

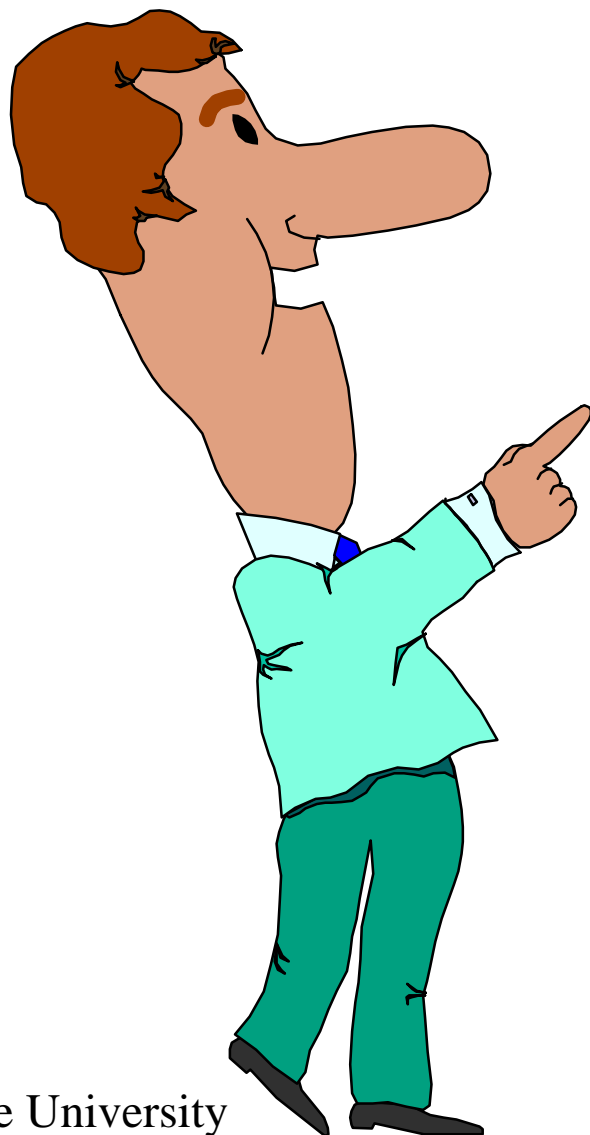
Is Real-Time Communication on Internet Possible?

Raj Jain

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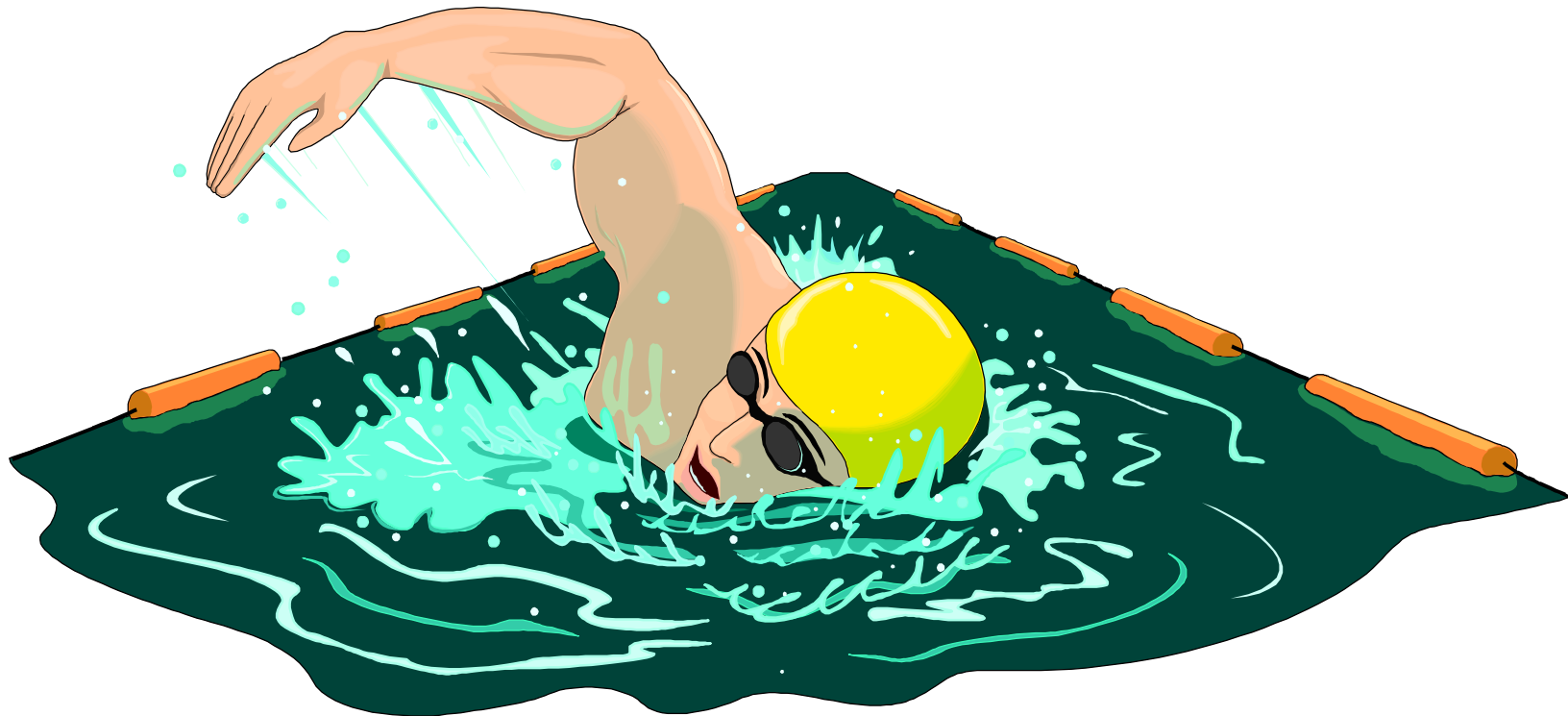
<http://www.cse.wustl.edu/~jain/>

Answer



- q No...
- q Yes...
- q May be...
- q It depends!

Is it possible to swim in a home?

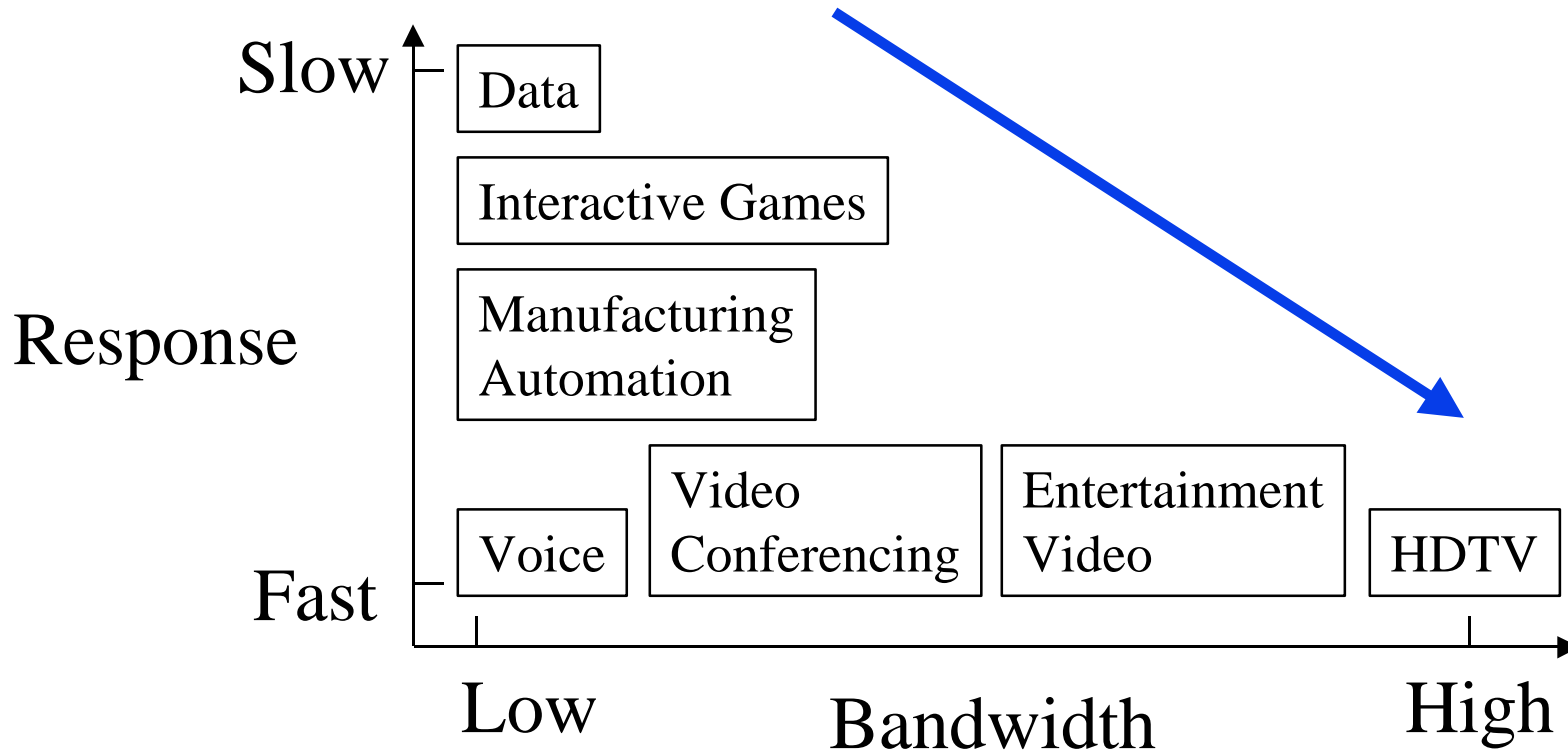


q What, where, when?

The Ohio State University

Raj Jain

What is Real-time Communication?



- q Need bandwidth, traffic management, signaling
- q Compression algorithms, Storage

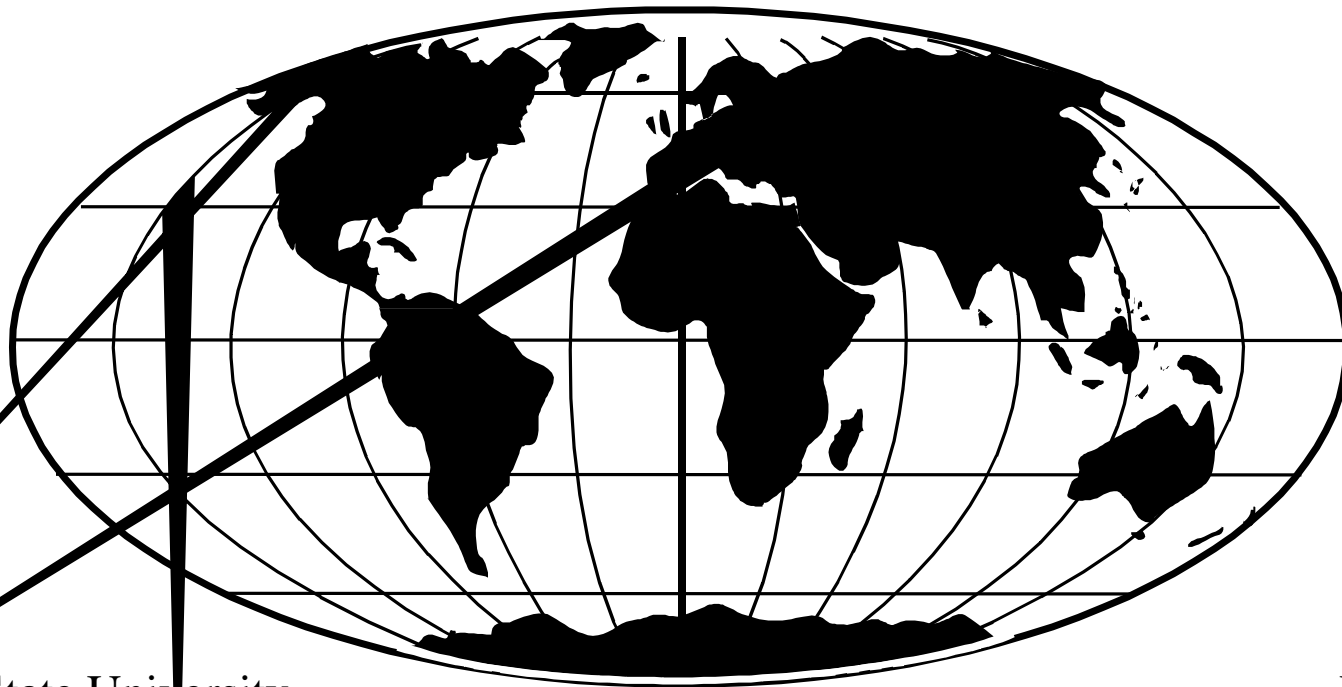
When?

- q 1996: No
- q 2001: May be
- q 2006: Certainly Yes



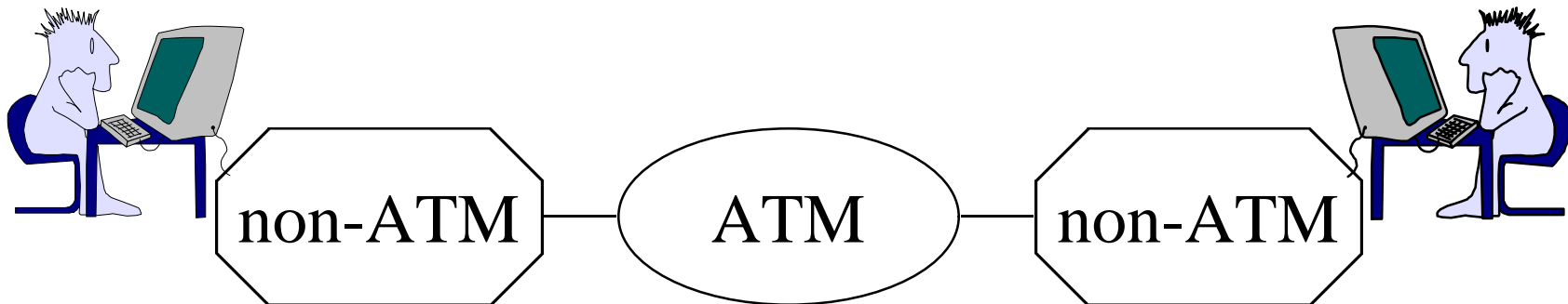
How Far?

- q LAN: Within a building or campus?
- q WAN: Within USA?
- q GAN: Remote corners of the world?



What is Internet?

- q The world-wide interconnection of networks
- q TCP/IP end-to-end (no ATM)?
- q ATM Backbone?
- q ATM End-to-end (no TCP/IP)?

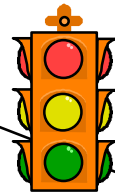
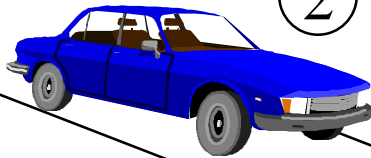


Traffic Management on the Information Superhighway

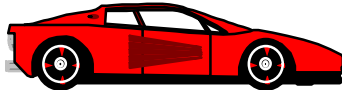
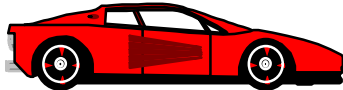
① CAC



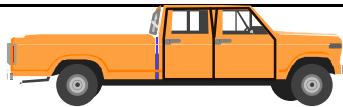
② Shaping



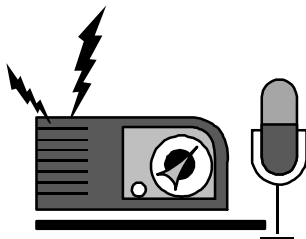
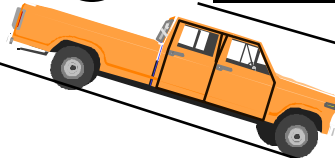
⑥ Policing



Scheduling ③



④ Priority



⑤ Traffic Monitoring and feedback

Traffic Management

- q Connection Admission Control:
Resource Reservation
- q Traffic Shaping
- q Deadline Scheduling
- q Priority
- q Dynamic Feedback

IP vs ATM



IP



ATM

IP vs ATM

- q Traffic management
- q Signaling (resource reservation)
- q QoS based Routing
- q World-wide Addressing
- q Connections: Soft vs Hard
- q Receiver oriented vs Source oriented
- q n-to-n vs 1-to-n
- q Evolution vs revolution

Old House vs New House

