

Managing an Open Access, Multi-Institutional, International Digital Library: The Digital Library of the Caribbean

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ABSTRACT. *Developing an Open Access, multi-institutional, multilingual, international digital library requires robust technological and institutional infrastructures that support both the needs of individual institutions alongside the needs of the growing partnership and ensure continuous communication and development of the shared vision for the digital library as a whole. This article explains the methods and factors that have led to the Digital Library of the Caribbean's success in building the necessary infrastructure, following the initial planning to the current stage of development, along with how challenges were met and the challenges that remain.*

KEYWORDS *Cooperative digitization projects, collaborative partnerships, worldwide digital libraries, cultural heritage projects, preservation, archiving, digital, collaboration, cooperation, library, university, college, archive, museum, information technology*

INTRODUCTION

The Digital Library of the Caribbean (dLOC) is a cooperative digital library that provides centralized access to digital collections that otherwise may exist in isolation. Bringing together collections from the diverse countries that comprise the Caribbean, dLOC provides researchers with greater access to resources that are physically dispersed throughout the Caribbean and the world. Supported by partner institutions with additional funding from the

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Department of Education's Technological Innovation and Cooperation for Foreign Information Access (TICFIA) Program, dLOC currently hosts over 675,000 images representing content submitted by nine Caribbean countries.

Universities, national libraries, national archives and private collections partner with dLOC to gain access to equipment, training and the online infrastructure to ensure that endangered research materials from the Caribbean are preserved and accessible to current and future researchers and educators. To remove barriers to possible contribution, dLOC promotes the open sharing of materials without the loss of ownership, copyright, or rights related to cultural heritage materials. All materials contributed are available in dLOC as open access resources and partners retain full attribution for all materials contributed and all rights to the contributed materials.

In addition, dLOC works with scholars and K-12 educators to incorporate these materials into research and teaching, providing greater context for contributed resources and further promoting new teaching and research based on the unique resources found in dLOC. By providing the infrastructure for diverse institutions in the Caribbean and worldwide to digitally preserve and offer online access to resources from and about the Caribbean and circum-Caribbean, dLOC is contributing to the advancement of Caribbean Studies and the related disciplines.

This article will explore the how the Digital Library of the Caribbean has grown from a pilot project with five members to a thriving partnership of many distinct institutions that benefit from shared technologies and collaboration. It will also address some of the struggles that the project has encountered and how, as a group, the dLOC partners have chosen to address them. In a follow-up article, we will address the partnership from the perspective of a sample of the member institutions and discuss the tactics for the future sustainability of the collaboration.

START SMALL, THINK BIG

In 2002, the University of the Virgin Islands (UVI), the University of Florida (UF) and Florida International University (FIU) entered into an agreement to collaborate in building a United States Virgin Islands History and Culture digital library collection.¹ It was through this successful partnership that the idea for dLOC was born. The representatives from UVI, using a grant from the Institute of Museum and Library Sciences, developed the model for local collaboration to select resources appropriate for digitization. The Digital Library Center at UF provided the technical expertise necessary to advise the development the digital collection. The partners developed a model in which the cultural and national patrimony would be united online, but the items and the rights would remain with the contributing partner. This model established in the US Virgin Islands project demonstrated the

potential for greater collaboration at the regional level, and it was with this collaboration that the idea for the Digital Library of the Caribbean emerged.

The success of most projects is incumbent upon adequate human and financial capital. The collaborators from the aforementioned project demonstrated the necessary human capital. The Technological Innovation and Cooperation for Foreign Information Access (TICFIA) program provided an opportunity to raise the necessary financial support. TICFIA supports “innovative techniques or programs using new electronic technologies to collect, organize, preserve, and widely disseminate information on world regions and countries other than the United States that address our Nation’s teaching and research needs in international education and foreign languages.”² Since its inception in 1999, the program has funded more than twenty distinct projects focusing on diverse world regions including Latin America and the Caribbean, Asia, Africa and the Middle East.

With this funding opportunity in mind, the original dLOC project directors presented the model of a joint digital library to a group of librarians and archivists at the 2004 Annual Conference of the Association of Caribbean University Research and Institutional Libraries (ACURIL). Representatives from interested institutions met later that year at the University of Puerto Rico, Rio Piedras, to establish the framework for collaboration. TICFIA awarded the Florida International University’s Latin American and Caribbean Center, in collaboration with the Center for Latin American Studies and the Digital Library Center at the University of Florida, the University of the Virgin Islands and the University of Central Florida a four-year grant in the fall of 2005 to develop the technical infrastructure and to build capacity in the Caribbean to digitize and make available Caribbean resources to students, scholars and citizens. The federal funds and university cost share provided the project with the support necessary to develop the technical infrastructure, local capacity for on-site digitization for the initial five foreign project partners³ and outreach funds to promote the freely accessible collections for teaching and research.

The development of digital collections requires equipment, knowledge and technical infrastructure. Many libraries and archives cannot allocate the necessary resources to build and host their own digital collections from scratch, and this is also the case for many Caribbean libraries and archives. dLOC offered the basic equipment, training, and the technical infrastructure needed for its partners to embark on the journey towards digital preservation and access for their resources. In the dLOC model, the partners retain ownership of their collections while sharing the content online in exchange for the technology required to provide digital preservation and access. Representatives from each partner institution guide the development of both their digital collections and the future of dLOC as a whole. The University of Florida’s Digital Library Center provides software to facilitate the digitization process (including metadata creation and the submission of electronic

files), long-term digital preservation of archival files and online delivery via a digital library infrastructure. Generally, the mission of dLOC is to:

- Serve as gateway to existing digital resources from and about the Caribbean
- Ensure digital preservation of resources
- Generate new digital content for scholars and students
- Increase access to rare or at-risk Caribbean materials
- Build capacity for digitization in the Caribbean
- Implement technical infrastructure and a support network to assist digital projects
- Form partnerships with Caribbean institutions and digital library initiatives

The model has proven so successful that the project has incorporated six new partners⁴ with content online and additional partners that are building collections from both the Caribbean and the United States.

LAYING THE FOUNDATION FOR SUCCESS

The key foundation for the current success of this project was laid during the initial planning meeting, the subsequent development of the grant proposal and the later adoption of the by-laws. The organizational structure defined in the by-laws, the project's four-year work plan and clear evaluation tools have facilitated the project's continued success despite significant changes in leadership.⁵ Even with changes in the project's principal investigator, one of the project's co-directors, the coordinator and the technical director, dLOC is on target to meet the majority of its original goals. The strength of the initial planning documents has facilitated our continued achievement of the project's goals.

The by-laws clearly define the structure and the roles of two governing bodies for the organization. The institutional partners who are contributing content are represented on the Executive Committee which is the group responsible for policy making, planning and fundraising efforts. The Executive Committee also oversees the project director and appoints a seven-member Advisory Board charged with providing collection development and additional guidance for the project. The Executive Committee meets annually at the Association of Caribbean University, Research and Institutional Libraries (ACURIL) conference to determine major policy issues. It also meets periodically through phone conferences to address on-going concerns. The participation of dLOC members in the leadership of the collaboration encourages practical planning and effective follow-through on the part of the project's members. Similarly, the Advisory Board meets annually and provides advice for the development of the project. The members of this board also work with the project coordinator on specific projects in their content

areas during the year. The by-laws stipulate two-year staggered terms which ensure continuity while providing for a consistent stream of new ideas and new areas of expertise on the board. These institutional structures, outlined and nurtured from the beginning of the collaboration, have sustained the project through its first four years.

THE PARTNERS MATTER

While the institutional structures are vital for success, an even more important contributing factor in dLOC's success is the personal commitment by the people involved in the project. Building upon longstanding relationships established through the Association of Caribbean University, Research and Institutional Libraries (ACURIL) and a long history of cooperative collection development and cooperative preservation activities, the institutional representatives of the partner institutions demonstrate a level of trust and commitment that carries dLOC forward. The partners from the US institutions that participate in the project value the collaboration and provide time, energy and resources. The local operations teams are committed to preserving their institutional collections and making them more widely available to the public. In addition, the grant funding has allowed the project team to travel to the member institutions to provide instruction, troubleshoot technical issues, and develop personal relationships and an understanding of the challenges in each location that may affect participation. Without the commitment and support of both the leadership and operational staff of the member institutions, dLOC would not exist.

The work required to develop dLOC includes staff from all areas within each of the partner institutions. The collection development and technical teams at the partner institutions dedicate the hours necessary to review their physical collections, select appropriate materials to build their digital collections, negotiate for copyright clearance, develop the necessary metadata, prepare materials for digitization, digitize materials and submit the digital resources. The technical representatives provide vital feedback on the digitization software throughout this process. This feedback aids the dLOC programmer in tailoring the digitization software and internal systems at the UF Digital Library Center to best serve the needs of each partner institution. The majority of this work, which is crucial to making dLOC succeed, requires significant internal and external collaboration.

dLOC's technical team at the University of Florida continues to research and improve both the workflow for our partners and the user experience for the online interface. The dLOC programmer at UF participates in the majority of the training visits to project partners where he trains the partners how to use the metadata creation and tracking software and receives valuable feedback. In addition to numerous development requests from colleagues,

partners and users, UF has conducted a number of formal usability tests for the project that have facilitated continued improvements to the dLOC site. Ochoa and Sullivan have a forthcoming article on user-centered technology for digitization projects that explains the user-centered process,⁶ a process which has informed the design of both the digitization tools and the dLOC site. The dedication and desire of the technical team to constantly refine existing technologies and to continue to evolve those technologies for new solutions has greatly contributed to dLOC's success.

In addition to the commitment from staff directly related to the partner collections and to the digitization process, the member institutions have benefited from strong administrative and institutional support. The Deans, Directors and other administrators of the member institutions have understood the problem of limited resources, the vital need for a collaborative solution, and the opportunity presented in dLOC to maximize existing resources. Administrators encouraged the original five partners to embrace the risk and opportunity presented in the idea of a collaborative digital library.

dLOC'S GROWTH

dLOC now provides access to over 6,000 titles and 675,000 images of Caribbean content. Representatives promote dLOC as a digital library resource and as a tool for ongoing digitization at various academic conferences such as the Caribbean Studies Association and the Association of Caribbean University, Research and Institutional Libraries (ACURIL). Statistics show a significant spike in traffic to the digital library immediately after the conferences. Additional outreach and promotion include teaching training workshops in Miami-Dade County, a lesson plan competition for K-12 classrooms, and a scholarly lecture series highlighting research of content in dLOC. Since the initial launch in 2006, the project has grown from a few thousand hits per month to almost 50,000 hits per month. New users can easily find dLOC content through regular web searches using commercial search engines because the metadata and full text for all items are available to search engines. dLOC, like many digital libraries, has dynamic web addresses built when users access materials within its digital library system; however, the dLOC programmer designed static citation and text pages of all content to ensure and optimize search engine access. Other users find dLOC through direct links provided by libraries and archives that highlight Caribbean digital content, through many other sites as dLOC's rich content is found by others and linked from blogs and Wikipedia pages, and through the RSS feeds available for new items for all of dLOC and RSS feeds for new items from each partner institution. As both the content in dLOC and awareness of the project continue to grow, dLOC continues to attract new users and members.

The pilot project with five Caribbean partners established the technical and organizational framework for a sustainable model for regional digital collaboration and growth. During the initial grant period, we have also been very successful attracting new members. By joining dLOC, members receive digitization training and trouble-shooting support; digitization tools within the dLOC Toolkit which include metadata creation, tracking software, electronic submission and archiving tools; and have their materials hosted and accessible on dLOC with its robust infrastructure which supports full-text searching, multiple file formats with downloadable content and page image views with zoom capability. The digital library hosting includes both partner pages within the dLOC webpage as well as customized interfaces for the partner's website.⁷ The customized holding and interface pages are to ensure that all partners receive attribution and credit for materials submitted and to ensure that materials submitted by each institution can easily be searched individually. This customization allows partners to benefit individually and collectively from participation, showcasing the value of dLOC's leveraging of digital technologies in terms of modularity, discrete representation, and aggregation. Finally, new partners also receive back-up archiving through the collaboration with the University of Florida Digital Library Center and the statewide Florida Digital Archive.⁸

dLOC continues to grow as a successful and well-regarded digital library, and word of mouth among libraries and archives generates significant interest. The dLOC Project Coordinator contacts potential members who are already interested and those who have yet to learn about dLOC, a process that has resulted in many new partners. For new partners to join dLOC, the interested institutions submit an application and that application is reviewed by the dLOC Executive Board. In order to join, institutions must meet the following criteria:

1. Willingness to contribute collections and to make these freely available to the project.
2. Availability of appropriate collections with Caribbean content.
3. Willingness to comply with common standards.
4. Willingness to designate a representative to manage local participation.

The requirements to join dLOC are minimal, to limit barriers for new partner institutions. Like dLOC's technological infrastructure, which is designed to ensure that all partners benefit individually and collectively, dLOC itself benefits from more contributing partners so any nonessential restrictions on membership would hinder dLOC's growth and development.

The list below includes all project partners that are currently contributing content online. The new members come from diverse countries, linguistic

groups, and types of institutions and with varying levels of experience with digitization.

- National Archives of Haiti
- National Library of Aruba*
- CARICOM, Guyana
- The College of The Bahamas*
- Florida International University
- La Fundación Global Democracia y Desarrollo (FUNGLODE)
- National Library of Jamaica
- Belize National Library Service and Information System*
- Pontificia Universidad Católica Madre y Maestra*
- Universidad de Oriente, Venezuela
- University of Central Florida
- University of Florida
- University of South Florida*
- University of the Virgin Islands
- Wider Caribbean Sea Turtle Conservation Network*

*New Members

Growth always implies change, and dLOC now has to balance the desire for new content and growth with our ability to support that growth. dLOC must support its current project partners while incorporating the new partners. This will bring changes in the governing structure and current operating structure. These questions about dLOC's future are currently being addressed by the group, and will be discussed in further detail in the follow-up article in the next issue of this journal. It is the dedication and flexibility of all dLOC members that has enabled the project to be a success; these same traits will help the group to determine the next steps.

EVOLVING TO MEET USER AND PARTNER NEEDS

It took time to establish the infrastructure and develop a critical mass of resources, and in the beginning there was not enough content to build topical collections. The majority of our partners contributed content focusing on a specific theme of their choosing, and the partner collection was a useful division of the content for the user. As the content grows, significant thematic and geographic collections are now emerging. Some obvious thematic collections include historical photographs, cultural history, travel and tourism, biology and environmental conservation, literature, agriculture, legal documents, slavery and resistance, government documents, university archives, maps and newspapers. Finding aids and additional contextual materials are

necessary for the most effective use of the materials in dLOC for teaching and research. dLOC is developing strategies that will address these needs in the most useful manner to meet usability and technological needs and to best enable additional growth and extension in the future.

Project partners and advisors are also developing strategies to address the needs of the growing number of institutional partners for training and additional resource preservation. While personal on-site training is ideal, both time and resources limit the number of trainings dLOC can present per year. dLOC is training existing partners to conduct digitization workshops, providing workshops for multiple partners at the ACURIL conference and developing online training videos. The video training will be available online or by mailed DVD. By moving the existing dLOC training to a series of video tutorials, basic training will be available on demand, and onsite dLOC training will then serve as the secondary level of training for advanced digitization concerns. With advanced training likely to be in demand from many existing and new partners, more onsite training partners are also being added, and the University of Central Florida has already begun sending trainers for new dLOC partners. Other partners are developing projects that combine training with resource collection and preservation. For instance, the University of South Florida has developed guides and training materials for conducting oral histories. Using those materials, the University of South Florida is developing an oral history project, "Caribbean Librarians in the 21st Century: An ACURIL Oral History Project," that will support training for conducting oral histories alongside the collection of oral histories.

CONCLUSIONS

Developing an open access, multi-institutional, multilingual, international digital library requires robust technological and institutional infrastructures that support the needs of individual institutions alongside the collaborative and ensure continuous communication and development of the shared vision for the digital library as a whole.

The Digital Library of the Caribbean (dLOC) first found success with the pilot project of five Caribbean members. dLOC has continued to grow into a thriving international, multilingual, multi-institutional partnership that is cooperatively enhancing and expanding dLOC as an open access digital library. Factors contributing to dLOC's success include an established history of trust and cooperation among partner institutions, institutional support from both staff and administration, a strong technological core that allows all materials to benefit individual institutions and the aggregated group of partners, and the planning documents that established strong governance for cooperative development.

NOTES

1. <http://webpac.uvi.edu/imls/project2002/2000.shtml>
2. www.ed.gov/print/policy/higered/leg/hea98/sec601.html
3. The nine founding institutions for dLOC: CARICOM Community Secretariat, Florida International University, Fundacion Global de Desarrollo y Democracia, National Library of Jamaica, University of Central Florida, Universidad de Oriente (Venezuela), University of Florida, University of the Virgin Islands, National Archives in Haiti.
4. National Library of Aruba, Caribbean Studies Association, The College of The Bahamas, Belize National Library Service, Pontificia Universidad Catolica Madre y Maestra, University of South Florida, Wider Caribbean Sea Turtle Conservation Network. All members that have contributed content are listed on the dLOC Partner page: <http://www.dloc.com/?m=hbbpart>.
5. The governance information is available online at <http://www.dloc.com/?c=dloc&m=hitbylaw>.
6. Ochoa, Marilyn and Mark Sullivan. "Digital Library of the Caribbean: a user-centric model for technology development in collaborative digitization projects." Invited paper to a Special Issue, *OCLC Systems & Services: International Digital Library Perspectives*: in press.
7. Partner pages include customized pages that show all materials contributed by the holding institution and the customized interfaces show those materials within an interface which has been customized to match the partner's website. For instance, see The College of The Bahamas holding page: <http://dloc.com/?h=cobn> and the holding page with the customized interface: <http://dloc.com/?h=cobn&n=cobn>.
8. For more on the Florida Digital Archive, see: <http://www.fcla.edu/digitalArchive/>.