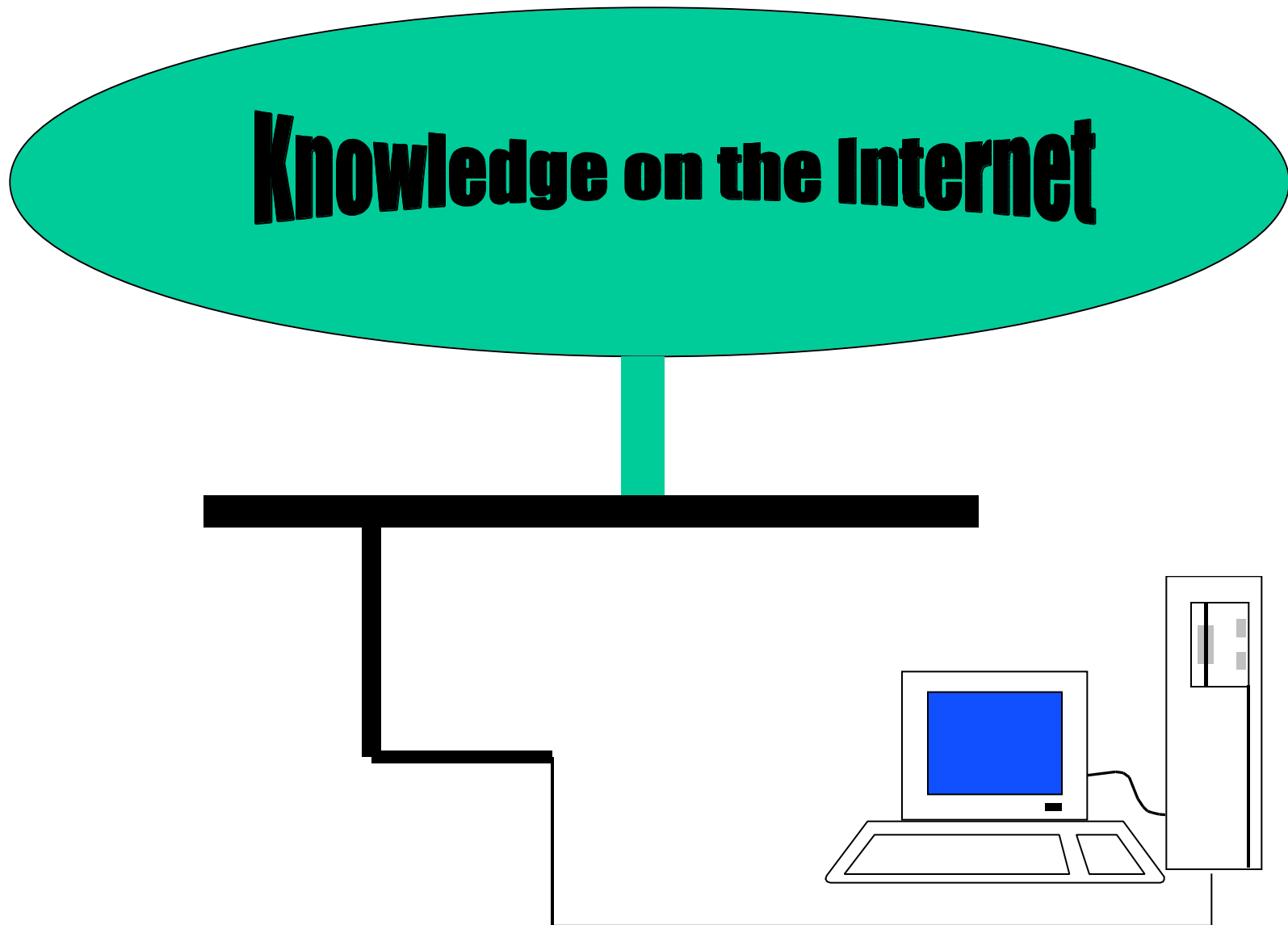# ADSL and the Future of Data Technology in the Law Office

The Need For Speed
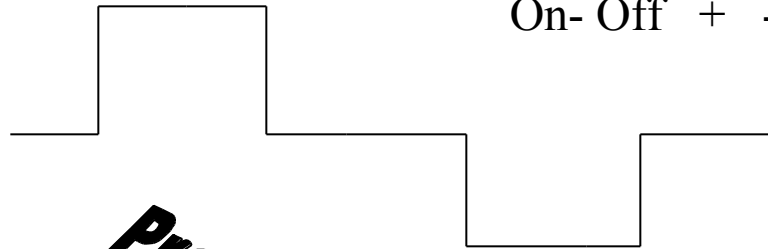
Knowledge on the Internet

Analog
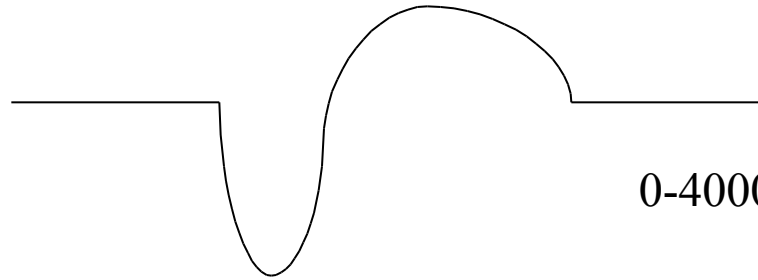
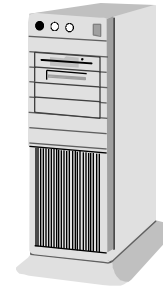0-4000 Hertz

Digital

On- Off   +   -

Level 3

Data Packets

Protocols

Transmission Control

EtherNet

Through Put

ASYNCHRONOUS

IP Address

ADSL
HDSL
VDSL
IDSL

MODEMS

Bandwidth

Bandwidth
The Voice Network

- Human Ear 0- 4000 Hz

- Sampling Theory 2 Times the Frequency

- 4000 Hz X 2 = 8,000 samples per second

- 8 Bits per word   8 X 8000= 64,000 bits/sec

Internet/Data over the Voice Network

- Download Documents Produced for Discovery Request

    (8 bits/word X 66,000,000 words = 528,000,000 bits)

- Total 528 Million bits of data on a 56Kbs modem (56,000 bits per second)

- 528 Million b/ 56,000b/sec= 2 Hours 36 Min
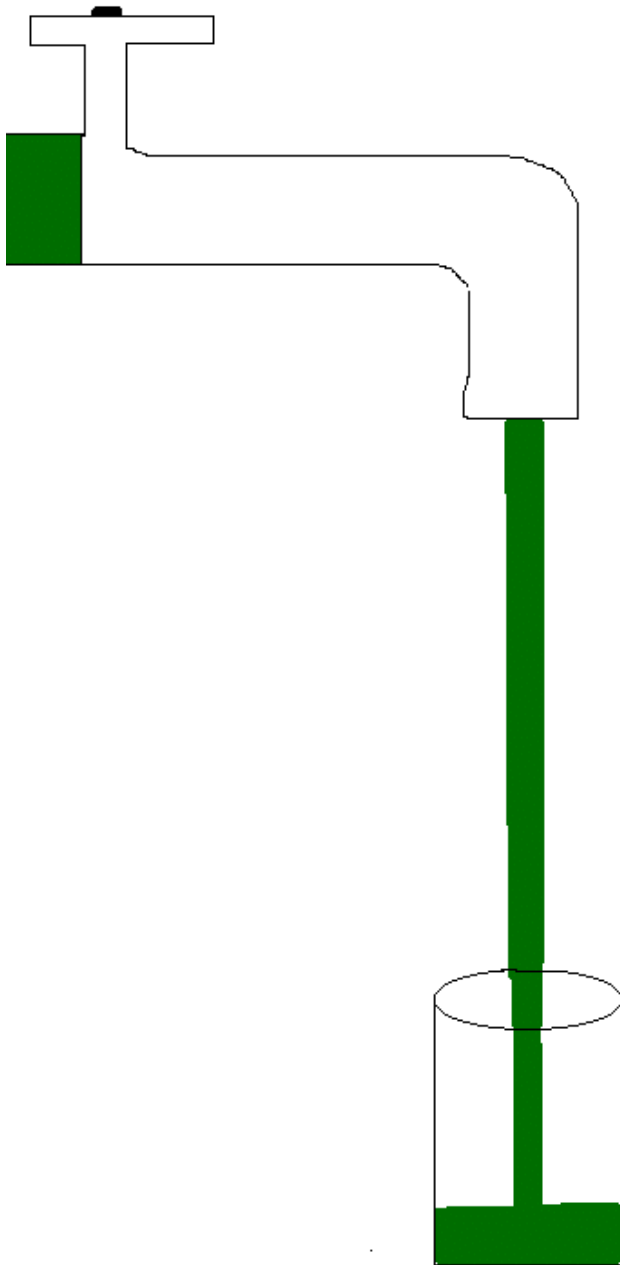
ADSL turns on the tap and let the data flow

High Speed- 1.5 Mbs Downstream

384 Kbs Upstream

Low Speed- 384 Kbs Downstream

128 Kbs Upstream

Internet/Data over ADSL

- Download Discovery Document from previous slide 528 Million bits of information

- ADSL High speed 1,500,000 bits/sec downstream

- 5 Min 51 Sec

- Vs. 2 Hours 36 Min on 56Kbs dial up modem

SO WHAT?

The Need for Speed

Applications in Corporate Legal Office

- On-Line Legal Research

- Electronic Discovery/ Data Retrieval and Storage

- Remote Document Drafting and Editing

- Remote Monitoring and/or Participation in Quasi-Legal Proceedings (e.g. depositions, arbitrations, mediations, negotiations, etc.)

- Video Conferencing

- Telecommuting

Live Content Delivery
(PC VIDEO)

- Real Time Broadcast - *Streaming*
  - Distance Learning
- 64- 384 Kbs Sub VHS Quality
- 384-800 Kbs VHS quality
- 800 Kbs- 4Mbs DVD (Digital Video Disk)

On Demand Content Delivery

- Streaming of stored content
  - Video on Demand
- 64-384 Kbs Sub VHS quality
- 384- 800 Kbs VHS quality
- 800 Kbs- 4Mbs DVD quality

High Inter-activity Applications

- Utilize significant Upstream and Downstream Bandwidth (speed)

- Video Conferencing 300 Kbs both directions sub VHS quality

- Interactive Shopping (still image with stereo audio) 200 Kbs

- High Interactive Games 1Mbs Upstream/ 500 Kbs downstream

Home Automation

- Home Security: No Video 64 Kbs

- Home Security (still image/multi- room scan video) 300 Kbs

- Home Management (with status feedback) 100 Kbs

ADSL Key Advantages

- Guaranteed and sustained bandwidth
- Secure Connection to protect customers content/data traffic
- Better Latency(lower average and lower variability)
- Always on

Future Trends

- Internet trending from text and graphics to real time streaming of video and audio, high resolution graphics, animation, and virtual reality environments

- Video services are trending from broadcast to on-demand paradigms and higher resolutions

- Data Packets, Higher Bandwidth, Faster Speeds