

Adoption of Web 2.0 in African National Libraries: An Evaluative Study

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Abstract

Purpose: This paper aims to provide an overall picture of the application of Web 2.0 technologies in national libraries in African countries. The focus of the research was to examine the types of Web 2.0 technologies that were used in national library websites and their features. **Design/methodology/Approach:** Content analysis was used in terms of quantitative approach. A checklist as the main research instrument was developed based on other checklists and questionnaires. Data were collected by accessing National library Web sites of African countries. **Findings:** In the African continent out of 61 countries 51 countries have national libraries. 31 of these have web presence and 10 national libraries are using Web 2.0 technologies in their websites. **Research limitations:** A combination of content analysis with survey and / or interview may enable future researchers to analyze other aspects (e.g. the application of internal wikis or the use of instant messaging for reference services) of Web 2.0 that a single method of content analysis could not gain. This study explores the application of Web 2.0 and is useful for all types of national libraries in evaluating/deploying Web 2.0.

Keywords: Africa, National Libraries, Web 2.0, World Wide Web

1. Introduction

Today Web 2.0 has been gainfully deployed in many fields such as e-commerce, online advertising, entertainments, gaming, host of online services etc. It also has been a widely applied technology in the library by the library community. This technology facilitates and also redefines sharing of information, and the cumulative web usage. The study covered Adoption of Web 2.0 tools and technologies in African national libraries.

2. Literature Reviews

Several papers have been published on the theoretical and generic aspects of Web 2.0 tools and technologies (O'Reilly, 2005; Linh, 2008; Miller, 2005; Naik, 2008). Some papers have also been published on the application of Web 2.0 tools and technologies in libraries, their advantages,

disadvantages, etc. (Kelly, 2009; Bradley, 2007; Stephens and Collins, 2007 etc...). More recently some researchers have presented issues based on practical experiences of applications of Web 2.0 tools and technologies (Arif & Mahmood, 2010; Farkas, 2007; Godwin and Parker, 2008; Sauer, 2006; Baro, Idiodi & Godfrey, 2013 etc...). The present study will show effective and reasonable ways of using Web 2.0 in African national libraries.

3. Research Objects

- Identify the Web 2.0 technologies that are applied in African national libraries,
- Identify the purpose of use of Web 2.0 tools and technologies, and
- Identify the characteristics of Web 2.0 tools and technologies.

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4. Research Design/Methodology

The study used content analysis method. Research sample identifies all African National Libraries with an official website and using Web 2.0 tools and technologies in their websites. The research instrument was used in the form of a checklist for collecting data (Table 1). The checklist consisted of checkpoints along with alternative answers

(Y=YES=1 and N=NO=0) and the list of national libraries that apply any Web 2.0 technologies.

Data from the websites of national libraries were gathered by looking at links such as ‘news’, ‘new titles’, ‘library communications’, ‘library services’ and also words like ‘blog’, ‘Library blog’, ‘instant messaging’, ‘RSS’, ‘facebook’, etc to identify the use of Web 2.0 tools and technologies.

5. Findings

Table 1. Checklist of African national libraries

No.	(Checkpoints)	A	B	C	D	E	F	G	H	I	J
Category 1 – Web 2.0 uses											
1	Does the library use any types of web 2.0 technologies?	1	1	1	1	1	1	1	1	1	1
2	Does the library use RSS?	1	0	1	0	0	0	0	1	0	1
3	Does the library use Social networking? (ex. Facebook, myspece, twitter)	1	1	0	0	1	1	1	0	1	1
4	Does the library use blogs?	0	0	0	1	0	1	0	0	0	1
5	Does the library use Vodcasts? (ex: You Tube)	1	0	0	0	1	1	1	0	0	0
6	Does the library use tagging? (ex: Delicious,)	0	0	0	0	0	0	0	0	0	0
7	Does the library use podcasts?	0	0	0	0	0	0	0	0	0	0
8	Does the library use instant messaging?	0	0	1	0	0	0	0	0	0	0
9	Does the library use wikis?	0	0	0	0	0	0	0	0	0	0
10	Does the library use mashups? (ex: Google map)	0	0	1	0	1	1	0	0	0	1
Category 2 – RSS use											
Purposes of RSS use											
11	General news / Information?	1	0	1	0	0	0	0	1	0	1
12	Library news and events?	1	0	1	0	0	0	0	1	0	1
13	New books arrivels?	0	0	0	0	0	0	0	1	0	1
14	New - journals?	0	0	0	0	0	0	0	1	0	0
15	New databases?	0	0	0	0	0	0	0	1	0	0
16	Custom catalogue searches?	0	0	0	0	0	0	0	0	0	0
17	Others?	0	0	0	0	0	0	0	0	0	0
Characteristics of the library RSS											
18	Adequacy of instructions on how to use RSS?	1	0	0	0	0	0	0	0	0	0
19	Provide links to download RSS readers?	1	0	0	0	0	0	0	0	0	0
20	Library builds its own RSS readers?	0	0	0	0	0	0	0	1	0	0
21	Entries are classified into category wise?	1	0	1	0	0	0	0	1	0	0
22	Entries is searchable by key words?	1	0	1	0	0	0	0	1	0	1
23	Entries are browsable by date?	1	0	1	0	0	0	0	1	0	0
24	Entries are browsable by topic?	1	0	1	0	0	0	0	1	0	0
25	There are links to the relevant Internet resources?	1	0	1	0	0	0	0	1	0	0

26	The latest postings are within the last 2 days?	1	0	1	0	0	0	0	0	0	0
27	Link to the library's home page?	1	0	0	0	0	0	0	0	0	0
Category 3 – Blogs use											
Purposes of the library blogs											
28	General news / Information?	0	0	0	1	0	0	0	0	0	1
29	Library news and events?	0	0	0	0	0	0	0	0	0	1
30	Library services?	0	0	0	0	0	0	0	0	0	1
31	New books?	0	0	0	0	0	0	0	0	0	1
32	Book reviews?	0	0	0	0	0	0	0	0	0	0
33	Book discussions?	0	0	0	0	0	0	0	0	0	0
34	Information literacy?	0	0	0	0	0	0	0	0	0	1
35	Research tools?	0	0	0	0	0	0	0	0	0	0
36	Suggestions?	0	0	0	0	0	0	0	0	0	0
37	Others?	0	0	0	0	0	1	0	0	0	0
Characteristics of the library blogs											
38	Adequacy of instructions on how to use blogs?	0	0	0	1	0	0	0	0	0	0
39	Library designs its own blogs?	0	0	0	1	0	0	0	0	0	1
40	Library uses RSS to feed blogs' entries?	0	0	0	1	0	0	0	0	0	0
41	Link to the library's home page?	0	0	0	0	0	0	0	0	0	1
42	There are dates and times of postings?	0	0	0	1	0	0	0	0	0	1
43	There are categories for postings?	0	0	0	0	0	0	0	0	0	1
44	There are archives for the blogs ?	0	0	0	1	0	0	0	0	0	0
45	The latest postings are within the last 2 days?	0	0	0	0	0	0	0	0	0	0
46	There are links to the relevant Internet resources?	0	0	0	0	0	0	0	0	0	1
47	There are links to similar blogs?	0	0	0	0	0	0	0	0	0	0
48	Entries are searchable by keywords?	0	0	0	0	0	0	0	0	0	0
49	Entries are browsable by topics?	0	0	0	0	0	0	0	0	0	1
50	Entries are browsable by date?	0	0	0	1	0	0	0	0	0	0
51	Archival entries are up to 1 year?	0	0	0	0	0	0	0	0	0	1
52	Archival entries are more than 1 year?	0	0	0	0	0	0	0	0	0	0
Category 5 – Instant messaging use											
Purposes library instant messaging use											
53	Reference services?	0	0	1	0	0	0	0	0	0	0
54	Advice on library services?	0	0	1	0	0	0	0	0	0	0
55	Guidance with resources	0	0	1	0	0	0	0	0	0	0
56	Others?	0	0	0	0	0	0	0	0	0	0
Characteristics of the library instant messaging											
57	Adequacy of instructions on how to use instant messaging?	0	0	0	0	0	0	0	0	0	0
58	Library offers text-based chat?	0	0	1	0	0	0	0	0	0	0
59	Library offers voice chat?	0	0	0	0	0	0	0	0	0	0
60	Instant messaging services are available eight hours a day?	0	0	1	0	0	0	0	0	0	0
61	Instant messaging services are available more than eight hours a day?	0	0	0	0	0	0	0	0	0	0

Category 6 – podcasts use											
Purposes of library podcasts use											
62	Library orientation tours?	0	0	0	0	0	0	0	0	0	0
63	General searching skills?	0	0	0	0	0	0	0	0	0	0
64	Searching the library catalogue?	0	0	0	0	0	0	0	0	0	0
65	General information?	0	0	0	0	0	0	0	0	0	0
66	Advice on library skills?	0	0	0	0	0	0	0	0	0	0
67	Study skills workshops?	0	0	0	0	0	0	0	0	0	0
68	Using research tools?	0	0	0	0	0	0	0	0	0	0
69	Guidance with resources?	0	0	0	0	0	0	0	0	0	0
70	Library news?	0	0	0	0	0	0	0	0	0	0
71	Book reviews?	0	0	0	0	0	0	0	0	0	0
72	Others?	0	0	0	0	0	0	0	0	0	0
Characteristics of the library podcasts											
73	Adequacy of instructions on how to use podcasts?	0	0	0	0	0	0	0	0	0	0
74	Link to the library's home page?	0	0	0	0	0	0	0	0	0	0
75	Podcasts are searchable by keyword?	0	0	0	0	0	0	0	0	0	0
76	Podcasts are browsable by topics/category?	0	0	0	0	0	0	0	0	0	0
77	Podcasts are browsable by date?	0	0	0	0	0	0	0	0	0	0
78	Archival podcasts are up to 1 year?	0	0	0	0	0	0	0	0	0	0
79	Archival podcasts are more than 1 year?	0	0	0	0	0	0	0	0	0	0
80	The latest postings are within the last 2 days?	0	0	0	0	0	0	0	0	0	0
81	Library uses RSS to feed podcasts?	0	0	0	0	0	0	0	0	0	0
82	A transcript accompanies each podcast?	0	0	0	0	0	0	0	0	0	0
Category 7 – Vodcasts use (YouTube)											
Purposes of Vodcasts use											
83	Library orientation tours?	1	0	0	0	1	1	1	0	0	0
84	General searching skills?	1	0	0	0	0	1	1	0	0	0
85	Searching the library catalogue?	0	0	0	0	0	0	0	0	0	0
86	General information?	0	0	0	0	1	1	1	0	0	0
87	Advice on library skills?	0	0	0	0	0	0	0	0	0	0
88	Study skills workshops?	1	0	0	0	0	0	1	0	0	0
89	Using research tools?	0	0	0	0	0	0	0	0	0	0
90	Guidance with resources?	0	0	0	0	0	0	0	0	0	0
91	Library news?	1	0	0	0	0	0	1	0	0	0
92	Book reviews?	0	0	0	0	0	0	0	0	0	0
93	Others?	0	0	0	0	0	0	0	0	0	0
Characteristics of the library Vodcasts											
94	Adequacy of instructions on how to use Vodcasts?	0	0	0	0	1	0	0	0	0	0
95	Link to the library's home page?	0	0	0	0	0	0	1	0	0	0
96	Vodcasts are searchable by keyword?	0	0	0	0	0	0	0	0	0	0
97	Vodcasts are browsable by topics?	1	0	0	0	0	0	1	0	0	0

98	Vodcasts are browsable by date?	1	0	0	0	1	0	1	0	0	0
99	Archival Vodcasts are up to 1 year?	1	0	0	0	1	0	1	0	0	0
100	Archival Vodcasts are more than 1 year?	0	0	0	0	0	0	0	0	0	0
101	The latest postings are within the last 2 days?	0	0	0	0	0	0	0	0	0	0
102	Library uses RSS to feed Vodcasts?	0	0	0	0	0	0	0	0	0	0
103	A transcript accompanies each Vodcasts?	0	0	0	0	0	0	0	0	0	0
	Category 8- Bookmarking use										
	Purposes of Bookmarking										
104	Library is Tagging General information?	0	0	0	0	0	0	0	0	0	0
105	Tagging Library news and events?	0	0	0	0	0	0	0	0	0	0
106	Tagging Library New books?	0	0	0	0	0	0	0	0	0	0
107	Tagging Information literacy?	0	0	0	0	0	0	0	0	0	0
108	Tagging Research information?	0	0	0	0	0	0	0	0	0	0
109	Others?	0	0	0	0	0	0	0	0	0	0
	Characteristics of the library Bookmarking										
110	Adequacy of instructions on how to use bookmarking?	0	0	0	0	0	0	0	0	0	0
111	Library designs its own bookmarking?	0	0	0	0	0	0	0	0	0	0
112	Library uses RSS to feed bookmarking entries?	0	0	0	0	0	0	0	0	0	0
113	Link to the library's home page?	0	0	0	0	0	0	0	0	0	0
114	There are dates and times of tagging information?	0	0	0	0	0	0	0	0	0	0
115	There are categories for tagging information?	0	0	0	0	0	0	0	0	0	0
116	The latest tagging is within the last 2 days?	0	0	0	0	0	0	0	0	0	0
117	There are tagging to the relevant Internet resources?	0	0	0	0	0	0	0	0	0	0
118	There are networking links to other national libraries bookmarking?	0	0	0	0	0	0	0	0	0	0
119	Entries are searchable by keywords?	0	0	0	0	0	0	0	0	0	0
120	Entries are browsable by topics?	0	0	0	0	0	0	0	0	0	0
	Category 09- Social networking use										
	Purposes of the library Social networking										
121	Library use any type of Social Networking?	1	1	0	0	1	1	1	0	1	1
122	Library use Facebook?	1	1	0	0	1	1	1	0	1	1
123	Library use Fliker?	0	0	0	0	0	0	0	0	0	0
124	Library use Twitter?	0	1	0	0	1	1	1	0	1	0
125	Sharing General information?	1	1	0	0	1	1	1	0	1	1
126	Sharing Library news and events?	1	1	0	0	1	1	1	0	1	1
127	Sharing online Library services?	0	0	0	0	1	1	1	0	0	1
128	Sharing new books?	0	0	0	0	1	1	1	0	1	0
129	Sharing Book reviews?	0	0	0	0	0	1	1	0	0	0
130	Book discussions on social networking?	0	0	0	0	0	1	1	0	0	0
131	Sharing Information literacy on social networking?	0	1	0	0	1	1	1	0	0	1
132	Sharing Research tools?	0	0	0	0	0	0	0	0	0	0
133	Suggestions?	0	0	0	0	0	0	0	0	0	0
134	Others?	1	0	0	0	0	0	0	0	0	0

Characteristics of the library social networking											
135	Adequacy of instructions on how to use different social networking sites?	0	0	0	0	0	0	0	0	0	0
136	Library designs its own social networking sites?	0	0	0	0	0	0	0	0	0	1
137	Library uses RSS to feed for social networking sites' entries?	0	0	0	0	0	0	0	0	0	0
138	Link to the library's home page?	1	0	0	0	1	1	1	0	1	1
139	There are dates and times of sharing information postings?	1	1	0	0	1	1	1	0	1	1
140	There are categories for postings?	0	0	0	0	0	0	0	0	1	0
141	There are archives for the social networking sites?	1	1	0	0	1	1	1	0	1	1
142	The latest postings are within the last 2 days?	1	0	0	0	1	1	0	0	0	0
143	There are links to the relevant Internet resources?	0	1	0	0	1	1	1	0	1	0
144	There are links to similar/other social networking sites?	1	1	0	0	1	0	0	0	0	0
145	Entries are searchable by keywords?	0	0	0	0	0	0	0	0	0	0
146	Entries are browsable by topics?	0	0	0	0	0	0	0	0	1	0
147	Entries are browsable by date?	1	1	0	0	1	1	1	0	1	1
148	Archival entries are up to 1 year?	1	1	0	0	1	1	1	0	1	1
149	Archival entries are more than 1 year?	0	0	0	0	0	0	1	0	1	0
150	A transcript accompanies each entries?	0	0	0	0	0	0	0	0	1	0
Category 10- Mashups use											
Purposes and Characteristics of Mashups											
151	Content providers?	0	0	1	0	1	1	0	0	0	1
152	Mashup site?	0	0	1	0	1	1	0	0	0	1
153	Clint browser?	0	0	1	0	1	1	0	0	0	1
154	Link to the Online Mapping?	0	0	1	0	1	1	0	0	0	1
155	Link to the Online shopping?	0	0	0	0	0	0	0	0	0	0
156	Availability of Online search?	0	0	0	0	1	0	0	0	0	0
157	Link to the Audio sites?	0	0	0	0	0	0	0	0	0	0
158	Link to the Video sites?	0	0	0	0	1	0	0	0	0	0
159	Link to the Travel details sites?	0	0	0	0	0	0	0	0	0	0
160	Link to the News sites?	0	0	0	0	1	0	0	0	0	0
161	Link to the Sports sites?	0	0	0	0	0	0	0	0	0	0
162	There is link to the Online messaging sites	0	0	0	0	0	0	0	0	0	0
Characteristics of Mashups											
163	Link to the google map site?	0	0	1	0	1	1	0	0	0	1
164	There is a satalite option?	0	0	1	0	1	1	0	0	0	1
165	There is a addres of the library?	0	0	1	0	1	1	0	0	0	1
166	There is a place searching options?	0	0	0	0	1	1	0	0	0	1
167	Link to the library's home page?	0	0	0	0	1	0	0	0	0	1
168	link to the google search?	0	0	0	0	1	0	0	0	0	0
Total checkpoints		34	14	24	9	38	34	29	13	18	42
Application Index		20	8	14	5	22	20	17	8	11	25

Note: Answers **Yes = 1, No = 0**. This checklist has 168 questions in total; **Application Index = Total of 'Yes' answers/Total of checkpoints X 100**; (A= Kenya National Library Services; B= National Library of Malawi; C= National Library of Mauritius; D= National Library of Nigeria; E= National Library of Rwanda; F= Kenya National Library Services; G= National Library of South Africa; H= National Library of Somalia; I= National Library of Tunisia; J= National Library of Uganda)

Table 2. List of National libraries used Web 2.0 in the African Continent

Sl. No.	African national libraries	Application of Web 2.0 checkpoints N=168
1	National Library of Uganda	42 (25%)
2	National Library of Rwanda	38 (22.6%)
3	Kenya National Library Services	34 (20.2%)
4	National Library of Somalia	33 (19.6%)
5	National Library of South Africa	29 (17.3%)
6	National Library of Mauritius	24 (14.3%)
7	National Library of Malawi	14 (8.3%)
8	National Library of Tunisia	18 (11.3%)
9	National Central Library, Tanzania	13 (7.7%)
10	National Library of Nigeria	9 (5.4%)

The maximum adoption of Web 2.0 in African national libraries was found in National Library of Uganda (25%), followed by the National Library of Rwanda (22.6%), Kenya National Library Services (20.2%), National Library of Somalia (19.6%), National Library of South Africa (17.3%), National Library of Mauritius (14.3%) and the National Library of Nigeria (5.4%) (Table 2).

Table 3. Types of Web 2.0 used in African national libraries

Sl. No.	Types of Web 2.0 Tools	Number of National Libraries used Web 2.0
1	Social networking sites	7 (70%)
2	RSS	4 (40%)
3	Blog	3 (30%)
4	Mashups	4 (40%)
5	Vodcasts	4 (40%)
6	Podcasts	0
7	Instant Messaging	1 (10%)
8	Folksonomy / Tagging	0
	Total national libraries	10 (9.2%)

Table 3 shows that various types of Web 2.0 used in the national libraries of the African Continent. SNS was being used by 7 of the 10 national libraries studied and Instant Messaging was being used in only one of the 10 libraries (Chart 1).

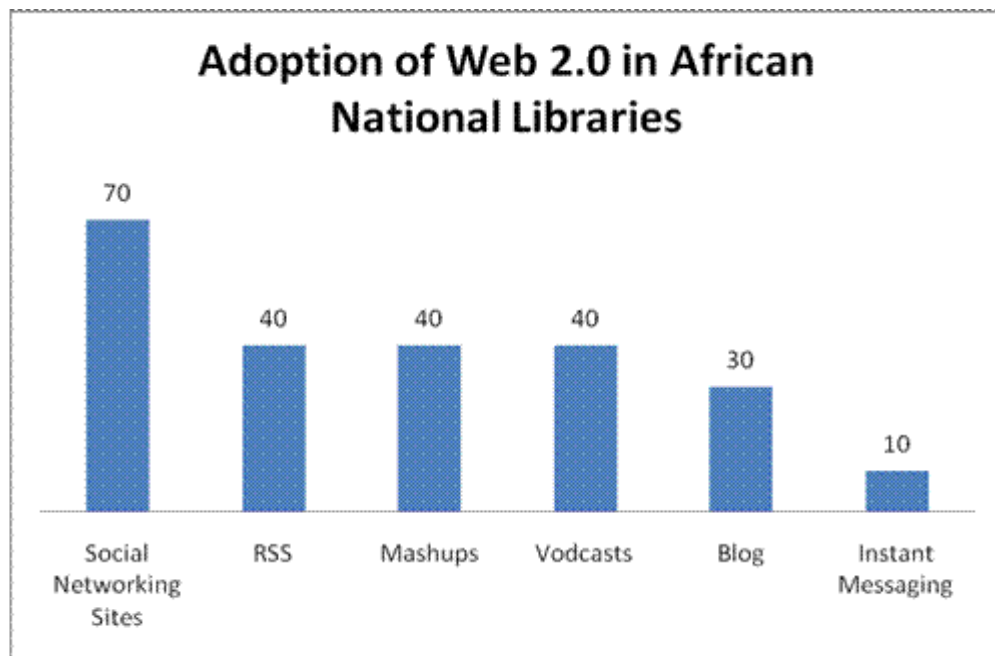


Chart 1. Various types of Web 2.0 used in African national libraries

6. Purposes of Web 2.0 in African National Libraries

In general libraries adopted web 2.0 tools for various purposes like sharing and disseminating information about library news and events, services, new book arrivals, book reviews, etc. (Table 4).

Table 4. Purposes of Adoption of Web 2.0 in African National libraries

Sl. No.	Purposes of Web 2.0 tools	African national libraries (N=10)
1	Sharing General information	07
2	Sharing Library news and events	07
3	Sharing online Library services	04
4	Sharing new books	04
5	Sharing Book reviews	02
6	Book discussions	02
7	Sharing Information literacy	05
8	Sharing Research tools	00

7. Features of Web 2.0 in African National Libraries

Almost of the national libraries adopted web 2.0 tools, having some basic features (Table 5).

Table 5. Features of Web 2.0 in African National libraries

Sl. No.	Characteristics of social networking	African national libraries (N=10)
1	Link to the library's home page?	06
2	There are dates and times of sharing information postings?	07
3	The latest postings are within the last 2 days?	03
4	There are links to the relevant Internet resources?	05
5	Entries are browsable by date?	07
6	Archival entries are up to 1 year?	07
7	Transcripts accompanies each postings	01

8. Conclusions

Overall it was observed that only 10 out of 31 national libraries used various Web 2.0 technologies like Social Networking Sites (SNS), Blog, RSS, Mashups, Vodcasts and Instant Messaging. The general Application Index is still low as the mean application index is 9 and the highest index is 42. Among Web 2.0 technologies utilized by African National libraries, SNS was the most widely applied technology and instant messaging was the least used technology. Web 2.0 technologies were mainly applied for specific purposes. Similarly, each Web 2.0 technology appeared on the library websites with basic features.

This research provides a broad picture of application of Web 2.0 in National libraries of African countries. It attempts to provide African national libraries with helpful information to better meet their user needs by effectively applying Web 2.0 tools and technology.

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