PRELUDE TO SINGULARITY

CURATING BYTES - THE CHALLENGE OF PRESERVING DIGITAL MATERIAL FOR FUTURE ARCHAEOLOGY

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Abstract

An increasing amount of public debate is happening on social media. Nigerian government agencies are increasingly using social media and other cloud platforms to deliver services and communicate with the citizenry, but most of these platforms do not host their servers in Nigeria thus making an increasing amount of public debate and government records in foreign storage sites. Also, a number of social platforms that have at onetime hosted important conversations have seized operation and their data lost or archived in a non-readily accessible manner. To assess the extent of this migration, a survey of citizen-government interaction was conducted within the Northern States of Nigeria and a qualitative study involving civil servants was also conducted. This paper presents results from this study and proposes measures that will ensure that social media data is archived for posterity.

Keywords: Digital Anthropology, Digital Archaeology, Social computing, Digital Humanities, Social Media

INRODUCTION

With an increasing amount of social interaction (including important social debates) being on social media, digitally transmitted communication systems and other digital systems, the question of a future digital anthropology is becoming relevant. What happens when our posterity decides to form anthropology of our times? Such an endeavour must access these digital resources, thereby raising the question of its ownership.

Presently, public records are archived in the various national archives within the federation. Records of conferences, colloquiums, town hall meetings are stored within public libraries, libraries of universities, government agencies and other printed records. These records continue to serve as important source of information for historians, anthropologists and modern archaeologists.

But an increasing amount of public debate and interaction is now moving to the digital sphere. What, if any, measures are being taken to ensure that this information is not lost to future generations? For digital platforms that are hosted outside of the confines of Nigerian law, what measures are being taken to ensure that future generation of Nigerians are not denied access to this information?

Already, modern digital ethnography has developed tools in anticipation of a fully digital society, where possibly all debate and interaction is are mediated by the digitally (Lee, 2017). In recognition of the increasing importance of social media, the American government has already started archiving the tweets of American presidents (Gayyo-Avello, 2017). In Nigeria, President Goodluck Jonathan was the first President to use the Social media in interacting with Nigerians , as at January 2018, President Muhammdu Buhari already has both twitter and Facebook accounts (Abdullahi, 2017). The Nigerian federal government, the presidency also has twitter accounts and so do the President of the Senate and the Speaker of the House of Representatives (Abdullahi, 2017).

These digital accounts are increasingly becoming the main conduits of interaction between these leaders and Nigerians and are sometimes also the main records of public debate. These mediums will therefore serve as important records of the happenings within the Nigerian government and the larger society in our time. As more Nigerians are connected to the internet, the amount of these interactions and their corresponding importance is only set to increase.

But Facebook, Twitter and most of these platforms do not store their data in servers domiciled within Nigeria. And as there has been no government effort to archive these materials, it is justifiable to speculate that information that will be of immense importance

to Nigerian posterity is now held in foreign hands, this means that in the future, Nigerian archaeologists and anthropologists could be denied access to the information needed to form a complete understanding of their past. Whoever holds this information could potentially render present day digital media users digital hostages to be ransomed by their posterity.

Abdullahi (2017b) has also suggested that these social media platforms, rather than encouraging harmony and social integration, are instead actually amplifying the class and other differentials, which exists in the Nigerian society. These differentials include the rise of online dissident groups which are increasingly adopting cyber activism as a means of bypassing the restrictions imposed on them by the society (Abdullahi, 2017c).

Also, national consideration is not the only motive for digital archiving. Social platforms such as Digg, myspace, that have at onetime hosted important public conversations are now struggling to stay financially afloat. What happens to the records of these important public debates when these corporations collapse? Who will be allowed to access to these data in the future and what time would laws governing personal privacy seize to take primacy over the need for scientific research? These important questions remain unanswered even in more digitally advanced societies.

This paper presents the results of a survey that investigates the manner in which public debate and government-citizenry interaction is changing in Nigeria. With a particular emphasis in Northern Nigeria, we investigate whether there is indeed a digital shift in the nature of public debate and to what extent if any. Other nations, even those with a considerably larger digital infrastructure like the United States, have begun archiving measures, this paper investigate whether such measures are an imperative within the Nigerian context.

History enables mankind to answer the question 'why?' By making inferences from the records of what has happened, human societies are able to speculate and make deductions that better enable them to understand their present situations
Technological singularity theorises a point in our technological evolution wheretechnology serves as the main if not the only medium of human interaction (sandberg, 2010). At such a point, the history of mankind will primarily be digital or technology-based. Technological singularity is not merely a hypothesised forecast, since 1999, studies have indicated that human interaction is drifting towards the digital (ark and Selker, 1999).

Digital Anthropology and Cyber Ethnography
Digital Anthropology involves studying the interaction between man and the digital (Pink, 2016). It's an anthropological look at how digital tools are changing and affecting the nature

of human relationships.

A subset of digital anthropology is cyber ethnography. Digital or Cyber ethnography is a discipline that employs established anthropological principles to study human-digital interactions. (ward, 1999). Cyber ethnography is necessitated by the fact that digital communities have been observed to evolve completely new cultural symbols probably as a result of digital mediation (Caliandro, 2017). At present, it involves studying online communities such as social media, internet forums etc (Lee, 2017). But a substantial amount of important public discourse is now becoming digital thus expanding the scope of cyber ethnography.

Studies have shown that millennial generations are spending more and more time on digital services such as social media etc (Lenhart et al. 2010). Efforts at open government have also transferred numerous government services to digital platforms (Janssen et al. 2012). This transference in numerous areas involves harnessing social media and other third party applications to interact with the citizenry and sometimes to manage important public debate (Bertot et al. 2010).

This is not completely new; numerous anthropological studies of 19th century societies have had to look at third party news sources such as newspapers and tabloids which form records of important social information. This realisation inspired many libraries and archive agencies to store newspapers and magazines as important cultural and historical records (Yarrow et al, 2008)

Digital Archaeology
Digital archaeology is concerned about restoring digital records from lost or damaged digital storage devices (Costopoulos 2016).

With the rise in the general usage of cloud services, numerous backup strategies have been proposed in order to mitigate data loss. However, when large cloud providers go insolvent, there are no laws governing how data can be stored, archived or preserved. (Bischoff, 2017)
In post dotcom boom era, services and applications such as yahoo 360, orkut, pico, mobli, Tsu and bolt have gone defunct with hundreds of terrabytes of important social and personal data in legal limbo (Mollah et al, 2017). Many others like myspace, digg, Linda Ikeji Social etc are threatened by insolvency (Abdullahi, 2017). This presents Digital anthropologists with a challenge as to how they could successfully archive these important data and preserve it for future anthropological and historical efforts.

Digital culture
Digital culture is the discipline concerned with studying the emergent culture of digital era technologies as an expansion of digital anthropology; it is concerned with issues of privacy, digitisation, internet laws etc (Wokurka, 2017). Digital culture is particularly important for

Africans because of the recent effort to save African historical material by digitisation (Katil, 2016). These efforts mean that in the near future, historians and anthropologists might only be able access manuscripts and other historical sources through the digital. Indeed, many manuscripts in the Sahel have been lost through conflict and are now available only in digital form (Frede, 2017).

Digital Anthropology in Nigeria

Digital anthropology is still at its infancy in Nigeria. Although the government has made numerous efforts towards digital inclusiveness, digital penetration is still less than 50% (Abdullahi, 2017). But trends in government have shown that even government agencies, political parties and other socio cultural groups are starting to embrace digital technologies (Abdullahi, 2017). And a number of services such as news platforms are now dedicated wholly to the digital. Sites such as nairaland and linda ikeji social are domestic experiments in social networking which although aren't as popular as foreign media such as Facebook, do present important domestic cultural content that is Nigerian (Abdullahi, 2017).

But even though states like Kaduna are moving towards open government (Abdullahi, 2017), there has been no effort by the federal or any state government to insure the protection of Nigerian data which is often held in foreign servers. Nigeria's huge digital socio cultural content is often at the mercy of European privacy laws which as we have seen leave undefined many areas important for protecting the digital history of Nigerians.

While conventional archaeology for instance has made conscious effort at including locals and descendants in order to respect community customs (watkins, 2016), at present, privacy laws are silent as to the legal ownership of long forgotten data, especially those of the failed cloud networks. But this sort of data as we have seen contains a treasure of information that will help future historians and anthropologists that will most likely be completely reliant on the digital to form a cohesive history and ethnography of us, their ancestors. In the absence of agreed upon international conventions and any effort at archiving our digital material, our descendants run the risk of losing ownership of the digital foot prints of ~~their~~ us, their ancestors, just as we lost many of our own artefacts to archaeological theft and piracy.

RESEARCH METHODOLOGY AND RESULTS

Methods

From May 2015 to July 2017, 500 questionnaires were sent to each of the states of Northern Nigeria and the federal capital territory (Abdullahi, 2017d). Due to the problem of participant training, the questionnaires were manually filled using a number of social media political action groups. The data was then manually digitized. The questioner can be accessed at Abdullahi, 2017d. The Internet was also crawled for data about Nigerian government sites. This data was used to investigate the hosting status of government

generated digital resources.

183 focus group interviews were also conducted with civil servants employed by various states and federal government agencies in order to assess the limit of government investment in the various social media and cloud networking sites. The qualitative data was analysed using an iterative inductive approach. Fig one shows how the interviews were framed.

Fig 1 Focus Group Interviews.

Results

Results from the survey are limited to the 19 Northern States of Nigeria and the federal capital territory. They were aimed at determining the most popular social media sites used by both citizens and governments in Nigeria. This in turn could give us glimpses into which digital platforms are host to important public debates, debates which are important for digital anthropologists.

Data from the survey shows that 7812 out of 10,000 (N=10,000) said they used Facebook while 1860 said they used twitter. Facebook alone has more 56% of the social media users in Nigeria use Facebook. In total only 6 per cent of respondents said they used a Nigerian based social media platform. Fig 2 shows a chart with the share of each of the major social media platforms nairaland, lindaikeji social and Kanoonline are the only local social media sites that our respondents said they were active on. But even then, a 'who is' search of all three indicate that both nairaland and linda ikeji social were registered by godaddy, an American domain host and registrar while Kano online was registered by dreamhost, another American registrar. This does not necessarily mean that their data is being hosted in these foreign countries but it does increase the likelihood of it being so.
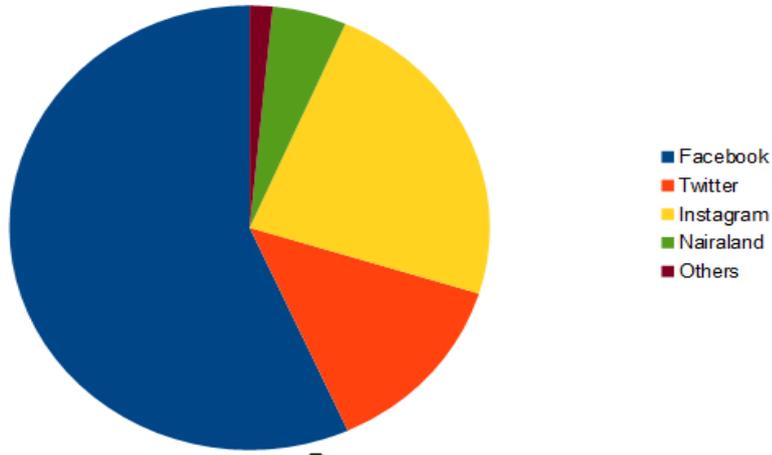
Fig 2: Responses on the usage of the various social media platforms

The essence of the focus group interviews was to determine if the nature of the digital drift, if any in the interaction between government and citizens in Nigeria. 183 civil servants (N=183) participated, first responding to a questioner and then giving the interview.

Asked to give a metric of social media of their various ministries, departments and agencies a rating scale from 1 to 10 (1 being least and 10 being most) for years starting 2000 to 2017 was used, All 183 respondents indicated that activity was below 5 until 2015. This shows that at 2015, there was a considerable jump in the social media activity of government Ministries, departments and Agencies. The metric continued to climb reaching maximum in July 2017, the date of the interview. Fig 3 shows a chart showing the metrics of each year, given by each of the respondents summed together
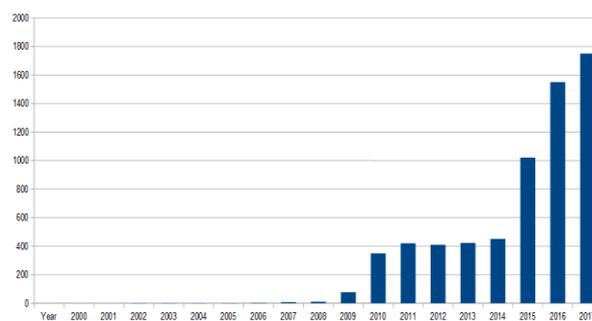

Fig 3- Govt- citizen interaction on social media (2000- 2017)

When the internet was crawled, 90 Ministries, departments and Agencies were found to have a presence on the internet while 82 federal ministries departments and agencies were

found to have a digital presence. When these sites where crawled and their ip addresses correlated with name servers in order to determine the hosts of their sites, 0 where discovered to have Nigerian based hosts. It was discovered that even main site of Nigeria's federal government, nigeria.gov.ng is being hosted at an Amazon server. While NIRA, the Nigerian Internet Registration Association and Galaxy Backbone are the most popular local hosting agencies, with only 19% of the surveyed agencies using local hosts. (See Fig 4)
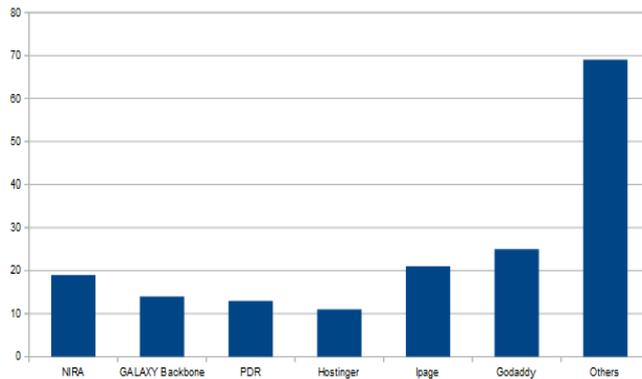

Fig 4- Distribution of government websites in Nigeria

Analysis

Results have shown that more than 90% of Nigerians in the Northern States use non local social media for interacting with one another and with the government. This possesses a significant challenge for the future which is seen as there is no attempt to archive this data within Nigerian shores or with entities that can guaranty Nigeria's posterity of access to those data.

The number of Nigerians using these social platforms is only set to increase as more Nigerians join the internet. As Fig 3 indicates, even government agencies have only recently began building up an online presence. This points to a definite digital drift- an indication that Nigeria's reliance on the digital is increasing not reducing. For digital anthropologists, this possess a significant challenge as to how a cohesive ethnography of Nigeria's digital space can be formed, but it possess an even bigger challenge because this data could very well be lost or held hostage by a foreign nation.

As we have seen in the Background, anthropological studies of social media sites like Facebook are very hard, this is due to the privacy settings and the overall policies of the media platform, so modern day digital anthropologists will very likely never be able to access enough data that willenable a coherent anthropological study, this leaves out the very task for future generations. Facebook however does not host any of its data centres in Nigeria, with the looming threat of distributive social media and under present geo political conditions, the valuable information stored on servers such as Facebook's falls outside of the

domains of Nigerian digital anthropologists.

Data from the government's online presence is also not encouraging. With only 19% of government media stored with local hosts, valuable information of immense historical importance is further endangered.

CONCLUSION

The results of this study point to a looming threat of scholarly oblivion facing future and indeed even contemporary Nigerian digital anthropologists. In the absence of a national policy for digital archiving, the continued usage of foreign cloud services and foreign owned social media leaves Nigeria's posterity at the mercy of foreign laws. Such laws as history has shown are rarely tailored to serve the interests of nations other than nation.

The results also point conclusively to a digital drift – this implies that Nigeria's digital presence is only getting higher and therefore with time, makes the problem even bigger. It therefore becomes imperative for a cohesive national action plan that will mitigate against this data exodus.

The strategy could involve:

1. Setting up data farms by the national library of Nigeria inorder to archive this data therefore making it available for posterity
2. Instituting policies that will require government agencies, officials, government funded organisations and political parties to use a locally owned social and cloud media platform.
3. Enforcing by legislation measures that will ensure government agencies only use locally based hosting platforms for digital services.
4. As a matter of policy, nations like Nigeria should work towards having an international convention of digital data that will ensure the principle of hereditary access, making Nigeria's posterity the owners of the huge amount of data which we currently generate and which is being held outside of our jurisdiction.

The data used in this research is limited to the Northern states of Nigeria; future research might investigate the implications of digitisation in the Nigerian south.

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