Abstract

The purpose of this senior project is to explore the technologies available and required to facilitate the transfer of inexpensive data between those in the developed world using internet messaging platforms and individuals in the developing world hoping to receive messages by way of Short Message Service (SMS). As cellular connectivity increases, so does internet connectivity in the developing world. In fact, internet usage on the African continent has increased by 7,415.6% since 2000.¹

With this unprecedented growth, multinational technology companies are setting their sights on Africa as the burgeoning market continues to expand. Facebook’s Internet.org non-profit has already launch in Angola, Benin, Cape Verde, Democratic Republic of the Congo, Gabon, Ghana, Guinea, Guinea-Bissau, Kenya, Liberia, Madagascar, Malawi, Mauritania, Mozambique, Niger, Nigeria, Republic of Congo, Rwanda, Senegal, Seychelles, South Africa, Tanzania, Zambia. Of the 49 countries with which the program is currently operating, 23 of them are African countries. This program allows everyday users to use an amended version of the internet at little or no cost.

¹ http://www.internetworldstats.com/stats.htm
Proposed Approach

Taking advantage of Facebook’s Internet.org platform, this project will try to facilitate the cheapest transferal of messages from a messaging platform to SMS devices. Of greatest importance in this project is the efficiency with which messages can be sent. We will consider efficiency from three interconnected facets.

- First, we will examine cost. How much does it cost for each of these messages to be sent? Can we undercut international data rates through our technology?
- Second, are there creative manners in which we can cut down on the amount of data that is being transferred?
- And finally, we will ensure the privacy and security of messages sent on our platform.

Users will be able to send/receive messages on a web platform I’ve already built. However, users in Africa will be able to enable a “in the field” feature that will allow text forwarding to their SMS phone numbers. Messages, including their SMS responses, will be visible on the web app messenger’s chat history. SMS messages will likely be delivered with a text code operating as a “cookie” to determine where messages are delivered/received. This will primarily allow individuals engaged in agricultural activities to stay in touch with internet resources/communications where SMS technologies exist but internet technologies do not.
**Deliverable**

The deliverable for this project will be a full-depth analysis of technologies and services required to facilitate the messaging platform. A detailed infographic of these technologies and their associated costs, ultimately arriving with a cost estimate for our service in conjunction with the other two KPIs, namely security and data efficiency/reliability. If time and feasibility permit, the messaging platform will be built on top of the messaging platform I already have in place and messaging will be piloted in Nigeria.