# Digital Information Resources Collaboration in a digital age : a case of librarians in tertiary institutions in Akwa Ibom State, Nigeria

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### **ABSTRACT**

This study explored digital information resource collaboration among librarians in tertiary institutions in Akwa Ibom State, Nigeria. The objectives of the study were to identify the types of digital resources available, assess the usefulness of collaboration, evaluate its impact on librarian performance, and identify challenges encountered in the collaboration process. A descriptive survey design was adopted, targeting all librarians in academic libraries within the state. Using a purposive sampling technique, five institutions were selected, and data were gathered from 45 librarians through a structured questionnaire. Descriptive statistics and simple regression analysis were employed for data analysis. The findings revealed that e-databases, e-journals, and e-books were the most common digital resources, while less-utilized resources like online magazines were scarce. Collaboration was found to enhance the preservation of digital materials and improve librarians' engagement with users, although there was a need for greater focus on subject matter expertise. Additionally, a strong positive relationship was observed between collaboration and librarian performance. Key challenges to collaboration included limited budgets, inadequate ICT facilities, and unreliable power supply. The study concludes that fostering a collaborative culture and addressing infrastructural and financial barriers are crucial to improving digital resource management and professional development among librarians.

(Keywords: digital information resources; collaboration; librarians; tertiary institutions; Akwa Ibom State; performance; challenges.)

### I. INTRODUCTION

In the rapidly evolving digital age, collaboration among librarians has become increasingly important for the effective management and utilization of digital information resources in tertiary institutions. This achievement is rightly tremendously contributed by the librarians who play a pivotal role in providing access to and facilitating the use of these resources by students, faculty, and researchers. Collaborative efforts among librarians can lead to improved information services, enhanced resource sharing, and more comprehensive support for the academic community.

Previous research has highlighted the importance of collaboration in the digital age. Adebanjo et al. (2024) emphasize that collaboration among librarians is essential for leveraging the benefits of digital resources and enhancing information services. They argue that collaborative efforts can lead to increased access to resources, improved user experiences, and enhanced support for research activities. However, challenges exist that may impede effective collaboration among librarians

in the digital age. For instance, Omekwu et al. (2023) point out that issues such as copyright compliance, licensing agreements, and the fair use of digital resources can pose challenges to collaborative initiatives. Additionally, technological infrastructure limitations, such as unreliable internet access and inadequate digital platforms, may hinder the sharing and management of digital information resources (Igbo & Imo, 2017).

In the context of Akwa Ibom State tertiary institutions, there is a need to explore the specific prospects and challenges perceived by librarians regarding digital information resources collaboration. Understanding these factors is crucial for overcoming challenges and leveraging the prospects of collaboration to enhance information services. By shedding light on the current state of digital information resources collaboration, this research will assist librarians, administrators, and policymakers in formulating strategies and initiatives to foster effective collaboration, ensure optimal use of digital resources, and provide improved information services to the academic community.

### Statement of the problem

As the digital age progresses and technology continues to advance, the availability and utilization of digital information resources have become increasingly important for librarians in Akwa Ibom State tertiary institutions. Collaboration among librarians, both within and across institutions, has the potential to enhance the access, sharing, and management of digital resources, leading to improved information services for students, faculty, and researchers. However, despite the potential benefits, there are certain prospects and challenges information associated with digital resources collaboration that are perceived by librarians in Akwa Ibom State tertiary institutions. This study aims to examine digital information resource collaboration among librarians in tertiary institutions in Akwa Ibom State, Nigeria. However, by addressing these potential challenges, the study aims to contribute to the understanding of the current state of digital information resources collaboration among librarians in tertiary institutions and provide recommendations to overcome the identified barriers.

### Objectives of the study

The main objective of the study is to investigate digital information resource collaboration among librarians in tertiary institutions in Akwa Ibom State, Nigeria.

Specifically, the study sought to:

- Determine the types of digital information resources available in libraries in tertiary institutions in Akwa Ibom
- ii) Assess the usefulness of information resource collaboration among librarians in tertiary institutions in Akwa Ibom State, Nigeria
- iii) Determine the effect of digital information resource collaborations on the performance of librarians.
- iv) Identify challenges affecting library professionals in tertiary institutions to acquire digital information resource collaboration skills.

### Research Questions

The following research questions guided the study:

- i) What are the types of digital information resources available in libraries in tertiary institutions in Akwa Ibom State, Nigeria?
- ii) What is the usefulness of information resources collaboration among librarians in tertiary institutions?

- iii) What is the effect of digital information resource collaborations on the performance of librarians?
- iv) What are the challenges affecting library professionals in tertiary institutions to acquire digital information resource collaboration skills?

### Research Hypothesis

There is no significant effect of digital information resource collaboration on the performance of librarians in Akwa Ibom State tertiary institutions.

### II. LITERATURE REVIEW

### Concept of digital information resources

Digital Information Resources means information resources, including information resources technologies, and any equipment or interconnected system of equipment that is used in the creation, conversion, duplication, or delivery of data or information (Oseghale, 2023). The term includes telephones and other telecommunications products, information kiosks, transaction machines, Internet websites, multimedia resources, and office equipment, including copy machines and fax machines. According to Olubiyo et al. (2022), electronic information has gradually become a major resource in every university library. The emergence of electronic information resources, simply referred to as electronic resources, has tremendously transformed information handling and management in academic environments (Oseghale, 2023; Omekwu et al., 2023). Igbo and Imo (2017) note that through the use of electronic resources, researchers and students; now have access to global information resources, particularly the Internet for their scholarly intercourse. More so, a digital information resource is defined as a resource that requires access to the computer or any electronic product that provides a collection of data, be it text referring to fulltext databases, electronic journals, image collections, or other multimedia and media-based products (Adebanjo et al., 2024).

# Types of digital information resources available in libraries in tertiary institutions in Nigeria

The increasing availability and use of digital information resources (DIRs) in libraries have revolutionized information accessibility, particularly in tertiary institutions. Several studies have investigated the types of digital resources available in academic libraries, revealing significant variations in resource types, access, and utilization across different institutions. Urhiewhu (2014) focused on the availability and use of digital information resources by undergraduates in universities

located in Delta and Edo States, Nigeria. The study identified various DIRs, including e-conference papers, e-zines, e-newsletters, e-reference materials, e-projects, e-journals, e-seminar papers, e-books, and edissertations. Ternenge and Kashimana (2019) examined the availability, accessibility, and use of electronic information resources (EIRs) at Francis Sulemanu Idachaba Library, University of Agriculture, Makurdi. The study found that e-journals, e-newspapers, Online Public Access Catalogue (OPAC), CD-ROM databases, e-magazines, e-books, and various online databases such as ScienceDirect and EBSCOhost were available for student research. Similarly, Simon and Ogom (2015) evaluated the extent to which undergraduate students at the University of Calabar utilized electronic library resources. Their findings revealed that, while e-resources were widely used, awareness was primarily driven by the library's efforts through orientation programs and signage.

In a more recent study, Mamman and Abubakar (2022) explored the challenges faced by students in higher institutions in Taraba State, Nigeria, concerning the access and use of electronic information resources. The study identified available resources such as e-books, online databases, e-journals, and CD-ROMs. While these resources were accessible to some extent, the study highlighted several obstacles, including poor internet connectivity, insufficient ICT skills among students, and a lack of computer terminals, all of which limited the effective use of these resources. Also, Joel, Orizu, and Vandi (2020) investigated the availability and usage of electronic information resources among postgraduate students in federal university libraries in North-East Nigeria. The study reported the availability of e-journals, e-books, CD-ROMs, online databases, the internet, ecatalogues, and e-mails. Like earlier studies, Joel et al. found that these resources were used to a considerable extent by students, although certain resources, such as eaudio visual resources and reference databases, were notably absent. This absence limited students' familiarity and usage of such resources, highlighting the need for a more comprehensive range of digital resources in university libraries.

# Usefulness of information resource collaboration among librarians in tertiary institutions in Nigeria

The concept of collaboration among librarians and between librarians and other academic staff is crucial for optimizing information resource sharing, enhancing access, and improving service delivery in academic libraries. Various studies have explored this area, focusing on the different dimensions and outcomes of

collaboration in Nigerian tertiary institutions. Alabi (2018) highlights the importance of librarian-faculty collaboration in higher institutions in Lagos State. The study also notes that effective collaboration requires essential skills, which librarians are developing to engage with faculty meaningfully. Nwegbu et al. (2011) examined the promotion of resource sharing between state and federal university libraries in Anambra and Enugu states. The study identified various measures to enhance collaboration, emphasizing that resource sharing can significantly improve the accessibility and utilization of information resources. While challenges to resource sharing, such as inadequate infrastructure and limited funding, were highlighted, the study suggested that deliberate policies to encourage resource sharing between libraries would lead to better resource management and Zaid (2019) focuses on the involvement of academic librarians in Open Educational Resources (OER) initiatives, which is another dimension of collaboration in academic libraries. The study found that librarians are key partners in developing and maintaining OER initiatives in Nigerian universities.

Kasim et al. (2022) discussed resource sharing among libraries and information centers in the digital age, emphasizing its importance for cost efficiency and service optimization. The paper highlighted how collaboration among libraries enables them to offer better services by pooling resources. The findings concluded that resource sharing is a necessary tool for maintaining efficient library services in the digital era, and collaboration among libraries should be supported by adequate policies and technological investments.

# Effect of digital information resource collaborations on the performance of librarians

Digital information resource collaboration plays a pivotal role in shaping the performance of librarians by enhancing resource access, skill development, and operational efficiency in academic and research settings. Pham and Tanner (2014) explore the collaboration between academics and librarians, presenting a comprehensive literature review and conceptual framework to understand the nuances of collaboration in academic settings. The study highlights how contextual factors, such as institutional culture and national settings, significantly influence the nature of collaboration. The authors further argued that collaboration in a developed country like Australia differs from that in a developing country like Vietnam due to varying infrastructural and policy frameworks. Zarnitz et al. (2019) focus on digital preservation and its collaborative aspects in the context of German National Specialist Libraries. The study

illustrates how collaboration in digital preservation is essential due to the complexity and resource-intensive nature of the task. Through shared digital preservation systems and workflows, libraries can reduce costs, optimize staff training, and improve the management of digital materials. According to the authors, this collaboration not only boosts librarians' technical capabilities but also strengthens their ability to maintain and preserve digital information resources. Deja et al. (2021) found that librarians with high levels of digital and information literacy are empowered to navigate the complexities of the digital landscape, thereby improving their professional performance. Information literacy not only enhances librarians' ability to manage digital resources but also positions them as key players in institutional digital transformation (Deja et al., 2021).

Owusu-Ansah and Rodrigues (2023) argued that collaborative digital library services can significantly enhance distance learning by improving access to digital collections and services. According to the authors, this form of collaboration ensures that librarians are not only participants but leaders in the implementation of digital library services. The study shows how collaboration contributes to librarians' professional particularly in acquiring new digital skills and in their capacity to support distance learners more effectively. Furthermore, Roy and Habib (2024) investigate the collaboration between Library and Information Science (LIS) academics and practitioners in Bangladesh, shedding light on how such partnerships affect professional development. The study emphasizes the need for open-mindedness and the elimination of egorelated conflicts to foster successful collaborations.

Guo (2021) explores how synchronous paper-electricity control technology can be used to manage library resources collaboratively, improving access and retrieval efficiency. The author notes collaboration as a tool that ensures librarians are better equipped to manage complex digital workflows, thereby improving their performance in terms of resource management and information access. Pham and Tanner (2015) further delve into the dynamics of collaboration between academics and library staff using a structurationist perspective. Their research identifies the barriers and enablers of effective collaboration, such as power asymmetries, spatial and temporal dimensions, and individual participant roles. The study concludes that overcoming these challenges through collaboration can lead to improved performance for both academics and librarians.

### Challenges to the acquisition of digital information resource collaboration skills

The growing reliance on digital information resource collaborations in academic libraries has brought both opportunities and challenges to library professionals. The ability to collaborate effectively in the digital age requires specific skills and competencies, which many library professionals struggle to acquire. Okeji et al. 2020) conducted a study examining the digital literacy skills of librarians in Nigerian university libraries, revealing that many librarians rated their digital literacy skills as moderate, with only a few rating their skills as excellent. Key areas of deficiency included network and system security, and the ability to apply security measures such as firewalls and filtering routers. This lack of proficiency in essential digital skills hampers librarians' ability to collaborate effectively on managing and protecting digital resources.

Dlamini et al. 2018) discuss the importance of collaboration between librarians and academics in Library and Information Science (LIS) departments. They argue that such collaboration is essential for curriculum development and the continuous evolution of LIS programs in response to changes in the job market and advancements in technology. However, the study also points out that many librarians lack the skills needed to engage fully in collaborative activities, especially in curriculum development. Rukwaro and Otike (2014) explored the challenges faced by librarians in Kenya in developing digital resource collections. The study identified key barriers such as insufficient and costly bandwidth, inadequate infrastructure, and a lack of necessary skills to develop and utilize digital resources. These challenges lead to the underutilization of available digital resources and hinder effective collaboration between librarians and other stakeholders. (2013) found that librarians face significant barriers to acquiring these skills, including limited budgets, inadequate training opportunities, and resistance to change. More so, Ukonu, Wogu, and Obayi (2012) investigated the challenges faced by undergraduate students at the University of Nigeria in using the institution's digital library. The study found that slow network speeds, lack of access to e-books due to expired subscriptions, and general underutilization of the digital library were significant issues.

### Gap in literature

While the existing literature extensively covers various aspects of digital information resource collaboration in academic libraries, digital preservation, and the roles of librarians in the digital era, these studies lack a regional

focus, especially concerning Akwa Ibom State. None of the reviewed studies have been conducted in Akwa Ibom State, Nigeria. The majority of research focuses on either broader national or international contexts, such as Nigeria as a whole, Kenya, South Africa, or Bangladesh. This leaves a significant gap in understanding how librarians in Akwa Ibom State are engaging in digital information resource collaboration.

### III. METHODOLOGY

This study adopted a descriptive survey design, which is appropriate for collecting data on the current practices, challenges, and opportunities related to digital information resource collaboration among librarians in tertiary institutions in Akwa Ibom State. The design allows for a systematic collection of data from a population to describe existing conditions without manipulating any variables. The target population comprised all librarians working in academic libraries in Akwa Ibom State. This includes librarians in universities, polytechnics, and colleges of education, who are responsible for managing and collaborating on digital information resources in these institutions. A purposive sampling technique was employed to select participants for the study. This technique was chosen to ensure that only librarians from institutions with significant involvement in digital information resource management and collaboration were included in the study. Out of the eight tertiary institutions in Akwa Ibom State, only five institutions were selected based on their involvement in information resource management. institutions were selected for their relevance to the study's objectives and the availability of librarians with the required experience.

The selected institutions include:

- University of Uyo (34 librarians);
- Akwa Ibom State University (4 librarians);
- Akwa Ibom State Polytechnic (3 librarians);
- Federal Polytechnic (2 librarians);
- College of Education (2 librarians).

This selection gave a total of 45 respondents. The choice of these institutions was based on the convenience of access to respondents and their engagement with digital resources, which aligned with the study's focus on digital information resource collaboration.

Data for the study was collected using a structured questionnaire designed by the researchers. questionnaire contained both closed-ended and openended questions to gather quantitative and qualitative data about the librarians' experiences with digital information resource collaboration. The instrument was subjected to face and content validation by an expert in test, and evaluation measurement. to ensure appropriateness and relevance to the study's objectives. The validation process ensured that the instrument accurately measured the variables under investigation. To assess the reliability of the instrument, a pilot study was conducted, and the reliability coefficient was determined using Cronbach's alpha. The reliability coefficient obtained was 0.83, indicating a high level of internal consistency and justifying the instrument's use for data collection. The questionnaires were distributed to the selected librarians in the five institutions. The researcher made follow-up visits to ensure that all respondents completed and returned the questionnaires. The data collected were analyzed using descriptive statistics (such as frequencies, percentages, and means) to answer the research questions. Additionally, simple regression analysis was employed to test the study's hypothesis. The test of significance was set at a 0.05 alpha level to determine whether there were statistically significant relationships between variables related to digital resource collaboration.

### IV. RESULTS AND DISCUSSION

Types of digital information resources available in libraries in tertiary institutions

The research question sought to find out the types of digital information resources available in libraries in Akwa Ibom State tertiary institutions. To answer the research question, percentage analysis was performed on the data<sup>1</sup>.

<sup>&</sup>lt;sup>1</sup> See Table 1 on the following page

Table 1: Percentage analysis of the types of digital information resources available in libraries in tertiary institutions in Akwa Ibom<sup>†</sup>

Type(s)	Frequency	Percentage (%)	
e-Journal	12	26.67	
e-Book(s)	7	15.56	
e-Database	14	31.11**	
e-Theses & Dissertations	6	13.33	
Online newspaper	6	13.33	
Online Magazine	2	4.44*	
TOTAL	45	100	

Table 1 above presents the percentage analysis of the types of digital information resources available in libraries in tertiary institutions in Akwa Ibom. From the result of the data analysis, it was observed that the resource type "e-Database" was ranked highest in terms of availability by respondents, while "online magazine" was ranked lowest of the types of digital information resources available in libraries in tertiary institutions in Akwa Ibom.

# Usefulness of information resource collaboration among librarians in tertiary institutions

The research question sought to find out the usefulness of information resources collaboration in digital age. To answer the research question, percentage analysis was performed on the data.

Table 2: Percentage analysis of the usefulness of information resource collaboration among librarians in tertiary institutions

Usefulness	Frequency	Percentage (%)
Demonstrating the value of libraries	5	11.11
Preserving the material on a digital scale	17	37.78**
Making services engaging to users	8	17.78
Subject matter expertise	3	6.67*
Becoming familiar with wide range of digital content	12	26.67
TOTAL	45	100

Table 2 (above) presents the percentage analysis of the usefulness of information resource collaboration among librarians in tertiary institutions. From the result of the data analysis, it was observed that the tagged "preserving the material on a digital scale" 17(37.78) was rated the most important useful of information with the highest percentage value as affirmed by the respondents, while the tagged type "subject matter expertise" 3(6.67) was rated the least percentage of the usefulness of information

resource collaboration among librarians in tertiary institutions.

<sup>†</sup> In tables 1,2 & 4, the suffix '\*\*' indicates the highest percentage frequency and '\*' indicates the lowest percentage frequency

### Effect of digital information resource collaborations on the performance of librarians

The research question sought to find out the effect of digital information resource collaborations on the

performance of librarians. To answer it, percentage analysis was performed on the data.

Table 3: Descriptive statistics of the effect of digital information resource collaborations on the performance of librarians

Variable	N	Arithmetic Mean	Expected Mean	R	Remarks
Performance of Librarians	15	60.24	12.5	0.97	*Strong to Perfect relationship
Digital Information Resources	45	13.33	12.5		
Source: Field Surv				car Field Survey	

Table 3 (above) presents the result of the descriptive analysis of the effect of digital information resource collaborations on the performance of librarians. The two variables were observed to have Strong to Perfect Relationship at 0.97%. The arithmetic mean for Performance of Librarians (60.24) was observed to be greater than the expected mean score of 12.5. In addition to that, the arithmetic mean as regards digital information resources (13.33) was observed to be higher than the expected mean score of 12.5. The result therefore means

that there is a remarkable effect of digital information resource collaborations on the performance of librarians.

# Challenges in the acquisition of digital information resource collaboration skills

The research question sought to find out the challenges affecting librarians in the acquisition of digital information resource collaboration skills. To answer the research question, percentage analysis was performed on the data.

Table 4: Percentage analysis of the challenges affecting librarians to acquire digital information resource collaboration skills

Challenges	Frequency	Percentage (%)
Shrinking budget/funds	13	28.89**
Shortage of computer skills development for the library leaders	7	15.56
Shortage of computers and other ICT facilities	9	20
Problems of information from dubious origin	4	8.89*
Poor power supply	12	26.67
TOTAL	45	100

Table 4 (above) presents the percentage analysis of the challenges affecting librarians to acquire digital information resource collaboration skills. From the result of the data analysis, it was observed that "shrinking budget/funds" was the highest rated, while "problems of information from dubious origin" was rated lowest of the challenges affecting librarians in the acquisition of digital information resource collaboration skills.

### Research Hypothesis

The null hypothesis states that there is no significant effect of digital information resource collaboration on the performance of librarians in Akwa Ibom State tertiary institutions. To answer the hypothesis, a simple regression analysis was performed on the data as presented in table 5 on the following page.

Table 5: Simple Regression Analysis of the effect of digital information resource collaboration on the performance of librarians

Model Change	R Square	R-Square	Adjusted R Square	Std. error of the estimate	R
1	0.97a	0.93	0.93	2.16	0.93
		*Significant at 0.05 level; df= 43; N= 45; critical R-value = 0.312			

Table 5 (above) shows that the calculated R-value (0.97) was greater than the critical R-value of 0.312 at 0.5 alpha levels with 43 degrees of freedom. The R-Square value of 0.93 predicts 93% of the effect of digital information resource collaboration on the performance of librarians in Akwa Ibom State tertiary institutions. This rate of percentage is highly positive and therefore means that the effect of digital information resource collaboration on the performance of librarians in Akwa Ibom State tertiary institutions is significant. It was also deemed necessary to find out the influence of the variance of each class of independent variable as responded by each respondent.

#### V. CONCLUSION

The study explored the types, usefulness, effects, and challenges related to digital information resource collaboration. The results provide significant insights into the current state of digital collaboration among librarians in tertiary institutions, and the implications for their professional performance.

The study identified the types of digital information resources available in tertiary institutions in Akwa Ibom State. The findings revealed that the most common digital resource available was the e-database, followed by e-journals and e-books. These resources are crucial for supporting academic research and information access. However, the availability of less-utilized resources such as online magazines was notably low. This suggests that while core digital resources are present, there is room for expanding the diversity of digital content to cater to a broader spectrum of academic needs.

The study also examined the usefulness of information resource collaboration among librarians. Collaboration in the digital age was found to be highly beneficial, particularly around the preservation of digital materials.

The study highlighted that collaboration helps librarians become familiar with a wide range of digital content, which improves their ability to engage users and provide relevant services. However, the least acknowledged benefit was subject matter expertise, indicating a need for further emphasis on specialized skills in collaboration efforts.

Additionally, the study looked into the effect of digital information resource collaboration on the performance of librarians. The statistical analysis showed a strong positive relationship between collaboration and librarian performance. This suggests that when librarians engage in resource-sharing and collaborative efforts, it significantly enhances their efficiency and effectiveness in managing digital resources. The high correlation underscores the importance of fostering a collaborative culture within libraries to improve service delivery and resource management.

In considering the challenges affecting librarians in acquiring digital information resource collaboration skills, the most prominent challenge identified was a shrinking budget. This limits the availability of funds necessary for training and technological upgrades. Additionally, inadequate ICT facilities and poor power supply were also significant barriers. These issues hinder librarians from fully developing the skills needed to engage in digital collaborations, thereby limiting the scope and effectiveness of their work.

The study's hypothesis, which stated that there is no significant effect of digital information resource collaboration on librarian performance, was rejected. The results demonstrated a highly significant effect, with digital collaborations contributing positively to the professional capabilities of librarians in Akwa Ibom State tertiary institutions. This highlights the importance of prioritizing collaborative efforts and addressing the infrastructural and financial challenges that impede the growth of such collaborations.

### VI. RECOMMENDATION

Based on the study's findings, the following recommendations were proposed:

- 1. To address the low availability of less-utilized digital resources like online magazines, tertiary institutions should diversify their digital content offerings. This can be achieved by investing in a broader range of digital resources to support varied academic needs and interests. Institutions should consider partnerships with content providers and publishers to enhance the range of e-resources available to both students and staff.
- Although collaboration was found to be highly beneficial, subject matter expertise was the least acknowledged benefit. Institutions should implement targeted training programs to develop librarians' specialized skills and knowledge. This includes workshops professional development and opportunities focusing on digital content technologies, management, emerging and

- collaborative practices to enhance librarians' ability to provide expert services.
- 3. Given the strong positive relationship between collaboration and librarian performance, libraries should promote a culture of collaboration both within and between institutions. This could involve establishing collaborative networks, shared platforms for resource management, and regular inter-library meetings to facilitate knowledge exchange and joint initiatives. Emphasizing collaboration can lead to improved resource management and service delivery.
- 4. To overcome the challenges related to shrinking budgets, inadequate ICT facilities, and poor power supply, institutions should prioritize investment in infrastructure and technological upgrades. This includes securing funding for digital resource acquisition, upgrading ICT facilities, and ensuring reliable power sources. Additionally, libraries should seek grants, sponsorships, and partnerships to support their digital initiatives and enhance their ability to participate in collaborative efforts.

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