7.5.11 Lab – Research Broadband Internet Access Technologies (Answers)

October 2, 2020

Lab – Research Broadband Internet Access Technologies (Instructor Version)

Objectives

- **Part 1: Investigate Broadband Distribution**
- **Part 2: Research Broadband Access Options for Specific Scenarios**

Background / Scenario

Although broadband internet access options have increased dramatically in recent years, broadband access varies greatly depending on location. In this lab, you will investigate current broadband distribution and research broadband access options for specific scenarios.

Required Resources

Device with internet access

Part 1: Investigate Broadband Distribution

In Part 1, you will research broadband distribution in a geographical location.

Step 1: Research broadband distribution.

Use the internet to research the following questions:

a. For the country in which you reside, what percentage of the population has broadband internet subscriptions?

As of 2018, the FCC reports that 92.3% of Americans have a broadband Internet connection. This data is contested by Microsoft, who says the percentage is much lower.

b. What percentage of the population is without broadband internet options?

Nine percent of Americans currently have no broadband internet options. The most recent FCC reports states that only 6% of Americans lack access to fixed broadband service at threshold speeds (currently 25Mbps down and 3Mbps up).

Step 2: Research broadband distribution in the United States.

Search the internet for the Fixed Broadband Deployment Map. The Fixed Broadband Deployment Map allows users to search and map broadband availability across the United States.

Note: For access options and ISPs for locations outside the United States, perform an internet search using the keywords **broadband access XYZ**, where XYZ is the name of the country.

a. Enter your zip code, city and country that you would like to explore and click **Find Broadband**.

List the zip code or city in the space provided.

Answers will vary.

b. Examine the All Providers Reporting area of the output. What, if any, wired broadband internet connections are available at this location? Complete the table below.

Answers will vary. See table below for examples.

ISP	Connection Type	Download Speed
Time Warner	Cable	10-25 Mb/s
Frontier	ADSL	6-10 Mb/s

c. Examine the **All Providers Reporting** area of the output. What, if any, wireless broadband internet connections are available in this location? Complete the table below.

Answers will vary. See table below for examples.

ISP	Connection Type	Download Speed
Omnicity	Fixed Wireless	1.5-3 Mb/s
Verizon	Mobile Wireless	768 Kpbs-1.5 Mp/s
Sprint-Nextel	Mobile Wireless	768 Kpbs-1.5 Mp/s

Part 2: Research Broadband Access Options for Specific Scenarios

In Part 2, you will research and detail broadband options for the following scenarios and select the best last-mile technology to meet the needs of the consumer. You can use the Fixed Broadband Deployment site as a starting point for your research.

Scenario 1: You are moving to Kansas City, Missouri and are exploring home internet connections. Research and detail two internet connections from which you can select in this metropolitan area.

ISP	Connection Type	Cost per Month	Download Speed
Google Fiber	Fiber	$50/$70	100 Mbps/1 Gb/s
At & T	DSL	$40/$50	5 Mbps/18 Mb/s

Choose one from the list of local ISPs that you selected. Give the reasons why you chose that particular ISP.

Answers will vary. The reasons are typically based on price per month, internet speeds, or packages offered.

Scenario 2: You are moving to an area outside of Billings, Montana and are exploring home internet connections. You will be beyond the reach of cable or DSL connections. Research and detail two internet connections you can select in this area.

ISP	Connection Type	Cost per Month	Download Speed
Charter Spectrum	Cable	$45.00	100 Mb/s
TCT	Fixed Wireless	$99	6 Mb/s

Choose one from the list of local ISPs that you selected. Give the reasons why you chose that particular ISP.

Answers will vary. The reasons are typically based on price per month, internet speeds, or packages offered.

Scenario 3: You are moving to New York City and your job requires you to have 24 hours anytime/anywhere access. Research and detail two internet connections from which you can select in this area.

ISP	Connection Type	Cost per Month	Download Speed
AT & T	Mobile Wireless	$50 for 5 Gb of Data	10 Mb/s
Sprint	Mobile Wireless	$50 for 6Gb of Data	10 Mb/s

Choose one from the list of local ISPs that you selected. Give the reasons why you chose that particular ISP.

Answers will vary. The reasons are typically based on price per month, internet speeds, or packages offered.

Scenario 4: You are small business owner with 10 employees who telecommute in the Fargo, North Dakota area. The teleworkers live beyond the reach of cable internet connections. Research and detail two internet connections you can select in this area.

ISP	Connection Type	Cost per Month	Download Speed
Midco	Cable	$85	200 Mb/s
Windstream	Copper	$50	1.5 Mb/s

Choose one from the list of local ISPs that you selected. Give the reasons why you chose that particular ISP.

Answers will vary. The reasons are typically based on price per month, internet speeds, or packages offered.

Scenario 5: Your business in Washington, D.C. is expanding to 25 employees and will need to upgrade your broadband access to include equipment colocation and web hosting. Research and detail two internet connections from which you can select in this area.

ISP	Connection Type	Cost per Month	Download Speed
Verizon	DSL	$64.99	15 Mb/s
Comcast Business	Cable	$69.95	150 Mb/s

Choose one from the list of local ISPs that you selected. Give the reasons why you chose that particular ISP.

Answers will vary. The reasons are typically based on price per month, internet speeds, or packages offered.

Reflection Question

How do you think broadband Internet access will change in the future?

Answers will vary. Broadband internet access will increase in geographical size and in speed with the further development of wired and wireless technology and infrastructure. Access options and speeds will continue to increase and with more availability to un-served and underserved areas.

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