Closing the Digital Divide: Sharing OER with Libraries, Schools, and Public Health Facilities in Africa and the World

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Available at: https://works.bepress.com/jeremy-smith/8/
Closing the Digital Divide

Sharing OER with Libraries, Schools and Public Health Facilities in Africa and the World

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53% of the world’s population, lack information capital that could be key toward bettering their lives in the way they themselves think it should be improved.

(Source: International Telecommunication Union [ITU], 2016b, p. 2)
Efforts to close the digital divide

Google’s Project Loon

Facebook’s Aquila Drone

OneWeb’s Proposed Satellite Constellation
An Alternative and Operational System

• No cost to the ‘bit-less’

• Provides the ‘bit-less’ information THEY want

• Relies on “Open Access” and “Commons-based Peer Production”
Commons-based Peer Production
(Yochai Benkler, 2006)

An internet-based phenomenon, with three key characteristics

1. Identification of problems and their solutions are “decentralized”
2. Diverse motivations of participants
3. Governance is separated from property
OER Technology Framework: $12 Keepod PC for Students

- Keepod v1
- Keepod vNext
- Keepod USB PC
- Boots to Chromium OS
- Students use Keepods to access OER
OER Partners: **Google Apps for Education**
OER Technology Framework: v1...Outernet for OER Delivery

Outernet Mobile Hotspots

Outernet National Library

Outernet Content Browser
OER Technology Framework: v2... World Possible & Rachel Pi

Rachel Pi **Server & Hotspot Device**

Rachel Pi **OER Content Packs**
OER Partners: **University of Massachusetts Amherst**

UMass Amherst Library

Professor Charlie Schweik
School of Public Policy

Global Librarians Team
System Components

1. A “Requester” – with a Smartphone or Data Plan

2. World Possible’s “RACHEL Plus”

3. A Peer “Searcher”

4. An “intermediary” in-country Courier with Internet access

5. Communication/Storage systems

- Twitter
- Google Drive
- Slack
- eMule

- Remote Area Community Hotspot for Education and Learning
  - Copies of Educational Websites are Stored on RACHEL Plus;
  - Videos, Podcasts, Learning Exercises, and More – Free!
  - No Internet is Used or Required
  - Works with all Laptop, Desktop, or Tablet Computers
  - 6-hour Battery, 500GB Storage
  - Up to 50 Users, Wired or Wireless
  - $399/each
A key component for this project
Step 1. Establish Requester – Searcher Peer relationship
Step 2. Establish Requester – Searcher Communication

Peer “Bit-less” Requester
Teacher or librarian with a mobile data plan

Peer Searcher

Messaging

eMule

UMass

UMA World Librarians
@UMA_WorldLibr
Joined February 2017
Step 3. Requester sends a content request

Peer “Bit-less” Requester
Teacher or librarian with a mobile data plan

Content Request

Peer Searcher
Step 4. Request Acknowledged

Peer “Bit-less” Requester

Teacher or librarian with a mobile data plan

Request Acknowledged

Peer Searcher
Step 5. Searcher looks for relevant Open Access digital content
Step 6. Searcher shares found content with in-country Courier

Peer Searcher

Google Drive

“Content found, on its way”

Intermediary Courier

Peer “Bit-less” Requester

U Mass World Librarians
UMA World Librarians
@UMA_WorldLib
Joined February 2017

shiftit

Carl Meyer
Step 7. Courier physically delivers content to requester; uploads to RACHEL Plus
OER Workflow: Captured Feedback Improves the Process

@NanchengwaLodge check our barrel ponics going crazy @Outernet_UMA @outernetindo @OuternetForAll with charcoal beds

@Outernet_ARHS yes it is perfect! Zikomo kwambiri - Thank you very much! This is our school @ProjEmpathy @shiftITmw

@Outernet_UMA Q1 eng L Content on construction of aquaponics systems & types of plants & fish that thrive in such systems with windmill pump

@Outernet_UMA thank you for this data! Can you send #PEREQ hairdressing info for #African hair? Braids styles?
Twitter conversation example

National Library System
Blantyre Branch, Malawi
Twitter conversation example

Green Malata School, Malawi
Commons-based Peer Production
(Yochai Benkler, 2006)

1. Identification of problems and their solutions are “decentralized”
   • Problem: Information need by requester
   • Solution: Information found by searcher

2. Diverse motivations of participants
   • Searcher motivations: “serious leisure”; Paid (e.g., research librarian); “to do good” (e.g., peer kids in searcher school)

3. Governance is separated from property
   • World Possible’s RACHEL database IS a system where governance is not separated from property
   • Request-search-upload IS decentralized, self governing peer to peer system
Conclusion

- Multiple operational peer-to-peer instances in Malawi
- Want to develop a system that can be replicated and scaled up
- Want to expand the peer-to-peer network