TOWARD GIGABIT LIBRARIES TOOLKIT
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PRESENTED BY:

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TOWARD GIGABIT LIBRARIES TOOLKIT
Innovation
Powered by Community

Founded 1996
A Non Profit, 501c3 Organization
Providing Advanced Technologies Infrastructure and Services to its R&E Members

Established, Operated, & Governed by the Nation’s Leading Research Universities
INTERNET2: MEMBERS & PARTNERS
Focused on advanced technology needs of members since 1996

- 300+ Higher Education members
- 80+ Industry members
- 40+ Affiliate members
- 40+ R&E Network members
- 65+ Int’l partners reaching
- 100+ nations
- 100,000+ Community anchor institutions
Internet2’s U.S. UCAN Program

Connectivity Stats

<table>
<thead>
<tr>
<th>CAI Type</th>
<th>Number Connected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Four-Year Colleges &amp; Universities</td>
<td>1532</td>
</tr>
<tr>
<td>Community Colleges</td>
<td>1062</td>
</tr>
<tr>
<td>K-12 Schools</td>
<td>87,796</td>
</tr>
<tr>
<td>Public Libraries</td>
<td>5336</td>
</tr>
<tr>
<td>Health Care Organizations</td>
<td>1900</td>
</tr>
<tr>
<td>Other CAIs</td>
<td>3235</td>
</tr>
</tbody>
</table>

100,000+ CAIs Connect to Internet2!
“Toward Gigabit Libraries” Grant

- $250K grant from IMLS.
- Awarded to Internet2 in Spring of 2016.
- Three-year grant developing training curriculum and self assessment material (“Toolkit”) for library broadband infrastructure.
- Targeting very rural and tribal libraries.
- Partners include State Library offices and R&E Networks.

**Project Goal:** Pilot toolkit in at least 30 libraries
Project Development Process

- Initial Draft of materials
- Updating materials based on input
- Finalize Toolkit

SME Workshop

Pilots

Release Toolkit
What is the Toolkit?

- Educational Workbook
- Self Assessment Tool
- Advocacy Platform
Toolkit Components and Process

- Technology Inventory
  - Broadband Connection
  - Wired Network
  - Network Devices
  - Wireless/WiFi Network
  - Computer/End User Devices

- Broadband Services and Activities
  - Broadband Technology and Operations Support
  - Broadband Funding
  - Additional Resources and Best Practices
5. TECHNOLOGY INVENTORY—YOUR LIBRARY

In this section, you will inventory some of the key pieces of the technology inside your library, including your network, computers, and other important technology components. This inventory will help you understand what sort of equipment you have now and provides a basis to determine if you need different or additional equipment for the future.

5A. Broadband Connection

If you have more than one broadband connection, i.e., two different types of technologies or service providers, answer the following questions in this “Broadband Connection” question for each connection.

1. What type of internet connection does your library currently have?
   Choose all that apply.

   □ Digital Subscriber Line (DSL)
   □ Cable Modem
   □ Fiber
   □ Wireless
   □ Satellite
   □ Other [add here]

There are three primary types of broadband—wireline (DSL, cable modem, and fiber), wireless, and satellite. Definitions for the types of Internet connections listed here are available at the FCC website: https://www.fcc.gov/general/types-broadband-connections

| Speed Ranges by Type of Broadband (Kbps - kilobit, Mbps - megabit, Tbps - terabit) |
|---------------------------------|-----------------|-----------------|-----------------|
| Technology                      | Type            | Download Speed Range | Upload Speed Range |
| Fiber                           | Wireline        | 100 Mbps - 1 Tbps  | 100 Mbps - 1 Tbps |
| Cable Modem*                   | Wireline        | 256 Kbps - 10 Gbps | 256 Kbps - 10 Gbps |
| DSL*                           | Wireline        | 256 Kbps - 100 Mbps| 256 Kbps - 15 Mbps |
| Fixed Wireless/ Microwave      | Wireless        | 1 Mbps - 155 Mbps  | 1 Mbps - 155 Mbps |
“Toward Gigabit Libraries” Site Visits
Is the library part of a larger city, county, regional, library system?

59 responses

88.1% No, we are a stand alone library
11.9% Yes, we are part of a library system
How frequently is technical/IT support available in the library?

59 responses:

- Anytime: 62.7%
- Only when problems arise: 20.3%
- Very infrequently / limited: 11.9%
- Never: 4.1%
Pre Library Intake Survey-- Trends So Far (59 Libraries)

Describe your current level of expertise around procuring and delivering access to broadband as a service in your library.

59 responses

- Very Experienced— I’ve been responsible for ordering and setting up our Internet connection and feel I have a good understanding of the process.
- Limited Experience— I’ve had some experience with ordering and setting up our Internet connection, but I don’t feel like an expert.
- No Experience— I’ve had no experience in ordering or setting up our Internet connection.
Pre Library Intake Survey (61 Libraries) - What do libraries want?

We want everyone in our community to have free and easy access to the Internet.

Consistent reliable internet availability, A sense of comfort when dealing with technology, educate public on tech use so they feel more comfy, computer tech would like windows 10 training.

We want our students to have every opportunity possible to compete in this global society. We would also like to help bridge the digital divide that many of our students experience. We would like to see every student have access to high speed internet services. We would also like to see broadband internet all across Indian Country.

We want our community to have the same online opportunities that people in larger communities have.

The internet has became vital for employment. Almost all the jobs in the area are not requiring on-line applications and classes and instruction on basic computer use are needed. The only option outside the city limits for internet is satellite internet which is too expensive for many. I need a strong volunteer base to get the one-on-one help that my patrons need.
Results— What are the Common Library Issues?

- Insufficient data wiring
- Inefficient network setups
- Old and/or obsolete equipment
- Poor WiFi coverage
- Not participating in E-rate
**Feedback from Technical Advisors**

<table>
<thead>
<tr>
<th>Date</th>
<th>Source</th>
<th>Assigned to</th>
<th>Issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/28/17</td>
<td>SS/Kansas Trip</td>
<td>SS</td>
<td>P. 27 - when talking about age of PCs, discuss how older PCs’ lower speed processors and RAM could con connection. Keeping computer SW up to date, rebooting on a regular basis also helps.</td>
</tr>
<tr>
<td>5/10/17</td>
<td>JW/ID trips</td>
<td>JW</td>
<td>add a row on current and future (aspirational uses of broadband) aimed at improving service to patrons. space to enter current/future uses. the right column (educational column) could be loaded with aspiration participation in interactive video programs (PPSP) and other interactive video applications.</td>
</tr>
<tr>
<td>5/10/17</td>
<td>JW/ID trips</td>
<td>CB</td>
<td>p.16 - add a couple questions addressing the current state of the electrical system in the library. is it adequate future broadband enabled technology needs (enough dedicated circuits to power public access computer bring your own devices (personal laptops, phone recharge, etc.). adequate outlets in the correct places to equipment (broadband router, wifi router, wifi repeaters, etc. Also add a question on surge protection for Glenn Ferry had 1 grounded outlet for all 4 of their public access machines located about 30 ft from the stretching electrical chords across the room (major trip hazard/liability), and plugging computers into multi recommendations/education - research electrical “best practices” resources from tech soup maybe that possibly recommend having an electrician do an electrical audit of their library to optimize power outlets</td>
</tr>
<tr>
<td>5/10/17</td>
<td>JW ID trips</td>
<td>JW</td>
<td>Not specific to toolkit, but are we adequately capturing contact info for any staff tech support at the library? question in the intake survey? Any follow up by tech advisor will likely benefit from having the tech staff c</td>
</tr>
<tr>
<td>5/11/17</td>
<td>James Deaton, OK</td>
<td>CB</td>
<td>Create a google spreadsheet to track the names/contact info of all participants in site visits</td>
</tr>
<tr>
<td>05/02/17</td>
<td>James Deaton, OK</td>
<td>CB</td>
<td>Work in additional clarity on the hub vs switch.</td>
</tr>
<tr>
<td>05/03/21</td>
<td>James Deaton, OK</td>
<td>CB</td>
<td>Move the section of questions about the network diagram closer to the example of a network diagram.</td>
</tr>
<tr>
<td>5/2/17</td>
<td>CB/OK trip</td>
<td>SS</td>
<td>Are the signature forms necessary on the toolkit and BIP?</td>
</tr>
<tr>
<td>5/3/17</td>
<td>CB/OK trip</td>
<td>CB</td>
<td>It may be difficult for a library with good tech support to understand all of the questions (because they do much);</td>
</tr>
<tr>
<td>5/4/17</td>
<td>CB/OK trip</td>
<td>CB</td>
<td>Suggest moving the network map drawing to align better with the network map question (put the two in se</td>
</tr>
</tbody>
</table>
Feedback – Post Pilot Visit Survey

How did your participation in the pilot affect your technical understanding of your broadband information technology environment?

31 responses

Very Dissatisfied ....................................................... Very Satisfied

- 0 (0%)
- 1 (0%)
- 2 (0%)
- 3 (9.7%)
- 4 (29%)
- 5 (61.3%)
Feedback – Post Pilot Visit Survey

In what areas did your knowledge increase? (25 responses)

- Broadband Funding: 0.6%
- Library Broadband Services and Activities: 0.7%
- Computer / End User Devices: 0.4%
- Wireless / WiFi Network: 0.8%
- Network Devices: 0.7%
- Wired Network: 0.8%
- Broadband Connection: 0.9%
Feedback – Post Pilot Visit Survey

How would you rate your overall experience with the pilot program?

31 responses

Very Dissatisfied ......................................................... Very Satisfied

0 (0%)  0 (0%)  1 (3.2%)  6 (19.4%)  24 (77.4%)
Feedback – Post Pilot Visit Survey

Would you recommend this pilot process to other libraries?

31 responses

100%
The Toward Gigabit Libraries experience in TX (in reverse order :0)
Palacios Library
Coleman Public Library
Carnegie Library of Ballinger
Stamford Carnegie Library

Luci Wedeking
What happened during the visit?
What happened after the visit?
Next Steps

• Pilots wrap up in New Mexico, Pennsylvania, and South Dakota.

• Iterative updates to Toolkit and materials.

• Develop brief report on impact and key findings of common issues and solutions/recommendations for issues identified.

• Finalize Toolkit distribute via Creative Commons.

• Socialize the Toolkit with library community.
How might you use the Toolkit in Your State?
Audience Q & A

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