

Establishing a Cloud-Based Consortial Platform for Library Usage Statistics (CC-PLUS)

Submitted by: Pennsylvania Academic Library Consortium, Inc. (PALCI)

NARRATIVE

Introduction

PALCI and partnering North American and international library consortia (VIVA, Jisc, Couperin.org, CRKN, USMAI, CDL, and SCELIC), request \$247,500 for a two-year National Digital Platform Project Grant. This project will further build and pilot the open source CC-PLUS prototype software developed with IMLS funds, and will establish the business models, infrastructure, and community necessary for a production-ready usage statistics tool supporting consortia with data-driven decisions in effective stewardship of library content.

The CC-PLUS (Cloud-based Consortial Platform for Library Usage Statistics) prototype is modeled similarly to the Jisc Journal Usage Statistics Portal (JUSP) built for use within the UK academic sector and currently in use by several consortia in the UK and beyond. CC-PLUS builds on the JUSP concept by creating an open source software, community, and administrative tool set and interfaces to provide libraries and consortia with an option to deploy the software locally, or as a hosted service as needed, with flexibility to meet community-identified usage data management challenges within North America and around the world. Collaborative development of CC-PLUS will result in a shareable platform deployed by consortia and member libraries to:

- establish and enhance proactive, community-based approaches to usage data management, especially among consortia in North America, with global applicability;
- create staffing and cost efficiencies with flexible, shared infrastructure;
- increase libraries' analytic capacity with flexible tools;
- support adherence to and use of COUNTER and NISO standards within the library, publisher, and consortial communities; and
- empower libraries and consortia to practice exemplary stewardship by making data-informed decisions regarding investments in electronic resources.

1. Statement of National Need

This proposal directly addresses a widely-shared, community-identified need for library usage statistics tools and services with consortial functionality, which will empower consortia to serve as exemplary stewards of library resources and collections, and promotes the use of technology to facilitate discovery and data-driven decisions.

Consortia Struggle to Evaluate Core Services

More than 200 library consortia around the world exist to give their members strategic advantage, leveraging the combined strength of individual institutions to further commonly held needs. Consortia excel at providing the infrastructure and expertise needed to work collaboratively by obtaining and creating resources and services critical to the success of their libraries. Consortia pool members' resources, budgets, personnel, and technology, to provide libraries with critical mechanisms to support their changing roles and keep pace in the constantly evolving information environment.

Consortia have served an important and growing role in libraries' large-scale joint licensing and deployment of electronic resources since the late 1990's, yet consortia also readily acknowledge the difficulties they face, namely cost, technical expertise, infrastructure, and time, in evaluating this important work. Electronic resources usage data are vital to understanding the value of library and consortial investments, but without tools to manage and analyze this data, many struggle to make the data-driven decisions necessary to ensure effective stewardship. Common analyses of these data, such as cost-per-use, benchmarking, and usage trends are resource-intensive to compile and track at consortial scale, especially as they are often combined with other issues related to data integrity and reporting problems.

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Standards and protocols, such as Counting Online Usage of NeTworked Electronic Resources (COUNTER) and Standardized Usage Statistics Harvesting Initiative (SUSHI) aid in the reporting and collection of usage data, but there continues to be wide variance among content vendors in how, and to what extent, these standards are supported. Additionally, few consortia have the staff or infrastructure necessary to design automated approaches.

Many consortia complete their usage data assessment work through heavy use of manual collection processes and Microsoft Excel. While Excel provides excellent assistance with cleaning, processing, and viewing data, it cannot provide the large scale analysis or significant storage capacity of an integrated database. In addition, workarounds are needed as the volume of data to be analyzed in consortial data sets often run against Excel's limitations on rows and columns. Homegrown databases are one such workaround, but are not scalable or easily replicable at member institutions. The JUSP service in particular is a mature and well-established approach to usage data management developed within the UK and offered globally, but also relies heavily on in-house expertise and established communities not present among many North American consortia. Without easy-to-deploy, flexible tools and established communities supporting these efforts, gathering consistent usage data is complicated and unsustainable. For those with disparate locally developed services, there is often duplicated effort in the resolution of shared data issues. Consequently, obtaining and analyzing reliable and consistent electronic resources usage data from multiple vendors is a very difficult and time-consuming process, especially at large scale. The lack of standard tools and approaches easily available to consortia to evaluate our investments also makes it difficult to identify issues, hold providers accountable for maintaining such standards, and address problems related to this data as a community.

Consortial Community Articulated the Need for Usage Data Tools

These issues are further borne out in feedback from the international library consortium community. In a 2015 International Coalition of Library Consortia (ICOLC) survey, this community overwhelmingly articulated a mission critical need for usage statistics tools and services to support consortium content decisions.¹ More than 40 responses, representing thousands of libraries from all over the world showed consortia were dealing with usage data using manual processes and time-consuming methods, e.g., emailing vendors to obtain reports and manually downloading multiple reports for each member institution. Only 20% of respondents were able to make use of automated services, such as the SUSHI automated retrieval standard, further demonstrating much of the work collecting data is being done manually. Integral to the CC-PLUS project, were the survey results highlighting specific functionality the group wished to have, including streamlined processing, ability to combine key data points, vendor password management, and tools facilitating analysis. It also demonstrated a tremendous urgent shared need for usage data and usage data system solutions, highlighting the struggle to provide this pivotal service to members, and revealing the need for further collective action. Despite this clearly identified need, no scalable, widely-affordable open source solutions exist.

Existing Commercial Solutions Do Not Meet Needs of the Consortial Community

Some commercial usage data systems exist, though they do not sufficiently address consortial needs in several ways. First, commercial systems available to consortia are often integrated with ILS functionality or other products.² Though these systems offer automated functionality similar to features of the solution proposed in

¹ Please see supporting documents for 2015 ICOLC Usage Statistics Survey and ICOLC Survey Results Summary.

² Ex Libris' Alma report functionality for consortia became available in 2017, but this system is tied to use of Alma, which is costly unless a library is already using the ILS. OCLC's WorldShare License Manager requires the use of OCLC License Manager, tied closely with OCLC WMS, and does not offer a consortial interface integrating many libraries usage data into a single interface.

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this project, they require libraries to maintain and use the same ILS, whereas most consortia serve libraries using different ILS systems. One known existing commercial system not tied to an ILS, ConsortiaManager, still requires significant manual effort to acquire and display usage data from multiple libraries in a single interface. ConsortiaManager³ is a third-party consortium workflow management tool offering the management of multiple libraries' usage data through a single interface, but based on a review and demonstration of the usage data service, it does not offer automated harvesting, nor is it flexible enough for use by most consortia.

Other commercial solutions work for individual libraries (Intota, EBSCO Usage Consolidation Service), but offer no consortial functionality, and do not allow libraries/consortia to collaboratively address the shared problems mentioned above. Additionally, these products are costly, require significant management and staffing time at the local level, and still risk the exposure of competitive intelligence information. Some very recent commercial usage data solutions offer a few consortial features, but are proving ill-suited to the needs identified in this project. RedLink's Consortia Dashboard and MPS Scholarly Stats are the two current commercial solutions with consortial features, and both of which have been piloted and used by consortia participating in this project's Advisory Board. These tools present consortial functionality as an afterthought, and lack key automation and consortial functionality necessary for meaningful analysis. Commercial solutions also present major disadvantages, not the least of which are cost, and risk of exposure of valuable competitive intelligence information critical to successful negotiation. Providing library vendors or third-party companies with this information puts libraries at a disadvantage. There is also a strong possibility libraries' own usage data may, in such a scenario, be repackaged and sold back to the very institutions from which it was derived.

The lack of consortial systems in this area is not surprising: the volume of consortial data is substantial, and the efforts involved in automation of data harvesting, verification, ingest, and storage are more complex than the already complicated needs of an individual library. The lack of commercial solutions has led some consortia to create locally developed alternatives, while others simply cannot afford the staffing, expertise, or resources to do this important work on their own. Some consortia hire staff who gather and normalize statistics for all of the member libraries; however, assembling, housing, and analyzing usage statistics for multiple libraries quickly becomes complex and presents significant challenges. One of the local solutions developed by consortia that serves as a model for this project, Jisc's JUSP service, is notable for its ability to meet the complex needs of usage statistics in the United Kingdom higher education consortial environment, and in other locations globally with strong local community support/infrastructure, such as Australia.

New COUNTER Release 5 Standards Add Complexity and Increased Need for Tools

The timing of the CC-PLUS initiative is fortunately paired with the upcoming COUNTER Code of Practice Release 5. Compliance with COUNTER's latest standard (R5) will be required beginning January 2019, although in practice it is anticipated that the transition will follow previous COUNTER release patterns of adoption, and prove to be significantly more gradual. In this new standard, publishers and aggregators are no longer required to support a standard Consortium Report with consolidated, de-duplicated data, further increasing the need for a consortium-focused usage statistics infrastructure. Members of the CC-PLUS Advisory Board have been involved with Project COUNTER's efforts to develop consortial harvesting tools to help ease this transition, but the plans for development of these tools are still unclear, and at this time, the focus of any newly developed harvesting tool will be narrow, leaving much manual work to be done, with no planned solutions for storing or analyzing data.

Addressing Consortial Usage Data Challenges with CC-PLUS

³ <https://www.consortiamanager.com/pages/index>

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In light of the challenges named above and the dearth of existing solutions, PALCI and partnering organizations developed the CC-PLUS prototype as the first step toward a new National Digital Platform for consortial usage statistics, with a 2017 National Leadership for Libraries Planning Grant (LG-72-17-0053-17). The CC-Plus developer, with a background building consortial usage databases, along with consortial grant partners, created a multi-tenant open-source software prototype that included a consortium administrative layer and interface. With the prototype complete, partnering organizations must now pilot and enhance the software, create a business model, and develop the technical infrastructure and user community to sustain production-level cloud-based services.

The CC-PLUS prototype, available under a GNU General Public License, is currently capable of:

- Importing and storing consortial/library SUSHI credentials
- Harvesting, validating, and storing usage data for the two most critical reports for informing collection decision making (JR1 and JR5) for multiple consortia, each with multiple libraries, from major scholarly publishers, including Association for Computing Machinery (ACM), American Chemical Society (ACS), American Psychological Association (APA), Institute of Physics (IOP), and Wiley
- Providing system alerts for problems with data harvests or other consortium-defined criteria, which significantly reduces the need for staff intervention
- Reporting usage data in a dynamic interface, which responds to consortial/library operational needs

The technical development proposed in this project will address the issues identified above by offering an open source software package which can be easily deployed or offered as a hosted service to consortia, and by extension, to individual libraries. Many features were out of scope in the development of the prototype, so future improvements include:

- More COUNTER R4 Reports (necessary for the anticipated transition period between COUNTER Release 4 and 5)
- COUNTER R5 Reports
- Enhanced User Interface Design
- Journal Title and Package integration investigations (external services e.g., GOKb, KBART)
- Manual report ingests with CSV-based data imports
- A User Interface for multi-consortial administration
- Improved process for local install
- Alerts identifying when data are re-stated
- Fuller user documentation

Equally important to technical development will be on-going community development and coordination. A community led effort, this project's infrastructure and services are directly informed by those who will make up use and improve the tool into the future. Piloting and testing are required to refine feature development and adequately identify costs related to data storage, tool administration, and maintenance. This project will prepare easy-to-deploy solutions for consortia who prefer/need to host the software locally, as well identify preferred partnerships, e.g., sharing of consortial infrastructure, and appropriate service providers for those who require hosted versions. Lastly, this project will continue to build the partnerships required both within and outside our communities to ensure the consortial community can use CC-PLUS and adhere to recognized standards, such as COUNTER and SUSHI to successfully address long-term consortial usage data issues.

Part 2. Project Design

Project Performance Goals - This project's performance goals and outcomes are as follows:

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This project will result in a modular, open source platform that will 1) increase libraries' and consortial analytical capacities, 2) create staffing and cost efficiencies, and 3) empower consortia and libraries to make informed decisions about their investments, serving as effective stewards of library collections. CC-PLUS will achieve these goals through creation of an open source consortial usage data platform to provide

- the robust management of many libraries' usage data through a single interface;
- an automation of data harvesting, verification, ingest, and storage;
- a shared consortial tool for data analysis, preservation, and distribution of usage data to member libraries;
- and a collaborative, community-based approach to resolving usage data issues.

Performance Goals & Measures - The projected performance goals and outcomes for this project are as follows: Improve consortia and libraries' abilities to manage the nation's content and collections by:

1. Extending the CC-PLUS prototype capabilities to:
 - Harvest, ingest and display COUNTER R4 DB and BR reports, as well as COUNTER 5 reports as they become available
 - Allow for manual imports/ingest of CSV-based data
 - Set system alerts which may be defined at the institution-level, rather than consortial-level
 - Develop a multi-consortial administrative user interface and set of tools
 - Identify and alert users when data is restated by publishers/providers
2. Improving local software installation process
3. Piloting/testing the software to refine features, identify issues, improve usability, and identify costs needed in developing business models
4. Holding focus groups at ICOLC meetings to gather direct community feedback on tool features
5. Developing fuller system documentation
6. Exploring integrations with other contextual data sources (E.g. journal package entitlements data, and institutional-specific data, such as cost information and user population size) and data visualization tools (E.g., Tableau), as well as web services commonly used by consortia
7. Establishing appropriate community governance mechanisms, including mission, vision and values, and review open source licensing terms to meet the the needs of the community, positioning the open source tools for long-term sustainability and adoption
8. Building partnerships internally (e.g., among consortia in the ICOLC community) and externally (e.g., the Open Library Foundation) to identify appropriate hosted-service provider solutions

The above-named goals and performance measures assume there is enough similarity among library consortia to make a shared usage statistics system meaningful, especially when deployed for the diversity of consortia within North America. The JUSP software, upon which this project is conceptually modeled, was developed for the Jisc user environment, meeting needs of UK higher education and UK consortia. Although Jisc provides JUSP services to institutions and consortia beyond the UK, the primary goal of the JUSP service is to meet the needs of its UK members, and support international standards development, rather than gain an international customer base. Similarly, Couperin.org's adaptation of the JUSP software, MESURE showed the need for significant local infrastructure, with adjustments and customization, including the development of customized reporting, to meet the needs and requirements specific to the higher education and research environment in France. Care will be taken to ensure the final CC-PLUS product is both general and flexible enough to be applicable to a diversity of consortial environments. Early iterations will limit the project's scope to standardized COUNTER data, but later phases are expected to broaden the scope significantly, and thereby expand the number and type of consortia to which this project may be of interest.

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Identified Risks - Risks identified by project planners include:

1. Unexpected changes to COUNTER and SUSHI standards impacting the project's underlying technology and processing capabilities.
Mitigation strategy: Project staff should maintain close ties to the COUNTER and NISO organizations (e.g., Anne Osterman of VIVA is a current member of the COUNTER Board of Directors and NISO SUSHI Standing Committee) and monitor all upcoming releases, as well as advocate for the needs of the consortium community.
2. Major changes in the marketplace, e.g., Availability of a widely-affordable commercial solution that could take market share away from the open source consortial solution described here.
Mitigation strategy: Encourage and practice transparent communication with consortia on this topic, share information via ICOLC email lists and meetings, actively engage the community in identifying new products, piloting new software and understanding the implications of commercial solutions for consortial work.
3. Major changes in project personnel, e.g., loss of key project staff
Mitigation strategy: Develop essential project documentation and planning materials, share planning responsibilities among team members, and encourage consortia to contribute with staff time and resources, including technical development personnel.

Project Schedule Overview

Phase 1 (October 2018 – July 2019): Transition from Prototype to Production-Ready

Develop & Enhance Core Functionality for Widespread Adoption by Libraries & Consortia

- Identify a project coordinator and a user interface & usability developer and begin planning of contract-based work
- Develop thorough project plan documentation with technical specifications, milestones, and deliverables
- Extend harvest, ingest, storage, and display functionality beyond JR1 and JR5 to include additional COUNTER R4 and R5 Standard Reports, with a focus on Journal Reports, Book Reports and Database Reports, including development of automated processing queues for large scale data processing at the publisher, library, and consortium level
- Expand publisher and aggregator connections to nearly all COUNTER-compliant providers for automated and secure harvest, ingest, and storage of usage data
- Enhance both Administrative and Reporting Interfaces with user interface design and usability testing, including a global administrative function for improved multi-tenant administration and deployment
- Study and consider feasibility of enhancing system report validation & error reporting, including automatic checking for and alerting users to usage data re-stated by publishers and aggregators
- Explore the use of APIs and other means to incorporate contextual data sources (e.g., KBART title lists to assist libraries with entitlements), tools (e.g., ERMs), and data visualization software (e.g., Tableau)

Phase 2 (July 2019 – March 2020): Deploy, Test & Refine in Production Environments

Pilot Both Hosted & Locally-Installed Use Cases of the Open Source Software

- Deploy the software package in production environments for six months of testing and evaluation by identified consortia and libraries, including both locally-installed and hosted use cases
- Identify and document service feasibility, infrastructure requirements, and costs associated with both hosted and locally-managed installations to develop business models and infrastructure recommendations
- Investigate releasing the software under a more permissive open source license (e.g., Apache 2.0) for maximum viability and adoption

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Refine Features & Functionality Using Community Feedback

- Use data gathered from the pilot and stakeholder community to further refine features and functionality necessary for widespread consortial adoption

Phase 3 (January – September 2020): Plan for & Recommend Future Services for Sustainability Develop Hosted Service Models & Prepare Consortium Community for a Sustainable Cloud-Based Service & Infrastructure Solution

- Prepare easy-to-deploy solutions for consortia hosting the software locally
- Create a business model for the development of a hosted service, leveraging deep collaboration for a shared consortial infrastructure to support cloud-based services for the CC-PLUS software
- Identify preferred partnerships and appropriate service providers for those who require hosted versions to transition this project from grant funds to a sustainable community-funded endeavor

Assessment & Evaluation

Feedback on the platform evolution and project parameters will be regularly contributed by the Advisory Board and supporting partners, described below. This group will meet at least monthly via conference and/or video call to review project plans, timeline, feedback, and development of the platform. The Advisory Board will also be the group responsible for ensuring the project is on-course to meet performance objectives and deliverables. This approach ensures the project remains a collaboratively developed project addressing a specific need, already clearly identified within the consortial community. As such, consensus building and buy-in are critical to its success. For those reasons, and because of the project's diverse partners, the timeline above accounts for reports to be distributed to the consortial community for feedback, and continuous communication and testing on platform phases as they are developed.

To that end, the consortial community, through outreach on the ICOLC email list, has already responded enthusiastically to this project, as reflected in the letters of support. A listserv for consortia members to provide regular feedback as the project progresses has already been developed and populated.

Project Communication and Dissemination

The results of this project will be made available to consortia through monthly updates to the ICOLC (International Coalition of Library Consortia) community email list, a project website, and interim and final reports, with webinar presentations, and presentations planned at relevant conferences and venues (e.g., ICOLC conference, Charleston Conference, and ALA). Software will be made available through the project webpage, and will be available through public open development sites, such as GitHub.

Regular project updates will also be distributed to other appropriate organizational channels, such as relevant library listservs, NISO, and COUNTER channels, in order to strengthen the project in all areas of the usage data supply chain (publishers, standards organizations, and libraries).

Project Team & Advisory Board

This project will be directed by Jill Morris, Associate Director of the Pennsylvania Academic Library Consortium, Inc (PALCI). Jill directed phase 1 of this project, funded by IMLS, and has nine years experience working for two large library consortia in senior positions. While working for a large multi-type consortium in a previous professional position, Jill managed a staff who developed and maintained a locally developed automated usage data system with a web-based interface for the display and analysis of library usage data, including the selected CC-PLUS application developer, Scott Ross. During this time, Jill also studied ways to make usage data more meaningful to libraries by contextualizing this data and encountered many of the same

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challenges articulated by her consortial colleagues in the 2015 ICOLC usage data survey.⁴ In addition, Jill has significant experience managing library consortium projects, and has a deep knowledge of library consortia needs and challenges.

In order to meet the goals outlined above and move the prototype to a production-ready tool and service, the project team will again contract with a trusted application developer. Should this project be funded, Scott Ross, an independent application developer, has already agreed to continue leading the technology development effort. Scott Ross is an independent contractor who built the CC-PLUS prototype, and recently retired from working with NC LIVE, a multitype library consortium, for more than 17 years. As the primary application developer for NC LIVE, Scott oversaw all technical development and project management, and built a locally developed usage data system, including an automated/scripted harvest, ingest and web interface reporting system still in use today⁵. Scott is familiar with usage data standard protocols and has worked on several recent projects to modify COUNTER usage reporting for various consortia.

Central to the success of this initiative is the continuation of its Advisory Board composed of eight committed partner organizations experienced with and knowledgeable about journal usage data systems and formats.⁶ These organizations include consortia and non-profit organizations of different sizes and scopes representing many types of libraries, including academic, public, and research libraries. The Advisory Board members have deep understanding and hands-on working knowledge of consortial and library usage data needs, formats, systems, and workflows for managing this data. Jisc, developer of the JUSP software, is a key partner in the project, as is Couperin.org, the French consortium which adapted JUSP code for its local needs. Many of the additional consortia, including VIVA, CRKN, CDL, and USMAI, track usage statistics centrally for their member institutions through a variety of methods and are familiar with the range of challenges in managing consortial data. They will be ideal partners for testing the solution as it develops. In addition, members of the Advisory Board are active on the COUNTER Board of Directors, the COUNTER consortial harvesting tools working group, the NISO Board of Directors, and the NISO Committee for SUSHI. This involvement will enable direct communication with these standards organizations as needed.

PALCI will also contract for additional project support, including a project coordinator to aid in project planning, management, logistics, meeting planning, communications, grant documentation, and technical documentation, as well as a user interface developer to improve the system's usability and design of the reporting and administration interfaces.

Project Budget - This project will take two years to complete. The projected schedule and budget is submitted with a strong degree of confidence based on work completed in the planning grant phase, with a total request of \$247,500. We estimate:

- Technical consultancy and application development contract - \$137,500
- User interface developer contract - \$16,500
- Project coordinator contract - \$40,000
- Project Director staffing & benefits - \$15,000

⁴ Morris, Jillian and Guhde, Emily. (2014). Making Usage Data Meaningful, *Serials Review*, 40(3), Available from: <http://www.tandfonline.com/doi/abs/10.1080/00987913.2014.948146>

⁵ <http://www.nclive.org/usagereports>

⁶ In addition to PALCI, committed partners and advisory board members include representatives from the Virtual Library of Virginia (VIVA, USA); Jisc (UK); Couperin.org (France), Canadian Research Knowledge Network (Canada), California Digital Library (USA), University System of Maryland and Affiliated Institutions (USMAI), and Statewide California Electronic Library Consortium (SCELC).

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- Virtual server services, data storage & setup, including pilot infrastructure needs - \$10,000
- Meeting travel - \$6,000
- Indirect PALCI costs at a rate of 10% - \$22,500
- Although no match is required, there will be significant in-kind contributions of staffing, consulting and other resources by PALCI and all partner organizations.

Sustainability

All phases addressed in this project will work toward long-term sustainability and success of this platform, resulting in the deployment of the platform across multiple consortia, in addition to the creation of a collaborative community aimed at improving consortial effectiveness in this area. As the platform is open source and adopted by a greater number of consortia, the community will continue to contribute to the software, building out additional functionality and meeting the needs of specific consortial situations. Rather than attempting to create a singular monolithic piece of software, this project will leverage existing services and develop ways to connect, integrate with, or feed other well-known and important library services, such as Tableau visualization software.

This project will also result in the eventual creation of hosted services similar to that of JUSP in the UK and MESURE in France. Though this platform will be lightweight and flexible enough for consortia to implement on their own, provided local infrastructure is available, it is also crucial for those with limited staffing and technical resources to have an affordable hosted usage statistics service. This project will identify preferred hosted-solution(s), and will pursue deep collaboration among consortia for shared infrastructure, as well as other partner organizations, such as the Open Library Foundation, which may further develop or support hosted options for this service on a cost-recovery basis.

Further development of the platform and these services will become self-funded efforts, with developers contributing to an open platform, creating efficiencies for those currently managing their usage statistics through other means, and allowing those with limited resources to take part in a collaborative approach to managing this type of data.

Part 3. Diversity Plan

The CC-PLUS project team strives to engage the broadest range of consortia types as possible, as well as stakeholders throughout the entire supply chain of electronic resources usage data and management tools. The project team itself represents a broad range of consortia types that serve a diverse cross-section of users, nationally and internationally. More importantly however, the success of the CC-PLUS effort is predicated on engagement with the ICOLC community, which represents consortia of all different sizes and user types, globally. These consortia have a vested interest in the success of this project and provide services to all user types, including, but not limited to, individuals from traditionally underrepresented groups by race, ethnicity, religious affiliation, gender identity, sexual orientation, ableness, veteran's status, and socio economic status. These consortia also represent libraries with diverse collections, budgets and resources. Recognizing that even with this reach, extra steps must be taken to ensure a diversity of experience is represented, the project team will take special care to ensure that focus and survey groups include representatives from organization types that are not represented in the grant team membership, and will specifically reach out to different consortia types that serve traditionally underrepresented groups, to ensure that input is included in the development of this tool.

Part 4. National Impact

This strategic project will have far-reaching and transformative impact on diverse library consortia representing thousands of libraries in the U.S. and around the world by creating an open source national digital platform for

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usage statistics to support exemplary stewardship of library collections. Library usage statistics, although certainly not the only measure, are often the only practical way to assess effectiveness of collections funds. This system will improve management of the Nation's content and collections under the stewardship of consortia by providing an open usage statistics platform to manage data for libraries. Additionally, this project will improve effectiveness of libraries by decreasing time spent managing disparate systems, support data-driven decision making for libraries without the infrastructure to maintain this type of information locally, and most importantly, allow for consortia and member libraries to place a greater focus on analysis and use of usage data for informed collection development activities, including vendor negotiation, collection management, and resource sharing. The CC-PLUS Project fills the current infrastructure gap, and allows consortia of many sizes and types, as well as individual libraries to make meaningful use of critical library data.

Alignment with IMLS Priorities

By collaboratively addressing the community-identified usage data challenges surfaced in the 2015 ICOLC survey, the proposed project fully aligns with the IMLS priority of a national digital platform to support exemplary stewardship of library services. In leveraging the collective knowledge of library consortia with decades of experience and vested interest in usage statistics management, this project brings a nuanced understanding of the digital infrastructure issues faced in the creation of such a platform, as well as the capacity and expertise of the international consortia community to tackle these issues. This platform will answer the challenges outlined in the statement of need by:

- building on existing technologies and work,
- engaging with consortial communities, and
- promoting computational analysis through adoption of an open, internationally accepted, standards-based tool that empowers libraries to make informed decisions about investments in electronic resources.

Previous calls for project support and partnership yielded enthusiastic support and commitment from partnering organizations, including 8 project partners, support from the [ICOLC](#) (International Coalition of Library Consortia) Coordinating Committee, and 15 individual library consortia in the U.S., Canada and around the world. With the elimination of the consortial report in the latest COUNTER R5 Standard, this software will play a critical role in delivering essential usage reports and decision-informing data in a meaningful, usable format to consortia spending millions on electronic resources.

As outlined in the performance measures, the project webpage and ICOLC list will serve as a communication forum, and will make the platform freely available under an open source license available on GitHub. Interim reports at relevant conferences will keep the community informed, along with webinars and monthly updates describing progress on project outcomes and deliverables identified above. This project specifically addresses long-term sustainability, providing consortia with the options necessary in selecting appropriate partners and infrastructure/service providers. In addition, this project boasts eight committed partners and an engaged Advisory Board ensuring robust community feedback throughout all stages of the project. These diverse consortia and partner organizations represent hundreds of libraries across the United States, as well as organizations in Canada, the United Kingdom, and France. Project partners will communicate with stakeholders and refine community-based needs by: developing the functional needs for the platform; piloting, testing and collecting feedback on product development; and finally, by creating and nurturing a consortial community for process and platform improvements. Success will be measured by community engagement in the development of the platform, the completion of the platform, and the broad dissemination of the report and tool to the community at-large.