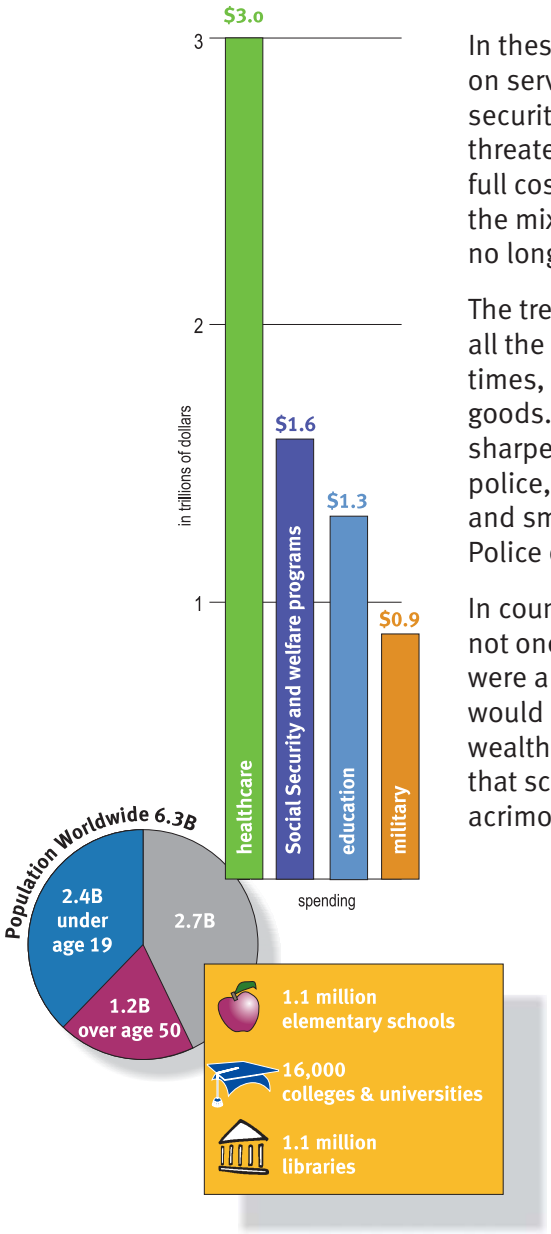
The Economic Landscape



The public and public goods[1]

In these early years of the 21st century, many countries face growing demands on services funded centrally. Surging healthcare costs, increasing national security programs, increasing education costs and aging populations threaten to outstrip the capacity or willingness of communities to meet the full cost of such services through taxation. Add slowing global economies to the mix and the challenges of funding the ever-growing needs of citizens are no longer merely academic.

The trends that we highlight revolve around a cycle of not enough money for all the programs democratic and open societies fund. In good economic times, funding the "public good" is painless, as there is money for all such goods. When those funds decline, for whatever reasons, public scrutiny sharpens toward expenditures on such nonrevenue producing sectors as police, fire, sewers, roads, libraries, schools and so on. Communities, large and small, are then pushed to declare where scarce funds will be expended. Police or sewers? Roads or libraries?

In countries in transition these issues are more clear-cut. The question is not one of dismantling existing abundant social services and goods. If there were a Maslow's Hierarchy of Community Needs, a stable electricity system would be funded before schools are equipped with swimming pools. But for wealthier countries unused to making such choices, one overarching trend is that scarce funds for supporting all the public goods will make for an acrimonious process of resource allocation.

Major trends

- **Slow economic growth worldwide**
- **Worldwide education and library spending**
- **A silver lining—shared infrastructures**
- **Funding the public good**

1. Please see "Sources" on pp. 147–48 for the complete list of sources consulted.

Gross domestic product (GDP) by country

- $1 trillion +
- $750 – 999 billion
- $500 – 749 billion
- $100 – 499 billion
- $50 – 99 billion
- < $50 billion

Country GDP

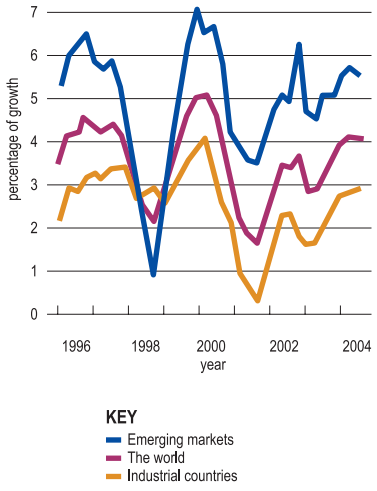
Country	World Rank	GDP Billion	Country	World Rank	GDP Billion	Country	World Rank	GDP Billion
United States	1	$ 10,417	Brazil	13	$ 452	Croatia	63	$ 22
Japan	2	$ 3,979	Netherlands	14	$ 414	Slovenia	67	$ 21
Germany	3	$ 1,976	Australia	15	$ 411	Sri Lanka	73	$ 16
United Kingdom	4	$ 1,552	Norway	21	$ 189	Trinidad & Tobago	88	$ 9
France	5	$ 1,410	Saudi Arabia	23	$ 186	Uganda	105	$ 6
China	6	$ 1,237	South Africa	35	$ 104			
Italy	7	$ 1,181	Malaysia	37	$ 95			
Canada	8	$ 716	Singapore	40	$ 87			
Spain	9	$ 650	Colombia	41	$ 82			
Mexico	10	$ 637	U.A.E.	43	$ 71			
India	11	$ 515	Hungary	45	$ 66			
South Korea	12	$ 477	Chile	46	$ 64			

Source: World Development Indicators Database, World Bank (July 2003).

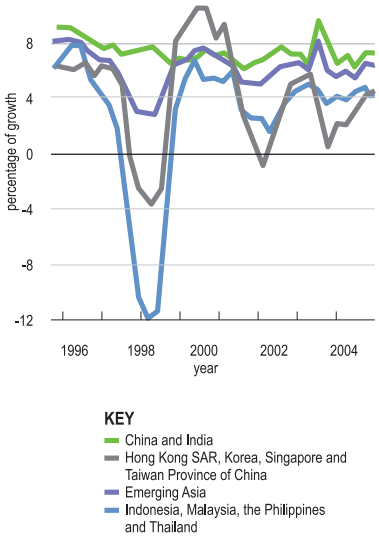
Slow economic growth worldwide

Economic contraction is forcing service reductions

> "More than a million Americans will lose publicly-funded healthcare. Crime-wracked Oakland, California, where the number of murders nearly doubled last year, is cutting millions from its police budget. Massachusetts won't pay for dentures, eyeglasses or prosthetics for low-income residents anymore. Oregon public schoolchildren will likely attend 15 fewer days of classes. Ohio and Kentucky are closing prisons. Illinois is slashing childcare funds for welfare families by half. The Fire Department of New York, formerly the heroes of 9/11 but now just another costly line item in the city's shrinking budget, is set to cut eight engine companies and reduce staffing on the remaining units from five firefighters to four."[2]



GDP growth rate of world economies[3]



GDP growth rate of Asian economies[3]

The worldwide economy is slowly recovering from a turbulent economic start to the 21st century. The worldwide gross domestic product (GDP) growth rate for advanced economies sank to less than one percent in 2001, and has struggled through 2002 and 2003.[3] During 2002, North America experienced an abrupt end to more than 18 years of economic growth. This period of radical economic shifts has left governments and public service organizations in the difficult position of having to rely on program cuts or painful tax increases to balance budgets when expected revenue predictions proved to be unreliable. In the United States, the effects of these sudden shifts have been traumatic. State governments are in the process of closing deficits for fiscal year 2003 that total nearly $80 billion. Budget deficits for fiscal year 2004 are estimated to exceed $70 billion. Most U.S. economists expect state fiscal problems to continue in fiscal year 2005, and further rounds of tax increases and program cuts will likely be made as states struggle to meet their balanced budget requirements.[4]

The worldwide outlook is slightly better, but the 2003 International Monetary Fund (IMF) predictions show slow economic growth. Estimated worldwide GDP is expected to grow 3.2 percent in 2004, with slower growth expected in the United States (2.6 percent) and Europe (0.5 percent). Developing economies are the bright spot, with GDP estimated to grow at 5.0 percent.

While long-range economic outlooks show recovering growth worldwide, there is little evidence that governments in industralized countries are likely to see substantial revenue increases to reverse the funding cuts required during the past two years. Worldwide unemployment rates are expected to remain at high levels through 2004. Worldwide equity markets are still approximately 50 percent below their early 2000 peak levels.

These ongoing fiscal constraints have contributed to a tendency for communities—local, regional and national—to reexamine the traditional practice by democratic societies of automatically funding "the public good."

We will return to the discussion of future funding for public goods, but we begin this section with a review of global education and library spending and a closer look at the traditional sources and uses of libraries funding, both in the U.S. and for selected regions across the globe where data is available.

2. *Salon* [online magazine] (January 22, 2003).
3. International Monetary Fund, *World Economic Outlook: Growth and Institutions* (September, 2003).
4. Elizabeth McNichol, *Using Income Taxes to Address State Budget Shortfalls,* Center on Budget and Policy Priorities (June 13, 2003), www.centeronbudget.org/2-11-03sfp.htm.

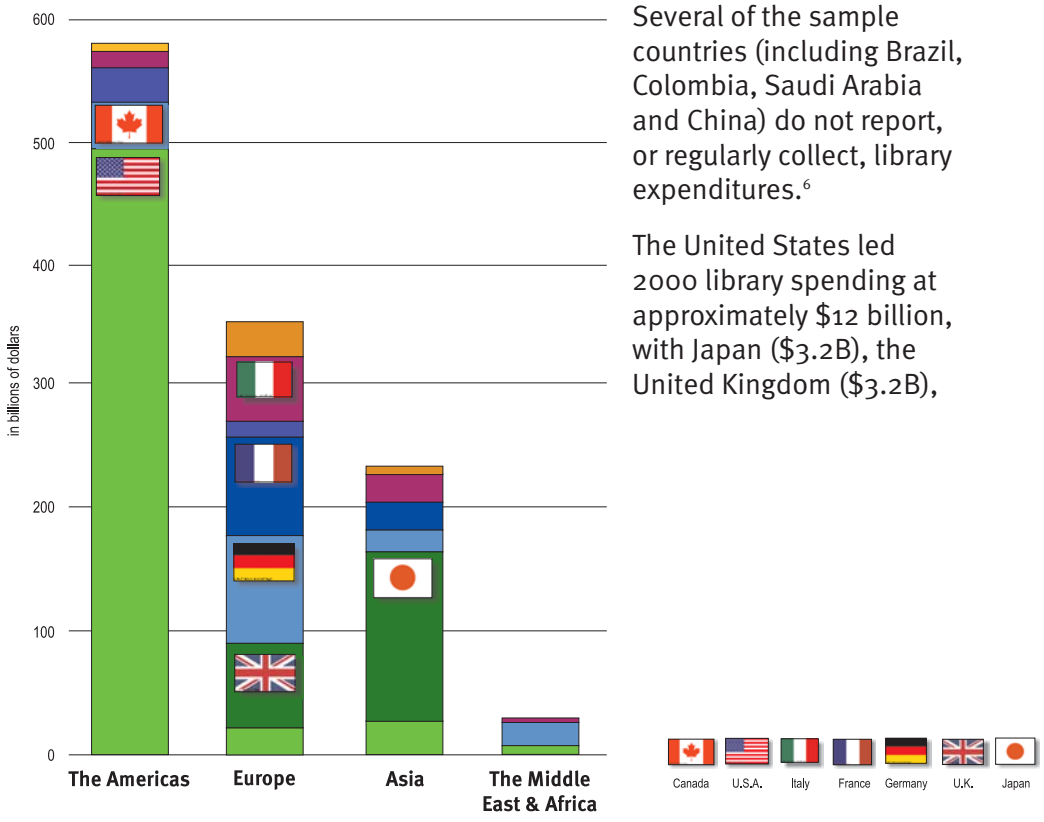
Worldwide education and library spending

In 2001, the 29 countries covered in this report spent approximately $1.1 trillion dollars on education or roughly 4.1 percent of their collective gross domestic product. The United States spent the most on education in 2001 at roughly $500 billion, followed by Japan, Germany and France at $139 billion, $89 billion and $82 billion respectively. While the U.S. spent the most in absolute dollars, it ranked tenth in education spending as a percent of GDP at 4.8 percent. Saudi Arabia ranked first, investing 9.5 percent of GDP in education. The top five include Norway, Malaysia, France and South Africa. All five countries spent in excess of 5 percent of GDP on education. The United Arab Emirates came in 29th at 1.9 percent of GDP.

Education spending per capita provides another lens to view worldwide education spending. Norway leads the group again with an estimated $2,850 per capita spent on education. The United States ranks second at approximately $1,780. The top five also include France, The Netherlands and Canada. Each spent more than $1,200 in education per capita in 2001. Uganda ranked 29th at approximately $5 per capita.[5]

Library spending for the selected countries totaled approximately $29 billion in 2000. This represents roughly 94 percent of the estimated worldwide annual library expenditure of $31 billion. It is important to note that this total figure is approximate. Several of the sample countries (including Brazil, Colombia, Saudi Arabia and China) do not report, or regularly collect, library expenditures.[6]

The United States led 2000 library spending at approximately $12 billion, with Japan ($3.2B), the United Kingdom ($3.2B),



Education spending by region

5. UNESCO Institute for Statistics (May 2003).
6 LibEcon.org: *A Research Study in International Library Economics*, Institute of Public Finance, United Kingdom, www.libecon.org/default.asp. Data used were the 2000 gross estimates.

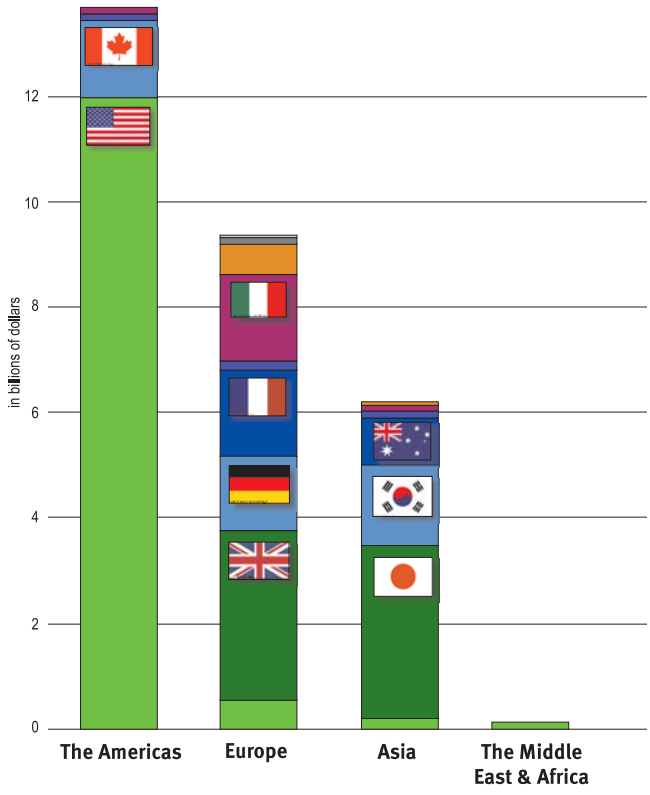
Italy ($1.6B) and France ($1.6B) rounding out the top five sample countries. The United States represents approximately 40 percent of sample country library spending and the top five countries represent 75 percent of total estimated library expenditures.

A look at library spending as a percent of country GDP again provides a different view. South Korea led the field at 0.31 percent of GDP, followed by the United Kingdom (0.21 percent), Australia (0.20 percent) and Canada (0.20 percent). The United States ranked eighth at 0.12 percent.

Examining annual library spending per capita provides a similar top five list. The United Kingdom tops the field at approximately $54 per capita. Canada ($45), Australia ($45), the United States ($43) and Norway ($40) create a familiar leading group. There is a wide degree of disparity across the group with relatively high GDP countries like Spain and Mexico ranking low on library spending per capita. As expected, high-population countries (with the exception of the United States and Japan) ranked relatively low on library spending per capita.[7]

A comparison of country education expenditure and country library expenditure does not provide any obvious associations. While it holds that most of the countries that rank in the top ten for education spending also rank in the top ten for library spending, there are obvious exceptions. Spain, Mexico and China rank high in education spending, but did not rank in the

Five countries—the United States, Japan, the United Kingdom, Italy and France—represent nearly 75 percent of the total estimated worldwide library spending.

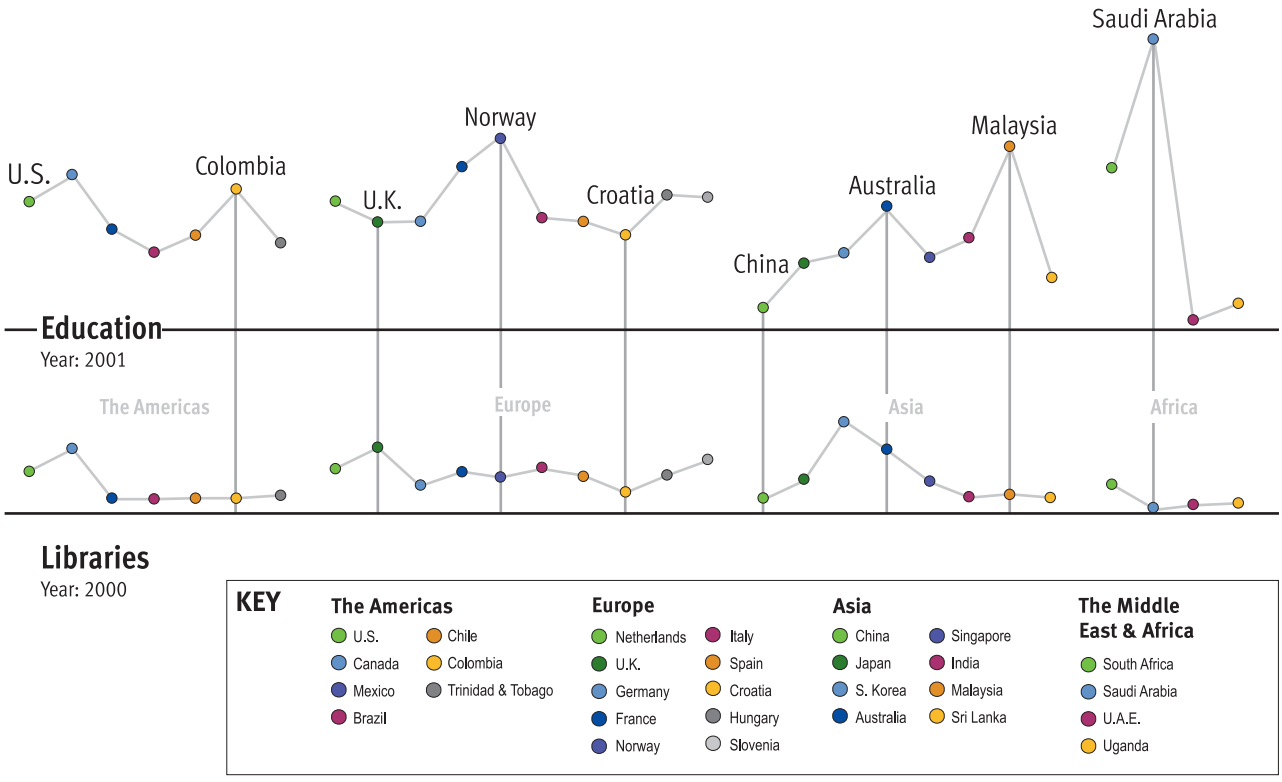


Library spending by region

7. Ibid.

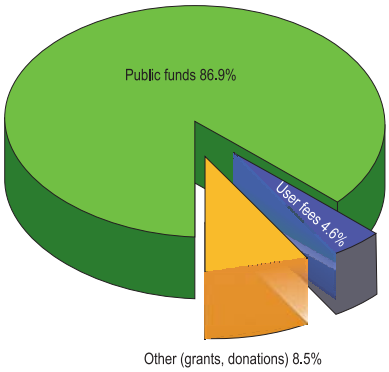
top ten for library spending, based on available data. Saudi Arabia ranked first in total educational spending per GDP, but based on available estimates, trails the sample countries in library spending. It is important to note again that there is no worldwide library expenditures reporting standard. Some library spending could be included in country total educational expenditures, which will skew a comparative view. Interestingly, anecdotal information suggests that one challenge for many countries is corruption. Funds earmarked for public entities—libraries included—may be diverted long before they reach their intended recipients.[8]

Trend data could provide very useful information, giving insights into regions where investments in libraries are growing or contracting. Retrospective trend information is not currently available for worldwide library expenditures. Several of the library expenditure sources used to compile this report are now collecting data for 2003, which will provide management trend information for the future.

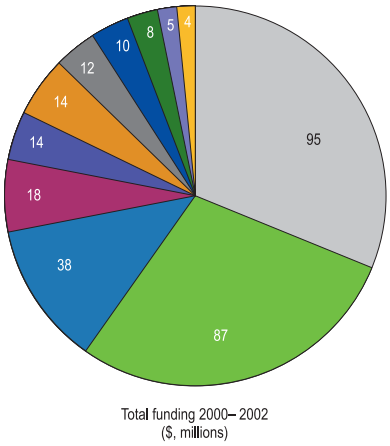


GDP spending on education and libraries[9]

8. Interview with Bob Usherwood, University of Sheffield and principal investigator of the IFLA sponsored study, *Public Library Politics—an International Perspective.*
9. World Development Indicators Database, World Bank (July 2003).



Sources of library funds



Largest private library funding foundations

Library funds—sources

Funding source information was available for the year 2000 for 15 of the 29 sample countries selected for this scan.[10] For the 15 countries covered, library funding came from three primary sources: public funding, user fees and charges and "other." Public funds are defined as funds received from central or local governments; user fees and charges are income generated by library operations and from fees, charges and subscriptions. "Other" includes miscellaneous sources such as donations, grants, proceeds from asset sales and interest earned.

For all countries covered, public funding is the primary source of library funding, comprising 87 percent of funding on average. Norway and France received more than 90 percent of their funding from public sources in 2000. United States public libraries receive 87 percent of their funding from public sources. User fees and charges represent 4 percent of library funding on average, with the remainder of resources coming from the miscellaneous "other" sources. The amount of funding from nonpublic sources varies significantly across the sample, with Hungary receiving over 20 percent of its funding from "other" sources. The United States receives approximately 8 percent of its funding from these miscellaneous sources.

U.S. funding—foundation and private grants

Although worldwide data was not available to analyze the primary sources of nonpublic funding around the world, data does exist that can provide an overview of the nonpublic funding in the United States.

Foundations and private grant funding are significant sources of U.S. library funding. Based on figures presented by the Foundation Center, the nation's leading authority on philanthropy, U.S. library grant funding averages approximately $200–300 million annually, based on the Center's report of grants over $10,000 from the top 1,200 granting institutions. 2000 and 2001 were particularly strong years, totaling nearly $300 million annually.[11] The spike in 2000 and 2001 is attributed to large donations from the Bill & Melinda Gates Foundation.

Foundation Center: U.S. grants for libraries worldwide 2000–2002 ($, millions)[11]

Year	Number of grants	Total grant funding	% funding from Gates*	Number of grants outside U.S.	Grant funding outside U.S.
2000	1,542	$352	19%	78	$30
2001	2,220	$283	10%	94	$24
2002	468	$100	0%	52	$12
Three-year total	4,230	$735	13%	224	$66

* Percent of total reported grant funding awarded to libraries by the Bill & Melinda Gates Foundation.

10 LibEcon.org: Research Study.
11. Foundation Center, *Grant$ for Libraries and Information Services,* New York, N.Y. (2000), http://fconline.fdncenter.org/dt_files/search_grants.html.

In 2000, $30 million was granted to organizations outside of the U.S. Of this amount, $13 million were Gates Foundation grants, with Canada receiving $5.5 million and Chile receiving $7.5 million. In 2001, the $24 million granted outside the U.S. included $6 million to Austria, $5 million to England and nearly $4 million to South Africa.

In 2002, grants totaling $12 million were awarded to libraries outside of the U.S., including those in Mexico, South Africa, Latvia and Kenya.

Historically, the Andrew W. Mellon Foundation has been the largest single private foundation source of grants for libraries. While the Gates Foundation led in 2000 and 2001, Mellon has consistently supported libraries as a part of its overall mission in support of scholarship. It ranks as one of the top ten private granting organizations in the world. Together these top ten agencies have provided libraries more than $210 million in grant support since 2000.

The top private granting organizations award funds for a wide variety of projects that include technology support, collections and acquisitions, programs and program development, conferences and seminars, staff, staff development, income development, campaigns, technical assistance, publications, fellowships, land acquisition and building and renovation, as well as general support, continuing support and even debt reduction.

In 2002, approximately $18 million in private grants reported to the Foundation Center were awarded for electronic media and online services.[12] Many organizations clearly benefited from Gates funding in 2000 and 2001.

The [funding agency] has no special brief for libraries as such but supports library activities as a means towards wider scholarly ends.

Director, Funding Agency

Electronic media & online services 2000–2002 ($, millions)[12]

Year	Number of grants	Total grant funding	Gates* funding	Mellon funding
2000	**117**	$ 56	$ 40	$ 8
2001	**808**	$ 41	$ 22	$ 7
2002	**52**	$ 18	$ -	$ 11
Three-year total	977	$115	$ 62	$ 26

* Grant funding awarded to libraries by the Bill & Melinda Gates Foundation.

12. Foundation Center, *Grant$ for Libraries and Information Services*.

U.S. funding—government

We looked at two United States federal government organizations, the National Science Foundation (NSF) and the Institute of Museum and Library Services (IMLS) as sources of funding for libraries. The NSF is an independent agency of the U.S. government whose mission is to promote the progress of science, primarily through the initiation and support of science research programs. IMLS is a federal grant-making agency that administers the Library Services and Technology Act and the Museum Services Act.

IMLS Office of Library Program Funds
Funding FY2003 (in millions)

Grants to state agencies	$150.4
Leadership grants for libraries	11.0
21st Century Librarians	9.9
General operations support	5.7
Native American grants	3.1
Total grants	$180.1

www.imls.gov/whatsnew/leg/finalfy2003.htm

As of August 2003, NSF had $380 million invested in ongoing projects that include the descriptor term "library." Of nearly 500 ongoing NSF-supported projects reviewed for this scan, only three were actually granted to *libraries*[13]. While NSF grants often fund research on organization, storage and dissemination of information, grants are not typically awarded to the institution's information center or library. Also, NSF customarily provides grants to researchers, not libraries.

IMLS grant support consists of the disbursement of the federal Library Services and Technology Act (LSTA) funds. Over 80 percent of the funding provided to libraries by IMLS is granted directly to the states for further disbursement. Of direct grants to states, IMLS awarded $30 million net in grant monies during FY2003. In this same fiscal year, funding for leadership grants nearly doubled to more than 15 percent at the expense of conservation, general operating support and museum assessment.

Special collections will be funded by grants and donations. Libraries will be strapped and it is likely that we will have to go after private dollars to fund these initiatives.

Director, Academic Library

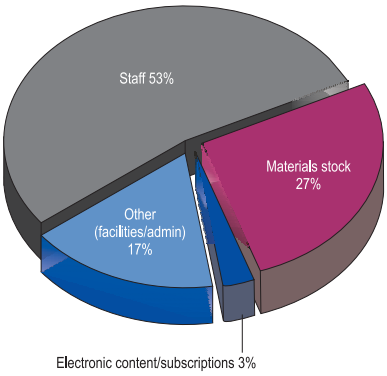
LSTA funds available to libraries are expected to increase from the current level of $180 million. In September 2003, The Museum and Library Services Act of 2003 was signed into law, providing appropriations authority of $232 million annually for libraries for FY 2004 through 2009.[14] For 2004, IMLS requested nearly a 16 percent budget increase. These requests were modified in a late November 2003 appropriations conference and votes on these appropriations are still pending. The amounts expected to pass represent an 11 percent increase in total, including a 5.4 percent increase for state grants and a doubling of "21st Century Librarian" recruiting funds from $10 to $20 million.[15,16]

Senator Judd Gregg, Chairman Senate Committee on Health, Education, Labor and Pensions says: "Even with the rise of 24-hour news cycle and Internet blog sites, there will always be the need for a good book. This bill helps to ensure our libraries do not become a relic of the past, but remain an important part of our neighborhoods and our culture… as well as allow[s] funds to be used to recruit new professionals into the field of library science."[17]

13. National Science Foundation, NSF Awards, www.fastlane.nsf.gov/a6/A6SrchAwdf.htm. One was the Library of Congress, one was for a consortium and one for a library at a science conservatory.
14. Institute of Museum and Library Services, "President Signs Bill Reauthorizing Museum and Library Services Act" (September 23, 2003), www.imls.gov/whatsnew/current/092503.htm.
15. American Library Association, ALAWON, "Conference Agreement Library Funding Numbers." www.ala.org/Content/NavigationMenu/Our_Association/Offices/ALA_Washington/News2/20034/101deco2.htm#1.
16. Danielle Dowling, Congressional Affairs Specialist, IMLS (interview December 2003).
17. Institute of Museum and Library Services, "Statements From Congress On Passage Of Museum And Library Act," Senator Judd Gregg, Chairman Senate Committee on Health, Education, Labor and Pensions, www.imls.gov/whatsnew/current/092503b.htm.

Library funds—uses[18]

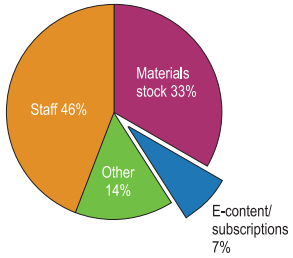
Resource allocation patterns among library funds across the countries covered in this report showed striking similarities, despite major disparities in other areas. On average, the countries included in the scan spent 53 percent of annual operating funds on staff, 27 percent on print material stock, 3 percent on electronic content and annual electronic subscriptions and 17 percent on other, primarily facilities and administration. Members of the Academic Research Libraries group in the United States show interesting simularities.



Uses of library funds worldwide

Staffing allocation was similar across most countries and regions in the sample. The majority of countries in the sample allocated between 52 percent and 60 percent of their resources to staff. Germany allocated the highest percentage to staff at approximately 60 percent; Mexico was the lowest at 42 percent. It is interesting that automation-poor countries show similar staffing expenditures to automation-rich countries. Where, then, are productivity gains that generally follow increased automation?

There is wide variability in the percentage of library funds allocated to electronic content and annual electronic subscriptions. Spain reported allocation of less than one tenth of one percent of its operating funds to electronic resources. The United Kingdom spent close to 8 percent on electronic resources in 2000. The Netherlands reported approximately 5 percent and the United States spent approximately 2 percent.

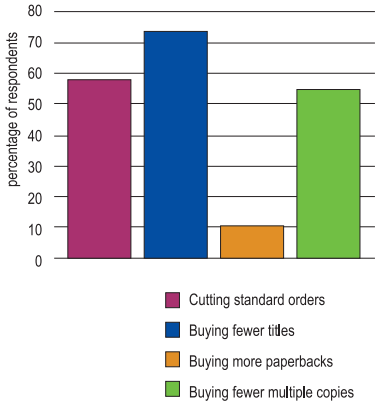


Uses of library funds—ARL university libraries 2001–02

Considering the amount of ink devoted to "the shift from print to electronic" in the library literature, the low percentages of materials funds devoted to electronic resources seems disproportionate to the hype.

As funding to libraries contracts or remains static (while the cost of materials does not), staffing and materials budgets receive increased scrutiny from funding agencies and library administrators. It is clear that libraries must find cost reduction opportunities in both of these budget categories.

Although there is no worldwide data available to analyze cost reallocation patterns, there is information available for U.S. libraries. Cost reductions in materials budgets, especially print materials, are evident across all library sizes and types. Libraries are changing both the amount and format of materials purchased. *Library Journal's* annual buying survey of public libraries indicates libraries are buying fewer materials, cutting standing orders and buying lower-cost materials, choosing paperback over hardback, for example. In the interviews OCLC did for this report, several public librarians reported they were ordering bestsellers in paperback to accommodate the need for multiple copies at the cheapest cost. They also reported significantly reducing other types of print purchases in favor of DVDs and CDs—media their constituents request. Reductions in print reference materials were identified as the "hardest hit" areas in the 2003 *Library Journal* survey, with 57 percent of public libraries indicating that they will reduce spending on these materials.



Source: 2003 Library Journal Buying Survey

U.S. public libraries—materials budget response to budget cuts

18. Please see "Sources" on pp. 147–48 for the complete list of sources consulted.

The State Library is facing a 79% cut in the acquisitions budget this fiscal year. Print items are the first to go. It's kind of a grim time.

State Librarian

A silver lining—shared infrastructures

Budget reductions create both challenges and opportunities.

The need to reduce staff costs, the need to lower materials costs while at the same time preserving these assets, the need to address the unfunded liability of capital renewal, and the increasing expectations of the technology-empowered user will have significant impacts on library services.

Some librarians interviewed for this report indicated that budget constraints could have a positive, liberating impact on libraries as it would force decisions avoided in more comfortable times. "It will allow us to make the shifts we know we have needed to make for some time" was a common way of expressing this.

Libraries of all types find there is increasing scrutiny of the return on investment (ROI) of library services and collections—and not just from the funding agency. An increased interest among the general population in how scarce tax dollars are spent has brought attention to what libraries and publicly-funded museums spend tax dollars on. As one public library director told the OCLC interviewer: a good library board insists that the library pass muster in the court of public opinion and this means a lot of public scrutiny and involvement.

Libraries are in the business of saving the [parent] institution money by providing rational management of vital information resources on which the institution depends.

Associate University Librarian

One of the most interesting patterns emerging on the horizon is a renewed look at the power (and ROI) of shared library systems and infrastructures. In the United States, consortia are (re)forming and states are coming together to look anew at the feasibility of utilizing shared technology infrastructures. Slow or negative economic growth compels publicly-funded institutions to be very, very clear in articulating the economic value to the community at large. The higher education sector and the government have done this for years by tracking the ROI of a college education to society at large. The value of a college degree can be expressed as value returned to society in economic terms.

The library and its sister organizations—museums, archives and historical societies—have not, in any organized fashion, used similar tactics in documenting the economic good of their continued healthy existence. Most people believe libraries represent a fundamental public good in a democracy; however, without a clearly articulated demonstration of value, taxpayers may choose not to fund this particular public good. "Sherrill Wilson would rather see Buncombe County close its libraries than raise property taxes."[19]

Libraries may have to stop thinking about their collections as their primary asset.

Industry Pundit

"Information is free." The commodity that forms the basis of a library's commerce is often thought by its constituents to be without cost when it is delivered across the network. Jim Gray, a Microsoft researcher, articulated the issues clearly in a March 2003 report.[20] The "cost of providing computing" is absolutely not free. Here are some highlights from that report:

> **"Computing is free."** The world's most powerful computer is free (SETI@Home is a 54 teraflops machine). Google freely provides a trillion searches per year

19. www.citizen-times.com/ Quote not archived (June 23, 2002).
20. Jim Gray, *Distributed Computing Economics*, Technical Report, MSR-TR-2003-24 (Redmond WA: Microsoft Research, March 2003).

to the world's largest online database (2 petabytes). Hotmail freely carries a trillion e-mail messages per year. Amazon.com offers a free book search tool. Many sites offer free news and other free content. Movies, sports events, concerts and entertainment are freely available via television.[21]

Actually, it's not free, but most computing is now so inexpensive that advertising can pay for it. The content is not really free; it is paid for by advertising. Advertisers routinely pay more than a dollar per thousand impressions (CPM). If Google or Hotmail can collect a dollar per CPM, the resulting billion dollars per year will more than pay for their development and operating expenses. If they can deliver a search or a mail message for a few micro-dollars, the advertising pays them a few milli-dollars for the incidental "eyeballs." So, these services are not free—advertising pays for them.

Computing costs hundreds of billions of dollars per year: IBM, HP, Dell, Unisys, NEC and Sun each sell billions of dollars of computers each year. Software companies like Microsoft, IBM, Oracle and Computer Associates sell billions of dollars of software per year. So, computing is obviously not free.

Total Cost of Ownership (TCO) is more than a trillion dollars per year. Operations costs far exceed capital costs. Hardware and software are minor parts of the total cost of ownership. Hardware comprises less than half the total cost; some claim less than 10 percent of the cost of a computing service. So, the real cost of computing is measured in trillions of dollars per year.

Megaservices like Yahoo!, Google and Hotmail have relatively low operations and staff costs. These megaservices have discovered ways to deliver content for less than advertising will fund. For example, in 2002 Google had an operations staff of 25 who managed its 2 petabyte (2^{15} bytes) database and 10,000 servers spread across several sites. Hotmail and Yahoo! cite similar numbers—small staffs manage ~300 TB of storage and more than 10,000 servers.

Outsourcing is seen as a way for smaller services to benefit from megaservice efficiencies. The outsourcing business evolved from service bureaus through timesharing and is now having a renaissance. The premise is that an outsourcing megaservice can offer routine services much more efficiently than an in-house service. Today, companies routinely outsource applications like payroll, insurance, Web presence and e-mail. Outsourcing works when it is a service business where computing is central to operating an application and supporting the customer—a high-tech, low-touch business. It is difficult to achieve economies-of-scale unless the application is nearly identical across most companies—like payroll or e-mail.[22]

Operations costs far exceed capital costs. Hardware and software are minor parts of the total cost of ownership.

Microsoft Technology Report, March 2003[21]

Universities are increasingly called to demonstrate their ROI, and libraries will be increasingly held accountable. They need to be better at showing the value of long-term investment in the information infrastructure. When a road is built, the ROI isn't in the transportation department—it's in the community at large.

Director, National Licensing Project

An 80-percent variable cost structure in a technology-intensive field, where common procedures and practices are shared across institutions, provides opportunity for cost reduction.

JSTOR, a nonprofit organization founded in 1995 to help the scholarly community take advantage of advances in information technologies, has built a model that demonstrates the operating cost advantages of leveraging shared technology infrastructures to store electronic journals. In a 2001

21. This paper makes broad statements about the economics of computing. The numbers are fluid—costs change every day. They are approximate to within a factor of 3. For this specific fact: SETI@Home averaged 54 teraflops (floating point operations per second) on 1/26/2003, handily beating the sum of the combined peak performance of the top four of the TOP500 supercomputers registered at www.top500.org/ on that day.
22 Jim Gray, *Distributed Computing Economics*.

We've had incredible cuts—40 percent of staff and funding. We need to convince the administration and the public that if they want this stuff around we need more support.

Director,
State Historical Society

Educause Review article, JSTOR reported an estimated annual cost of access advantage of more than 60 percent by moving from a traditional, open-stack journal management system to a centrally-administered electronic content system.[23]

A 1999 study by AT&T Labs suggests that for every dollar libraries spend to purchase an article, they spend twice as much on ordering, cataloging, shelving, circulating and providing reference assistance.[24] The economic return possible by reducing these shared operating costs across just a fraction of the world's million libraries is substantial.

Driving efficiencies and looking for innovative ways to share technical infrastructures is certainly not new for libraries. WorldCat, a shared infrastructure application, jointly created by libraries, was launched in 1971. Since 1978, the Dutch shared cataloguing system, Gemeenschappelijk Geautomatiseerd Catalogiseersysteem (GGC), has helped libraries across The Netherlands leverage shared solutions. Many other shared applications are providing libraries worldwide with substantial cost savings. But increasing financial constraints and the growing array of nonlibrary information services are driving libraries to come together to collaborate in new ways. Working together to create common efficiencies and improved ROI for stakeholders will change libraries' economics. It is required. For what's at stake is the adequate funding of the public good.

My library's reputation is predicated on what it owns. How will it maintain that reputation as it moves to digital? A new model needs to be developed.

Director, Academic Library

Funding the public good

"We've been hearing from people, 'Don't raise our property taxes. Don't raise our property taxes,' said Alderman Mike D'Amato, a member of the Library Board of Austin, Texas, which earlier this month cast a unanimous vote to close its Villard Avenue branch, the least busy of the city's 12 neighborhood libraries. 'Do you want your taxes cut?' D'Amato asked. 'Do you want your services the same? Because it's impossible to do both.'"[25]

There has been a worldwide shift in the past 15 years or so from public to private support for and provision of goods and services. This can be seen in a wide variety of sectors, such as telecommunications, railroads, hospitals, public radio, gas and electricity utilities and higher education. Increasingly, costs are moved to the consumer.

It is interesting to study the varied approaches to the funding of public programs in emerging economies where historical approaches are either not available to use as guides or are simply no longer adequate to match surging community needs. The following look at the funding of public libraries in the world's fastest growing economy, China, highlights the variety of solutions that can emerge when citizens, commercial enterprises and governments collaborate and compete for public programs.

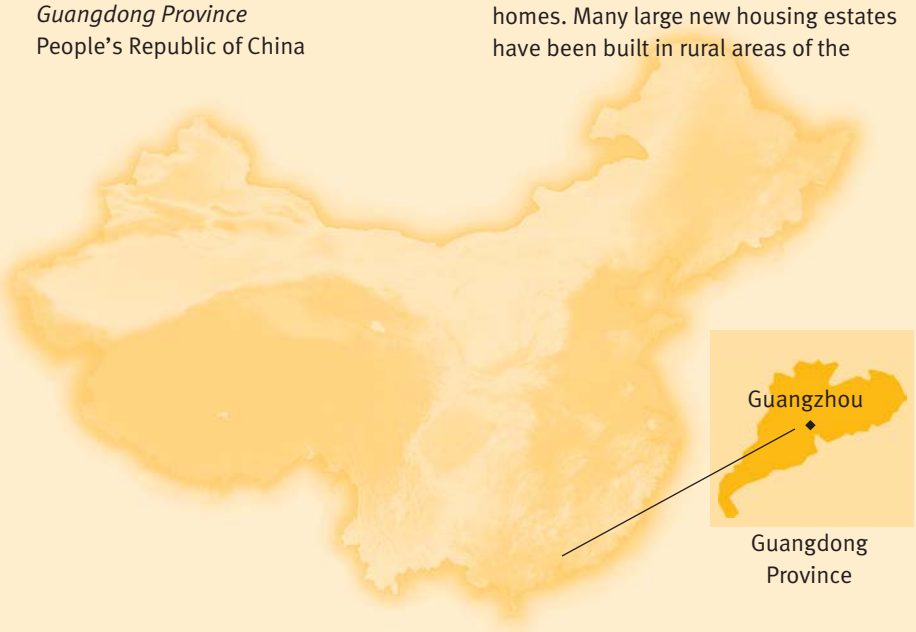
23. Kevin M. Guthrie, "Archiving in the Digital Age There's a Will, But is There a Way?" *EDUCAUSE Review* (November/December 2001).
24. Andrew Odlyzko, "Competition and cooperation: Libraries and publishers in the transition to electronic scholarly journals," AT&T Labs—Research, Revised Version (April 27, 1999).
25. Mike Clark-Madison, "The Budget Battles, Round 3," *The Austin Chronicle* [online] 22, No. 52 (August 29–September 4, 2003): n.p.

Funding the public good in China

Libraries as cultural centers in large, new communities in Guangzhou, China

Huang Qunqing and Zhang Xuhuang
The Science and Technology Library of Guangdong Province
People's Republic of China

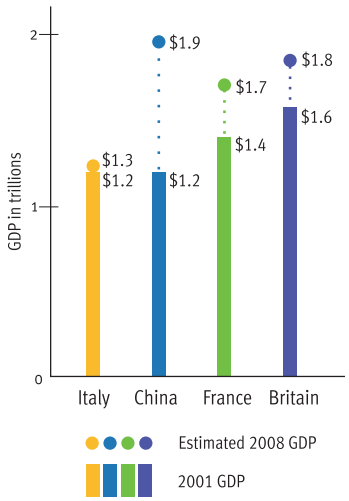
Guangzhou (population 10 million) is the capital city of South China's Guangdong Province and has been developing rapidly in recent years. Its GDP grew 12 percent in 2002. Residents' incomes are increasing and people are investing in cars and new homes. Many large new housing estates have been built in rural areas of the province around Guangzhou. Real estate developers are adding many interesting new amenities to their developments in efforts to attract buyers such as regular bus service to the city, recreation facilities and community libraries.



A survey of ten large, new country housing estates conducted by Huang Qunqing and Zhang Xuhuang of The Science and Technology Library of Guangdong Province found that each development had, or had plans to construct, a community library. Ranging in size from small facilities of approximately 100m² to three-story facilities, each library surveyed had unique operating and funding strategies.

One of the largest community libraries, the Guangzhou Country Garden Library, is a 685m² facility located on the top floor of the estate's clubhouse. Built in 1999, the Guangzhou Estate Company invested 10,000 RMB to purchase the initial collection of 12,000 books, 90 magazine

China—profile of a growth economy[26]



China—GDP estimated growth[26]

China's annual GDP growth was 7.9 percent from 1995–2002, making it one of the world's fastest growing economies. The chart above shows China's estimated GDP for 2008 in relation to three other industrial countries.

China—manufacturing center[27]

World's leading producer of these goods:

1990

- Cotton textiles
- Televisions

2002

- Cotton textiles
- Televisions
- Refrigerators
- Cameras
- Cell phones
- Desktop PCs
- DVD players
- Bicycles
- Motorbikes

In 2002, China became the first country in more than 20 years to attract more foreign investment than the United States.[27]

China	$53.2B
United States	$52.7B

subscriptions and 40 newspapers. The estate company maintains an operating account, financed by a resident's realty management fee, to replenish books and fund librarians' salaries. The library is free for residents of the community.

Opened jointly by the estate company and the Guangzhou municipal library, the Riverside Garden Library is a free library that not only serves residents but also farmers and other citizens in the neighboring communities. The real estate company and the municipal library jointly manage the library. The Guangzhou library established and maintains the book collection and provides professional training. The real estate company is responsible for the facility, staff and the replenishment of magazines and newspapers.

Other models include the library in Guangdi Garden, which opened as a bookstore. Residents can purchase a reading card for 50 CNY that gives them the right to read or buy the library/bookstore books. The library is run on contract with the bookstore owner who must agree to provide abundant free browsing and reading materials.

Several estate companies have entered into cooperative arrangements with schools to build branch libraries in their housing estates. Finally, other communities have chosen to operate local libraries that are stocked, staffed and maintained by the residents.

The entrepreneurial nature of recent real estate development in China has been good for the proliferation of libraries, but the financial sustainability of many of these new real estate-financed libraries is in question over the long run. Many estate clubhouse programs are running at operating deficits that may make it difficult to continue to sustain the current level of library investment. The library is a public good, not a commercial business, so it may be hard for developers to maintain funding.

Residents of these new estates recognize that libraries and cultural facilities are desirable features of their communities, but ones that will require funding in excess of estate management fees. There is an increasing push among residents for local government support of libraries and other public services.

[Excerpted and edited from a paper presented at the World Library and Information Congress: 69th IFLA General Conference and Council, August 2003].

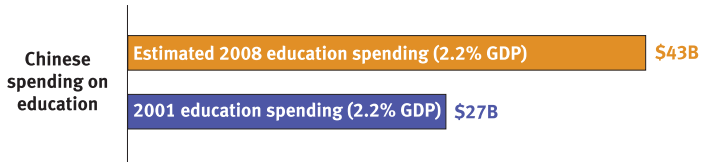
China—education and technology[26]

China's population is 1.3 billion (July 2003 est.)[28]

China graduated 2 million technicians and engineers in 2003.[27]

In 2001, 110 out of every 1,000 people in China owned a mobile phone.[26]

In China, there are 4 to 6 million new cell phone subscribers every six months.[27]



If China continues to fund education at 2.2 percent of GDP, by 2008 Chinese economic expansion will fund a 50-percent growth in education spending.[26]

26. Development Data Group, World Bank (October 2003).
27. K. Lieberthal and G. Lieberthal, "The Great Transition," *The Harvard Business Review* (October 2003): 71–80.
28. CIA, The World Factbook 2003, www.cia.gov/cia/publications/factbook/index.html.

Along with a general shift to privatization of public services in the developed countries, there has been an increasing emphasis on assessment and accountability—although these are hardly new societal expectations.

John Cotton Dana, a key figure in 20th century librarianship, wrote in 1920:

"All public institutions…should give returns for their cost; and those returns should be in good degree positive, definite, visible and measurable […] Common sense demands that a publicly-supported institution do something for its supporters and that some part at least of what it does be capable of clear description and downright valuation."[29]

What was true in 1920 still holds today. Accessment and accountability, then, are not new themes. To measure accountability, libraries have traditionally focused on their collections—the size, the variety, the utility as measured by circulation.

In a world where cuts in materials budgets are commonplace and where content is not scarce, trends suggest that "clear description and downright valuation" of libraries must place them squarely and unambiguously in the larger network of learning resources that includes museums, public broadcasting and community organizations that are part of a knowledge-based society.

Robert S. Martin, the Director of the Institute of Museum and Library Services writes:

"Libraries of all types provide a broad range of resources and services for the communities they serve. They preserve our rich and diverse culture and history and transmit it from one generation to the next. They provide economic development. They provide extraordinary opportunities for recreation and enjoyment. And they serve as a primary social agency for education, providing resources and services that both support and complement agencies of formal education."[30]

The challenge, then, is how to continue to adequately fund the public good.

29. John Cotton Dana, *The New Museum: Selected Writings by John Cotton Dana*, edited by William Penniston (1999). Quoted in Robert S. Martin, "Reaching Across Library Boundaries," In *Emerging Visions for Access in the 21st Century Library,* 3–16, Council on Library and Information Resources and the California Digital Library, (Washington DC: CLIR, August 2003): 10.
30. Robert S. Martin, "Reaching Across Library Boundaries," In *Emerging Visions for Access in the 21st Century Library,* 3–16, Council on Library and Information Resources and the California Digital Library (Washington DC: CLIR, August 2003): 11.

Implications

- Public funding for libraries and allied organizations will likely continue to decline or remain at low levels for several years. *What can we do to shift internal resources to maintain and increase services in the face of static or declining funding?*
- Not enough is known about models of library funding globally. There may be lessons to learn for North American libraries. *How do other countries fund libraries and allied organizations, and what might work?*
- 75 percent of the world's library spending is concentrated in 5 countries. *How can these countries help build global communities in partnership with countries where public funding of libraries is relatively low?*
- Productivity gains from technology adoption and innovation is not as apparent in libraries as in other industries. *How can technology be leveraged to serve more people and deliver more services*?
- Libraries and allied organizations cannot assume public funding will always be available. *What can be done to demonstrate (and increase) the economic value of libraries?*