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before the
Committee on House Administration
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"Improving Customer Service for the Copyright Community:
Ensuring the Copyright Office and the Library of Congress
are able to meet the demands of the digital age"

Chairman Miller, Ranking Member Brady, and Members of the Committee:

This is my first opportunity to testify before the committee since becoming Acting Librarian nine weeks ago. Dr. James H. Billington appointed me to be Deputy Librarian in January 2015. Before becoming Deputy, I served five years in the Library's Congressional Research Service and five years in the Law Library, most recently as Law Librarian of Congress.

I look forward to continuing our work together in enhancing the services the Library provides the American people and the Congress. With a new senior executive team and organizational alignment, an updated strategic plan, and increased focus on knowledge-based and data-driven management, the Library is actively addressing current challenges, including those that are the focus of this hearing, and I am optimistic that it is positioned for the future and prepared for its new leadership.

Carved on the front of the Library of Congress Madison building are the following words.

"Knowledge will forever govern ignorance
and a people that mean to be their own governors
must arm themselves with the power that knowledge gives."

President Madison's powerful statement undergirds the mission of the Library of Congress: to provide Congress and the American people with a rich, diverse, and enduring source of knowledge that supports Congress in fulfilling its constitutional duties and empowers America in its intellectual, creative, and civic endeavors.

We at the Library want it to be engaging, inspiring, and useful. It is not merely for love of statistics that we say this library that Congress has sustained for more than 215 years is the largest collection of the world's recorded knowledge ever assembled by one institution; that the Library holds over 160 million items and includes the world's largest collections of legal materials, films, sound recordings, and maps; that its dedicated staff has provided research

and analysis for the Congress for 100 years through the Congressional Research Service (CRS) and for almost 200 years through the Law Library; and that the Library has worked to "promote the progress of science and useful arts" since becoming the national home of the copyright function in 1870. Copyright is an integral part of the Library's role as a driver of U.S. creativity and innovation. Motivation to create and share the fruits of the mind is diminished without the protection for intellectual property that copyright provides. For 145 years, the Library has been not only the home of knowledge, but also its staunchest defender. The numbers and history remind us of the scope of this great institution. We are proud of the Library's role as a knowledge resource and its continuing service of the public good.

We take very seriously our duty as stewards of this precious resource and as servants of current and future generations. We also appreciate the realities of the digital age: the change it has brought to the forms of knowledge that are our stock in trade, to the tools we use to deliver our services, and to the expectations of our users, including the clients of the Copyright Office.

The last ten months at the Library have been eventful. We have looked closely at our strategic goals, organizational structure, and management. In responding to key audit reports, we are incorporating federal and industry best practices into updated information technology (IT) governance and operations. Making progress on these fronts is essential to delivering effective service to the copyright community and others who rely on the Library of Congress. Today I will:

- update you on organizational and IT efforts, and

- discuss modernization of the U.S. Copyright Office.

Library Management, Organization and Strategic Goals

The Library is in an important period of transition, and we have assembled an executive team and completed an agency realignment to ensure strong momentum going forward. This executive team includes Chief of Staff Robert R. Newlen, who has devoted 40 years to the Library of Congress in several offices in CRS and as Assistant Law Librarian. He has a deep understanding of the services the Library offers to the Congress and the American people.

My colleague Maria A. Pallante, Register of Copyrights, has testified before this Committee, and you are of course very familiar with Congressional Research Service Director Mary

Mazanec. The Library also has new executives to lead the units that together manage the national collection.

J. Mark Sweeney became the permanent Associate Librarian for Library Services in February this year. As a former Director of Preservation and Chief of the Main Reading Room, Mr. Sweeney joins me in expressing deep gratitude to the Congress for approving the joint request from the Library and the Architect of the Capitol to lease temporary collections space. The leased space will relieve overcrowded Capitol Hill shelves and provide a critical bridge to Module 5—the next high-density preservation and storage module the Architect is building for the Library at Fort Meade.

Jane D. McAuliffe, previously head of the Library's John W. Kluge Center, is now Director of National and International Outreach (NIO). NIO is a new unit that unites programs that share the national collection with the world—fellowship, intern, and teacher training programs; exhibitions and publishing; services to federal libraries and other customers; library service for the blind and physically handicapped; digital partnerships; the Poet Laureate Consultant in Poetry and the Young Readers Center; and celebrations of literacy and creativity such as the National Book Festival. A scholar and experienced college president, Dr. McAuliffe brings both skill and vision to these exciting programs.

In early October this year, Roberta I. Shaffer—who served as Law Librarian of Congress and Associate Librarian for Library Services until her retirement in 2014—agreed to return temporarily to lead the Law Library while we finalize the national search for a permanent Law Librarian.

In addition to these leaders of programmatic units, the Library has new leadership in critical management positions.

In May, Edward R. Jablonski became the new Chief Operating Officer and supervises management support services that include contracting, finance, facilities and support services, security, emergency preparedness, human resources, and IT. Mr. Jablonski served as the CRS Associate Director for Finance and Administration and, in his prior naval career, as Deputy Commander and Comptroller of the Naval Sea Systems Command, among other posts.

Mary Klutts, well known to you as the Library's Budget Officer, in January was named the Chief Financial Officer and brings to the position of CFO a thorough grasp of Library programs and finances, and understanding of the support the Library provides to fellow legislative branch agencies through cross-servicing arrangements.

I am also happy to report that in September Bernard A. Barton, Jr. became the Library's new permanent Chief Information Officer (CIO). Formerly the CIO and Deputy Administrator of the Department of Defense Technical Information Center (DTIC), Mr. Barton brings many years of information technology experience to the Library. Most recently, he provided executive direction in planning, implementing, and evaluating long-range IT activities at DTIC and managed the day-to-day activities of the organization.

I want to acknowledge and thank Elizabeth R. Scheffler for stepping forward earlier this year to provide IT direction as the Library conducted a national search for a CIO. I thank my colleague Register Pallante for suggesting Ms. Scheffler and detailing her to the Library's central IT operation for eight months. Ms. Scheffler, Director of Public Records and Repositories for the U.S. Copyright Office, served from January through September as Interim Library CIO. During her tenure, she produced an interim IT strategic plan. The plan focuses on updating the Library's IT strategic governance process, finalizing the enterprise architecture, incorporating industry and federal best practices into operations and planning, and addressing infrastructure projects that will improve IT services Library-wide. With the interim plan, Mr. Barton has a solid foundation for development of a complete IT strategy that will support the Library's institutional strategic plan for the next five years.

To revamp the Library's organization, we began in June to realign programs and operations. We created the NIO service unit to elevate outreach, educational, fee-for-service, and national service activities. We consolidated the institution-wide management support structure under a Chief Operating Officer in the Office of the Librarian.

Most importantly, the realignment separated IT infrastructure, development, and support functions from digital collections and digital outreach functions. These distinct management support and programmatic functions had been combined in the former Office of Strategic Initiatives. Now, digital collections—both born-digital materials and those digitized from analog—are managed alongside traditional materials as part of the national collection. Teaching with Primary Sources and other digital outreach efforts are managed in NIO. Without these programmatic responsibilities, the focus of the new Office of the Chief Information Officer (OCIO) is squarely on IT planning, management, and service delivery, including web development and repository development.

On September 30, the Library published its 2016-2020 institutional strategic plan. The plan is a clear statement of the Library's mission, values, and functions. It provides a framework for our operations as we position ourselves for the future and prepare for new leadership. The plan identifies strategies and actions to achieve specific outcomes. Two strategies from the plan are particularly relevant for today's hearing.

- Deploying a dynamic, state-of-the-industry IT infrastructure across all parts of the Library that follows best practices and standards.

  Accomplishing this strategy includes harmonizing IT systems, ensuring security and continuity of operations; developing policies that allow location-independent access while protecting networks, data, and intellectual property; and providing technology-enabled access for the blind and physically handicapped and other communities with specialized access needs. Fundamental to this strategy is employing an IT governance structure that ensures accountability, efficiency and coordination in managing the institution's IT portfolio.

- Working with the U.S. Copyright Office to develop modernized copyright systems and practices, in accordance with the copyright law and public objectives.

  Success with this strategy entails supporting modernization of the U.S. Copyright Office with respect to technology and infrastructure, registration services, and the accuracy, timeliness, and searchability of copyright records. Also important is working to assure the effective exchange of bibliographic data and the smooth transfer of the copyright deposits most critical to the current and future national collection.

Information Technology Management and Operations

The Library has focused in earnest on its information technology management challenges. In January, shortly after I became Deputy Librarian, the Library stopped temporary rotations into the position of CIO and began a nationwide recruitment effort that culminated with Mr. Barton's appointment. At that time we also began planning to realign the Library so that the OCIO could focus solely on IT functions. While these changes were pending, we brought Ms. Scheffler in from the U.S. Copyright Office and supported her with a hands-on Deputy CIO to begin addressing known issues.

Early this spring, the Government Accountability Office (GAO) delivered companion audit reports to the Library that severely criticized both the institution's overall IT planning, management, and operations, and the U.S. Copyright Office's planning and justification for certain IT investments. The Library Inspector General (IG) also delivered reports on IT investment management and system development life cycle management. Together, these reports offered dozens of specific policy and operational recommendations to the Library. We welcome these examinations and the constructive guidance they give.

That knowledge and guidance has proven critical to developing the dynamic, state-of-the-industry IT infrastructure and management the Library needs. In many cases, the findings and recommendations confirmed the Library's own observations and plans to implement improved organization, infrastructure, and services to meet our vision of IT for the Library of Congress. The new CIO has prioritized, in his two months on the job, establishing productive relationships with Library components (and their IT operations) so that he can develop an understanding of their requirements and better deliver the IT services they need.

The GAO report was structured around six themes. The themes are itemized below and include updates on some of the key actions undertaken in each area.

- First, to provide strategic direction for use of IT resources through IT strategic planning, enterprise architecture improvement planning, and human capital planning.

  The Library has been using the interim IT strategic plan published in April of this year as a guide to improving operations. In the coming weeks, we will finalize a new IT strategic plan that is linked to the institutional strategic plan for fiscal years 2016-2020. We established an office of IT Strategic Planning and Investment Management within the OCIO. This office has taken over updating the enterprise architecture and has established processes to define the future IT state and how best to achieve it. An outside expert is verifying and validating the work of this office and identifying changes that could be beneficial. We are developing an employee IT skills assessment that will be modeled on approaches used successfully in other organizations and will provide a baseline for future training and staff requirements.

- Second, to provide a framework for effective IT investment decision-making and investment management.

  With the participation of Library stakeholders, we have refined an IT strategic governance process that defines roles among the Library's Executive Committee, IT Steering Committee, Architecture Review Board, and other governance bodies. The process is being incorporated into appropriate Library of Congress regulations and directives.

  The principal benefit of this process will be standardized documentation for investment proposals and regular reporting on investment status. We already are using such documents in decision-making. In a meeting on the Library's fiscal 2017

budget request, the Executive Committee worked from IT investment proposals that had been reviewed and annotated by the OCIO and the relevant bodies. We will refine and expand the process going forward.

Just as process and documentation are important, data are, too. This year we completed a physical inventory of Library IT assets. The data will inform our assessments of support requirements, life-cycle replacement, and other regular operational matters. We developed an approach for categorizing IT expenditures (in addition to basic budget object-class coding) that is being used in executing the fiscal 2016 budget. The refined financial data will inform the Library's strategic planning.

- Third, to plan and manage IT acquisitions to deliver required capabilities on time and within budget through cost estimating, scheduling, and risk management.

  With the IG's support, the Library has undertaken an analysis of IT-related outlays, which will help as we develop project management cost guidelines. These guidelines are being added to existing schedule and risk management principles. A new Project Management Office, which reports directly to the CIO, leads this effort.

- Fourth, to protect IT systems and reduce the risk that they may be compromised.

  Like all federal agencies, the Library is keenly aware of the potential for compromise of its data. Among other security actions, this year we began implementation of the National Institute of Standards and Technology (NIST) risk management framework, and adopted government practices for conducting privacy impact assessments.

- Fifth, to ensure that IT services meet the needs of component units.

  The Library has developed Service Level Agreements (SLAs) that describe baseline services the OCIO is providing to Library units with regard to email, other commodity IT, and basic services. Next, the OCIO is working with program offices to develop supplemental agreements that establish shared expectations for support for mission-specific services and applications.

- Finally, to allocate IT resources efficiently and effectively, reducing duplication or overlap.

  The Library shares the auditors' concerns about potential duplication or overlap in IT services between the OCIO and Library units. While commodity IT,

infrastructure, and security are most effective when managed centrally, we concluded that there are mission-specific program systems that are best managed at the service-unit level, in coordination with the Library OCIO. Within an enterprise IT model, the CIO will offer recommendations to the Executive Committee and to me as he develops a deeper understanding of the needs of each service unit and identifies possible synergies and cost savings.

A consistent theme through all of the GAO and IG recommendations is the need for the Library to be more knowledge-based and data-driven in managing IT. With an experienced federal CIO and a re-energized IT shop, the Library is positioned to adopt government and industry best practices that make sense for the Library and to structure IT success around regular feedback from the systems themselves, from the budget and project reporting, and from users.

The Library's new CIO started just as we experienced an IT-related problem. As the Committee is aware, in late August the Library had an outage of key systems, including Congress.gov, the U.S. Copyright Office electronic copyright registration system (eCO) and the Braille Audio Reading and Download (BARD) system of the National Library Service for the Blind and Physically Handicapped.

Such a break in service to users is unacceptable and we deeply regret it. All the systems were restored to operation; however, the incident illustrates the operational challenges the Library must address at the same time it is implementing strategic IT management reforms.

Every year, the Architect of the Capitol (AOC) performs required maintenance on the electrical systems in Library buildings. This work entails shutting off both normal and emergency power. As in previous years, a team of representatives from across the Library planned extensively for this year's power outage and system shutdown that was to occur over a weekend. The Library backed up applications and databases and successfully brought down servers, storage, and network devices. After receiving AOC approval, the Library began to bring systems back up. The restoration proceeded as planned except that a data storage unit containing several Library applications and parts of the eCO system failed during its startup sequence.

A review determined that vendor error in replacing a hardware component of the storage unit caused the failure. While the vendor immediately corrected the installation error, the unit took 10 days to rebuild.

The critical knowledge we gained from this failure is that we must have sufficient redundancy, capability, and security built into both the primary and alternate computing

facilities, and the CIO has already directed corrective actions. In addition, OCIO is researching data-facility and cloud-computing options that may be better able to support Library needs for continuous operation of critical systems.

The inability to restart systems after the annual power outage was unusual; however, to ensure we properly identified lessons learned and actions to be taken, I asked the Library Inspector General to perform an independent review of the event.

I have also asked the IG to conduct three additional reviews that will help improve IT management and service Library-wide, including service to the U.S. Copyright Office.

- Review high priority Tier 1 systems and how they are configured. Congress.gov, the Library's web-based legislative information system, and eCO are two such Tier 1 systems.

- Look into best practices for storage infrastructure and make strategic and operational recommendations for current, intermediate, and long-term data storage needs.

- Assist in calculating IT costs by activity and category in far greater detail than the Library has done previously.

I am confident that with leadership from our new CIO, information from the IG, and methodical action by Library engineers, we will proactively address known issues and be better positioned to respond to unanticipated incidents in the future.

U.S. Copyright Office Modernization

As the Register recently noted in the U.S. Copyright Office strategic plan, "there is no question that [the Copyright Office] must modernize to meet current and future needs." The Library strategic plan calls for the institution as a whole to work with the Copyright Office to develop modernized copyright systems and practices, in accordance with the copyright law and public objectives.

I am proud of the work of the U.S. Copyright Office and its very dedicated staff. As an attorney, I recognize the significance to authors, practitioners, and the courts that the Copyright Office published the 3d edition of *The Compendium of U.S. Copyright Office Practices*, the first comprehensive overhaul and restatement of the Copyright Office's practices and standards in over 25 years. Recent Copyright Office policy studies have

informed Congressional debate and public understanding on topics of broad interest such as the music marketplace, orphan works, and mass digitization, as well more esoteric topics that are part of the complex field that is copyright. The succinct analysis of federal court decisions the Copyright Office presents in its searchable online Fair Use Index makes the principles and application of the fair use doctrine more accessible and understandable. I also appreciate the public process the Copyright Office followed when updating its fee structure and the careful and thorough formal rulemaking it conducted regarding anti-circumvention exemptions under the Digital Millennium Copyright Act (DMCA). The Library decision in the recent DMCA rulemaking was recently published in the Federal Register.

The Library has a fundamental interest in a strong copyright system. Too often, the description of the Library's interest in copyright is reduced to acquisition of materials for the national collection under the mandatory deposit provisions of the law. These materials are essential, of course, as they ensure a complete set of the expression of the nation's intellectual and creative work is available to inspire progress for current and future generations. Nevertheless, as an institution with a mission to support empowerment through knowledge, the Library supports the goals of the national copyright system. The work of the U.S. Copyright Office—advising Congress, the courts, and the executive branch on copyright matters; registering copyrights; facilitating commerce through licensing; and providing public access to records of copyright ownership, for example—is an integral part of the Library's mission to provide the knowledge that makes progress possible and ensure that creators' rights are protected so that progress continues. I am committed to supporting the Copyright Office's efforts as it begins to implement its own new strategic plan.

Well-developed and flexible information technology systems are critical to the administration of both a modern Library of Congress and a modern Copyright Office. This is an area where the Copyright Office and the Library are working together to improve internal operations and better meet customer needs. For example, we have made some recent changes in IT management. First, a new approach to IT strategic governance establishes documentation requirements and review processes for all IT investments. The intent is to produce better-structured information upon which to make decisions and from which to track performance. The Copyright Office will maintain IT investment evaluation and selection processes for their mission-specific systems, with approval by the Librarian, provided they produce similarly auditable documentation and coordinate with the CIO on security and use of Library infrastructure. Second, the Library started testing "agile" IT contracting methods. These methods are designed to make system development efforts move faster and be more responsive to user requirements. Finally, the Library is considering other data center and cloud-based computing options that can provide the

redundancy and capability required by Copyright Office customers and users of other Library services.

The Library's support for the U.S. Copyright Office will draw upon the knowledge the Copyright Office has gained about its users through the public processes it has conducted over the past year. This knowledge, combined with the Library's increased focus on IT operations and industry standards should help us make great advances together.

Chairman Miller and members of the Committee, I thank you again for this opportunity to provide testimony on key issues facing the Library. I am confident we are turning the page and implementing the necessary changes to make the Library and all its central functions better for the long term. I look forward to working closely with you on these challenges.