Starting (and Growing) a Rural Library Hotspot Lending Program

Brian Whitacre, Oklahoma State University
Department of Agricultural Economics

NACDEP 2019 National Innovation and Creativity Award Winner

NACDEP Presentation, Asheville, NC 6-10-19
Agenda

• Background on the Digital Divide
• Why Broadband Adoption Matters
• Hotspot Lending Program Basics
  • Program Overview
  • Pilot Survey Results
  • Challenges of the Program
What is “Broadband,” anyway?
- High-speed Internet connection
- Defined by Federal Communications Commission

Historically, anything > 200kbps in at least 1 direction was considered broadband
- Dial-up modems provided ~56 kbps
- Some datasets still use this!! (FCC’s Adoption Data)

Previous FCC thresholds:
- 200 KBPS at least 1 direction (prior to 2008)
- 786 KBPS down (2008)
- 4 MBPS down, 1 MBPS up (2010)

Current FCC Definition (2015+):
- 25 MBPS down, 3 MBPS up
Background on the Digital Divide

- Rural broadband adoption rates persistently lag those in urban areas
- Low-income households have only ~50% adoption (compared to 95% for high-income)
- Income-based digital divide has actually increased over time


Source: Lee and Whitacre, 2017
Why Does This Matter?

- Households without a high-speed connection to the Internet are increasingly at a disadvantage (Horrigan and Duggan, 2015).
- Studies have shown that it is broadband ADOPTION (not simply having availability) that matters for changes to rural economies.
Think about everything you do online!

• Connect socially
• Pay bills
• Search / apply for jobs
• File taxes
• Search for health information
• Entertainment (Netflix, Music, Hulu…)
• Civic engagement
• Schoolwork / Research
A Common Misperception...

- “They don’t WANT to be online…”

  Horrigan and Duggan (2015) use national survey data to show otherwise.
More recent research suggests that those without home connections fully recognize the importance of Internet access (Reisdorf, 2018; Strover, Rhinesmith, Whitacre, 2017)
Why Hotspot Lending Programs?

- Rural libraries are uniquely positioned to impact the digital environment of their communities
- Specific possibilities:
  - Shrinking the “homework gap”
  - Providing financially disadvantaged patrons with home-based access (including those with limited data plans)
  - Helping patrons search for employment / job opportunities
  - Keeping in touch with family / friends
  - Accessing health information
  - Offering connectivity at community-wide events
• Connects via a cellular (wireless) service provider (i.e. AT&T, Verizon, Sprint)
  • Area must have coverage for the device to work!
• Emits a Wi-Fi signal that users can connect their personal devices to (laptop, tablet, smartphone)
  • Most can connect 8-10 devices at once
• Mobile – works wherever the service provider has coverage
• Speeds based on provider signal (4G LTE is best – 5G is coming!)
• Similar to data plan of cell phone
  • Unlimited plans available (and needed!)

Dec 2017 Broadband Availability for RURAL locations (all US) (FCC, 2019)

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Wired</td>
<td>25 / 3 Mbps</td>
<td>73.6%</td>
</tr>
<tr>
<td>Mobile</td>
<td>5/1 Mbps</td>
<td>99.1%</td>
</tr>
</tbody>
</table>
### Pilot OK Program (Started May 2017)

Broadband Adoption data from 2017 ACS

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Elgin</td>
<td>2,700</td>
<td>7.9%</td>
<td>$65,625</td>
<td>9.0%</td>
</tr>
<tr>
<td>Perkins</td>
<td>2,800</td>
<td>21.6%</td>
<td>$40,861</td>
<td>30.1%</td>
</tr>
<tr>
<td>Seminole</td>
<td>7,500</td>
<td>24.6%</td>
<td>$32,594</td>
<td>36.7%</td>
</tr>
<tr>
<td>Haskell</td>
<td>1,900</td>
<td>28.3%</td>
<td>$32,244</td>
<td>50.0%</td>
</tr>
</tbody>
</table>
OK Rural Library Hotspot Program Basics

- OSU funds devices / data for 1st year
  - Libraries try to fund on their own after that (local sponsors, budget)
- Libraries set all policies (length of loan, late return fees, etc.)
- Librarians report monthly statistics
- Librarians participate in monthly conference calls
  - Sounding board for what is going right / wrong
  - This proved to be very helpful!!
- Patrons complete 1-page survey upon return
  - OSU summarizes results
  - Can be very helpful in making case for local sponsors!
OK Pilot Program – 1 year summary

- Extremely well received!
  - 4 devices each (some have upgraded to 7); high demand even without significant amount of marketing
  - Texts sent out when devices are ready – being picked up within 10 minutes!
  - Immediately request being put on waiting list upon return

- Surveys reveal most are being used in conjunction with smartphones / tablets

- Most use by lower-income households, likely to purchase home broadband service for $10 / month (but not $30)
OK Hotspot Program Survey

Library Hotspot User Survey

1) On a scale from 1-10, with 1 being low and 10 being high, how would you rate the following?

---

Please list the two websites you visited most often while checking out the device.

1) ____________________________
2) ____________________________

---

On a scale from 1-10, with 10 being very proficient, how would you rate your internet skills:

- Before checking out the device? ______
- After checking out the device? ______

---

For each of the price points below, how likely is it that you would purchase broadband Internet service for your household in the next six months?

<table>
<thead>
<tr>
<th>Price</th>
<th>Very unlikely</th>
<th>Somewhat unlikely</th>
<th>Neither likely nor unlikely</th>
<th>Somewhat likely</th>
<th>Very likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>$10/month</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>$30/month</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>$50/month</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

---

Additional Comments on Library Hotspot Program:

---

Which of the following devices did you connect to the hotspot? Select all that apply.

- ○ Desktop computer
- ○ Laptop
- ○ Smartphone
- ○ Tablet (e.g. iPad)
- ○ E-Reader (e.g. Kindle)
- ○ Other

---

Please mark your TOP 3 uses of the device.

- ○ Entertainment
- ○ Learning job-related skills
- ○ Helping my child with schoolwork
- ○ Connecting with family and friends
- ○ Research
- ○ Keeping informed of current events
- ○ Other ______________________

---

14
# Devices Loaned / Wait Lists

<table>
<thead>
<tr>
<th>Library</th>
<th>City population (2015)</th>
<th>Initial number of hotspots</th>
<th>Final number of hotspots</th>
<th>Total loans (June 2017–April 2018)</th>
<th>Average loans per month</th>
<th>Average wait-list length (no. of people)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perkins</td>
<td>2,860</td>
<td>4</td>
<td>7</td>
<td>155</td>
<td>12.9</td>
<td>6</td>
</tr>
<tr>
<td>Haskell</td>
<td>1,904</td>
<td>4</td>
<td>7</td>
<td>169</td>
<td>14.1</td>
<td>20</td>
</tr>
<tr>
<td>Seminole</td>
<td>7,508</td>
<td>4</td>
<td>6</td>
<td>95</td>
<td>7.9</td>
<td>10</td>
</tr>
<tr>
<td>Elgin</td>
<td>2,700</td>
<td>4</td>
<td>4</td>
<td>106</td>
<td>8.8</td>
<td>7</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td></td>
<td></td>
<td>525</td>
<td>10.9</td>
<td>11.6</td>
</tr>
</tbody>
</table>

Total Devices Loaned: 525  
(Avg. of 11 / library / month)

Avg. Wait List: 11.6
Q1a. On a scale from 1-10, with 10 being high, how would you rate your satisfaction with the library hotspot program?

Average Ranking: 9.5 / 10
Q2c. What is your annual household income?

- Prefer not to answer
- $125,000 or more
- $75,000 - $124,999
- $50,000 - $74,999
- $25,000 - $49,999
- Under $25,000

75% earn below $50,000
Q2d. What is the highest level of education of any adult in your household?

- Post College Degree
- College Degree
- Some College / Associated Degree
- High school, GED, or equivalent
- Did not graduate high school

42% with only HS Degree or Less
Q3a. Which of the following devices did you connect to the hotspot (choose all that apply)?

- Other
- E-Reader (e.g. Kindle)
- Tablet (e.g. iPad)
- Smartphone
- Laptop
- Desktop Computer

66% Connect with More than 1 Device
Q3b. Please mark your TOP 3 uses of the device

- Entertainment
- Connecting with family and friends
- Research

94% Use for Multiple Purposes
Q3d. Please rate your Internet skills before and after using the device

- Stayed the same
- Declined
- Improved

26% felt their Internet skills improved
Sample Comments from Patrons

- “I love it!”
- “Great for research and helping my son and daughter do their homework”
- “It’s a total blessing”
- “Awesome program – thanks!”
- “Used for Planning Community Event”
- “I greatly appreciate as I am a full-time student without Internet at home”
- “Thank you, thank you, thank you. It’s great!”
- “Wonderful program – just need more available to check out”
- “Good program, used for banking / paying bills”
- “So happy that we have an outstanding library that broadens our community’s opportunities – I love you library!”
- “Can’t thank you enough – hope to purchase my own unit soon”
- “This is a wonderful thing for the library to do.”
- “Wish it was longer than a week.”
- “This is a wonderful program that is extremely beneficial to my children.”
- “Love it! Simple to use. No hassle and very convenient to take wherever you go.”
- “Please keep doing it! Thank you!”
Each Round:
• ~4 libraries, 4-7 devices each
• 1-week loans
• Libraries attempt to continue program (on their own) after 1st year

Supplemental funding from:

AARP Real Possibilities

($3,000 - $5,000 grants)
### 2nd Round Site Data / Statistics

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Grove</td>
<td>7,060</td>
<td>13.6%</td>
<td>$40,435</td>
<td>26.8%</td>
<td>108</td>
</tr>
<tr>
<td>Guthrie</td>
<td>11,350</td>
<td>21.1%</td>
<td>$44,084</td>
<td>32.3%</td>
<td>165</td>
</tr>
<tr>
<td>Okemah</td>
<td>3,196</td>
<td>35.3%</td>
<td>$30,432</td>
<td>46.6%</td>
<td>186</td>
</tr>
<tr>
<td>Sayre</td>
<td>4,490</td>
<td>16.5%</td>
<td>$29,500</td>
<td>28.4%</td>
<td>80</td>
</tr>
<tr>
<td>Atoka</td>
<td>3,077</td>
<td>30.0%</td>
<td>$30,042</td>
<td>25.2%</td>
<td>84</td>
</tr>
<tr>
<td>Davis</td>
<td>2,774</td>
<td>15.7%</td>
<td>$48,295</td>
<td>32.9%</td>
<td>91</td>
</tr>
<tr>
<td>Marietta</td>
<td>2,669</td>
<td>21.8%</td>
<td>$43,065</td>
<td>40.5%</td>
<td>122</td>
</tr>
</tbody>
</table>

820 loans
13.2 Avg. Wait List
The Main Barrier to Continuing: COST

- Devices cost ~$70 each
- Unlimited data is the real problem:
  - We partner with PCs for People (non-profit; limited to Sprint)
    - Ongoing cost for a library with 4 devices: $540 / year
    - Very limited budgets for most rural libraries!
  - Expanding to other providers has proven challenging
    - T-Mobile wants to partner but higher costs will be difficult in the post-grant period

Cost for 1 year of Unlimited Data:

<table>
<thead>
<tr>
<th>Sprint (PCs for People)</th>
<th>AT&amp;T</th>
<th>T-Mobile</th>
</tr>
</thead>
<tbody>
<tr>
<td>$135</td>
<td>$420</td>
<td>$300</td>
</tr>
</tbody>
</table>

$3,200 funded pilot round of 4 devices for 4 libraries
Specific Network Coverage Can Be Limited

- Sprint Coverage in Oklahoma:
What is Extension’s Role?

Manager of Risk

1. Establishing funding for Year 1
   - No libraries would have started program on their own
2. Providing sounding board for problems (monthly calls)
3. Promoting the program locally
4. Gauging local interest in sponsoring devices after pilot ends

Interested in learning more? Visit our website:
http://agecon.okstate.edu/hotspot/
Or, take a look at our recent JOE article: