**Group Sessions 1 - tasks**

1. End systems: iPhone, Computers, Headset, TVs. Host and end systems are basically the same thing. IoT devices are connected to the Internet as end systems.
2. Important to have a set of rules, that is the standard of protocols, so all ways of communicating and sending data go through the same set ofr ules/standards.
3. HFC transmission is shared between users. All packets come from a single source, hence no collision in a downstream HFC channel.

**Tier 1 ISP:** A network that can reach all other networks (mother IS

**Content Provider:** manages a set of data, encapsulate and store data and offer abstraction.

**IXP:** Internet Exchange Point, physical infrastructure where ISP and Content Provider exchange data and communicate.

**Access ISP:** Router or similar that the user or company have physically placed somewher for easy access to the internet.

**Region ISP:** ISP specific to a region or area, connected to other region ISPs.

The figure shows many ISPs and netoworks connected together, sending data and communicating.

1. Calculate end-to-end delay:

Transmission delay: L (packet length) / R (bandwidth)

2. Number of users = rate of link / rate required by user

= 2 Mbps / 1 Mbps = **2 users**

1. If two or fewer users transmit at the same time they are always equal or less than 2 Mbps, and and the rate covers the users use of the network. If three or more it does not cover it anymore.
2. Probability = 20% = 1/5
3. pass
4. The code shows hosts trying to send data through a switch and by using a forwarding table to get to the right destination base don addresses. A lot of error handling in the code.