

# Envisioning Our Information Future and How to Educate for It

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An Institute of Museum and Library Services (IMLS) funded National Forum Planning Grant “Envisioning Our Information Future and How to Educate for It” brought together a diverse group of stakeholders to lay the framework for re-visioning LIS education. This article describes three take-aways from the 2015 forum: encourage wide recruitment; build bridges; and adapt for the future. Actions underway to address each of these are described. The forum was the beginning of the re-visioning process. The principal investigators are currently engaged with various constituencies to obtain feedback on the actions and to gain insights into directions for curriculum redesign. LIS educators are encouraged to collaborate to make the vision a reality.

**Keywords:** LIS curriculum design, educating information professionals, transforming LIS education, recruitment, design thinking, information future

## Background

With advances in information technology, personal and work-related information behaviors are changing rapidly. Library and Information Science (LIS) education is being challenged, not only to keep pace, but to take the lead. Adapting to these changes and creating an iterative process for evaluating and implementing relevant curriculum focused on innovation, continuous learning, and critical engagement within a global and diverse context, will determine the success or failure of LIS education.

When we began to think about a re-visioning of LIS education, we identified eight trends that impact the roles of librarians, archivists and information professionals now and in the future. Three broad categories of change include technological, demographic, and globalization. The tech-

nological changes are rapid and frequent: search tools, mobile technology, social media, questions answering services, big data, and growth of digital content are examples of technological trends that directly impact library and information science. In addition the users served are becoming more diverse, whether in local communities or reaching out across the globe. Which knowledge, skills, and abilities will be needed by information professionals to successfully lead and shape our information future?

This is not the first time that LIS education has recognized the need to rethink and reinvent itself. The Kellogg Foundation provided funding in 1994 to four LIS schools, Drexel, Florida State, Illinois, and Michigan, to test innovative approaches to LIS education. Barber (1996, p. 65) noted: “New models and approaches must be developed for organizing, searching, retrieving, analyzing, packaging, delivering, and

preserving relevant information. And new types of service professionals are needed to develop and implement these new models and approaches.” The results of this effort included new names for some of the schools involved, curriculum expansions, and innovative projects (Marcum, 1997) but did not lead to a widespread rethinking of LIS education.

The need for transformative change in LIS education is now more broadly recognized than was the case two decades ago, given the challenges faced by libraries and other information organizations. For example,

- The ACRL/NY Annual Symposium 2012 website notes: “Academic librarians are under tremendous pressure to adapt to changes in technology, declining budgets, ‘re-skilling,’ and cultural or institutional expectations. Through necessity and ingenuity, some librarians are adapting by seeking out new opportunities for collaboration, innovation and creative service offerings that meet our users’ evolving needs with limited resources” (ACRL/NY). The organizers of the symposium hoped to encourage academic librarians to take risks and demonstrate entrepreneurial spirit. LIS educators need to be involved in conversations about “re-skilling” so that new graduates are prepared to take on new roles and those seeking to retool have appropriate options for certificates through continuing education within LIS programs.
- The Aspen Institute Dialogue on Public Libraries Working Group, supported by the Bill and Melinda Gates Foundation, brought together various stakeholders to begin a conversation about transforming public libraries for a more diverse, mobile, and connected society. A report was generated based on the initial meeting which took place in 2013 (Aspen Institute, 2014). Unfortunately, no LIS educators were included in this conversation.

With libraries transforming themselves, it is essential that LIS educators also transform LIS education. Marchionini and Moran (2012) identify four components that need to be re-examined: the characteristics of students who will become successful information professionals; the type of faculty needed; the curriculum; and the modes of delivery. There is no general agreement as to what is considered to be “core” to the MS-LIS degree. Programs continue to review and revise their core requirements. Marcum summarizes the problem in a piece she wrote after attending the January 2015 forum: “The differences in perception about what constitutes appropriate library and information science education grows out of the great difficulty we have in defining the profession itself” (Marcum, 2015, p. 3).

Many programs offer their degrees in a variety of modes, including face-to-face, online, blended, and hybrid. New courses have been added to reflect the technological changes, including such topics as informatics, metadata, natural language retrieval, and data mining. All of these changes, however, are incremental, not transformational.

In addition to the efforts by libraries to transform themselves, we must look beyond settings and skill sets generally associated with LIS professionals. The entry in the *Occupational Outlook Handbook* (Bureau of Labor Statistics, 2015) for librarians notes: “Employment of librarians is projected to grow 2 percent from 2014 to 2024, slower than the average for all occupations. Librarians are needed to assist library patrons in locating information and resources, but growth will be limited by budget constraints in local government and educational services.” In contrast, other professions that could benefit from an LIS education are anticipated to have more rapid growth. For example, Hey, Tansley, and Tolle (2009, p. xiv) include librarians among data scientists: “The interests of data scientists—the information and computer scientists, database and software

engineers and programmers, disciplinary experts, curators and expert annotators, librarians, archivists and others, who are crucial to the successful management of a digital data collection—lie in having their creativity and intellectual contributions fully recognized.” It has been predicted that by 2018 there will be a shortage of between 140,000 and 190,000 people to fill the demand for 1.5 million data-savvy managers (McKinsey Global Institute, 2011). Among other responsibilities, their roles include the need to extract the “gold nuggets hidden under mountains of data” (*The Economist*, 2010).

The above discussion helps to explain some urgency for re-visioning LIS education now. There is an immediate requirement to: (1) educate information professionals to successfully lead and shape our information future; (2) pave a path for students to understand the challenges ahead; (3) prepare students to excel in their abilities to keep pace with the rate of change; and (4) ensure that LIS educators stay ahead of trends that are shaping our information world. As Figure 1 suggests, we need to design our future purposefully and with deliberation.

### National Planning Forum: Envisioning Our Information Future & How to Educate for It

The purpose of the National Planning Forum grant funded by the Institute of Mu-



**Figure 1.** A Future by Design Not Default—Infographic by Sita Magnuson.

seum and Library Services (IMLS) was to convene a diverse group of stakeholders to lay the framework for re-visioning LIS education and to begin action planning within that framework. Fifty-three participants ranged from directors of libraries, museums and archives, to educators, digital humanities scholars, content providers, futurists, and information technology entrepreneurs at various stages of their careers. A *list of the participants* can be found on the project website.

The forum participants worked through seventeen modules that were spread over three days from January 14–16, 2015. [The list of *specific activities* during the forum can be found along with photographs of the event on the project website.] Each module presented the group with opportunities to engage with the notion of our information future, with activities ranging from individual reflections to whole group discussions (see Figure 2). Tomorrow Makers, the forum facilitators, utilized their DesignShop® approach which integrates the flow of all of the activities in the design development process. The first 10 modules were part of the SCAN phase which engaged participants with new ideas, provided an opportunity to identify assumptions, establish a common language, pinpoint key concepts, and build models based on emerging social, technological, and economic trends. In the second phase, the FOCUS phase, the participants converged around ideas and issues that had risen to the top of the discussions through two modules. During the third and final phase, the ACT phase, participants identified action items. The participants offered various recommendations for innovations ranging from recruitment, to course and curriculum design and suggested that we test these ideas so that we have actual proofs of concepts. Below are some of the key takeaways from the forum and corresponding actions or activities to test the concept, enabled in part by a supplemental grant from IMLS.

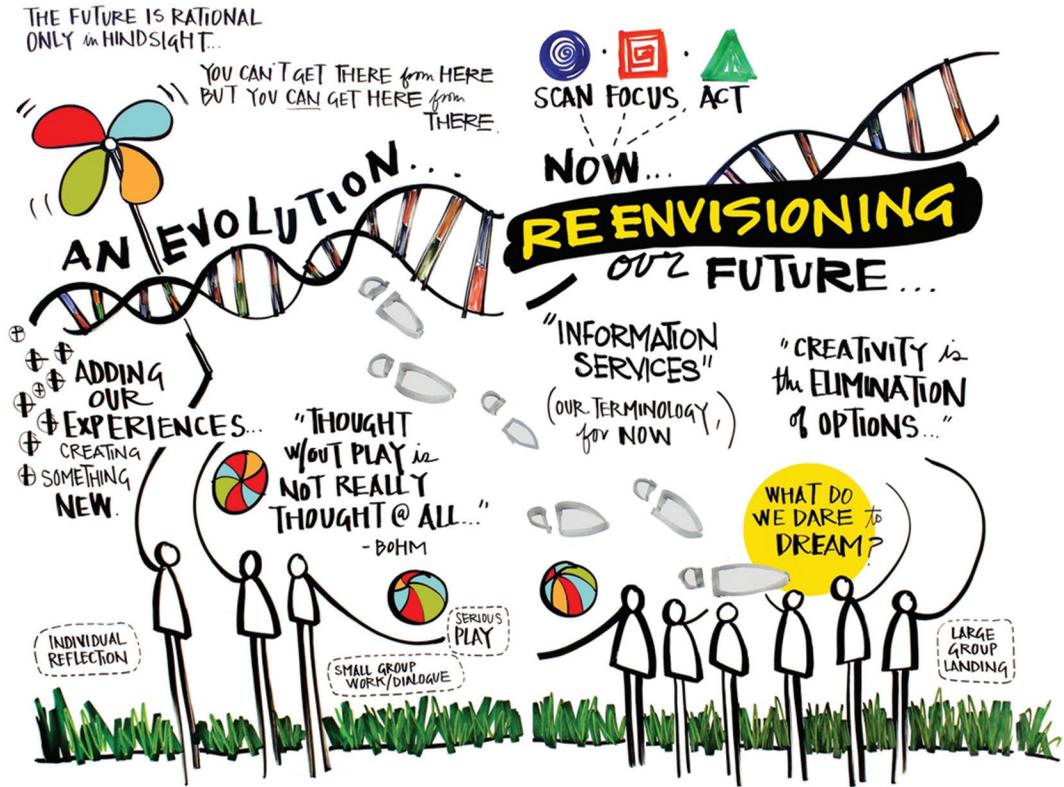


Figure 2. Re-envisioning our future—Infographic by Sita Magnuson.

**Take-Away 1: Encourage Wide Recruitment**

The participants urged us to find ways to dispel the stereotype and recruit a broader pool of potential students. There is a perception that the field is only about the book and we need to communicate the broader range of possibilities. We need to increase diversity.

*Action:* We have created Beyond the Stacks: Innovative Careers in Library and Information Science. As recommended by the forum attendees, we are promoting

awareness of the “cool careers” one can pursue with a Master’s degree in Library and Information Science. The monthly podcasts are available on iTunes and at [beyondthestacks.info](http://beyondthestacks.info) (see Figure 3).

**Take-Away 2: Build Bridges**

LIS needs to build bridges within our community, across silos, and to the rest of the world (see Figure 4).

We have begun to focus on a variety of ways to build bridges. First, we are pursuing Artists-in-Residence Programs as a



Figure 3. Beyond the Stacks Logo by Derek Murphy.



**Figure 4.** Building bridges—Infographic by Sita Magnuson.

way to build bridges. The idea came from Jer Thorp, an artist attending the Forum. He wrote a [blog post](#) encouraging a large-scale artist-in-residency program.

Currently, we are gathering information about artists engaged in these programs. Derek Murphy has written a series of essays profiling successful artist-in-residence programs at Libraries, Archives, and Museums (LAMs) for the [Unbound blog](#). This concept is captured in the graphic found in Figure 5. We will have a conversation with artists, LIS students and faculty, and practicing librarians and archivists to discuss how we can incorporate this concept into the LIS curriculum.

*Action:* Create a teaching library or archive. We are developing and clarifying this concept, trying to imagine what a teaching library might look like. We are learning from teaching hospitals, veterinary teaching hospitals, hospitality school hotels, and AmeriCorps.

### *Take-Away 3: Adapt for the Future*

Participants encouraged us to think about ways to deal with the constant change around us. A big question posed was who will teach our students in the future.

*Action 1:* We will partner with institutions in designing professional development programs for faculty. The National Archives and Records Administration has volunteered to test the concept with us by providing a two-week intensive experience for a faculty member.

*Action 2:* We need to implement innovative pedagogy. We will learn from the experiences of the [Library Test Kitchen](#) and the [MIT Media Lab](#).

*Action 3:* New forms of field experiences—increasing opportunities for students to gain experience with remote work in the information professions given the increasing number of students completing degrees online.

### *Engagement with Constituencies*

In addition to developing proofs of concepts and taking action on various items described above, the project team has developed a plan to engage with various constituencies (see Table 1).

The [template for the presentations](#) providing an overview of the forum and the series of pilots can be found on the project website.

The first presentation and discussion took place at the New England Library



**Figure 5.** Artist in Residencies Graphic by Derek Murphy.

Table 1. Events Affording Opportunities for Engagement with Various Constituencies.

Constituency	Conference	Theme
Practicing librarians	New England Library Association (NELA) Conference Fall 2015—Completed	Envisioning our Information Future. Institutional needs in terms of staff knowledge, skills, and abilities in five years
Educators and information professionals	Association for Information Science and Technology (ASIST) Conference Fall 2015—Completed	How to Educate for Our Information Future. Dominant, emergent, decaying themes within LIS curriculum
Educators and those interested in LIS education	Association for Library and Information Science Education (ALISE) Conference 2016—Completed	How to Educate for Our Information Future through Design Thinking
International librarians	International Federation of Library Associations and Institutions (IFLA), World Library and Information Congress, Summer 2016—Pending	Envisioning Our Information Future. Institutional needs in terms of staff knowledge, skills, and abilities in five years
Educators and information professionals—international perspective	ASIST 2016—Pending	How to Educate for our Information Future in collaboration with EUCLID to expand dominant, emergent, decaying themes within LIS curriculum internationally

Association (NELA) in October 2015. The participants, predominantly public and academic librarians in the New England area, were asked to respond to the following questions:

- What will your organization need to do to be successful in 5 years?
- What knowledge, skills, and abilities will be required of your information professionals to help you get there?

The discussion resulted in a list of skills for future information professionals including marketing skills, design skills, and advocacy. Several participants talked about the need to understand space: purposeful space planning, space renovation, digital space. The need for LIS graduates to have a firm background in technology was emphasized. The participants at the NELA session encouraged us to educate entrepreneurs and develop more joint

inter-professional programs. Several suggestions were made to adopt innovative approaches to pedagogy in LIS, including following the example of some engineering programs that focus on problem solving throughout the program. The participants noted that the rate of change is increasing and LIS graduates have to identify relevant trends and be prognosticators.

At the annual conference of the Association for Information Science and Technology (ASIST) in November 2015, participants built upon Module 3 from the January forum with an exercise framed to explore “Emerging, Dominant, Decaying” topics in the context of the LIS curriculum.

Participants selected one of the following topics: Information Technology Curriculum, Curriculum focused on Cultural Institutions, or the Teaching/Learning Experience. For each topic, the groups were asked to consider: What is fading, losing its importance/relevance, disappearing—

i.e., “decaying” (the past/passing)? What still exists, is important/relevant, or is central/holds sway—i.e., “dominant” (present)? What is starting to come forward, gain importance/relevance—i.e., “emergent” (future)? (see Figure 6).

The following summarizes some of the discussion from each group:

- In the Teaching and Learning group, the participants agreed that lecturing is decaying. Dominant trends include stu-

dent involvement in curriculum, service learning, individual and team capstone/internship projects. Emergent trends include individualized, personalized, and modularized approaches to learning.

- The Information Technology group noted that we are no longer teaching tools for the sake of the tools. Dominant topics include conceptual framing, ethics and technology, and user experience with technology. Emerging technology topics include technology

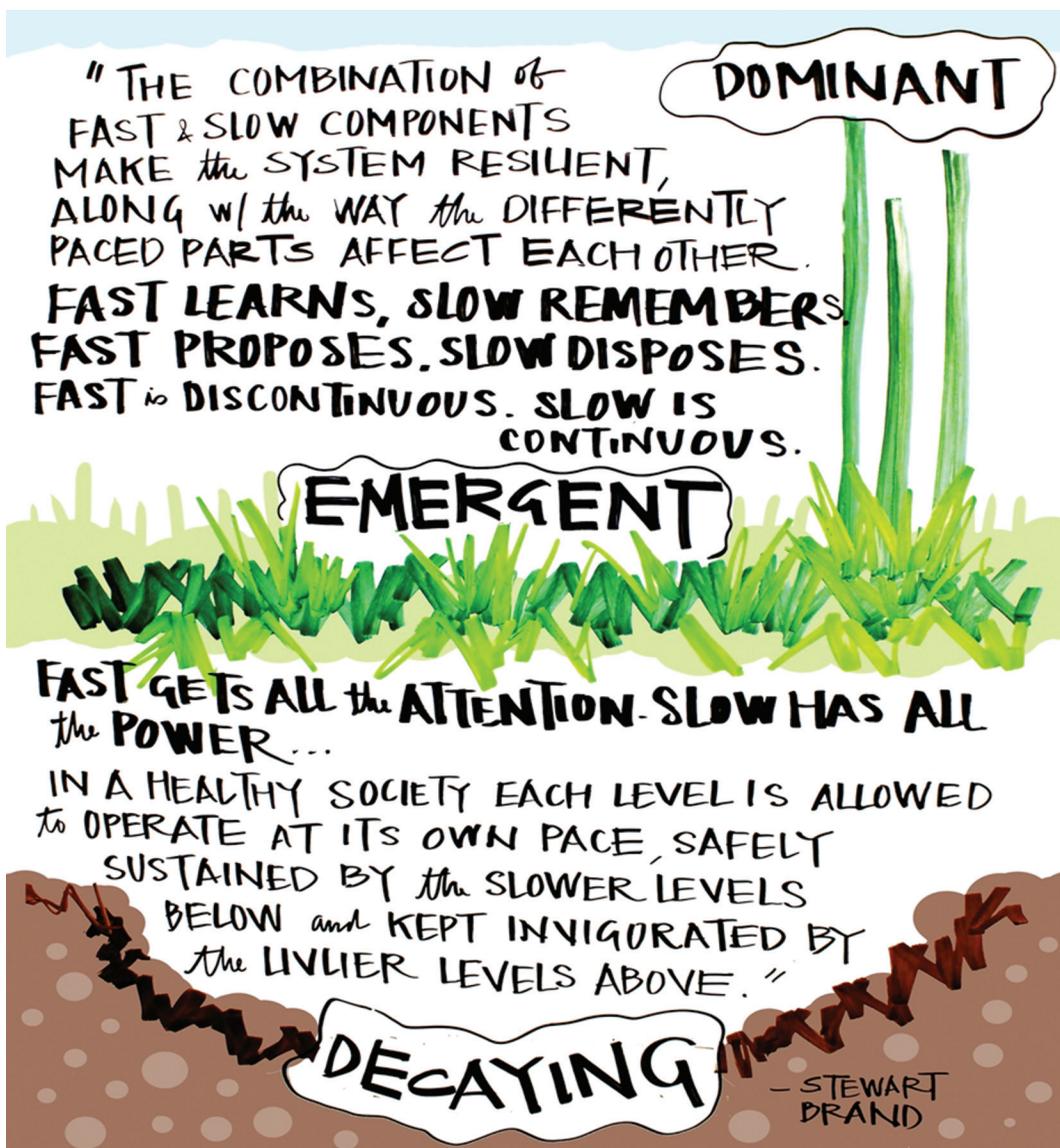
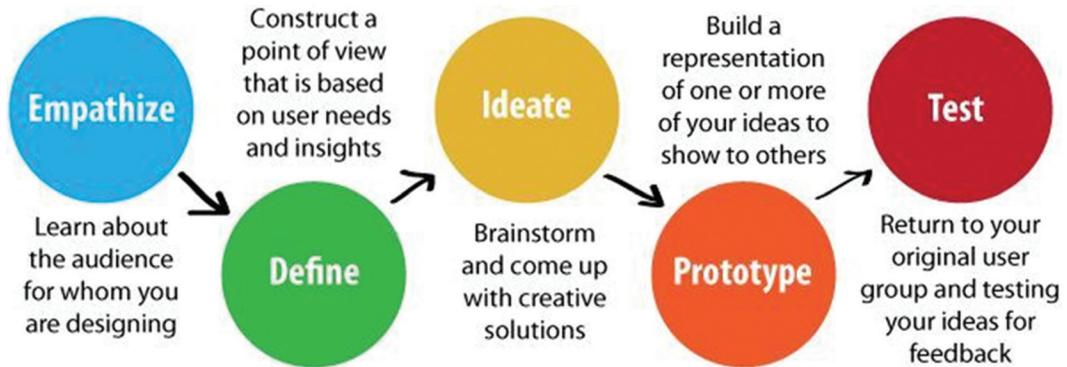


Figure 6. Decaying, Dominant, Emerging—Infographic by Sita Magnuson.



**Figure 7.** Design Thinking Process. © 2014 IDEO LP. All rights reserved. <http://designthinking-forlibraries.com/>.

within a social context (finance, legal, etc.) as well as concepts and approaches to dealing with very large and streaming data.

- The Cultural Institutions group noted that setting as a focus is decaying as is the distinction between physical and digital. Personal information management is a related dominant topic. Emerging topics include repurposing and reusing, curating and sharing, and information ethics and privacy.

There was some overlap in trends within the broad topics, including ethics and different types of technologies.

In January 2016, a three hour pre-conference workshop was held at the annual conference of the Association for Library and Information Science Education (ALISE). This workshop, “Educate to Innovate”, focused on Design Thinking as a follow on to the design approach taken in the National Forum in January 2015. The ALISE 2016 workshop objectives were twofold, namely, (1) to explore design thinking principles and processes that can be used for re-visioning our courses (micro level) and curriculum (macro level), and (2) to explore and apply tools that navigate from design “problem” to “solution” using guides from IDEO and Systematic Inventive Thinking (SIT). Participants were challenged to consider, “How can we rethink the familiar more deliberately

to generate innovative ideas for change?”, then introduced to the five-stage Design Thinking process (see Figure 7).

To ensure a common base for exploring concepts and tools, groups began by describing the “anatomy of a course”, its components, possible sequence, and general characteristics. Moving to “Empathize” and “Define” (see Figure 7), participants assumed the role of a student as the stakeholder (audience) for which courses are designed. By getting into the skin of the student and understanding his or her motivations for taking a course, and challenges, frustrations, or “pain points” associated therewith, participants could focus on particular user needs as context for defining and framing a problem, asking a “How might we . . . ?” question. Groups discussed design principles, for example, principles of flexibility, modularity, relevance, scalability, etc., that could be used to guide or inform the “solution” addressing particular pain points, thus setting the table for the next stage of ideation.

Participants engaged in Systematic Inventive Thinking (SIT) “task division” exercises challenging fixedness around the sequencing of a course module as an example. Groups explored the implications for students and pain points of re-sequencing a somewhat typical module of Overview-Readings-Lecture-Discussion-Posting Response-Assignment for Assessment, to have Assignment for As-

essment come first. Other examples of task division, and of task unification, as well as guidelines for brainstorming based on IDEO's "go far" strategy, set the stage for the final activity in the workshop, and fourth stage in the Design Thinking Process. Using a Concept Poster as a tangible matrix for capturing the ideas recorded on sticky notes, groups created an early stage prototype (see Figure 7) that brought together the stakeholder(s), pain points, design principles, the design concept (i.e., what are we designing in response to the "How might we . . . ?" question), potential benefits to be derived from the design solution, and assumptions regarding feasibility, desirability, and viability of the design concept. An example of a Concept Poster appears in slides from the workshop, and also in photographs of prototypes completed by participants—available at <http://infofuture.simmons.edu> under the ALISE 2016 tab. The workshop concluded with a reference to the *Design Thinking for Libraries toolkit*—a partnership of IDEO, Bill & Melinda Gates Foundation, Chicago Public Library, Aarhus Libraries (Denmark) and librarians from over 10 countries worldwide—which can be adapted for use in various transformative activities, such as curriculum re-design. Participants were invited to share with the project their experiences with design thinking going forward. These will be posted to the project website with permission.

### Making the Vision a Reality

LIS education needs to transform itself

so that information professionals with the MS-LIS degree are prepared to design our information future in libraries, archives, museums, and beyond. Initial actions identified based on outcomes from the 2015 Forum include the need to recruit a wider and more diverse range of students; break down academic silos and build bridges to create a broader discipline; and adapt for the future by creating mechanisms to prepare faculty to teach for the changing future.

Work on the project will continue over the next several months: engaging with additional constituencies at conferences, completing work on the various pilot projects, and drafting a white paper to synthesize findings. The *project website* will continue to be updated with the results of these efforts, encouraging all LIS educators to collaborate in re-envisioning LIS education for the 21st century (see Figure 8).

### Acknowledgement

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Figure 8. Re-envisioning our future—Infographic by Sita Magnuson.

saw several of the specific projects mentioned in the article.

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