. We get it from the news. Old postcards were its start. The cards in the museum are CNN in embryo."²²⁷

Postcards facilitate communication between countries and across oceans. Sometimes they are descriptive, and other times they express sentiment. The messages of the postcards in the Eliot Elisofon Photographic Archives transcend the brief scribbling on their backs; the postcards are a glimpse of a world culture unknown.

WARREN M. ROBBINS LIBRARY

The Warren M. Robbins Library at the National Museum of African Art, founded in 1971, is the major resource center in the United States for the research and study of the visual arts of Africa. Its collection of more than 32,000 volumes covers all aspects of African visual arts, including sculpture, painting, printmaking, pottery, textiles, crafts, popular culture, photography, architecture, rock art, and archaeology. The African Art Library has significant supporting collections of African ethnography, musicology, performing arts, theater, cinema, oral traditions, religion, creative writing, and arts in the African Diaspora, as well as general information on the history of African countries. The African Art Library has extensive files on contemporary African artists and on topics relating to African art, culture, and history. It also has small collections of videos, posters, and maps.²²⁸

AFRICAN VOICES. SMITHSONIAN NATIONAL MUSEUM OF NATURAL HISTORY

African Voices is a permanent exhibition in the Smithsonian National Museum of Natural History that examines the diversity, dynamism, and global influence of Africa's peoples and cultures over time in the realms of family, work, community, and the natural environment.²²⁹ Opened in December 1999, the exhibit was a result of a 1992 public controversy surrounding the museum's previous permanent African collection, "Hall of African Cultures," which many deems to out-of-date and even offensive.²³⁰ The "Hall of African Cultures" closed in 1992, and a new team including museum staff, Africans, African Americans, Africanists and community leaders began planning a new exhibition

²²⁷ Richard.

²²⁸ "Warren M. Robbins Library, National Museum of African Art." 22 Feb. 2007 <http://www.sil.si.edu/libraries/nmfa/nmfa_about.cfm>.

²²⁹ "African Voices." Exhibit. Smithsonian National Museum of Natural History. 2007.

²³⁰ Arnoldi, Mary Jo. "Reflections on 'African Voices' at the Smithsonian's National Museum of Natural History." African Arts. Summer 2001.

aimed to increase understanding of Africa's modernity and contemporary connections to Africa's social history.²³¹

The exhibit showcases a history of Africa that is incorporated among themes that feature artifacts celebrating working, living, and wealth in Africa. Interactive stations allow visitors to design their own Malian mud-cloth, listen to a variety of African languages, and watch the flow of people and goods from Africa to other parts of the world on an illuminated map. Quotations from political leaders and ordinary people are painted on the walls. Photographs capture the essence and use of objects on display. On the opening night of "African Voices," one visitor commented: "This hall is rich, lively, and complex - just like Africa."²³² "African Voices" offers a new understanding of the continent.

VISUAL GRIOTS. SMITHSONIAN NATIONAL MUSEUM OF NATURAL HISTORY

A griot (pronounced gree-oh) is a storyteller in West Africa who perpetuates the oral traditions of a family or village.²³³ For centuries, griots have told stories about births, deaths, marriages, battles, hunts and folktales. Often they communicate through musical performance.

The Academy for Educational Development, a Washington-based non-profit organization committed to solving social problems and building the capacity of individuals, communities and institutions to become more self-sufficient, expounded upon the griot concept to initiate a program that allowed Malian children to become story-tellers with photography.

Three Washington, D.C. based photographers - Nestor Hernandez, Shawn Davis, and Sora DeVore – began to develop the project in late 2003. The experience and expertise of the team ensured a promising result. Hernandez and DeVore have led celebrated photography projects for children in Ghana, Cuba, West Virginia, and Washington, D.C. Davis is an AED program officer for the Center for International Exchanges and was a Peace Corps volunteer in Mali.

Hernandez had recently attended the African Encounters of Photography – a pan-African biennial in Bamako, Mali's capitol – and visited the Seydou Keita Association, a small organization dedicated to a renowned Malian photographer that also promotes photography to Malian youth. Hernandez met its director Alioune Ba, an official photographer of the National Museum of Mali, and shared with him an idea of a project that would use Malian and U.S. photographers to guide children to document their daily lives in Mali.

²³¹ Arnoldi. 2001.

²³² Arnoldi. 2001.

²³³ Visual Griots: Mutual Understanding through the Art of Photography. Washington :Academy for Educational Development, 2006.

Hernandez selected two villages – Damy and Kouara – to participate in the project. The communities are home to the ethnic group Bwa, a predominantly Christian, and agriculture-based society. These villages are home to approximately 800 inhabitants each. Though they lack electricity and running water, the villages have a community school with classes up to the sixth grade.

The team spent a year planning and fundraising for the project, and in January 2005, Hernandez, Davis, and DeVore traveled back to Mali. Visual Griots, an official AED project, received financial aid and institutional support from the organization and also benefited from donations from other artists and supporters of Mali.

The team understood the importance of communicating and collaborating with local leaders of the communities, so they prioritized discussion to ensure the success of the project. Malian teachers, photographers and community leaders all helped to plan and implement the workshop. According to Davis, community involvement helped facilitate understanding across cultural and language barriers that might otherwise hinder meeting the project's goals.²³⁴ The team tasked local school administrators with selecting the students who would participate. The administration chose 22 sixth-graders, an equal number of boys and girls, and a fair representation of all ethnic and religious groups in the village, with academic achievement as a third criterion. They also met with the Parent Teacher Associations and village councils to gain support. Unless the communities embraced the project, Davis said, the students wouldn't be free to shoot.²³⁵

The workshops themselves were four days each and reserved mornings for class instruction and afternoons for shooting. Davis demonstrated the idea that photography transcends language barriers, thus allowing the students to communicate ideas about themselves to people across the country and throughout the world. Students learned about decision-making and perspective in photography - how they could position their camera to achieve various effects. They practiced looking through pieces of paper with a rectangle cut out of the middle before advancing to the more modern point-and-shoot cameras that most students had never seen before, much less used.

Once students felt comfortable using the cameras, they enjoyed roaming their villages and finding subjects to shoot and taking pride in their task. Photographs portrayed daily life and personal emotions. They included villagers harvesting millet, grinding Shea nuts, making mud bricks and walking to school. Other photos feature brooms, sheep, a coveted motorcycle, and a mosque in Djenné. In one photo, a boy naps next to a radio. In another, girls pose, imitating old ladies. Though the children may be geographically distanced from the people viewing their photographs, the message the photograph communicates transcends any geographical, cultural or language barrier. Most people understand the ties that bind a family or the appeal of leisure like a local music group.

²³⁴ Davis, Shawn. Personal interview. 14 March 2007

²³⁵ Davis, Shawn. "Visual Griots of Mali: Empowering Youth through the Art of Photography." *African Arts*. 22 March 2006.

The workshops taught students not only how to use cameras, but also self-expression, creative thinking and leadership development. Davis said the photography was "a tool to develop pride about who they are and where they come from."²³⁶ As the children shot and evaluated their developed photographs, they were "rediscovering and placing value on their surroundings."

The next step of the project was sharing the images with the local and greater communities. This communication took various forms and was an extended, dynamic process. The village elders helped plan the community displays in Damy and Kouara. At the exhibitions, village elders presented certificates. The village griot sang for a large crowd and musicians played in anticipation of the photographs. Celebration followed the unveiling, and the community clearly was happy with the images of themselves created by the students.

Visual Griots then traveled to the African Encounters of Photography biennial at the National Museum in Bamako in November 2005. A boy and a girl from each school were chosen to represent the students and helped to mount the show and attend the opening. This experience afforded the students a chance to travel to their national capitol and learn about the adventure of urban life, which is traditionally uncommon for rural children, according to Davis.²³⁷ The workshop instructors selected the images for display - at least one from each of the 22 students - and matted and framed them with glossy text panels to accompany them. At the exhibit opening, Malian government ministers, U.S. government officials, renowned filmmaker Cheick Oumar Sissoko, and nonprofit staff viewed the photos, which the children proudly displayed. The exhibit was well-received, garnering attention from the Malian National Radio and Television and Mali's largest newspaper, *L'Essor*. "Rural artists are capable of surprising talent," the paper reported. "The exhibit shows the daily environment of the students, their families, their daily lives, their humanity, and their universality... The images are full of freshness and are occasionally shocking in maturity."²³⁸ Davis also noted that the images highlighting the rural/city divide ignited nostalgia of people in the city for their old villages.²³⁹

Through the Visual Griots exhibit prompted communication, other exhibits fostered learning, as well. Davis noticed that one of the students was drawn to a series of photographs on a slaughterhouse. Davis viewed the images as graphic and violent, but when he asked the child about them, the child described the images as connoting celebration and wealth. "What a humbling example of the subjective nature of photography. Each interpreter of an image brings his/her own unique set of cultural trappings that informs the 'reading,'" Davis said.²⁴⁰

²³⁶ Davis, Shawn. "Visual Griots of Mali: Empowering Youth through the Art of Photography." *African Arts*. 22 March 2006.

²³⁷ Davis, Shawn. Personal Interview. 14 March 2007.

²³⁸ "Photographie: Les 'Griots Visuels' S'Exposent." *L'Essor*. 10 Nov. 2005.

²³⁹ Davis, Shawn. Personal interview. 14 March 2007.

²⁴⁰ Davis, Shawn. "Visual Griots of Mali: Empowering Youth through the Art of Photography." *African Arts*. 22 March 2006.

When the children returned to their respective villages, the difference in their access to the media highlights a divide that differentiates rural Mali from the metropolises of the West. After finishing harvesting in the fields, the villagers gathered in the family courtyard of one student to watch the black-and-white television, the village's main attraction. Powered by a car battery, the television provides a weekly news digest in Bomu, the language of the Bwa. After announcing the visit of French president Jacques Chirac to Bamako for the France-Africa summit, the broadcaster featured interviews with the local children by their exhibit in Bamako. Again, the families had a chance to reflect on the images that celebrated their community and traditions.

Malian mayor Abdias Thera comments on the exhibit included:

*"It is not great luxury that brings happiness, you know, but instead the profound truth of our day to day lives - our reality. And each environment has its realities that belong to that place and in our case our children brought these realities to light... our children who are before us now, this has enabled them to open themselves up to the world. Because before these photographs, maybe they didn't know that they too could communicate. But boy, have them communicated, or what?...The children, in almost all of their photos depicted the work that we do with our hands. Fabrication of mats, even the way we select our seed for planting, the way we prepare the different ingredients for our soup, the way we grind the millet, our traditional games such as traditional wrestling. These are the aspects of our lives - our ways - that the children brought out in their photos. And these are the values that belong to us."*²⁴¹

By October 2006 the Visual Griots exhibit was ready to travel the world, beginning with an installment at the Smithsonian's National Museum of Natural History, running through April 29, 2007. Upon approving the exhibit, Dr. Mary Jo Arnoldi, curator of African ethnology at the museum, wrote in a letter to Davis:

*"When I looked through the portfolio of photographs that the students created, I was struck by how sensitively they were able to capture and express the relationship between the lived environment and their place in it. Through their choice of photographic subjects the students communicated in a nuanced way what is important in their lives. Their ability to capture the interrelationship between place and identity in these photographs is remarkable. It is clear to me from the portfolio that the students enthusiastically embraced the medium of photography, and that they quickly demonstrated a very sophisticated mastery of composition and abstraction. Many of the photographs are quite lyrical and they are visually powerful. The students have indeed produced a significant body of aesthetically compelling images."*²⁴²

A number of the images also find a permanent home in the art collection of the U.S. embassy in Bamako. The U.S. Ambassador to Mali, Terence McCulley, said, "These young photographers have set an example for us, and I am convinced that this new

²⁴¹ Academy for Educational Development, ed. "Voices of Impact - The Visual Griots of Mali." 2007.

²⁴² Arnoldi, Mary Jo. Letter to Shawn Davis. 29 March 2006.

embassy is, in itself, a visual griot - singing a song of friendship and respect between Malian and American peoples. May this song resonate through all of the work that we undertake together in the future."²⁴³

²⁴³ Academy for Educational Development, ed. "Voices of Impact - The Visual Griots of Mali." 2007

Appendix M – Impacts of Family Planning Campaign in Mali

The impact of a family planning multimedia campaign in Bamako, Mali.

Studies in Family Planning - September 1, 1998

Thomas T. Kane²⁴⁴

Mass media communication techniques have been found to be an effective way to diffuse information about family planning and to effect changes in attitudes toward and practice of contraception in a variety of populations (Rogers and Rogers, 1976; Rogers and Kincaid, 1981; Gallen and Rinehart, 1986; Bertrand et al., 1987; Hornik, 1989 and 1990; Piotrow et al., 1990 and 1992; Valente, 1994; Westoff et al., 1994a and 1994b; Guilkey et al., 1995; Westoff and Rodriguez, 1995). In traditional societies, at the early stages of adoption of modern contraceptive practice, traditional norms, values, and beliefs remain strong. In these cultural contexts, messages about family planning may have to be presented in particularly acceptable ways. The use of traditional media such as songs, music, plays, and proverbs using local languages in familiar settings is one strategy for reaching segments of some populations that are illiterate or closely tied to certain beliefs and practices.

In this report, the results are discussed of an evaluation of a 1993 information, education, and communication (IEC) campaign that integrated traditional forms of communication and modern mass media to present family planning messages through radio and television to men and women in Bamako, Mali.

Several theoretical frameworks developed over the past two decades have helped to explain the role that mass media IEC messages play in influencing contraceptive knowledge, attitudes, and behavior, including the health belief model (Becker, 1974), the theory of reasoned action (Fishbein and Ajzen, 1975; Fishbein, 1980; Fishbein et al., 1991), and social cognitive learning theory (Bandura, 1986; Nazeer, 1995). Hornik (1989 and 1990) has reviewed some of these alternative models of health-behavior change, many of which have been applied to public health and family planning.

In the application of the health belief model to change in contraceptive behavior, an individual would be motivated to use a contraceptive method if he or she perceives (1) that he/she is susceptible to unplanned pregnancies or at risk of having a larger family size than desired; (2) a high degree of negative consequences, in terms of health risks or economic or social costs resulting from having a family size larger than desired or from an unplanned pregnancy; (3) the potential benefits of practicing contraception; and (4) the barriers that must be overcome in order to practice contraception (Becker, 1974; Hornik, 1990). The "cues to action" for adopting a contraceptive method may come in the form of mass media messages or from interpersonal communication, or may result from adverse personal experiences with an unplanned pregnancy, or from any combination of these elements (Becker, 1974; Hornik, 1990).

According to Fishbein's theory of reasoned action (Fishbein, 1980), contraceptive behavior may be seen as subject to two major influences: (1) the attitude of the individual toward the practice of contraception and (2) the individual's "subjective norm" or belief concerning what his or her sexual partners will think regarding the practice or nonpractice of contraception. Mass media

244 Kane, Thomas, "The impact of a family planning campaign in Bamako, Mali." *Studies in Family Planning*. 01 Sept 1998

<http://macece.bizland.com/FHS2006/Readings/family%20planning%20campaign.doc>.

family planning messages can have a positive effect on both of these influences, and thus may lead to the decision to use a contraceptive.

The social cognitive learning theory approach (Bandura, 1986) has also been a useful model for predicting contraceptive behavior, whereby the individual's (or couple's) concept of self-efficacy with regard to the practice of contraception is also taken into account. Mass media IEC interventions can include information or messages designed to increase the individual's (or couple's) self-confidence in her or his ability to practice contraception effectively and behave responsibly in sexual situations. Such messages can be presented in televised family planning plays or spots, through persuasion techniques as part of the IEC messages, and by enhancing negotiation skills. Montgomery and Casterline (1993 and 1996) have provided empirical evidence demonstrating the impact of social learning and social influence on the diffusion of fertility-control behavior.

Mass media family planning IEC campaigns can influence men and women to use contraceptive methods to control their fertility by: (1) conveying family planning messages through television and radio that allow couples to consider, some for the first time, the possibility of contraception; (2) legitimizing the practice of contraception as acceptable behavior; (3) pointing out some of the economic, social, and health advantages of smaller family size achieved through effective contraceptive practice; and (4) providing information about the use of and sources for modern contraceptive methods and encouraging sexual responsibility and communication between partners on the subject of family planning. The IEC messages contained in the television and radio broadcast campaign reported on and evaluated in this study cumulatively addressed all of the four points above, through the entertainment-education approach of using television and short radio spots and dramas. This approach has been shown to be an increasingly popular and effective strategy for this purpose (Lettenmaier et al., 1993; Valente, 1994; Yoder et al., 1996).

Background

In terms of income per capita and natural resources, Mali is one of the world's poorest and least developed countries. Composed of diverse ethnic groups (Bambara, Peul, Soninke/Sarakole, Malinke, Songhai, Tuareg, Bozo, Dogon, and others), this predominantly Muslim West African country situated in the Sahel region has only recently begun to embrace modern family planning practice as part of the country's programs for improved health and economic development. Prevalence of contraceptive use nationwide remains low. According to the Demographic and Health Surveys (DHS) conducted in Mali in 1987 and again in 1995-96, current use of any method of contraception among currently married Malian women increased from only 5 percent to 7 percent in the period between the two surveys, and current use of modern methods increased from only a little more than 1 percent in 1987 to 4 percent in 1995-96 (Traore et al., 1989; Coulibaly et al., 1996). With a population of almost 10 million in 1997 and an annual rate of population growth of 3.0 percent, Mali's population could double in 23 years (Haub and Cornelius, 1997).

During the last five years, efforts to bring family planning services to Mali have increased dramatically through the work of the Ministry of Health; the private family planning association, Association Malienne pour la Protection et la Promotion de la Famille (AMPPF); and the SOMARC contraceptive social marketing project, which promotes and sells contraceptives at subsidized prices through pharmacies and stores (SOMARC II, 1992). Bamako, the capital and by far the largest city in Mali, has a population of about 900,000 - almost 10 percent of the total population - and is still a predominantly traditional society. The Bambara are the largest ethnic

group in Bamako, and most other ethnic groups living in Bamako speak Bambara as well as their native languages.

In 1989, AMPPF, in collaboration with the Johns Hopkins University/Population Communication Services project (JHU/PCS), began a project entitled "Modern and Traditional Media to Promote Family Planning in Mali." The project included various family planning IEC activities, and covered the District of Bamako and the city of Segou, the two urban areas in Mali where AMPPF runs family planning clinics. The purpose of the project was to strengthen the institutional capacity of the AMPPF at the central and regional levels in order to increase the use of existing family planning services.²⁴⁵

The Mass Media Campaign of 1993

The 1993 mass media campaign conducted by AMPPF in Bamako was part of the project to promote family planning in Mali. The campaign's objectives - to effect changes in contraceptive knowledge, attitudes, and practice - are examined here in relation to background sociodemographic factors, exposure to radio and television, and to the specific family planning IEC interventions of the intensive campaign conducted in Bamako by AMPPF. The campaign consisted of four television plays, four short television spots, and two recorded songs containing various family planning messages that were played on the radio during the intervention period. During the campaign period, each of the four 30-minute plays aired two times, the four short spots (one minute each) aired more than 40 times (at least ten times each), and the two songs were played more than 70 times. The campaign was part of a larger AMPPF three-year traditional and modern media project. The purpose of the larger project was to increase the adoption of family planning in Bamako and selected other cities in Mali and to increase the use of AMPPF family planning services. In addition to the radio and television messages, spots, and plays, the project designed and launched a national family planning logo during the first week of the three-month IEC campaign period. The main messages contained in the ten IEC interventions used in the campaign are described in Table 1.

The interventions primarily targeted married men and women. Specific messages were designed to address some of the important barriers to family planning acceptance, such as misconceptions and lack of knowledge about specific methods, men's disapproval of family planning and their high desired family size, and the widespread perception that Islam is opposed to contraceptive practice.

The purpose of the evaluation of the AMPPF traditional and modern media project was twofold: (1) To determine the impact of the mass media interventions on contraceptive knowledge, attitudes, and practices of men and women of reproductive age living in Bamako by examining changes over the six-month period between the baseline and post-intervention surveys that included the three-month campaign; and (2) to determine whether the media interventions

²⁴⁵ As part of this project, the AMPPF, with assistance from the Johns Hopkins University Center for Communications Program, developed and implemented several activities, including: an IEC workshop for IEC coordinators and regional AMPPF leaders and health workers; a consensus-building seminar with AMPPF partners; a theater and song contest held in Bamako and Segou; the production and launching of a national family planning logo; and under a contract with the Centre de Services de Production Audio-Visuelles (CESPA), a videotaping of the four best theatrical plays and the four television spots and a recording of the two best songs. AMPPF also pretested the IEC interventions with religious and village leaders, and men and women.

attracted new clients to the AMPPF clinic in Bamako. The clinic-based results are reported elsewhere (see Mbodji et al., 1994).²⁴⁶

To achieve these objectives, four surveys were carried out in Bamako: the population-based 1992 Bamako Baseline Survey, the 1993 Bamako Postintervention Survey, the 1992 AMPPF Clinic Baseline Survey, and the 1993 AMPPF Clinic Postintervention Survey on sources of referral of new family planning acceptors at the clinics (Gueye et al., 1993 and 1994; Mbodji et al., 1994). The baseline surveys conducted in November-December 1992 preceded the AMPPF family planning television and radio IEC campaign, which began in early April 1993 and continued to the end of June 1993.

Methodology

A separate sample pretest-post-test quasi-experimental design was used for the population-based evaluation in Bamako. A separate sample quasi-experimental design was chosen to avoid certain threats to the internal validity of the study (for example, against such biases as testing and selection) (Fisher et al., 1991). No control-group population was available for comparison with Bamako (the intervention area) because of the vast difference in the size, structure, and mass media access of the population of Bamako compared with the next-largest urban areas of Mali.²⁴⁷ Also, experimental and control areas within Bamako were not available because television and radio interventions reached all segments of the city. Two independent two-stage, stratified, random-sample surveys of adult men, and women of reproductive age living in Bamako were conducted. The preintervention baseline survey was conducted in November-December 1992 with a sample of 402 men and 422 women, and the postintervention survey was carried out in July-August 1993 with a sample of 418 men and 450 women.^{248 249} The surveys assessed

²⁴⁶ Clinic records on new and continuing acceptors were analyzed, examining trends in numbers of new male and female clients before, during, and after the media interventions. A baseline (preintervention) survey and a postintervention source-of-referral survey of new acceptors were conducted at the AMPPF clinic to determine the extent to which the IEC media interventions and other sources of media contact and individuals influenced men and women to come to the clinic to adopt family planning. A total of 252 new female clients at AMPPF were interviewed in the baseline AMPPF clinic survey, and 250 were interviewed in the postintervention AMPPF clinic survey. The main findings from the clinic-based evaluation were that monthly attendance at the AMPPF clinics increased substantially (more than 12 percent) during the three-month campaign period, and that attendance was sustained at a higher level after the campaign, compared with attendance levels prior to the campaign. In addition, the proportion of new clients at the AMPPF clinic in Bamako who heard the campaign song "Sere Den" on the radio, the song that invites women eight times to visit the AMPPF clinic, was significantly higher (88 percent) than the proportion of women in the general population reporting to have heard the song, as indicated by the representative survey of women in Bamako. These and other findings suggest that the IEC campaign had a positive impact on AMPPF clinic attendance during and after the campaign period (Mbodji et al., 1994).

²⁴⁷ The next-largest urban towns of Segou, Mopti, Sikasso, Gao, and Kayes have fewer than 100,000 inhabitants each (according to the 1987 Mali Census of Population [DNSI, 1987]). Populations in these other urban areas of Mali have far more limited access to radio and television and also to family planning services than do the residents of Bamako.

²⁴⁸ The two population-based Bamako surveys' sample designs were two-stage random samples using probability proportionate to size (PPS) sampling for selection of enumeration areas (EAs) in the first stage. The study population consisted of all women aged 15 to 49 and all men aged 15 to 59 living in Bamako. The survey plan involved taking a representative sample of more than 400 men and 400 women from the six communes that make up the District of Bamako. A total of 70 enumeration areas (approximately one-third of the total enumeration areas that make up Bamako) were selected using PPS sampling. EA maps from the 1987 general population census were updated in 1992. Thirty-five EAs were randomly selected from the 70 sampled EAs for the baseline survey, and the remaining 35 EAs were used for the postintervention survey. Each of the selected EAs, which varied in size of population, was subdivided into segments of about 30 households per segment. In each of the even-numbered households listed in the randomly selected segment of each EA, one eligible male was randomly selected for the interview, and one eligible female was randomly selected from each of the odd-numbered households listed in the selected segment.

respondents' exposure to the mass media interventions, their agreement with the messages and actions taken, as well as their knowledge and use of contraceptives, attitudes toward family planning, awareness of AMPPF services, and background sociodemographic characteristics. Multivariate binomial logistic regression models are used to examine the effects of demographic and socioeconomic variables on the likelihood of exposure to the AMPPF interventions, and to assess the effects of exposure to the interventions on contraceptive knowledge, attitudes, and practice, while controlling for demographic and socioeconomic variables.

249 Data collection for the 1992 Bamako preintervention baseline survey was carried out in two phases. In the first, two teams of interviewers, one with five female interviewers and the other team with four male interviewers, drew up a list of households and eligible men and women. Each team had a same-sex supervisor. The household listings for the baseline survey ran from 26 October to 3 November 1992 and for the postintervention survey, from 23 June to 4 July 1993. The selection of eligible survey respondents yielded 464 men and 476 women for the baseline survey. The second phase - data collection - was carried out by two teams, one comprised of four female interviewers, the other comprised of four male interviewers, each team under the direction of a supervisor. All interviewers participated in compiling the list of eligible men and women. A total of 422 women aged 15 to 49 were interviewed. The response rate for women chosen for the survey who were actually interviewed was 89 percent. The interviews for the men's baseline survey took longer than the women's interviews. A total of 402 men in the sample represented 87 percent of the men chosen for the survey. The longer interview period can be explained by the fact that many of the men, particularly those in outlying areas, arrived home from work very late. Two to three visits were required, on average, to make contact with the eligible men. The fieldwork for the 1993 Bamako postintervention survey of men and women ran between 5 and 26 July 1993 for the female sample and from 5 July to 5 August 1993 for the male sample. The selection procedure for eligible women and men in the sampled households resulted in a total of 517 women and 499 men being chosen for the postintervention survey. Interviews were conducted with a total of 450 eligible women, a completion rate of 87 percent. A total of 418 eligible males were successfully interviewed in the follow-up survey, an interview completion rate of 84 percent for men. The proportion of individuals actually interviewed in relation to the number chosen varied by gender of respondents and by enumeration area. Producing unbiased results for the different indicators being studied required that weighting coefficients be calculated for each of the enumeration areas for each of the two sexes. The calculation of the weighting coefficient uses the number of individuals chosen and the number actually interviewed.

Works Cited

- Academy for Educational Development. "Establishing Community Learning and Information Centers (CLICs) in Undeserved Malian Communities: Final Report." 2005.
- Academy for Educational Development, ed. "Voices of Impact - The Visual Griots of Mali." 2007.
- Addai-Sebo, Akyaaba. "Internet Telephony: Africa's Brace New Future." New African (May 2005) 45.
- African Oil Policy Initiative Group (AOPIG). "African Oil: A Priority for U.S. National Security and African Development." 2002.
- African Vision: The Walt Disney-Tishman African Art Collection. Washington: Smithsonian Institution, 2007.
- African Voices." Exhibit. Smithsonian National Museum of Natural History. 2007.
- "Africa's top film festival opens." BBC News. 25 Feb. 2007. 12 March 2007 <<http://news.bbc.co.uk/2/hi/africa/6394133.stm>>.
- Altbach, Philip G. and Salah M. Hassan, eds. The Muse of Modernity: Essays on Culture as Development in Africa. Trenton: Africa World Press, Inc., 1996.
- Akande, Laolu. "Diplomats Decry Nigeria's Declining Influence in the African Union." The Africa Sun Times. 20 April 2006. 13 March 2007 <http://www.africansuntimes.com/37/index.php?ast/news/diplomat/nigeria_s_rapidly_declining_influence_in_africa>.
- Arnoldi, Mary Jo. Letter to Shawn Davis. 29 March 2006.
- Arnoldi, Mary Jo. Personal interview with Maggie Tunning and Adrian Whitsett. 15 March 2007.
- Arnoldi, Mary Jo. "Reflections on 'African Voices' at the Smithsonian's National Museum of Natural History." African Arts. Summer 2001.
- Bakker, Nisha. "A UNICEF-supported centre in Mali helps young women in distress." UNICEF. 20 June 2006. 6 March 2007 <http://www.unicef.org/infobycountry/mali_34617.html>.
- Balit, Silvia. "Communication for Isolated and Marginalized Groups Blending the Old and the New." 2004. 13 March 2007 <http://www.fao.org/sd/dim_kn1/docs/kn1_040701a2_en.pdf>.

Barber, Karin. "Popular Arts in Africa." *African Studies Review* 30.3 (1987).

Beaubien, Jason. Personal Interview with GISC interns. 18 Jan. 2007.

Berg, Matt. "IESC Geekcorps to Receive Tech Museum Award in Economic Development Category." 30 Sept. 2006. 7 Feb. 2007
<<http://mali.geekcorps.org/2006/09/30/geekcorps-to-receive-tech-museum-award/>>.

Brenjo, Nina. "Is France Losing its Grip on Africa?" *Reuters Foundation AlertNet*. 19 Feb. 2007. Accessed 17 Apr. 2007.
<<http://www.alertnet.org/db/blogs/1265/2007/01/19-182425-1.htm>>.

Butler, Rhett. "Cell Phones May Help 'save' Africa." 11 July 2005. 8 Feb. 2007
<http://news.mongabay.com/2005/0712-rhett_butler.html>.

"Burkina Faso gets new film school." *BBC News*. 1 March 2005. 12 March 2007
<<http://news.bbc.co.uk/2/hi/africa/4305449.stm>>.

"Chad cuts Sudan ties after attack." *BBC News*. 14 April 2006. 12 March 2007
<<http://news.bbc.co.uk/2/hi/africa/4909650.stm>>.

Chad Press, Media, TV, Radio, Newspapers. Press Reference. 13 Feb. 2007
<<http://www.pressreference.com/Be-Co/Chad.html>>.

Chad. Map. Organization for Economic Co-operation and Development Information by Country.

"Chad: Rebel Offensive Poses Risk of Ethnic Reprisal." *Human Rights Watch*. 13 April 2006. 15 March 2007 <<http://hrw.org/english/docs/2006/04/13/chad13172.htm>>.

"Chad: SOS Children's Villages in the Country." SOS-Kinderdorf International. 6 March 2007 <http://www.sos-childrensvillages.org/cgi-bin/sos/jsp/wherewehelp.do?BV_SessionID=%40%40%40%401318576145.117962936%40%40%40%40&BV_EngineID=ccccaddkgliihekcfngcfkmdhkhdfj.0site=ZZ&lang=en&nav=2.3&c=11557&ct=13042&v=0>.

Chand, David. Personal interview with GISC Interns. 1 Feb 2007.

CIA World Factbook. 15 March 2007. 20 March. 2007
<<http://www.cia.gov/cia/publications/factbook>>.

"community center." *Merriman Webster Online Dictionary*. 2007. 20 March 2007
<<http://www.m-w.com/dictionary/community%20center>>.

- "Community Centers Bridge Digital Divide in Mali." USAID SUB-SAHARAN AFRICA. 2005. 8 March 2007
<http://africastories.usaid.gov/search_details.cfm?storyID=340&countryID=14&ectorID=0&yearID=5>.
- "Community radio journalist held for past two days by gendarmes in southern town." Reporters Without Borders. 2 Feb. 2007. 17 Apr. 2007
<http://www.rsf.org/article.php3?id_article=20895>.
- "Conflict in the Africa Region." USAID Conflict Management. 6 Feb. 2007
<http://www.usaid.gov/our_work/crosscutting_programs/conflict/support/afr.htm>.
- Conteh-Morgan, John. Theatre and Drama in Francophone Africa: A Critical Introduction. Cambridge: Cambridge University Press, 1994.
- Coomey, Chris. "Brave New World". Seattle Weekly. 14 June 2006. 2 April 2007
<<http://www.seattleweekly.com/2006-06-14/music/brave-new-world.php>>.
- "Country Profile: Chad." BBC Online. 16 Feb. 2007. 28 March 2007
<http://news.bbc.co.uk/2/hi/africa/country_profiles/1068700.stm>.
- "Country Profile: Mali". BBC Online. 2 January 2007. 28 March 2007
<http://news.bbc.co.uk/2/hi/africa/country_profiles/1021454.stm>.
- "Country Profile: Mauritania." BBC Online. 20 April 2007. 24 April 2007
<http://news.bbc.co.uk/2/hi/africa/country_profiles/791083.stm>.
- "Country Profile: Niger." BBC Online. 17 January 2007. 28 March 2007
<http://news.bbc.co.uk/2/hi/africa/country_profiles/1054396.stm>.
- Creech, Heather. "Evaluation of UNESCO'S Community Multimedia Centres." 2005. 5 March 2007
<http://portal.unesco.org/ci/en/files/22129/11477736959CMC_Evaluation_Final.pdf/CMC+Evaluation_Final.pdf>.
- Crawley, Vince. "New U.S. Military Command Reflects Africa's Growing Importance." 12 Feb. 2007. 17 Feb. 2007
<http://usinfo.state.gov/xarchives/display.html?p=washfile_english&y=2007&m=February&x=20070212163151MVyelwarC0.4182855>.
- Crowe, Sarah. "As the 'hunger season' begins in Niger, UN nutrition appeal offers hope for Sahel." UNICEF. 28 March 2006. 6 March 2007
<http://www.unicef.org/infobycountry/niger_31940.html>.
- Dang, Tu. Personal interview with Adrian Whitsett. 13 March 2007.

Davis, Shawn. Personal interview with Maggie Tunning and Adrian Whitsett. 14 March 2007.

Davis, Shawn. "Visual Griots of Mali: Empowering Youth through the Art of Photography." African Arts. 22 March 2006.

De la Rose, Philippe Garcia. "Protecting the Cultural Heritage: a Tool for Development." What Museums for Africa? Heritage in the Future. Paris: ICOM, 1992.

"Demographic Trends." UN Human Development Report. 2006. 22 Feb. 2007
<<http://hdr.undp.org/hdr2006/statistics/indicators/44.html>>.

Dia, Idrissa. Personal interview with Adrian Whitsett. 15 March 2007.

Eagle, Nathan. "Entrepreneurial Programming and Research on Mobiles" W3C Workshop on the Mobile Web in Developing Countries. 5-6 Dec. 2007. 2 Feb. 2007 <<http://www.w3.org/2006/07/MWI-EC/Presentation/eprom.pdf>>.

"Elliot Elisofon Photographic Archives." 22 Feb. 2007
<<http://africa.si.edu/research/archives.html>>.

Etta, Florence, ed. Information and communication technologies for development in Africa: Volume 2, The Experience with Telecentres. Ottawa: International Development Research Centre, 2003.

Evans, Alexander. "Understanding Madrasahs: How Threatening Are They?" Foreign Affairs 85 no1 9-16 Ja/F 2006

Gellner, Ernest. Nationalism. Detroit: Phoenix Press, 1997.

Gilmer, Chris. "Google announces free communication applications in Africa." Online posting. 19 March 2007. Download Squad. 20 March 2007
<<http://www.downloadsquad.com/2007/03/19/google-announces-free-communication-applications-in-africa/>>.

Gospel Recordings Nigeria. Global Recordings Network. 2 April 2007
<<http://globalrecordings.net/ng>>.

"Growing Evidence of Al-Qaeda Presence in Nigeria." Global Issues Report. 6 March 2007.

"Grassroots Soccer Curriculum." Grassroots Soccer. 2002-2006. 8 Feb 2007
<http://www.grassrootsoccer.org/index.php?option=com_content&task=view&i=28&Itemid=51>.

Harding, Frances. Handout. "Theatre and video for development." 15 Feb. 2007.

Harding, Frances. Presentation and personal interview with GISC interns. 15 Feb. 2007.

Harding, Frances, Ed. Performance Arts in Africa: A Reader. London: Routledge, 2002.

Harsch, Ernest. "Big Leap in China-Africa Ties." African Renewal 20.4 (2007) 3.

Hassounah, Khaled. "Nigerian Students Power Up Their Laptops." CNET NEWS. 11 April 2007. 12 April 2007 <http://news.com.com/2300-1041_3-61750251.html?tag=ne.gall.pg>.

"Islamist Terrorism in the Sahel: Fact or Fiction?" International Crisis Group. 31 March 2005.

Jain, Ravi. "The Mobile Web in Developing Countries." W3C Workshop on the Mobile Web in Developing Countries. 5-6 Dec. 2006.

Jeter, Malaika. Personal interview with Maggie Tunning and Adrian Whitsett. 14 March 2007.

Kane, Thomas, "The impact of a family planning campaign in Bamako, Mali." Studies in Family Planning. 01 Sept 1998
<<http://macece.bizland.com/FHS2006/Readings/family%20planning%20campaign.doc>>.

Kesting, Piney. "The Next Generation of Superheroes." Saudi Aramco World 58 (Jan/Feb. 2007).

LaFraniere, Sharon. "Crowds of Pupils but Little Else in African Schools." The New York Times. 30 Dec. 2006.

Lamb, Gregory. "A Closer Look at What the \$100 Laptop Will Be." Christian Science Monitor. 29 Jan. 2007. 8 Feb. 2007
<<http://www.csmonitor.com/2007/0129/p13s01-stct.html>>.

La Monica, Paul. "VCs Discuss the Next Big Things." CNN Money. 30 June 2006. 13 March 2007
<http://money.cnn.com/2006/06/30/magazines/fortune/brainstorm_vc/index.htm>

Laremont, Ricardo and Hrach Gregorian. "Political Islam in West Africa and the Sahel." Military Review. Jan.-Feb. 2006.

Levitt, Michael. "Hezbollah Finances: Funding the Party of God." *Terrorism Financing and State Responses: a Comparative Perspective*. Feb. 2005. 13 March 2007
<<http://www.washingtoninstitute.org/templateC06.php?CID=772>>.

Levtzion, Nehemia and Randall L. Pouwels. Eds. The History of Islam in Africa. Athens: Ohio University Press, 2000.

Li, Kun. "Regional director visits community-based child nutrition centres in Burkina Faso." UNICEF. 3 August 2006. 6 March 2007
<http://www.unicef.org/infobycountry/burkinafaso_35202.html>.

Library of Congress. "Mali Country Profile." Jan. 2005. 16 Jan. 2007
<<http://lcweb2.loc.gov/frd/cs/profiles/Mali.pdf>>.

Madamombe, Itai. "Community radio: a voice for the poor." Africa Renewal Vol. 19, #2 2005. 08 March 2007
<http://www.un.org/ecosocdev/geninfo/afrec/vol19no2/192_pg04.htm>.

Mali. Map. Organization for Economic Co-operation and Development Information by Country.

Mali Press, Media, TV, Radio, Newspapers. Press Reference. 13 Feb. 2007.
<<http://www.pressreference.com/Ky-Ma/Mali.html>>.

"Mali: SOS Children's Villages in the Country." SOS-Kinderdorf International. 6 March 2007 <http://www.sos-childrensvillages.org/cgi-bin/sos/jsp/wherewehelp.do?BV_SessionID=@@@@1318576145.1174962936@@@@&BV_EngineID=ccccaddkgliihekcfngcfkmdhkhdfj.0&lang=en&site=Z&hNav=show&nav=2.3&ct=486919>.

Maudlin, John. "China and the Hedge Fund Dragon." FrontLine Weekly Newsletter 9 March 2007.

Mauritania. Map. University of Texas Libraries.

Mauritania Press, Media, TV, Radio, Newspapers. Press Reference. 13 Feb. 2007.
<<http://www.pressreference.com/Ky-Ma/Mauritania.html>>.

"Mauritania: Youth Literacy Rate." Globalis. 2003-2007. 13 March 2007
<http://globalis.gvu.unu.edu/indicator_detail.cfm?country=MR&indicatorid=41>.

"Mauritania Newspapers." Online Newspapers. 1995-2007. 13 March 2007
<<http://www.onlinenewspapers.com/mauritan.htm>>.

McDanel, Mike. "The SKINNY on Billboards." National Business Association Website. 21 March 2007.

<<http://www.nationalbusiness.org/nbaweb/Newsletter2005/2034.htm>>.

McVicar, Mike. Personal interview with GISC interns. 8 Feb. 2007.

Mill, John Stuart. "On Liberty." London: Longman, Roberts and Green, 1869.

Mission, goals and programmes of the FIFA Football for Hope movement. Zurich: FIFA, 2007.

Mogahed, Dalia. "Understanding Islamic Democracy" Gallup Organization. Spring 2006

Musa, Bala A. "Popular Theatre and Development Communication in West Africa: Paradigms, Processes and Prospects." African Theatre for Development: Art for Self-Determination. Ed. Kamal Salhi. Exeter: Intellect, 1998.

Nasr, Vali. Interview with PBS Frontline. 25 Oct. 2001. 24 April 2007

<<http://www.pbs.org/wgbh/pages/frontline/shows/saudi/interviews/nasr.html>>.

Niger. Map. Organization for Economic Co-operation and Development Information by Country.

Niger Press, Media, TV, Radio, Newspapers. Press Reference. 13 Feb. 2007.

<<http://www.pressreference.com/Ma-No/Niger.html>>.

"Niger: SOS Children's Villages in the Country." SOS-Kinderdorf International. 6 March 2007 <http://www.sos-childrensvillages.org/cgi-bin/sos/jsp/wherewehelp.do?BV_SessionID=%40%40%40%401318576145.117962936%40%40%40%40&BV_EngineID=ccccaddkgliihekcfngcfkmdhkhdfj.0site=ZZ&lang=en&nav=2.3&c=11557&ct=13767&v=0>.

Okome, Onookome. "The Popular Art of African Video-Film." 2001. 12 March 2007

<http://www.nyfa.org/archive_detail_q.asp?type=3&qid=45&fid=6&year=2001s=Summer>.

Oreh, O. "Modes of Communication." African Cultural Development. Ed. Ogbu Kalu. Enugu: Fourth Dimension Publishers, 1980.

"Overcoming the Digital Divide." Information Technology Journal 6.2 (2007). 171.

Owens-Ibie, Nosa. 2007. "How Video Films Developed in Nigeria." 15 Nov. 2006. 12 March 2007. <http://www.nollywood.net/Essays/p2_articleid/126/p2_page/3>.

Oyewola, Olusola. "Mobile Phone Airtime - A Virtual Currency in Nigeria." Mobile Africa. 11 Jan. 2007. 7 March 2007 <<http://www.mobileafrica.net/a84.htm>>.

- "Mauritania." BBC Online. 29 March 2007. 29 March 2007
<http://news.bbc.co.uk/2/hi/middle_east/country_profiles/791083.stm>.
- "Photographie: Les 'Griots Visuels' S'Exposent." L'Essor. 10 Nov. 2005.
Radio France. <<http://www.radiofrance.fr/>>.
- Reader, John. Africa. Washington: National Geographic Society, 2001.
- Rice, Xan. "Phone revolution makes Africa upwardly mobile" Times Online. 4 March 2006. 8 Feb. 2007 <<http://www.timesonline.co.uk/article/0,,3-2068420,00.html>>.
- Rich, Sarah. "Beneficial Billboards." World Changing website. 30 November 2006. 13 March 2007. <http://www.worldchanging.com/archives/005465.html>.
- Richard, Paul. "Postcards Still Send a Message." Washington Post. 26 Nov. 2006: N01.
- Robinson, Elizabeth. "Programmes for Adolescents: Peer Educators in Mali." Family Health International Network. 2000. 8 March 2007
<http://www.fhi.org/en/RH/Pubs/Network/v20_3/NWvol20-3MaliPeerEd.htm>.
- "Rural Radio: Africa's Internet." Food and Agriculture Organization of the United Nations. 18 Dec. 2001. 4 April 2007 <<http://www.fao.org/News/2001/011205e.htm>>.
- Russell, John. Phone interview with Christopher Kerr and Brett Pettit. 14 Feb. 2007.
- "Rwanda a Model for Africa?" CNN Money. 30 June 2006. 5 April 2007
<<http://money.cnn.com/blogs/brainstorm/2006/06/rwanda-model-for-africa.html>>.
- Sahel and West Africa Club. "Atlas on Regional Integration in West Africa." Dec. 2006. 13 March 2007 <<http://www.oecd.org/dataoecd/31/37/37944348.pdf>>.
- Sanders, Edmund, "A Darfur Tree is Her Newsstand." Los Angeles Times. 4 March 2007. 6 March 2007 <<http://www.latimes.com/news/nationworld/world/la-fg-newshound4mar04,0,4420036.story?coll=la-home-headlines>>.
- Schmundt, Hilmar. "Web Access for All Rwandans." Spiegel. 29 Dec. 2006. 19 March 2007 <<http://www.spiegel.de/international/spiegel/0,1518,457000,00.html>>.
- Smithsonian Institution. Go Smithsonian. Washington: Smithsonian Business Ventures, Feb. 2007.
- Smithsonian Institution Research Information System. 2001-2004. March 2007
<<http://www.siris.si.edu/>>.

"Statistics of Facilities." Chart. SOS Children's Villages. Jan. 2006. 6 March 2007
<http://www.sos-childrensvillages.org/cgi-bin/sos/jsp/retrieve.do?lang=en&site=ZZ&hNav=show&nav=6.2&cat=/622_facilities_and_activities&BV_SessionID=@@@2098626993.1174963936@@@&BV_EngineID=cccfaddkgliihhicfngcfkmdhkhdfj.0>.

Stoller, Paul. "Signs in the Social Order: Riding a Songhay Bush Taxi." American Ethnologist 9.4 (1982) 750-762.

Tayler, Jeffrey. Angry Wind: Through Muslim Black Africa by Truck, Bus, Boat, and Camel. New York: Houghton Mifflin, 2005.

Taylor, Philip M. Munitions of the Mind. Manchester: Manchester University Press, 1990.

Tearfund international learning zone. 21 March 2007 < <http://tilz.tearfund.org/>>.

"Technology and Life Skills Education." International Youth Foundation Field Notes. Nov. 2006.

"The All Africa Internet Guide." 14 March 2007 <<http://www.goafrica.co.za/>>.

"The Global Anti-Shi'a Propaganda Campaign, Part IV: Sub-Saharan Africa." Global Issues Report 6 March 2007.

The World Bank. "Africa Development Indicators." 2006.

Theory Clusters (preferred link). Universiteit Twente. 18 Oct. 2006. 3 April 2007
<<http://library.duke.edu/research/citing/workscited/webpage.html>>.

"This Is Nollywood." <<http://www.thisisnollywood.com/nollywood.htm>>.

"Trade Routes in Africa Used by Militant Radical Islam (Part 1 of 3)." Global Issues Report 31 January 2006.

"Trade Routes in Africa Used by Militant Radical Islam (Part 2 of 3)." Global Issues Report 1 March 2006.

UNESCO Institute For Statistics. 2006. 22 Feb. 2007
<http://www.uis.unesco.org/profiles/selectCountry_en.aspx>.

United Nations Development Programme: HIV and Development Programme. "The Scenarios Conest." Scenarios from the Sahel. 1999. 2 April 2007
<http://www.undp.org/hiv/publications/sahel/chp2_3_a.htm>.

USAID Conflict Management. "Conflict in the Africa Region." 6 Feb. 2007. 15 February 2007 <http://www.usaid.gov/our_work/cross_cutting_programs/conflict/support/afr.html>.

U.S. Department of State. "Background Note: Chad." Sept. 2006. 14 March 2007 <<http://www.state.gov/r/pa/ei/bgn/37992.htm>>.

U.S. Department of State. "2005 Country Reports on Human Rights Practices, Mauritania." 8 March 2006. 2 April 2007 <<http://www.state.gov/g/drl/rls/hrrpt/2005/61581.htm>>.

Visual Griots: Mutual Understanding through the Art of Photography.
Washington:Academy for Educational Development, 2006.

Voice of America News. <<http://www.voanews.com/french/>>.

"Warren M. Robbins Library, National Museum of African Art." 22 Feb. 2007 <http://www.sil.si.edu/libraries/nmafa/nmafa_about.cfm>.

West, Harry G. and Fair, Jo Ellen. "Development Communication and Popular Resistance in Africa: An Examination of the Struggle over Tradition and Modernity through Media." African Studies Review 36, 1 (1993).

Willemot, Yves and Brahim Ould Isselmou. "Funds needed urgently to fight malnutrition in Mauritania." 4 May 2006. 6 March 2007 <http://www.unicef.org/infobycountry/mauritania_33777.html>.

Wise, Christopher, Ed. The Desert Shore: Literatures of the Sahel. Boulder: Lynne Rienner Publishers, Inc., 2001.

World Bank. Africa Development Indicators 2006. Washington: International Bank, 2006.

"World Bank Suspends Loans to Chad." BBC News. 6 Jan. 2006. 12 March 2007 <<http://news.bbc.co.uk/2/hi/business/4588412.stm>>.

"Worldwide Press Freedom Index 2005." Reporters without Borders. 3 April 2007 <http://www.rsfs.org/rubrique.php3?id_rubrique=554>.

About the Internship Project

This report is the result of a group of students selected for their varied academic backgrounds from the University of Nebraska-Lincoln. As project interns at the Global Innovation and Strategy Center in Omaha, Nebraska, the students worked 10-20 hours per week on a commercial network to explore ways that information may be transmitted to Muslim youth in the Pan-Sahel countries of Mauritania, Mali, Niger, and Chad.

After doing extensive primary research and consulting with several visiting guest speakers, the interns developed a plan of action to discover which channels of communication would be most effective for reaching the selected group. The interns reached out to numerous contacts working in academia, the United States Government, and the private sector to fill in research gaps and to gain new insight into solving the current communication problem in the region. The interns also organized a trip to Washington, D.C. to access the vast array of intellectual resources available in the nation's capitol.

Once the interns had an idea of the situation on the ground in the Pan-Sahel, they developed a series of ideas and methods that they believed would effectively communicate any variety of messages into the region. The ideas were then analyzed for their strengths and weaknesses. Numerous briefs were given to officials in the government and private sectors. The comments received from these briefs were taken into account, and the interns revised their ideas as necessary. After further analysis of each potential communication channel, several ideas were selected for final recommendation. These ideas were presented to US STRATCOM officials.

About the Authors

Christopher Neil Kerr graduated from University of Nebraska-Lincoln with an MBA – Agribusiness in May 2007. He was a Finance Major/Political Science Minor at Texas Christian University before working as a Market Maker at the Chicago Board Options Exchange and the International Securities Exchange while in Chicago from 1999-2001. He spent 2002-2004 working and traveling overseas.

Brett Becker Pettit graduated from Tulane University in 2006 as a member of the first post-Hurricane Katrina class. He holds dual degrees in Political Science and Philosophy. After taking graduate Political Science courses during the 2006-07 academic year at the University of Nebraska-Lincoln, he relocated to the Chicago area with his wife to pursue career opportunities in US national security.

Keith Benjamin Roland graduated from Doane College in Crete, Nebraska in 2002 with majors in International Relations and German. From 2003-2005, he was a Peace Corps Volunteer in the southern Africa country of Lesotho. He was primarily an English teacher for the equivalent of eighth and ninth grades, but also partook in various extra-curricular activities including HIV/AIDS awareness. He is currently pursuing his Master's degree in Political Science at the University of Nebraska-Lincoln.

Christopher John Steffens received his Master of Business Administration from the University of Nebraska-Lincoln in May 2007. He received his Bachelor of Business Administration in Management from Fort Hays State University in December 2004 where he also played baseball.

Maggie Elizabeth Tunning graduated from the University of Nebraska-Lincoln in May 2007 with a degree in Journalism and a second major in French. She will pursue career opportunities in the non-profit sector or publications in the United States or abroad.

Adrian Jahmal Natesa Whitsett is currently enrolled at the University of Nebraska – Lincoln pursuing dual Bachelor degrees in Broadcasting and Philosophy. From 1999-2003, he was a United States Marine stationed at Camp Kinser, Okinawa and Camp Lejuene, North Carolina and was a member of Operation Enduring/Iraqi Freedom during its initial phase in Iraq with 2nd Light Armored Reconnaissance Battalion.