



Changes in Library Evaluation: Responding to External Pressures in the Institution of Museum and Library Services' *Measuring Success Initiative* for the Grants to States Program

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Abstract

This **article** examines the challenges of developing and implementing a new national evaluation approach in a complex library funding program. The approach shifts a prior outcome-based evaluation legacy using logic models to one relying on nonlinear logic mapping. The new approach is explored by studying the *Measuring Success* initiative, launched in March 2011 for the largest funded library services program in the United States, the Institute for Museum and Library Services formula-based Grants to States program. The paper explores the relative benefits of nonlinear logic maps and emphasizes the importance of scaling evaluation from individual projects toward clusters of similar library services and activities. The introduction of this new evaluation approach required a new conceptual frame, drawing on diffusion, strategic planning, and other current evaluation theories. The new approach can be widely generalized to many library services, although its focus is on a uniform interorganizational social network embedded in service delivery. The paper offers a new evaluation perspective for library service professionals by moving from narrow methodological concerns involving measurement to broader administrative issues including diffusion of library use, effective integration of systematic data into program planning and management, and strengthening multi-stakeholder communication. **AU :1**

Keywords: Institute of museum and library services; grants to states; library and services technology act; evaluation; results-based management; outcome-based evaluation; logic models; logic mapping; systems theory; strategic planning; diffusion; social networks **AU :2**

1 I. Introduction

3 The US political environment creates intense competition for social services
5 and informal learning at all levels of government. This is not expected to
7 change in the foreseeable future given economic circumstances. Evaluation
9 research may be the most effective tool to help libraries respond to ever-
11 changing technology demands, expanding diversity, and rapidly changing
13 social needs in this political–economic environment.

9 The Institute for Museum and Library Services (IMLS) grant programs
11 have incorporated program evaluation for about 15 years, but the practice
13 remains nascent when compared to that of related sectors such as education,
15 social services, and public health. Improving the quality and usefulness of
17 library program evaluation requires a cultural shift in how the field
19 approaches planning for the programs it plans and administers, and the role
21 of assessment in both.

17 Library educators, executives, and professionals must alter the customs
19 embedded by a prior generation of evaluation models. Lacking any straight-
21 forward blueprint for change, this shift requires continuous adaptation to
23 enable and sustain clearer articulation and understanding of what library
25 programs intend and what actually happens. Constrained library budgets,
27 increased demand for library services, and heightened requirements for
29 persuasive evidence of tangible results exacerbate the need.

23 This paper describes an initiative by IMLS and its state grant partners to
25 revise program evaluation protocols for the largest US-funded library services
27 program, formula grants to State Library Administrative Agencies (SLAAs),
29 the Grants to States program under the Library and Services Technology Act
31 (LSTA). The authors and collaborators have led this initiative, *Measuring
33 Success*, since its inception in March 2011.

29 The next section summarizes the theory shaping the initiative. The
31 subsequent section describes progress of *Measuring Success* to date. The final
33 section offers lessons learned to guide future evaluation research and practice
35 in library services.

35 A. Theoretical Background

37 Program evaluation includes more than monitoring and measurement.
39 It involves systematic thinking about a program, raising meaningful ques-
41 tions, gathering and assessing evidence to provide answers, and applying
all to strengthen a program (Russ-Eft & Preskill, 2009). There are as
many approaches to program evaluation as to library program administra-
tion. Library programs are dynamic and continuously shaped by external

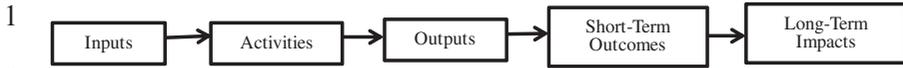
1 influences; useful evaluation also relies on the capacity of library program
3 administrators to effectively adapt. When external influences shift sub-
5 stantially enough, the evaluation approach also must change to retain value.
7 Two primary reasons may make an evaluation approach stagnant and
9 ineffective, consequently requiring adaptation. First, people act surrounded
11 by uncertainties, and as in other areas of society, the knowledge base
13 changes continuously. A 10-year-old “best practice” may no longer reflect the
15 strongest current possibilities. Second, people resist change. Innovation takes
17 effort. Repeated and significant change can cause burn out, compromising
19 the effectiveness of an evaluation approach selected in the past.

11 Federal emphasis on evaluation started in the late 1960s with the growth
13 of Great Society Programs (see, e.g., Weiss, 1972). Evaluation practice
15 matured as part of a larger public administrative shift toward “results-based
17 management,” known more commonly in library services as “outcome-based
19 evaluation” (OBE) (see, e.g., Rossi, Lipsey, & Freeman, 2004). OBE followed
a similar trajectory in other public and nonprofit settings around the world,
introducing new public management approaches that sought to better
integrate business practice to governmental settings (see, e.g., Boston,
Martin, Pallot, & Walsh, 1996).

21 1. Outcome-Based Evaluation

23 A major emphasis of OBE was to turn attention away from strict monitoring
25 of whether funds were spent appropriately and protocols followed properly.
27 This “input” approach to management was replaced by a private sector
29 concern with bottom line results. The private sector challenge in prioritizing
31 results ultimately boils down to maximizing profits, but the core philosophy
driving the public and nonprofit sectors’ bottom line focuses on beneficial
changes to the public, and particularly to segments of the public that are
targeted because they share a specific need.

31 As the new approach to public administration matured, OBE, tightly
33 interwoven with logic models, became a dominant feature of the evaluation
35 landscape in the US government and elsewhere. Multiple federal agencies,
37 and philanthropic organizations such as the Centers for Disease Control and
the United Way, have been in the forefront of this approach for several
decades. It has remained the dominant federal approach since the 1990s in
response to directives by the federal Office of Management and Budget
(OMB) and the White House, associated with the Government Performance
and Results Act of 1993 (GPRA). Consequently IMLS began to introduce
OBE and logic models to their grantee communities as key tools for
planning and evaluation by the latter part of that decade.



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Fig. 1 Basic logic model structure.

The features of the basic logic model are easy to understand. A set of program “inputs” like labor, funding, and capital are allocated. Inputs shape program “activities” (or services). The activities lead to products or “outputs,” which in turn lead to “outcomes” (see Fig. 1).

Generally, outcomes constitute immediate changes in program participants. Over time, longer-term outcomes, if they are sustained and shared with larger populations, are expected to create more sweeping changes in participants, communities, and/or other segments of society—these are often called impacts. Once a program logic model is complete, metrics are developed to assess whether projected changes in outputs, outcomes, and, ideally, impacts, happen and to what extent.

Consider an early child literacy program. A logic model articulates program intentions. Funds and staff are allotted as inputs. Staff designs and administers activities like curriculum design, instructor training, and outreach. These activities lead to an output of direct participation for pre-school or very early readers (and usually caregivers). As a result of participation, the children are expected, for instance, to increase their cognitive capacities and/or to become better prepared to participate in schooling. It is anticipated that the participating children will experience longer-term improvements in learning and higher academic success (impacts). Once a logic model and its embedded theory are complete, metrics can assess the validity for any included propositions. For instance, output metrics might count the number of participating children. Outcome metrics might estimate changes in participating children’s cognitive abilities during the program’s life.

The logic model approach is useful for program planning and assessment. It helps practitioners clarify program intentions by articulating an underlying logic. It helps frame data for collection and analysis. It moves administrator and policy maker focus to program performance by shifting attention from inputs and toward outputs, outcomes, and impacts.

2. OBE Weaknesses

Unfortunately, the model has four major weaknesses. First, the linear design can oversimplify the projected sequence of change in a frequently nonlinear world. Second, the model does not test alternative explanations or

1 contradictions. At best, it recognizes external influences. Third, in practice
3 the model generally lists *arrays* of potentially causal items under the various
5 headings (inputs, activities, outputs, outcomes, and impacts), complicating
7 both theoretical program logic and its subsequent assessment. Fourth, the
9 model presumes objectivity, but programs are often created and implemen-
11 ted through processes requiring political compromise among individuals
13 with different ideological perspectives, interests, and influence, situated
15 across different institutional settings (Weiss, 1995).

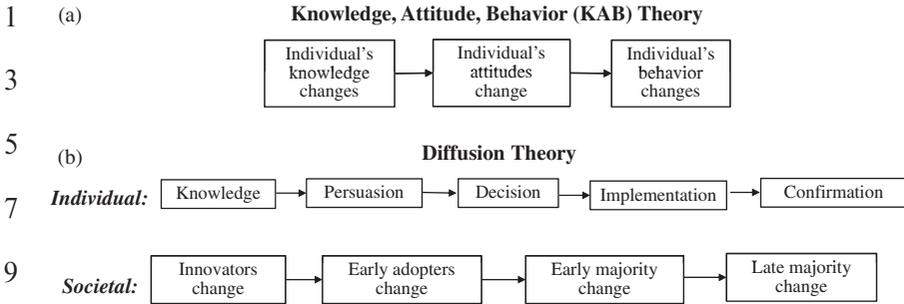
17 Despite its weaknesses, the logic model remains highly recommended
19 and applied in the US government and elsewhere. Its terms have become part
21 of the vernacular of global public administration. While many evaluators
23 grumble openly about the model's limits, no cohesive alternative replaced
25 it. A group of evaluation theorists and practitioners, many affiliated with
27 the Systems Thinking Topical Interest Group in the American Evaluation
29 Association, has begun to seed an alternative (see, e.g., Rogers, 2008, 2010).
31 Current social science discussions surrounding complexity theory are moving
away from the mechanistic features of the logic model and toward more
subtle interweaving of program dynamics within a larger environment and
embracing complexity theories. For instance Patton (2011) has introduced a
framework for logic mapping using nonlinear interactions at individual,
organizational, and societal levels.

Two limits of the logic model are significant for this paper. First, the
societal impact of most public programs is due to nonlinear "tipping points"
(Gladwell, 2000; Schelling, 1971). These arise when individuals act based
on their perceptions of others' experiences. As ideas gain traction among a
segment, they reach a tipping point where others become increasingly
willing to adopt the notion. Then the notion "sticks" and becomes part of
common lore (Heath & Heath, 2007); diffusion happens quickly and at a
large scale. Second, external factors frequently influence both a program and
the responses of participating individuals. Programs do not operate in a
vacuum; they must be considered within their larger environment.

33 3. Theories of Change

35 Both limits affect an important theoretical issue underlying IMLS's
37 *Measuring Success* initiative. Library services and programs operate on an
implicit "theory of change"¹ associated with informal learning. A prevailing

39 ¹A theory of change is a way to make assumptions about how some factors lead to some
41 type of social (or other) change which is subject to assessment for evaluating its relative
effectiveness. See, for instance, Schmitt (2007) and Harris (2005).



11 **Fig. 2** Two informal learning theories of change.

13

15 interpretation of informal learning is based on variations of this theory of
 16 change: acquisition of some *knowledge* leads to *attitude* change that in turn
 17 leads to a change in *behavior*. The “KAB” theory of change (Fig. 2a) remains
 18 dominant in the social sciences and associated professional fields, including
 19 library services.

20 While elegant, KAB theory is overly simplistic. Social scientists and
 21 other learning theorists have invested substantial energies over decades to
 22 devise and test substantial refinements of KAB theory and others to
 23 understand how learning can lead to desired behavioral (or other types of)
 24 change. While nothing has yet removed the basic KAB theory from its
 25 pedestal, this is a central part of the arena.²

26 One leading alternative with supporting empirical evidence involves
 27 diffusion theory (see groundbreaking work of Rogers, 1962). This theory is
 28 illustrated in Fig. 2b. Diffusion theory works at both individual and societal
 29 levels. The top row of Fig. 2b focuses on individuals. Diffusion theorists
 30 divide individual learning change into five steps. First, an individual
 31 becomes aware of desirable *knowledge*. Then this person must be *persuaded* of
 32 its value. Once persuaded, the person must *decide* to access it (e.g., through
 33 program participation). Afterwards, the person must *implement* the knowl-
 34 edge (i.e., apply it) to validate usefulness to his/her circumstance. If the net
 35 benefit is positive, the individual ultimately *confirms* its personal value and

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38 ²Despite a wealth of literature in the public health and social psychology fields in
 39 the 1980s, not much empirical testing of the model has occurred. Many scholars have
 40 either qualified the model to better specify types of knowledge, attitudes, and behaviors
 41 involved or modified links. For a nice synopsis of the model and its shortfalls, see Farrior
 (2005).

1 adopts the desired behavioral change. In short, this model suggests that any
3 program seeking to benefit individuals through *knowledge* must first persuade
5 them that acquiring the knowledge is worthwhile, and then hope the
individual decides it is valuable enough to sustain it through a behavioral
change.

7 There are other applicable theories beyond KAB and diffusion.
9 Using insights from strategic planning theory (Bryson, 2004), program
11 staff contend with influences outside direct organizational control
13 (external influences) in seeking to affect target populations. These involve
15 “opportunities” and “threats” (or “barriers”). Consider again a library early
17 childhood literacy program. Even if program staff appropriately target a
group of families who could greatly benefit from such service, that group
may not participate even if they agree gains will result. Their reasons may
not be irrational but reflect perceived barriers like practical transportation
access or childcare constraints. Conversely, innovations in information
technology may offer new opportunities for participation in childhood
literacy programs, even without changes in target group awareness of its
benefits.

19 As Fig. 2b also shows, diffusion theory provides insight into how
21 individual change can aggregate into societal change.³ Using economic
23 terminology, “spillovers” happen when something affects one individual and
25 then spreads to another. Diffusion theorists articulate such spread by
27 assuming that some individuals are more prone to lead and others to follow.
29 While Rogers’ (1962) diffusion theory described five types of individuals,
31 people more realistically fall on a continuum. At one extreme, there are
33 risk-takers willing to immediately adopt innovation, like participating in a
35 new library program. Others, more cautious in varying degrees, will wait and
assess others’ experiences before opting to participate and adopt their
learning to change their circumstances. At the far extreme are risk-adverse
individuals who may never choose participation and potential change.⁴ This
aspect of diffusion theory is key in understanding how library programs can
gradually increase popularity and impact; it is based on the continued
intermingling of former, current, and potential participants and not just
on the direct interactions between library staff and some clientele at one
point in time.

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39 ³By societal change, we are simplifying multiple units of change that extend beyond
individuals, such as distinct groups, communities, and so forth.

41 ⁴Those with experience in organizational politics may have seen this referenced as the
“80:20” rule. This means that change may never reach 20% of a target population.

1 II. IMLS Grants to States and the *Measuring* 3 *Success Initiative*

5 We now turn our attention to the IMLS's *Measuring Success* initiative Grants
7 to States.

9 A. The Political Context

11 There are three important policy features of IMLS Grants to States that have
13 influenced choices for building a refined evaluation system. First, this has
15 always been a formula-based federal program, resulting in complex inter-
17 governmental relationships. The federal authorizing legislation places
19 responsibility for the program's oversight in IMLS, but provides SLAAs
21 with substantial discretion in the services and activities they carry out.
Further, many SLAAs have redistributed a large share of funds to local public
libraries through project grants to tailor services and programs to various
communities. Consequently, three governmental actors interface—IMLS, the
SLAAs, and local libraries. Much multilevel cooperation is needed. Perhaps
reflecting the absence of regulatory laws, the level of intergovernmental
cooperation between IMLS and the SLAAs always has been high.

23 Since the formal parameters of Grants to States have been shaped
25 through the legislative process, like most such products, its intentions are
27 purposely broad. The LSTA has always stated overarching purposes, such as
rural library services, technology infrastructure, and more. Recently, library-
to-library collaboration and library partnerships with nonlibrary organiza-
tions have been highlighted. The LSTA however has never articulated
explicit outcomes through this program that are intended to benefit parti-
cipant circumstances.

31 Third, LSTA legislation for Grants to States is tied to Congressional
authorization for IMLS. Since the first Library Services bill was signed on
June 19, 1956, each federal authorization has stipulated that each state
receiving funding must provide a formal plan for its use. The federal
government began to institute evaluation requirements in 1990. IMLS was
created in 1996 with funding both the library and museum communities
amalgamated in the Congressional legislation. That legislation required that
each SLAA conduct an independent evaluation of the results of its five-year
plan. Processes were left to each SLAA. The federal legislation however
complicates fulfilling evaluation requirements due to a discontinuity in the
timing of the required SLAA five-year plans and five-year evaluations. As a
result, the five-year SLAA evaluations can only assess three to four years of

1 their five-year plans. The evaluations and plans nonetheless are perceived as
3 important contributors to transparency and to strengthening agency level
5 performance at a federal level even if research strongly suggests that elected
7 and appointed senior governmental policy makers rarely read the required
9 evaluation reports (McDavid & Huse, 2012).

OBE based on logic models was first introduced to the Grants to
7 States program in 1997 and applied through 2011. It is the focus of the next
9 section.

11 **III. Introduction of Logic Models to Grants to** 13 **States: 1997—2011**

15 Grants to States, like nearly every other public program, historically has
17 focused its administrative oversight on monitoring inputs to ensure that
19 funds have been spent properly. While the 1990 and 1996 federal legislation
highlighted increased federal concern for monitoring outcomes, fiscal
21 accountability has remained part of the dominant program culture.

As IMLS began to offer guidance and leadership in OBE to Grants to
21 States in response to the federal evaluation directives, it had to balance
23 several concerns. First, it had to balance the monitoring of inputs and their
25 outcomes. Second, as a state formula grant program, it had to balance federal
27 government interests versus those of state governments. Third, since many
SLAA investments were made through project awards to local public
libraries, any new type of evaluation approach introduced to Grants to States
had to be integrated with project grant administration.

Against this backdrop, IMLS began to introduce OBE with logic models
29 to the Grants to States program in 1997. It hired an evaluation officer and
contracted with a third-party expert in program evaluation. Training
31 workshops were introduced to participating SLAA partners in using logic
models for planning and assessment of outcomes. Every state had to select at
33 least one project for OBE assessment. IMLS staff, in turn, availed themselves
35 to support SLAA capacity to undertake new and increased programmatic
evaluative responsibilities.

While federal legislation required each SLAA to conduct a five-year
37 evaluation, IMLS gave each the option to decide whether to include OBE and
in what form. The SLAAs increasingly placed emphasis on their own project
39 grants to public libraries. Some adopted a requirement for a simplified logic
41 model and OBE in project grants to libraries, and some built tools and
training for that purpose.

1 This move to OBE required changes in the IMLS Grants to States web-
3 based annual reporting system. The focus remained at a project level, with
5 much of the architecture continuing to monitor expended funds. This
7 reporting system allowed OBE reporting for both the SLAA as a whole and
9 for its project grants. Reporting progress made in building SLAA OBE
capacity was optional, with more detailed information requested at the
project level. Fields in the online reporting tool were created for projects to
enter information on activities, outputs, and outcomes, paralleling logic
model architecture.

11 Substantial effort was devoted to creating a taxonomy to classify
13 projects related to legislated priorities, but no standardized measures at the
15 project level were incorporated for outputs or outcomes. The reluctance to
17 examine program participants' experiences in library programs reflected a
hesitancy to cross a perceived user confidentiality barrier. It also reflected an
inability to develop a logical structure to accommodate wide variation in
service delivery.

19 As the effort to use this approach to OBE matured through a little over
21 the first half of the decade, IMLS continued to invest substantial resources to
23 this endeavor. This impacted relations with each SLAA partner, as a number
25 of the states soon designated at least one staff person to manage the new OBE
27 approach within their agency. Further, attempts were made to drill deeper
into two specific areas involving substantive investment of Grants to States
funds for project grants—early childhood reading and staff development.
While analyses were done for guiding assessment and pilots launched in
multiple sites around both subject areas, the endeavors were not brought to a
level of refinement to support large-scale adoption.

29 Overall, the Grants to States reporting system evolved without a unified
31 theory of change to cumulate results for the plethora of library programs
33 supported with Grants to States funds across SLAAs and their local library
partners. As a result, IMLS and its independent contractors for assessment of
the SLAA five-year evaluations submitted in 2002 and 2007 found it
extremely difficult to aggregate beyond individual projects to assess the
performance of a state or a suite of libraries involved with the same program
category (e.g., early childhood reading).

35 Evaluation became part of the vocabulary for IMLS and grantees, but the
37 terms and evidence derived from its incorporation could not yet be used
39 systematically to frame conceptual understandings or to guide high-level
41 decisions. Instead, the SLAAs' autonomy, combined with disparate evaluation
and program planning experience and knowledge across the Grants to
States universe, created a system of complex and vaguely understood
elements, fragmented across a multitude of projects. This made monitoring

1 funding expenditures by project category complex and evaluation of results
beyond individual projects nearly impossible.

3 By the latter part of the decade, a change in the appointed IMLS director
5 corresponded with a de-emphasis in program evaluation in Grants to States
(and elsewhere in the agency). The third-party evaluation training contract
7 ended with no substitute. The one IMLS evaluation officer was reassigned and
no replacement was hired. Remaining IMLS staff had never been fully
9 integrated for using OBE. Eventually IMLS stopped investing in improving
its information reporting systems on the grounds of concerns for efficiency and
11 the promise of government-wide solutions (which have not yet been
implemented into this program's administration at the time of this writing).

13 Ultimately, as project-level OBE using logic models was integrated into
Grants to States program administration, and pertinent new technical and
15 administrative challenges emerged, funds and resources moved away. Little
was learned about how Grants to States translated into impacts on the public.

17 Despite these shortcomings, this era is noteworthy for an unprecedented
shift in the program culture with a deliberate linkage of planning with
evaluation under the rubric of OBE with logic models. This linkage is
19 important as it had influenced responsibilities within each SLAA as well as
between IMLS and SLAAs. The adopted approach to OBE, despite its
21 imperfections, gained a strong foothold in the Grants to States program.

23 This legacy would shape the parameters for the *Measuring Success*
initiative, the focus of the next section.

25 **IV. Impetus for the *Measuring Success* Initiative**

27 By 2010, the political calculus across all levels of government had changed
29 fundamentally. It became and remains politically risky to rely primarily on
articulating the belief that fostering strong libraries nurtures a vibrant
31 democracy as an argument for sustaining and expanding funding in this area.
It has become imperative to move beyond this narrative by much better
33 ability to demonstrate *how* public investments in library services result in
concrete benefits to the public. In fact, while overall demand for library
35 services has continued to increase, aggregate state funding for library services
has shrunk (Institute for Museum and Library Services, 2011).

37 In alignment with the political realities that spur the new urgency to
increase the evaluative capabilities in Grants to States, new IMLS leadership
39 created an Office of Planning, Research, and Evaluation (OPRE). In addition
to overseeing the agency's new statistical research program, this office is
41 charged with oversight and reporting on IMLS programmatic performance.

1 To help meet these demands, new research and evaluation staff were hired,
3 including a senior evaluation officer late in 2010 and a second evaluation
5 officer in 2011. In early winter of 2011 IMLS's new appointed director
7 signaled that evaluation was a chief priority of her administration. The LSTA
9 Grants to States program, as the agency's largest single program, has been at
11 the forefront of this new policy direction.

13 A new IMLS evaluation approach to Grants to States has required SLAA
15 buy-in as partners to ground the content while preserving each state's
17 flexibility to address the unique circumstances in their jurisdiction. It has
19 required a more consistent framework to: (1) track performance of activities
21 and services in the LSTA Grants to States over time and across different
23 programmatic areas; (2) enable a much stronger performance synthesis that
25 allows for purposeful clustering across individual projects; and (3) better
27 identify and foster best practices and shared learning.

17 **A. Designing the *Measuring Success* Initiative**

19 Creating a new evaluation approach for this formula grant program has faced
21 several key challenges. For better and worse, evaluation has been closely tied
23 to logic models since the late 1990s, and severely decentralized at a project
25 level. Key parties in IMLS and its SLAA grantees have had disparate
27 understandings of evaluation and interpretations of definitions and appli-
29 cation of project measures. Finally, any solution must be embedded in a new
31 grant performance reporting system.

33 Following months of building internal consensus, a framework for
35 restructuring the evaluation approach for Grants to States was shared with
37 SLAA participants at their annual convening in March 2011. This new OBE
39 approach moved away from logic models. Decisions were operationalized in
41 two transparent principles. First, the development of the new evaluation
approach would unfold iteratively and incrementally. Three overlapping
phases to occupy an approximately 24-month period were delineated: design,
pilot, and roll-out. Sequential steps within each phase would provide system-
atic points for reflection and adaptation as appropriate. Second, the process
was designed to be participatory. States would drive the content while IMLS
would take an active facilitating role. Additional external stakeholders, such
as experts in methodology, would be brought in as circumstances warranted.

As the overriding vision for *Measuring Success* was communicated,
attention turned toward the first phase in designing the new evaluation
system. Four sequential steps were initially planned: (1) kick-off at the
March 2011 meeting, (2) "backward logic mapping," (3) "forward logic
mapping," and (4) creation of assessment frameworks. At this time, basic

1 features of the new design are nearly complete and are the focus of the
remainder of this section.

3

5 **1. Kick-off**

7 The March 2011 annual meeting of SLAA staff was comprised predominantly
of SLAA directors (chiefs), state grant coordinators, and other senior SLAA
9 professionals. The event was structured to engage the SLAAs as partners in a
process with which participants had some familiarity. SLAA participants
11 were broken into four groups/teams that reflected six of eight major
priorities spelled out in the new federal legislation summarized in Table 1.⁵

13

14 **Table 1**
15 **Federal Priorities of Grants to States Program**

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- 17 1. Expanding services for learning and access to information and educational
19 resources in a variety of formats, in all types of libraries, for individuals of all
ages in order to support such individuals' needs for education, lifelong learning,
workforce development, and digital literacy skills.
 - 21 2. Establishing or enhancing electronic and other linkages and improved
coordination among and between libraries and entities . . . for the purpose of
improving the quality of and access to library and information services.
 - 23 3. Providing training and professional development, including continuing
25 education, to enhance the skills of the current library workforce and leadership,
and advance the delivery of library and information services; and enhancing
efforts to recruit future professionals to the field of library and information
services.
 - 27 4. Developing public and private partnerships with other agencies and
community-based organizations.
 - 29 5. Targeting library services to individuals of diverse geographic, cultural, and
socioeconomic backgrounds, to individuals with disabilities, and to individuals
31 with limited functional literacy or information skills.
 - 33 6. Targeting library and information services to persons having difficulty using a
library and to underserved urban and rural communities, including
children . . . from families with incomes below the poverty
 - 35 7. Developing library services that provide all users access to information through
local, State, regional, national, and international collaborations and networks.
 - 37 8. Carrying out other activities consistent with the purposes [of LSTA], as
described in the State library administrative agency's plan.
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41 ⁵The IMLS team working on *Measuring Success* agreed that the fourth priority,
partnerships, would be integrated in other priorities. It also was decided to omit the last

1 Each team contained about 25 SLAA participants and 2 IMLS
2 facilitators. In beginning a new OBE approach that differed from logic
3 models, the teams engaged in “backward logic mapping.” Teams were
4 assigned one or two of the federally authorized priorities for review and
5 identification of key objectives. Participants next articulated and ranked the
6 most important external opportunities outside of the program related to
7 these objectives. The opportunities were vetted using a taxonomy that
8 considered *political*, *economic*, *sociocultural*, and *technological* influences as
9 distinct areas of external influence on the program (see Bryson, 2004, for
10 details of the PEST taxonomy). In a subsequent activity, participants
11 repeated the process for external programmatic barriers. Finally, participants
12 began to list and prioritize strategies to address the opportunities and
13 barriers they had now identified and ranked.

14 By day’s end, the meeting rooms were filled with flip charts sprinkled
15 with post-it notes and colored dots representing rankings of the
16 opportunities, barriers, and strategies. The introduction of a single strategic
17 planning tool, exercised in the same way across all of the SLAA/IMLS teams,
18 moved participant preoccupation away from sensitive issues associated with
19 state autonomy and changes in performance measurement and toward
20 discussion of what the Grants to States program intended to achieve as a
21 whole. It also helped build trust and common ground on the importance of
22 moving forward to develop a new evaluation approach.
23

25 2. Continued Backward Logic Mapping

26 Communication between IMLS and SLAA partners continued following the
27 conference. *Measuring Success* “branding” occurred with the creation of a
28 Wiki. By late spring, SLAA participants had self-selected into six teams,
29 each roughly corresponding to a priority in the new federal legislation.⁶

30 Webinars were held biweekly from late May through early July 2011.
31 Teams completed backward logic maps correlated to the six federal priorities.
32 They identified and recommended strategies to attain objectives associated
33 with their priority, either directly or indirectly through “capturing” an
34 opportunity or barrier. Fig. 3 illustrates a sample backward logic map
35 produced during that time.
36

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38 priority, since it allows the SLAAs to meet other nonspecified state library needs with Grants
39 to States funds.

40 ⁶Many team members participating in the webinar process had not participated in the
41 March 2011 conference.

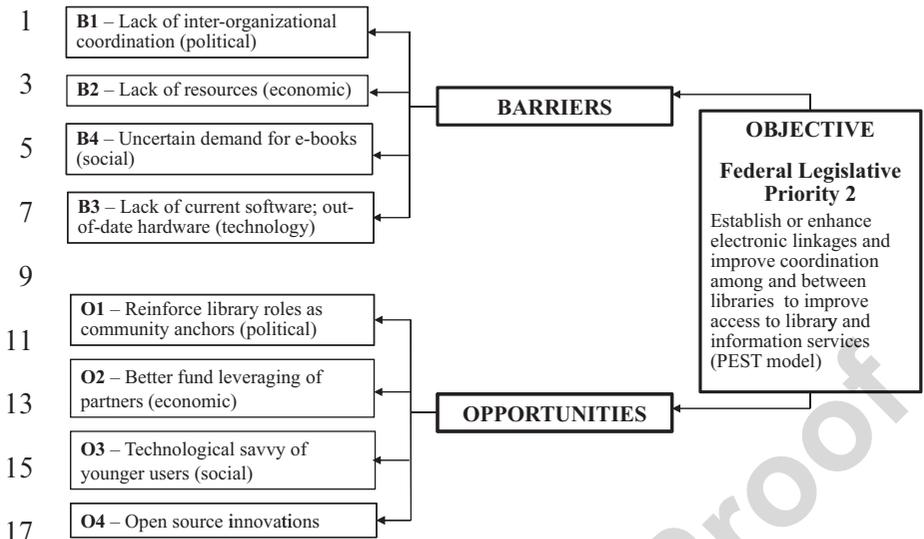


Fig. 3 Sample backward logic map.

The backward mapping efforts were most successful in identifying specific objectives and associated barriers and opportunities. They were less successful in articulating the logic by which a successful program could reach its objective. Sometimes the program and objective were considered identical. Other strategies focused on related efforts such as advocacy. While participants homed in on key opportunities and barriers that could affect achievement of a selected objective, it often remained unclear how a strategy or bundle of strategies could capture external opportunities or barriers to produce the desired result.

3. Forward Logic Mapping

By July, many SLAA participants were interacting frequently in various teams, virtually and by telephone. They included chiefs, senior librarians, and mid-level professionals.

In furthering momentum for emerging communities of practice (another underlying goal of the process), the teams began to use “forward logic mapping” to build out the new evaluation scheme. SLAA and IMLS participants referred to these logic maps as “results chains.” Forward logic maps or results chains involved vetting a series of if/then statements.

1 Participants began with a strategy articulated toward the end of the
3 that could be expected culminating in a suite of outcomes changing the
circumstances of some targeted segment of the public.

5 These results chains differed from traditional logic models in several
7 major ways. Both terminology and concepts had changed. Participants ceased
to think about change as a simple linear flow, connecting inputs, activities,
9 outputs, outcomes, and impacts. Instead, they began with a strategy (and its
associated subset of supporting activities), and proceeded to consider how the
11 strategy could lead to a subsequent related, desired result. A result could lead
to another result or to initiation of an additional strategy, or both. No limit
13 was imposed on the number of strategies/results that could proceed a
concluding result. Similarly, there was no limit on how many strategies/
15 results might be needed to reach the next sequential point. This logic
mapping accommodated many nonlinear interactions and allowed for
recursive changes as well.

17 Social network theory also was introduced to frame and validate
emerging theories of change in the results chains (for more on social network
19 theory in evaluation, see, Penuel, Sussex, & Korbak, 2006). Four sets of
actors were identified: (1) SLAAs; (2) public libraries;⁷ (3) *nonlibrary partners*;
21 and finally, (4) users, comprising distinct segments from the broad public.
Fig. 4 summarizes the underlying social network revealed across all of the
23 results chains.

As seen in Fig. 4, the four sets of actors are closely interwoven. First, the
25 SLAAs conduct needs assessments, develop long-term statewide plans, and
extend available types of support to catalyze efforts among public libraries.
27 Second, public libraries customize the planning to the circumstances of their
communities, which subsequently leads to delivering pertinent services and
29 activities to various segments of the local public. Third, outside partners
bring expertise, capital, and connections to assist SLAA efforts at a state level
31 as well as public libraries in their local communities. Fourth, users (i.e.,
segments of the public) access and participate in the library services and
33 activities. As teams refined their chains, the social network was refined
further to stratify users into two groups: target users who initially participate
35 in the library services and activities, and potential users who might opt to
participate in the same services and activities as target users diffuse
37 information about value they found.

39 ⁷Many states give project grants to different types of libraries. For the purposes of this
41 paper, however, the discussion is confined to public libraries, since it is this type of library that
has been the predominant focus of discussion during the *Measuring Success* initiative.

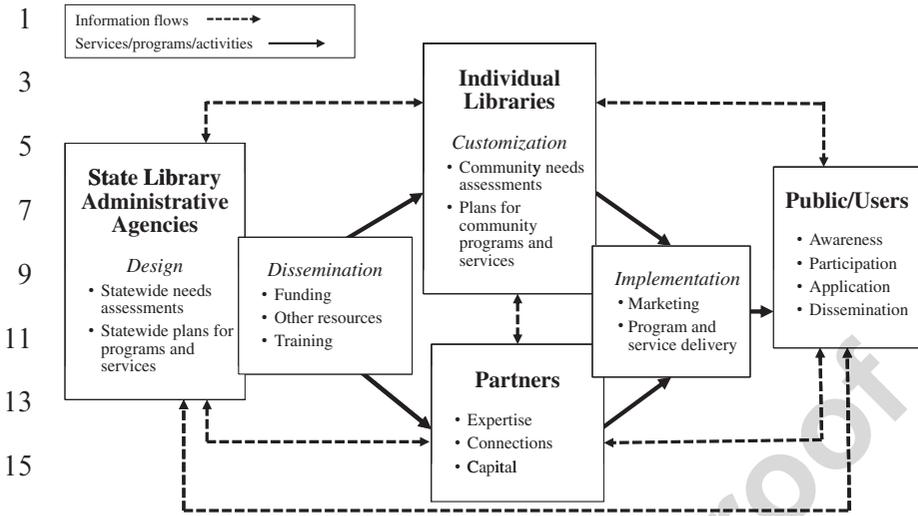


Fig. 4 Social network for grants to states.

By the end of this phase, each team had produced at least three results chains that corresponded with their perceptions of major objectives tied to their team's federal priority. The 6 teams completed about 25 results chains over a six-week period.

4. Refining Results Chains

As the initial iteration of the logic maps was finalized, this phase of SLAA teamwork ended. The initiative's original design had assumed that the logic mapping would be complete enough that SLAA planning participants could: (1) recommend points on the results chains for national assessment; and (2) agree on construction and methods of assessment at these points using descriptive statistics and/or other appropriate qualitative tools. The first goal was complete by mid-August, but the second never occurred. Instead, after reflection, it became clear that further refinement of the logic was needed.

Chain refinement reflected the political reality of federal legislation governing Grants to States. Its programmatic priorities did not articulate specific outcomes expected for various segments of the US public and communities. The initial round of results chains exposed a schism in mapping to federal priorities and to intended changes in participant circumstances. A

1 decision consequently was made to continue IMLS facilitation of the new
 3 system design for another several months using a smaller group of SLAA
 participants who had emerged as leaders. Seventeen mid-level professionals
 from 16 SLAAs agreed to participate as technical advisors.

5 These technical advisors first convened in a webinar in late September
 2011. A new configuration was presented for consideration. Table 2 shows
 7 how the 25 results chains created by the original SLA teams were organized
 into focal areas that reflected the types of library services that SLAAs
 9 typically support through Grants to States.

11 The technical advisors agreed on this classification scheme and moved to
 refine the original results chains better to delineate steps in the social
 network that lead to desired changes in different segments of the public (i.e.,
 13 users). Ultimately, consensus emerged that staff and leadership development
 was best integrated into results chains for the other focal areas and best
 15 viewed as in interim outcome.

As the teams further refined the results chains by focal areas, they
 17 implicitly agreed to an emerging theory of change for informal learning as
 summarized in Fig. 5.

19 As seen in this figure, program staff make initial assessments of the
 potential target public in a community or catchment area. These assessments
 21 include not only the types of learning that can benefit specific segments
 of the public, but also external opportunities and barriers that are likely
 23 to influence public participation in the informal learning opportunity.
 Following assessment, efforts are made to directly enable informal learning
 25 for individuals and to address indirect opportunities and barriers that may
 influence the ability and/or desire to access an identified body of knowledge.
 27 In inducing individuals to participate in a library's learning program,
 attention is focused on capturing external opportunities and barriers through
 29 incentives. Finally, assuming satisfactory experience and effective incentives,
 the theory assumes initial target users will share their experience with others.

31

33 **Table 2**
 Focal Areas for Programs and Services Typically Supported by IMLS Grants to States

35	1. Lifelong learning
37	2. Community services
	3. Employment and small business development
39	4. Digitization
	5. Database delivery
	6. Civic engagement
41	7. Staff and leadership development (distributed throughout other focal areas)

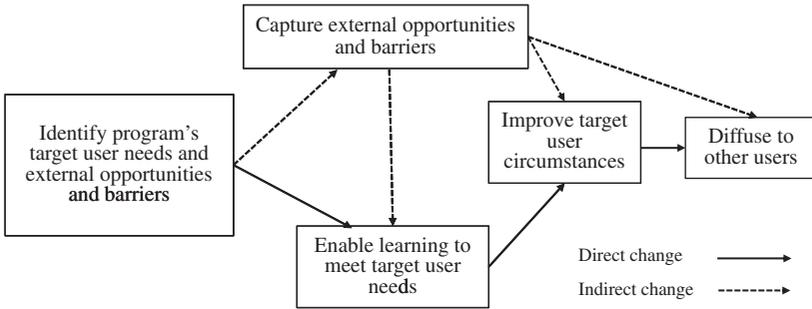


Fig. 5 Informal learning program theory of change.

These other users would adopt the same benefits acquired by the target users through diffusion. The one complexity not illustrated in Fig. 5 concerns that this programmatic action operates through a social network that interrelates an SLAA, public libraries, other potential partners, and a suite of distinct user groups.

The emerging theory of change moved participants away from both KAB and diffusion theory in making the causal link from acquiring knowledge to its subsequent application. As seen in Fig. 5, causality is embedded in capturing external opportunities or threats as the program interacts with the users. In practical terms, capturing these opportunities and threats involve applying appropriate incentives such as social media innovations or, say, addressing childcare constraints. This insight moved the program's theory of change further into social networking by building on insights of social marketing theorists such as Lefebvre (2010). Put simply, acquisition of knowledge may not suffice for someone to act or change behavior, be it in deciding to participate in some library service/activity or in subsequently applying the learning acquired from that participation to another aspect of the participant's life (e.g., applying and obtaining a job). Incentives matter. Further, diffusion is seen as an outgrowth of the process: as one individual experiences the benefits of participating in some library service or activity, spillovers are more likely to occur by either the target user opting to participate in another library program or another group of users opting to participate in the initial library program.

V. Creating an Assessment Framework

By early November 2011, the technical advisors had finished the bulk of their work. The teams had refined results chains for five focal areas (including

1 online databases but excluding civic engagement). All incorporated the same
2 set of interrelated actors in a social network and articulated a unified theory
3 of change associated with informal learning. Unlike logic models, the results
4 chains relied extensively on nonlinear relationships culminating in expected
5 improvements for a plethora of groups in society.

6 As the new focal area results chains were finalized, the technical advisors
7 moved to consider designing an assessment framework to measure whether
8 the theories embedded in the results chain worked as intended, and if not, to
9 be able to adapt and modify. Links on the results chains were reviewed to
10 decide whether national assessment was merited. If the answer was yes,
11 research questions were vetted around these links.

12 At this point, an unexpected challenge emerged. IMLS had always
13 assumed that evaluation methods would not rely exclusively on statistical
14 performance indicators. It expected that the nature of the question would
15 drive the method, be it statistical metrics and/or other qualitative inquiry
16 approaches. The senior author of this manuscript led methods selection
17 in close collaboration with the director of IMLS's Office for Planning,
18 Research, and Evaluation. This task had been presumed to be relatively
19 straightforward, given their education and experience, but it turned out
20 otherwise.

21 If a new evaluation approach to collect data across disparate projects and
22 connect to the interactive social network of the SLAA universe was to be
23 created, an entirely new scheme that could scale across local, state, and
24 national levels was needed. There was no precedent for such a system in
25 library services in the United States. Besides introducing new political and
26 social uncertainties into the newly emerging evaluation approach, this lack of
27 precedent created a methodological complexity. It was one issue to ask
28 SLAAs to report about matters to which they had direct control, such as
29 funds allotted for a particular program category, say, through a project grant
30 over a given time interval. It was something else to collect data for initiatives
31 over which they have no direct control, and in which no dominant culture for
32 using data in programmatic decision making exists (e.g., changes in
33 employment status for participants in a library-based employment training
34 program). A one-size-fits-all data assessment model was not possible.

35 As a result, the *Measuring Success* design phase stopped again for
36 reflection in late fall 2011. By this time, the political urgency of the
37 initiative had increased again, as the state library directors (chiefs) were
38 scheduled to meet at one of their periodic meetings. Discussions between
39 IMLS senior leadership and these state library officials at this meeting about
40 progress already made led to renewed support to continue the *Measuring*
41 *Success* endeavor.

1 The proposed solution for the assessment scheme was developed by IMLS
3 internally in winter 2012. The schism in the earlier evaluation approach with
5 logic models used in Grants to States between projects and some higher unit
7 of analysis was resolved in the new evaluation approach by targeting the focal
9 areas in the results chains as foundations. Using prior input from SLAA
11 participants, projects were classified into discrete activities and services
13 corresponding to each of the focal areas. This scheme would focus on
15 performance across the entire social network, with discrete assessments of an
17 SLAA, a participating library, and some targeted set of users. Another
19 priority simplified the logic to enable easier aggregation of data across
21 individual projects.

13 The process for building out the solution continued to rely on incre-
15 mental change to strengthen capacity and buy-in of the SLAAs. Initially,
17 reporting would not look much different from the present, but information
19 would be simplified and streamlined. Annual reporting would retain the
21 essential need to monitor expenditures, particularly at project levels, but it
23 would improve the capacity to report outcomes, at least to the extent they
25 could be attributed to IMLS funding to SLAAs and their local libraries. This
27 reform also would begin to allow for better aggregation of information across
29 individual projects.

21 A gradual build out of the whole assessment framework for user-specific
23 impact would happen by piloting through volunteer SLAAs. Building this
25 pilot capacity would foster participation in new communities of practice
27 among participating states and their network. As their capacity increased,
29 diffusion of new practices to other states would be more possible. In
31 addition, data would be collected and analyzed across clusters of projects that
33 corresponded with various activities under each of the focal areas.

29 The overall strategy introduced an additional new wrinkle. Instead of
31 being confined to an annual SLAA web-based reporting system linked to
33 mandates for five-year plans and evaluations for data collection and
35 reporting, IMLS would exercise leadership and resources to frame multisite
37 evaluations of selected activities and services within focal areas (e.g.,
39 evaluation of a suite of childhood reading projects across a suite of local
41 libraries under the lifelong learning focal area).

35

37 **A. Next Steps**

39 At the time of writing, IMLS is vetting the design of the program's new
41 evaluation system with its SLAA partners. Unlike in 2011, the 2012
43 conversations are more grounded, encompassing the discussions between
45 IMLS and its SLAA partners over the past year around the completion of the

1 design phase of the *Measuring Success* initiative. The planned design contains
a more logical structure for detailing the plethora of initiatives for which
3 SLAA partners use Grants to States funds. The system is built on the
nonlinear unifying theories of change embedded in the results chains
5 developed by IMLS and the SLAAs. It contains a more logical approach to
measurement and assessment and enables individual projects to be
7 systematically sorted into coherent clusters for higher-level assessments of
particular library initiatives for each SLAA and the nation at large.

9 The plan also details next steps in the *Measuring Success* initiative,
including a roll-out of a new performance reporting system and SLAA
11 partners that have volunteered to pilot these innovations. The high level of
collaboration using virtual and other technologies continues. Emphasis is
13 placed on creating and nurturing new communities of practice, diffusion,
reflection, and adaptation for continuous learning.

15

17

19 VI. Discussion

19

The authors expected that the flaws in logic models would manifest as a
21 major lesson for participants in this initiative. This is believed to be true.
Logic models have demonstrated limits. The approach adopted in *Measuring
23 Success*, using backward and forward logic maps, has provided an effective
alternative to IMLS's OBE architecture in allowing participants to better
25 articulate the major types of library services and programs that libraries
actually deliver using Grants to States funds. It allows for nonlinear
27 relationships. Participants have embraced dynamic environmental interactions,
leading to an emerging theory of change that embeds a social network
29 of interdependent actors.

The approach using the backward and forward logic maps also had
31 another intentional benefit. Logic models presented a simple and attractive
way of integrating planning with assessment when OBE was initially
33 introduced to Grants to States in 1997. The logic maps introduced in the
Measuring Success initiative significantly increased the strength and quality of
35 the integration. The logic maps focused explicitly on issues surrounding
planning in better specifying precisely what the various activities captured in
37 Grants to States' various focal areas intended to achieve in benefitting specific
segments of the American public. Stakeholder acceptance of the new
39 approach to outcome-based evaluation (or, more broadly, results-based
management) resulted in large because of this greater capacity of logic
41 mapping. Further, the increased quality of articulation of program intentions

1 using the forward logic maps enabled the ability to develop a more
sophisticated and clearer logic for assessment and measurement.

3 Nonetheless, logic models were only one challenge in changing an entire
culture formed around prior program evaluation experiences. In particular,
5 IMLS's evaluation approach in Grants to States decentralized data collection
and analysis in individual project grants without systematic links to support
7 broadly useful collection and analysis of data for state and federal decision
making. Whether fortuitous or otherwise, the forward and backward logic
9 maps in the *Measuring Success* initiative enabled development of solutions that
allow scaling of individual projects into clusters of similar activities using
11 the derived focal areas as a foundation. This foundation has led to construction
of a logical reporting structure that should greatly increase the
13 effectiveness of overall monitoring of expended funds and performance for
individual projects when clustered into their hierarchical groupings. We
15 anticipate it will be both more effective and more persuasive in showing the
value of libraries to the public.

17 The capacity of the new evaluation approach to function more effectively
across multiple levels was directly related to the introduction of systems
19 theory thinking. A structured social network linking a suite of actors is
critical for evaluating the effectiveness of a wide array of library services
21 supported through Grants to States. The same is true for the introduction of
environmental opportunities and threats as action points in program
23 planning and monitoring. These precepts are essential for understanding the
realities of any community-based program, with those of a local library a core
25 example. They are expected to yield huge future dividends when stakeholders
begin to consider applying evidence emerging from this new evaluation
27 approach. There is huge potential for generalizing this insight to a slew of
other library service endeavors grounded in rich community relationships.

29 A major factor that will determine the effectiveness of this new evaluation
approach will be its usefulness to various stakeholders (Patton, 2008). The
31 process used in launching *Measuring Success* has increased the likelihood of
such success. SLAA participants can see their fingerprints on the entire
33 scheme as they drove the content, with active IMLS leadership and fulfillment.
With greater ownership of the product, the SLAA partners and IMLS
35 program staff are more likely to value it, apply it, and find it more useful.

Technical, administrative, and political uncertainties remain. Prior
37 habits that have shaped understanding about what evaluation entails,
particularly the emphasis on tracking expended funds and assessing
39 outcomes for individual and widely disparate projects remains a core
mindset among many SLAA and IMLS staff despite the progress made over
41 the past year with the launching of the *Measuring Success* initiative.

1 Change takes consistency, iteration, and time. The point of this case
3 study is that change is historical. The changes made thus far in introducing a
5 new OBE approach linking program planning with assessment would not
7 have been possible if there had not been experience with a prior one using
9 logic models. The prior approach reflected dominant professional thinking at
11 the time of introduction 15 years ago. Correspondingly, even if progress
13 continues in instituting a new evaluation approach to the Grants to States
15 program, there undoubtedly will be unforeseen technical, administrative,
17 and political uncertainties that will arise, requiring further reflection and
19 adaptation. These uncertainties will undoubtedly cause a future generation of
21 program evaluators and library service professionals to decide to develop a
23 new evaluation approach in response to changed circumstances.

25 Despite this note of caution, we emphasize that the process used in
27 *Measuring Success* has enabled a concrete and compelling vision to emerge
29 with a promise of helping library executives and administrators better
31 address external policy-maker concerns for accountability and results and to
33 better manage library programs in a continuing era of heightened public
35 demand and scarce budgets.

21 Authors' Note

23 The views expressed are those of the authors and do not necessarily reflect the
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