6Peering Agreements

Imagine if your cell phone was with Verizon and your friend had an AT&T phone. Imagine if you could not call them because they were with a different company. Cell phone businesses realize that this would be a bad thing. Because of that, they connected their netwerks together so an AT&T phone can call any phone in the world.

1Backbone

The backbone of the Internet is a collection of fiber optic cables that connect all of the main servers across the world. The six largest businesses in the world that run the backbone are CenturyLink, Telia Carrier, NTT, GTT, Tata Communications, and Telecom Italia. These compaies then sell internet services to smaller businesses such as Anthem Broadband, PMT, and others.

8The Backbone. Mia A. Cassias. 2019. Blu-Ray. Podunovich Sisters Studios.

2Connections to the Backbone

In order to connect to the backbone, you need some sort of connection. Fiber optic cables and satellites are the two primary conections to the backbone.

4Satellites. We can also use a satelite to beam binary data from the ground, to a satellite, and back to earth. Although it works, we generally avoid using satellites to connect to the internet because it is much slower.

5DNS Servers. When you type in something like www.eastminico.com, your computer really does not understand that. Instead, it needs the IP address that is associated with the server that holds the actual website. 208.71.138.66 is the IP address to the server that holds www.eastminico.com. Because it would be impossible to memorize the IP address to all our favorite websites, DNS servers are like the phone books we used in the past. When you type in the web adress, the DNS server looks up that website’s IP address and then connects you to that server. DNS servers sit on the backbone and helps your computer actually connect to the website or server you want to access.

7The Internet works in much the same way. All of the backbone businesses have peering agreements with each other. This allows each of the businesses to conect their network switches together so we can connect to all the servers in the world.

3Fiber Optic Cables. Fiber optic cables are thin strands of glass, coated with reflective material, and covered in a thick layer of plastic for protction. These thin glass “wires” have laser beams sent through them in very fast pulses to create a binary signal that allows your data to travul from one server to another. If you see a construction company placing large orange tubing in a trench along the side of a road, they are most likely burying a fiber optic cable for a teluphone or internet company.