Federal & Indian Gaming Law

Internet Part 1

with Greg Gemignani

DETOUR...

- To introduce the Internet, Internet Gaming, and Federal Law you need to have a bit of background in communications and computing.

Communications – A bit of history

- From the dawn of history until the late 19th century, communications were accomplished by direct communications when participants were in audio or visual range or by courier and letter when not.

COMMUNICATIONS – A BIT OF HISTORY

- https://youtu.be/_HOLzShLPoQ

COMMUNICATIONS – A BIT OF HISTORY

- https://www.youtube.com/watch?v=eQd3H8AmtP0
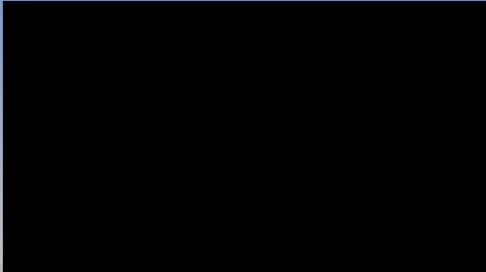
COMMUNICATIONS – A BIT OF HISTORY

- https://youtu.be/GVDGuCjog_0

COMMUNICATIONS – A BIT OF HISTORY

- https://youtu.be/bvPH-tsD9ZM

COMMUNICATIONS – A BIT OF HISTORY

https://youtu.be/9hK7MzR4lxg

Phone Communications

Long Dist.

LATA   LATA

Local   Local   Local

Phone Communications

Phone Communications

Phone Communications
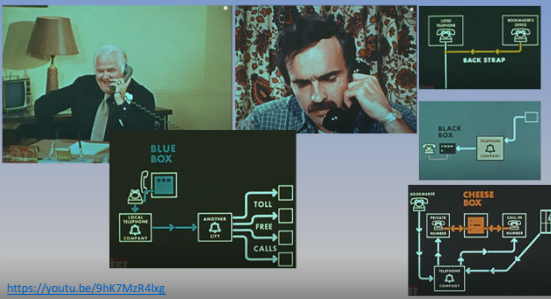
Phone Communications
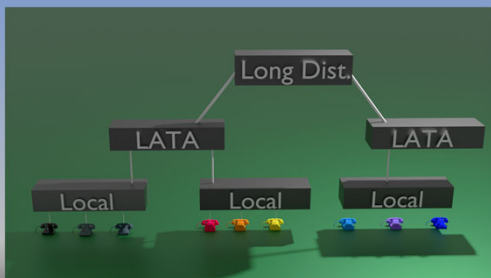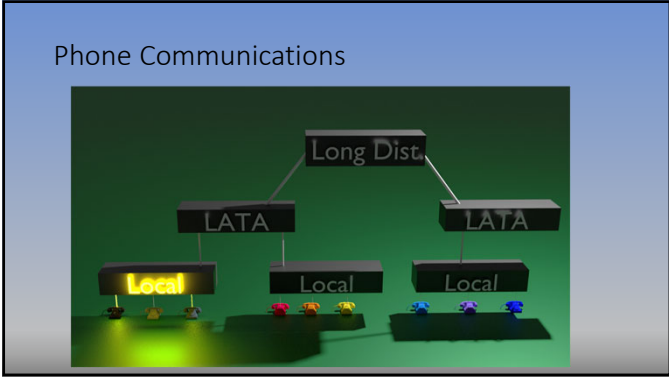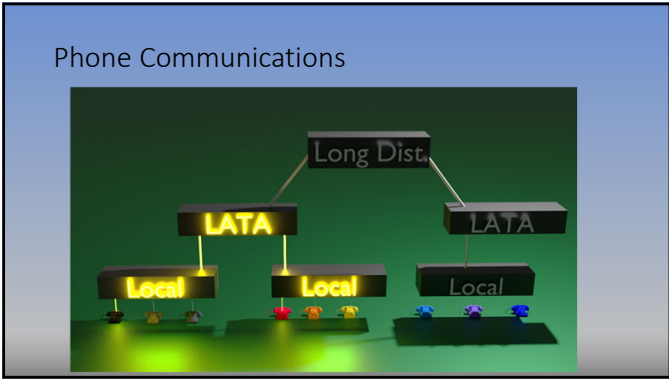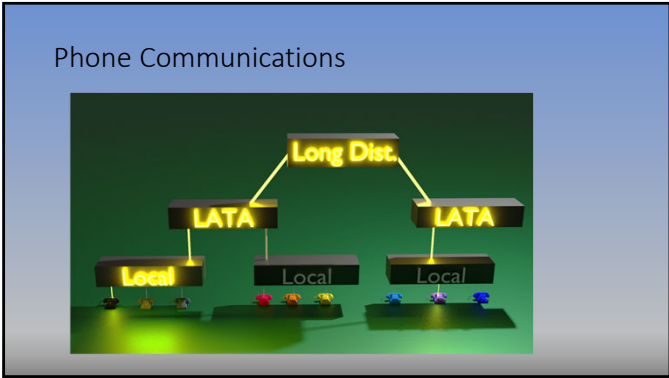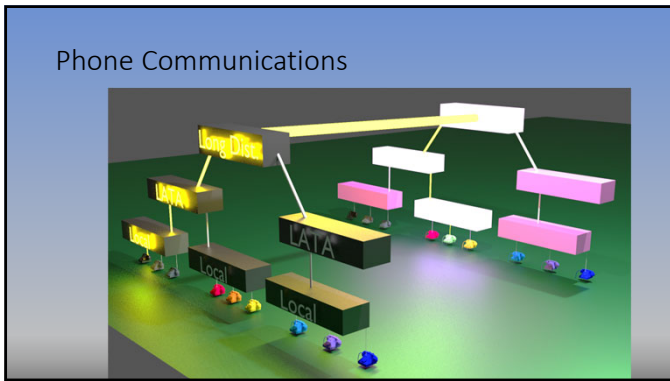
Computer Technology & the Internet

- Computerization has brought the largest influx of innovation in the gaming industry in the last 40 years
- Computer and computerized technology is moving at a rapid pace
- Gaming law moves at a much slower pace

COMPUTERS – A BIT OF HISTORY

- To understand where we are and why we are, it may help to provide a bit of history so that the technology concepts that impact laws and legal compliance are easier to understand
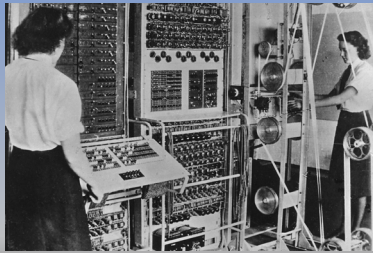
COMPUTERS – A BIT OF HISTORY

- Early computers, like Colossus pictured on the right, were single task single purpose machines
- Colossus was designed to apply binary math to encrypted communications to break the encryption

COMPUTERS – A BIT OF HISTORY

- Harvard 1 was a room sized mechanical electrical computer that calculated mathematical tables

COMPUTERS – A BIT OF HISTORY
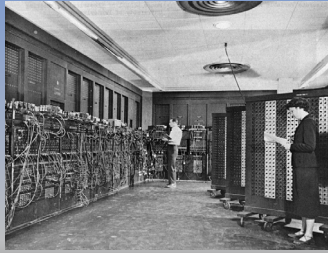
- In 1943 the first programmable computer, ENIAC, began operation

COMPUTERS – A BIT OF HISTORY

- While programmable for different tasks, ENIAC's programs were a series of switches and wires plugged into specific orders.

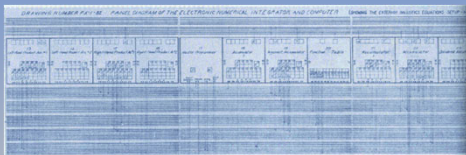## COMPUTERS – A BIT OF HISTORY

- Programs were "stored" on wiring/panel diagrams outside of the computer
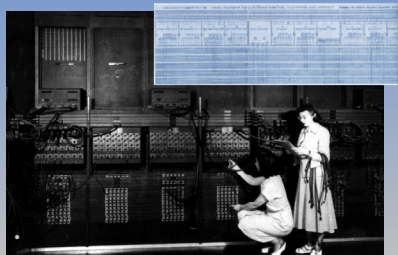
COMPUTERS – A BIT OF HISTORY

- Programmers, would read the panel/wiring diagrams to set the ENIAC computer up for a particular set of operations (a program)

COMPUTERS – A BIT OF HISTORY

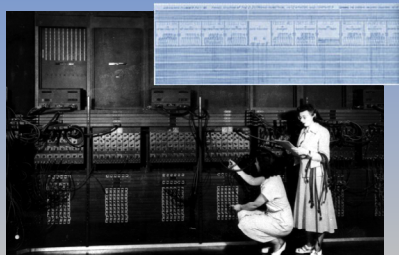- Early programmers were primarily women

COMPUTERS – A BIT OF HISTORY
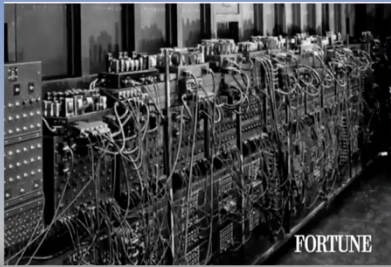
COMPUTERS – A BIT OF HISTORY

- Clearly, storage through notes, and programming by creating a matrix of wires and switches was a labor intensive, time consuming task.
- IBM found a better way

COMPUTERS – A BIT OF HISTORY

- IBM had a history of using punch cards for tabulating
  - Punch cards were adapted from the textiles industry
- IBM adapted punch cards to store computer programs for digital computers

COMPUTERS – A BIT OF HISTORY

- Programs and data stored on punch chards can be reloaded and run on demand.
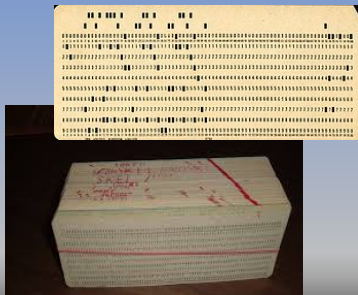- However, programs only work when the cards are in the exact right order

COMPUTERS – A BIT OF HISTORY

- While superior to diagram cards with wires and switches, punch cards had storage issues and the holes could wear out, ruining a program

COMPUTERS – A BIT OF HISTORY
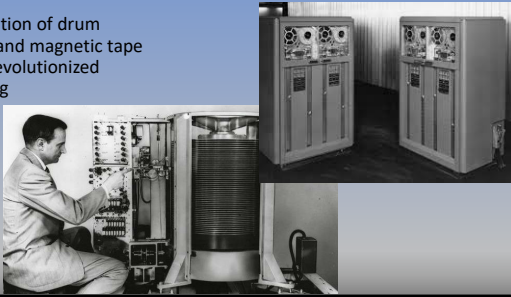
- The invention of drum memory and magnetic tape storage revolutionized computing

COMPUTERS – A BIT OF HISTORY

- With magnetic tape storage, data and programs could be stored, recalled and processed electronically
- This also allowed the first use of the computer terminal as we know it
- However, early implementations had 1 terminal per computer

COMPUTERS – A BIT OF HISTORY

- The character terminal allowed direct input into the computer
- To facilitate terminal communications, the RS-232 serial interface became the de facto communications interface
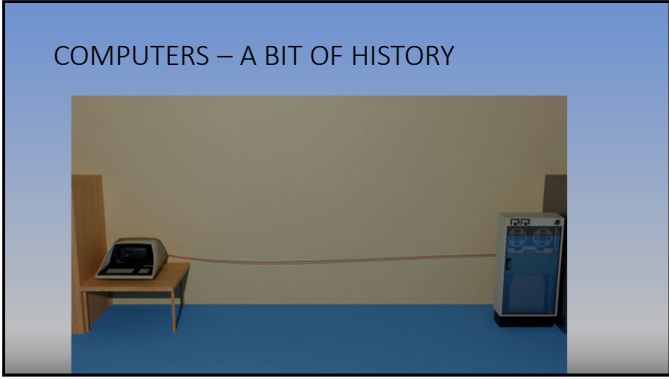- Serial communications allowed for communications to occur 1 bit at a time in one direction at a time

COMPUTERS – A BIT OF HISTORY

COMPUTERS – A BIT OF HISTORY

- 1 data terminal per computer was far less than optimal.
- Multiple terminal computing would increase the efficiency of programming and operations
- To facilitate this, additional RS-232 interfaces were added and multi-user and multi-session operating systems needed to be invented to share the resources of a single computer

COMPUTERS – A BIT OF HISTORY

- While allowing multiple terminals was helpful, having computers talk to each other would also be helpful
- Computer scientists realized data terminal serial interface could be used to facilitate computer to computer communications.

COMPUTERS – A BIT OF HISTORY

COMPUTERS – A BIT OF HISTORY

- In the 1960s researchers at multiple universities and the federal government realized that computer-to-computer communications could allow projects to leverage work among different institutions while minimizing duplication
- A way was needed to allow computers in disparate locations to communicate with one another

COMMUNICATION – A BIT OF HISTORY

- The solution was to use the vast telephone network system to allow wide area communications between computers
- However, the phone system was highly inefficient for computer use
- Computers could communications transmitted hundreds of bits per second in a dense use of phone lines in the1960
- The phone system of the 1960s was never built for a series of short calls, and short long distance calls were very expensive

COMMUNICATION – A BIT OF HISTORY

- Computers could transmit up to 300 bits per second in the 1960s
- Phone calls were short for computers
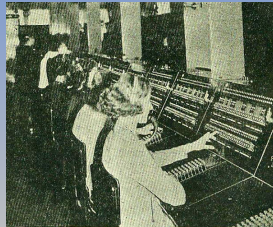- Also, each computer to computer communication would require a separate phone call because the phone network was a circuit switched network
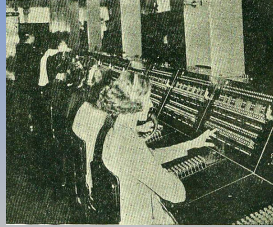
COMMUNICATION – A BIT OF HISTORY

- To make matters worse, the cost for long distance calls was significant as each circuit created by switches incurred additional cost

COMPUTERS – A BIT OF HISTORY

- Circuit Switched Networks dedicate a communication line between two parties to a communication
- Do you know what happens when someone tries to establish communication with someone already on a dedicated line communication?

Communications

- A better solution was needed
- That solution was to use a persistent network in which information is broken into packets and routed between origin and destination

Communications

- https://youtu.be/rHHpwcZiEW4

Communications

- With wide area packet switching, an interconnection of networks was possible

- https://youtu.be/7NpczzIsnLU

Communications

- With wide area packet switching, an interconnection of networks was possible

This clip is for non-commercial use only

- https://youtu.be/7NpczzIsnLU

Computing + Communications

- On a packet switched network, every device has an IP address
  - MAC Terminal ipconfig getifaddr en1
  - Win CMD ipconfig

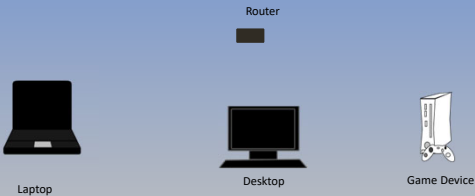## Computing + Communications

Router

Laptop

Desktop

Game Device

Computing + Communications

Router
192.168.1.1

Laptop
192.168.1.4

Desktop
192.168.1.2

Game Device
192.168.1.3

Computing + Communications

ISP

Modem

ISP Assigned IP:
12.110.66.130

Router
Local IP:
192.168.1.0

Laptop
IP: 192.168.1.1

Desktop
IP: 192.168.1.2

Printer
IP: 192.168.1.3

Computing + Communications

Business

Home

ISP

School

Internet
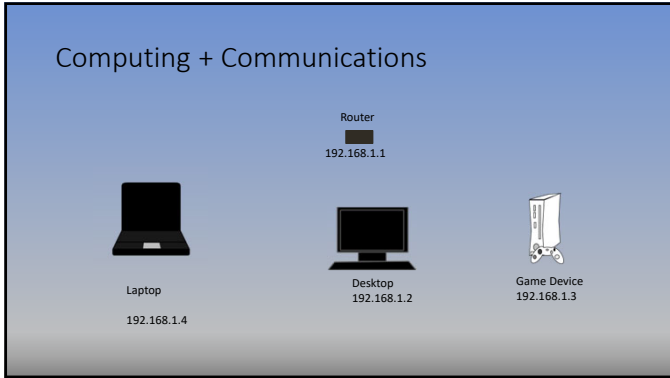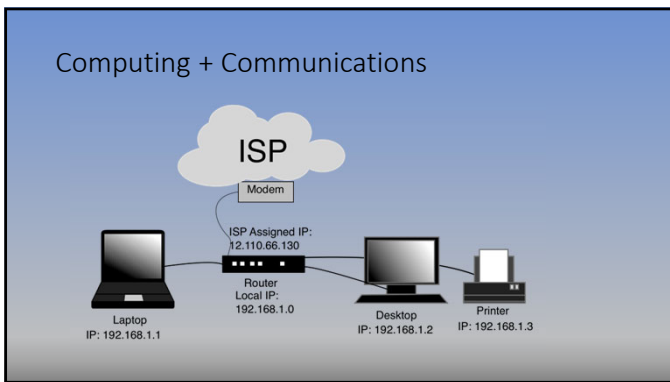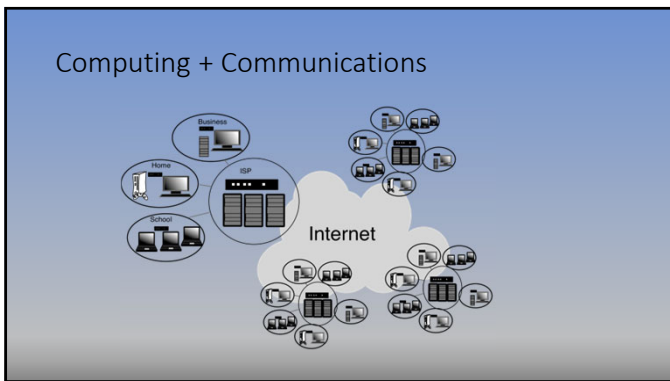
Computing + Communications
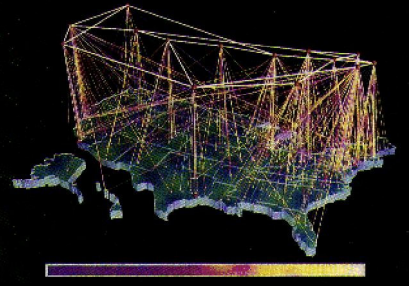
Computing + Communications

TENSION

QUESTIONS