

A Survey of the Awareness and Use of Web 2.0 Technologies by Library and Information Professionals in Selected Libraries in South West Nigeria

Sarah Okonedo^{1,*}, Felix Chimeziri Azubuike², Samuel O. Adeyoyin¹

¹Nimbe Adedipe Library, Federal University of Agriculture, Abeokuta, Nigeria

²Library Section, Financial reporting council, Lagos, Nigeria

Abstract This paper examined the awareness and use of Web 2.0 technologies by library and information professionals (LIPs) in selected libraries in Southwest Nigeria. Descriptive survey was adopted for this study. The sample size comprised of 230 library and information professionals from the population of 310 from 39 selected university and special libraries in Southwest Nigeria. Data was collected through questionnaire and analyzed using the descriptive statistics of frequency and simple percentage scores. The findings indicated high level of awareness of the existence of Web 2.0 technologies among library and information professionals and that only few were not aware of the existence of these technologies due to lack of publicity. The types of Web 2.0 technologies used are social networking tools (facebook, Twitter, Hi5, LinkedIn); Instant messaging; Blogs and Wikis. The major challenges to the use of Web 2.0 technologies included low bandwidth, time constraint, inadequate training, and lack of funds to undergo training, inadequate power supply and lack of web 2.0 skills. It was therefore recommended that the hands-on training should be increased while all relevant stakeholders like the Nigerian Library Association, Library schools, Librarians' Registration Council of Nigeria, libraries, etc should assist in creating more awareness on the use and benefits of Web 2.0 technologies.

Keywords Web 2.0 Technologies, Library, Library and Information Professionals, South West, Nigeria

1. Introduction

Today, libraries worldwide have undergone significant metamorphosis – from a purely traditional modeled manual service delivery system to a more dynamic technologically driven system[1]. However, these dynamic technologically driven systems in which Web 2.0 and social networking sites tools are embedded as observed by[25] have been found to be very useful to professionals in the developed world. Web 2.0 and collaborative tools have the potential to increase the effectiveness and also the efficiency of teams, by speeding up the co-creation of knowledge[25]. With the onset of the digital age, Library and Information professionals in Nigerian libraries have a significant role to play in the utilization of innovative technologies like web 2.0.

The term Web 2.0 refers to a collection of web-based technologies like blogs, wikis, audio-podcasting, RSS feeds, social bookmarking and tagging, social networking, multimedia sharing, etc. Web 2.0 enables users to connect,

communicate and collaborate with one another, forming online socializing and communities. It also encourages participation through open applications and services[18,13] observed that “the implications of transporting library services to the online environment for the Nigerian academic libraries in the digital age are enormous particularly with the dynamic nature of digital technology which is constantly creating the need for new skills, work environment and work methods.[26] articulated the e-competencies required of librarians as having basic knowledge of computers and their capabilities, competency with search engines, competency with Internet facilities, competency with e-mail and competency with Internet navigator tools, competency with web browsers and web file formats, competency with database softwares, Internet development and management know-how.

It cannot be over emphasized that Library and Information professionals need to brace up to the new trends of web 2.0 technology competencies so that they can render more effective services to their library patrons in this electronic environment.[27] asserted that if information professionals do not keep abreast of the changing technologies, they will be unable to manage the different types of information resources and cope with the ever growing information needs

* Corresponding author:

sarah_okonedo@yahoo.com (Sarah Okonedo)

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of the users in this digital age.

2. Research Questions

1. What is the level of awareness of Web 2.0 technologies among library and information professionals in libraries in South Western Nigeria?
2. What are the types of Web 2.0 technologies used by library and information professionals in libraries in South Western Nigeria?
3. What is the level of use of Web 2.0 technologies in libraries in South Western Nigeria by library and information professionals?
4. What are the challenges encountered by library and information professionals in the use of Web 2.0 technologies?

3. Literature Review

3.1. Role of Library and Information Professionals Globally

Librarians and information professionals (LIPs) are trained to be experts in information searching, selecting, acquiring, organizing, preserving, repackaging, disseminating, and serving[32]. The contemporary role of LIPs is well captured by[29] who sees librarians as partners in information literacy education; computer literacy mentors, database builders, excellent guides in determining sources that are available; able troubleshooters, partnering with discipline faculty and other specialists for delivery of information and instruction; designing instructional programs for information access; teaching students and faculty how to access information or location and how to evaluate what they find; serving as consultants; developing and implementing information policy; creating information access tools; selecting, organizing and preserving information in all formats; and serving as leaders and facilitators in introducing information technologies and ensuring their effective use.

The environment in which librarians work is changing in terms of greater access to a range of information, increased speed in acquiring information, greater difficulty in locating, analyzing and linking information, constantly changing technology and adaptation, continuous learning for users and staff. Although the advent of Internet has brought predictions of the demise of the libraries, it has proven that libraries are, not only crucial but librarians' role as knowledge providers has become even more significant. The rise of digitized information is an opportunity to elevate the role of librarian and leading to the emergence of a new breed of librarian: "The Cyber Librarian" or "Cybrarian" - a specialist in locating information on the Internet (16) as cited by[30].

According to[14], librarians are presently playing an integrated role beyond their traditional job. In a fast changing world, there are new demands and influences on libraries and

information centers. Using modern technologies, libraries all over the world are now shifting their emphasis from traditional to multidimensional work force.[14] outlined this role to include: advocator, consortia manager, consultant, guide/teacher, content manager, facilitator, intermediary, knowledge manager, sifter, web designer and researcher.[30] opined that the Internet and World Wide Web are very powerful and bringing changes not only in librarianship but also in his daily professional activities.

3.2. Web 2.0 Tools: What does It Mean?

The term Web 2.0 was born out of a brainstorming session between O'Reilly Media and MediaLive International. In a conference held in October 2004 the term Web 2.0 was introduced and the features of Web 2.0 were presented by Tim O'Reilly in that conference. And since then it has become a popular and controversial phrase. The term Web 2.0 has led many in academia and business to append a bustle of 2.0's to existing concepts and fields of study such as Library 2.0, Tourism 2.0, Enterprise 2.0. etc. Web 2.0 is a stage of development of the Web (Web 1.0 and Web 1.5). Web 1.0 was like a warehouse of information and static content whereby users cannot manipulate or edit web content. Unlike Web 1.0, Web 2.0 is characterized by user participation, interactive, openness, and network effects dynamism. It allows the user to edit, manipulate, play, control and remix the data from multiple sources. According to[25] Web 2.0 refers to a perceived second generation of web development and design that facilitates communication, secure information sharing, interoperability, and collaboration on the World Wide Web such as blogs, wikis, online social networking, virtual worlds and other social media forms.

However,[7] define Web 2.0 as a set of trends and tools for using the Internet. He further explains that these socio-technological innovations have enabled interactivity and gathering of knowledge through experience and practice on a global scale. The concept of collaborative work, social networking and the ease in the usage of these applications have brought a significant change in the Internet usage style of Internet surfers in the world. Web 2.0 concepts have led to the development and evolution of hosted services and web culture communities, such as social networking sites, video sharing sites, RSS, wikis, blogs, pod casting, 3D virtual environment and folksonomies.

Web 2.0 tools are Internet based services which include collaborative publishing sites such as wikis, wikinut, Web blogs; RSS(really simple syndicate) Feeds; Starpages; Social bookmarking like Furl, Del.icio.us, Simpy, Blinklist, CiteULike (articles), Connotea (articles), Reddit, Flickr (images), FreeGovInfo (EPA government documents), LibraryThing (books), PennTags (library catalog records), Podcast.com (podcasts), ScribD (documents), Slideshare (powerpoint presentations); photo sharing sites: Youtube, Flickr, Vimeo and Photobucket; social networking tools such as, Facebook, MySpace, Linkedin, Hi5, flixter, Orktu, Ning

and Bebo; Personal search agent; Instant messaging; resource discovery tools, mapping services, web annotation [31].

In a nutshell, Web 2.0 can be seen as a web platform that renders a mutually maximizing collective intelligence and architecture of participation of its users and offers the opportunity for interaction of users with the library without necessarily been physically present. Only few of these web 2.0 tools will be explained in this paper.

Blogs - also known as Web logs, these allow users to post thoughts and updates about library services on the Web.

Wikis - collaborative websites sites like Wikipedia and others that allow registered users from around the world to publish on it, edit and update online content. The lack of peer review and editorship of Wikis pose challenge to librarians.

Instant messaging- IM is available through browsers from most of service providers (AOL, Meebo, MSN, Google Talk, etc). Libraries have begun employing it to provide "chat reference" services, where patrons can synchronously communicate with librarians much as they would in a face-to-face reference context[21].

Social networking- sites like Facebook, LinkedIn, del.icio.us, Hi 5 and MySpace allow users to build and customize their own profile and communicate with friends.

RSS Feeds- (Really simple syndication) this is an XML-based format that allows the syndication of lists of hyperlinks. Users republish content from other sites or blogs on their sites or blogs. This Web 2.0 application is already having an impact on libraries as RSS feeds are now been created for users to subscribe to, including updates on new items in a collection, new services, and new content in subscription databases.

LibraryThing – It enables users to catalog their books and view what other users share those books. Brief descriptions, reviews and tags can be constructed. The information is then shared with others who have read the book. It also enables them to communicate asynchronously, blog, and "tag" their books.

Social bookmarking- these tools allow you to bookmarking websites in the "traditional" virtual sense, but then combine value-added content such as keywords or tags and the ability to share bookmarks.

Flickr – this is an online image sharing application. It allows users to upload, share and tag images by keywords. Photos of our library, staff and students, its presentations, classes, and events, can be stored quickly and efficiently.

Podcast - Podcasting is very similar to a radio broadcast with the main differences being transmission via the Internet and producing pre-recorded content. Podcasts can be enhanced through the use of images, video as well as links to web site content.

Tagging - tagging can become part of critical thinking, making links which involve evaluation, categorizing, and formulating keywords. They can assist understanding of subject headings and summarizing a topic.

The characteristics of Web 2.0 as given by[20] are that it permits the building of virtual applications, drawing data and functionality from a number of different source as appropriate; it allows the user to actively participate online by means of blogging, sharing file or equivalent; User can own the data on a Web 2.0 site and exercise control over that data; Web 2.0 is smart application which will be able to capture user's knowledge and deliver services to satisfy their needs; and Web 2.0 is built upon trust, whether that is trust placed in individuals, in assertions or in the users and reuse of data. Examples: eBay, craigslist, Wikipedia, skype, lodgeball and Google AdSense.

3.3. Use of Web 2.0 Tools by Nigerian Libraries

When web 2.0. tools are made mentioned in the context of library what readily comes to mind is the impact these web 2.0. tools have on library services and products. The use of web 2.0 technologies by libraries and information professionals is also increasingly prevalent and a growing tool that is being used to communicate with more potential library users, as well as extending the services provided to individual libraries.

A recent study by[3] found a forum of 'Nigerian Librarian' on facebook and reported that the forum had 57 members and that facebook could well serve as avenue for libraries for outreach and collaboration purposes for students and other users. The study also concluded that social networking tools could enhance professional, scholastic and social collaboration[3,4] in a survey on the awareness of library 2.0 and participating in the global discussion among librarians in Southwest Nigeria universities reports that there is insufficient awareness and understanding of what constitutes Library 2.0 among librarians in Southwest Nigeria universities. However, respondents in the study expressed perceived support for Library 2.0 innovations.[19] observed that today, RSS, Blogs and Wikis, Social Bookmarks are not as strange as they sounded to the ears of Nigerian library and information professionals some years ago.

3.4. Challenges of Using Web 2.0 Tools by Nigerian Library and Information Professionals

The use of Web 2.0 tools for library services has gained popularity amongst libraries, information centres and information professionals around the world; perhaps due to changes in Internet technologies, the information seeking behavior of library clientele, and its effectiveness in rendering quality library services. Despite the popularity and ease of use of Web 2.0 technologies, most libraries are constrained by varying factors in their quest to effectively utilize these tools. Some of the barriers to the use of web 2.0 as indicated in a study carried out by Anunobi and Ogbonna (2012) includes not being familiar with Web 2.0, restricted opportunity for use, low skills, lack of needed facilities and interest.

4. Methodology

The target population for this study consists of three hundred and ten (310) library and information professionals in twenty two (22) university libraries and seventeen (17) special libraries. Sample was drawn by applying total enumeration where all the respondents in the study population constituted the sample size. A self-developed questionnaire was used for data collection. A total of two hundred and thirty (230) copies of the completed questionnaire were returned and two hundred and twenty-five (225) found usable as the others were not properly filled resulting in a total response rate of 97.8%. The data collected were analyzed using descriptive statistics of frequency and simple percentage scores. The analysis was presented in tables.

5. Result

Demographic Information of Respondents

The respondents were asked to mention their gender, age, educational qualification, and work experience. Table- 1 shows that majority of the respondents 120(53.3%) were male while their female counterparts were 105(46.7%). Majority or 122(54.2%) of respondents were Masters degree holders, while respondents 86(38.2%) whose working experience ranges between 11-15 years constituted the highest in the study population.

Table 1. Frequency Distribution of Respondents' Demographic Information

Variables		Frequency	Percentage (%)
Gender	Male	120	53.3
	Female	105	46.7
	Total	225	100
Educational Qualification	NCE	2	0.9
	OND	6	2.7
	HND	11	4.9
	First Degree	82	36.4
	Masters	120	54.2
	PhD	4	0.9
	Total	225	100.0
Working Experience	1 – 5 years	27	12.0
	6 – 10 years	63	28.0
	11 – 15 years	86	38.2
	16 – 20 years	33	14.7
	21+ years	16	7.1
	Total	225	100.0

Research Question 1: What is your level of awareness of the existence of Web 2.0 technologies?

Respondents were asked to rate their level of awareness of web 2.0 existence and it was revealed that majority 135(60.0%) of the respondents were aware of web 2.0 existence, 46(20.4%) were very aware of web 2.0 existence

while 44(19.6%) of the respondents were not aware of the existence of Web 2.0 technologies. This implies that a total of 181(80.4%) of the respondents were aware of the existence of Web 2.0 technologies. As seen in table 2 below:

Table 2. Frequency Distribution of Level of Awareness of Web 2.0 Technologies by Library and Information Professionals

Level of awareness of Web 2.0 technologies	Frequency	Percentage (%)	Cumulative Percentage
Very aware	46	20.4	20.4
Aware	135	60.0	80.4
Not aware	44	19.6	100.0
Total	225	100.0	

If you are not aware, which of the following is responsible for your unawareness?

Table 3 revealed that majority 217(96.4%) of the respondents indicated that lack of publicity on Web 2.0 technologies was responsible for their non use of these technologies, while 2(.9%) of the respondents indicated lack of interest.

Table 3. Frequency Distribution of Level of Non Awareness of Web 2.0 Technologies

Reason for non awareness of Web 2.0 technologies	Frequency	Percentage (%)	Cumulative Percentage
Lack of publicity on them	217	96.4	96.4
Lack of Internet access	6	2.7	99.1
Lack of interest	2	0.9	100.0
Total	225	100.0	

Table 4. Types of Web 2.0 Technologies Used by Information Professionals

Types of web 2.0	No		Yes	
	N	%	N	%
Blogs	77	34.2	148	65.8
Wikis	99	44.0	126	56.0
Instant messaging	69	30.7	156	69.3
Podcas, webcasts, vodcasts	149	66.2	76	33.8
RSS Feeds	144	64.0	81	36.0
Social book marking, delicious, dig	153	68.0	72	32.0
Social networking sites- facebook, twitter, hi5, LinkedIn	66	29.3	159	70.7
Media sharing- flickr, YouTube, Slideshare, Scribd	120	53.3	105	46.7
LibraryThing	155	68.9	70	31.1
Virtual world	158	70.2	67	29.8

Research Question 3: What are the types of Web 2.0 technologies that are being used by Library and Information Professionals in South West Nigeria?

Table 4 revealed that Blogs 148(65.8%); Wikis

126(56.0%); Instant messaging 156(69.3%); and Social networking sites like Facebook, Twitter, Hi5, LinkedIn 159(70.9%) were largely used while Podcast, webcasts and vodcasts, 76(33.8%); RSS feeds, 81(36.0%); Social book marking, del.icio.us dig, 72(32.0%); Media sharing like flickr, YouTube, Slideshare, Scribd; LibraryThing 70(31.1%); and Virtual world 67(29.8%) were not used.

Table 5. Usage Level of Web 2.0 Technologies by Library and Information Professionals

Technologies	Level of use					
	High		Average		Low	
	N	%	N	%	N	%
Blogs	98	43.6	111	49.3	16	7.1
Wikis	109	48.4	105	46.7	11	4.9
Podcast, webcasts, vodcasts	137	60.9	60	26.7	28	12.4
Media sharing-flickr, YouTube, Slideshare, Scribd	130	57.8	83	36.9	12	5.3
Social bookmarking, delicious, dig	145	64.4	61	27.1	19	8.4
RSS feeds	154	68.4	52	23.1	19	8.4
Virtual world	159	70.7	49	21.8	17	7.6
LibraryThing	163	72.4	42	18.7	20	8.9
Social networking sites- Facebook, Twitter, Hi5, LinkedIn	189	84.0	27	12.0	9	4.0
Instant messaging	200	88.9	19	8.4	6	2.7

Research Question 4: What is the level of use of Web 2.0 technologies by Library and Information Professionals in South West Nigeria?

The data revealed that Instant messaging and Social networking sites- Facebook, Twitter, Hi5, LinkedIn got the highest use acceptance rate of 200 (88.9%) and 189 (84.0%) respectively. While the above result indicates that the level of use of Web 2.0 technologies by the respondents is of high proportion (see Table 5 below).

The outcome of the result on the frequency of use of these Technologies revealed that Instant messaging received the highest daily use acceptance response by having 207(92.0%) respondents while Wikis had the lowest daily use acceptance response by having 103 (45.8%) respondents. Wikis had the highest weekly use acceptance response by having 99 (44.0%) respondents while Instant messaging got the lowest weekly use acceptance response by having 10 (4.4%) respondents. Podcast, webcast and vodcast had the highest monthly use acceptance response with 41 (18.2%) respondents while Instant messaging had the lowest monthly use acceptance response by having 5 (2.2%) respondents (Table 6).

Research Question 5: What challenges are encountered in using web 2.0 technologies?

The data collected revealed that a total of 144 (64%), 146 (64.9%) and 139 (61.7%) of respondents agreed that Low bandwidth, time constraint and lack of training were the major challenges encountered by library professionals in using Web 2.0 technologies respectively, while a total of 81 (36%), 79 (35.1%) and 86 (38.3%) of respondents disagreed that low bandwidth, time constraint and lack of training were challenges in the use of these technologies.

Table 6. Frequency of use of Web 2.0 technologies

Technologies	Frequency of Use									
	Daily		Weekly		Once a month		Once a year		Never	
	N	%	N	%	N	%	N	%	N	%
Podcast, webcasts, vodcasts	145	64.4	23	10.2	41	18.2	8	3.6	8	3.6
Blogs	104	46.2	92	40.9	23	10.2	4	1.8	2	0.9
Wikis	103	45.8	99	44.0	17	7.6	2	0.9	4	1.8
Social bookmarking, delicious, dig	146	64.9	34	15.1	32	14.2	8	3.6	5	2.2
RSS feeds	156	69.3	22	9.8	34	15.1	8	3.6	5	2.2
Media sharing-flickr, YouTube, Slideshare, Scribd	136	60.4	54	24.0	29	12.9	3	1.3	3	1.3
Virtual world	164	72.9	23	10.2	27	12.0	6	2.7	5	2.2
LibraryThing	170	75.6	20	8.9	24	10.7	6	2.7	5	2.2
Social networking sites- Facebook, Twitter, Hi5 LinkedIn	202	89.8	11	4.9	8	3.6	3	1.3	1	0.4
Instant messaging	207	92.0	10	4.4	5	2.2	-		3	1.3

Table 7. Challenges faced in using Web 2.0 by library and information professionals

Challenges	SD		D		A		SA	
	N	%	N	%	N	%	N	%
Low bandwidth	67	29.8	14	6.2	55	24.4	89	39.6
Time constraint	69	30.7	10	4.4	115	51.1	31	13.8
Inadequate training	65	28.9	21	9.3	111	49.3	28	12.4
Lack of funds to undergo training	71	31.6	17	7.6	102	45.3	35	15.6
Inadequate power supply	75	33.3	41	18.2	61	27.1	48	21.3
Lack of web 2.0 skills	71	31.6	30	13.3	96	42.7	28	12.4
Lack of Internet access	77	34.2	63	28.0	69	30.7	16	7.1
Organizational policy	79	35.1	106	47.1	26	11.6	14	6.2
ICT-unfriendly work environment	123	54.7	61	27.1	27	12.0	14	6.2

KEY:- SD – Strongly Disagree, D – Disagree, A – Agree, SA – Strongly Agree

6. Discussion of Findings

This study finds that there was high level of awareness of the existence of Web 2.0 technologies among library and information professionals in South West Nigeria. However, the study also revealed that few of the study population were not aware of the existence of these technologies.[5] confirmed this when they declared that librarians in university libraries in Ogun State, Nigeria are mostly aware of Facebook, though noted that few still lack knowledge of online social networks.

The Nigerian Library Association, Information Technology Section organized a workshop on digital revolution and focused on the application of Web 2.0 tools in library services. The workshop with over seventy (70) participants was an eye opener and afforded many the opportunity to learn or improve on the usage of these technologies. The reason for the disparity in the level of awareness in the current study and the previous study might be because of the several workshops held, culminating in greater awareness of the existence of Web 2.0 technologies.

Findings from the study also revealed that lack of publicity on the existence of web 2.0 technologies and lack of Internet access are responsible for the non awareness of the existence of Web 2.0 technologies by Library and Information Professionals in South West Nigeria. This is in agreement with a similar study by[4] who observed that there was lack of formal workshops in Southwest Nigeria to acquaint librarians with the emerging concept of Library 2.0.

The study also found out that there was high prevalence of use of Virtual world; Library Thing; Podcast, webcast, vodcast; Social bookmarking tools like delicious, dig; and

RSS feeds for official purposes by library and information professionals in South West Nigeria while Social networking sites like Facebook, Twitter, Hi5 and LinkedIn; Instant messaging; Blogs were commonly used for personal purposes. This corroborates[25,10] as cited by[5] findings that 12 of the respondents (highest) used instant messaging such as yahoo messenger, MSN, AOL, Googletalk, etc for entertainment purposes and that school librarians use social networking sites for personal use only. However, Wikis and News groups/online forum were mostly used for research purposes. This conforms to the findings of[25] that online forum and newsgroups were the most used tools by librarians, information professionals, and other professionals in workplaces in Nigeria.

From the findings of this study, the major challenge faced by library and information professionals in South West Nigeria in the use of Web 2.0 technologies was low bandwidth. However, other challenges include time constraint, inadequate training, lack of funds to undergo training, inadequate power supply, lack of web 2.0 skills among other challenges. This is in line with the findings of [9],[22],[23],[24],[33],[11],[15],[10],[6],[5], who found out that the problems associated with the use of Web 2.0 tools or online social networks were linked to bandwidth challenges, lack of knowledge of social networks, inadequate training and support for library staff, time constraint, lack of professional skills necessary for handling and mediating knowledge in the social media, inadequate power supply and finance.

7. Conclusions

The awareness and use of web 2.0. tools is growing among library and information professionals in South-West Nigeria, as it has become a platform for interaction and collaboration among librarians. It is therefore interesting to note that the future of these technologies in the library arena will continue to improve library's services, focusing more on the facilitation of information transfer and information literacy rather than providing controlled access to it. This paper surveys library and information professionals' current awareness of Web 2.0 technologies, the types of Web 2.0 technologies being used, level of use, and barriers to the use of these technologies. It is obvious from this study that library and information professionals in South-West Nigeria are aware of the existence of web 2.0 technologies, but more awareness should be created on the existence of Web 2.0 technologies and their benefits to library and information services delivery. There is no resting on our oarse now as this is just the beginning of our recognition.

8. Recommendations

The following lines of action are recommended based on the findings of this study:

1. All relevant stakeholders like the Nigerian Library Association, Library schools, Librarians' Registration Council of Nigeria, libraries, etc should assist in creating more awareness on the use and benefits of Web 2.0 technologies;

2. University libraries, special libraries and other institutions should adopt the use of Web 2.0 technologies for better operations and services delivery. This would in turn compel library staff to use these technologies for official and research purposes instead of mainly for personal use as revealed by this study.

3. The Nigerian Library Association and other relevant bodies should organize more hands-on practice workshops on web publishing and computer literacy to enable library and information professionals acquire the required skills for the use of Web 2.0 technologies.

4. Libraries should Endeavour to provide functional and high-speed internet access to staff and users of their libraries.

5. Each of the libraries should endeavour to provide alternative power supply source to curb the erratic power situation being experienced now.

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