

**22:010:622**  
***Internet Technology and  
E-Business***

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# OVERVIEW

- Complete student introductions?
- Discuss BlackBoard/Syllabus/Timetable problems/questions/concerns
- Presentations
- Conclude last week's material:
  - \* T1, OC3
  - \* DoCoMo
- Wireless Networked Digital Devices

# INTRODUCTIONS

- Name
- Rutgers ID #
- Home Town or Country
- Undergraduate Degree and School
- Work Experience
  - \* Firm
  - \* Job
- Computer Skills: Internet Skills
- Hobbies and Interests

# *BLACKBOARD*

- [gillett@everest.rutgers.edu](mailto:gillett@everest.rutgers.edu)
- [www.rci.rutgers.edu/~gillett](http://www.rci.rutgers.edu/~gillett)
- [www.fom.rutgers.edu](http://www.fom.rutgers.edu)
- Login
- prg622-40\_03
- Course Information
- Announcements
- Discussion Boards
- Etc.

# *SYLLABUS*

- Memorandum
- Contact Information
- Description
- Grading
- Assignments
- Participation
- Examinations
- BlackBoard
- Academic Integrity
- Withdrawal Policy
- University Closings
- About the Instructor

# TIMETABLE

- Preliminary at this stage
- Shows
  - \* *Dates*
  - \* *Topics*
  - \* *Readings*
  - \* *Deliverables!*

# *Presentations*

- Prepare an 8-10 minute presentation:
  - \* *Introducing yourself*
  - \* *Discussing your interests in this course and your pre-existing skill set*
  - \* *Demonstrating one or more Web Sites, e.g.:*
    - ◆ Personal Web Site
    - ◆ Business Web Site
    - ◆ A site you have found especially interesting or valuable

# *Some Loose Ends . . .*

- T1
- OC3
- DoCoMo

# *T1*

- Dedicated line
- Usually fiber optic (could be copper)
- 24 digitized voice channels or 1.544 Megabits / second of data
- 192,000 bytes / second – 80 times normal residential modem
- Much more reliable than telephone lines
- \$1,000 - \$1,500 per month

# T3

- At one time, the main dedicated lines were either T1 or T3
- T3 is equivalent to 28 T1 lines
  - \* 43.232 Megabits / second

# OC3

- Now there is a much wider range of choices
- We will learn more about this later
- OC3 lines are each equivalent to 84 T1 lines
  - \* 155 Megabits / second
- \$40,000 - \$60,000 per month
- OC192, by comparison, is equivalent to 64 OC3 lines
  - \* 9.6 Gigabits / second

# DoCoMo

- DoCoMo mostly owned by NTT
- Cellular has several US standards: TDMA, CDMA, PCS? and GSM
- QualCom's patent on CDMA (Code Division Multiple Access) hold up against Motorola's Attack 1/23/2001
  - \* Not True in Europe (GSM) or Japan (I-Mode)
- I-Mode works on a Persistent Link on the Internet!
- What does this require?
  - \* Effectively Packet Switching of Radio Signals (constant roaming)
  - \* Charge for Service

# DoCoMo

- Subscribers pay about \$0.04 to send about 250 characters of text
- 450,000 new subscribers a month
- W-CDMA for using I-Mode using other methods
- Japan is a small Island
- 3G service (FOMA) has not been so successful
  - \* Only about 150,000 subscribers
- NTT DoCoMo issued 50 Billion Yen bonds in January 2003
- Moody downgraded rating to 'negative'

## *Wireless Networked Digital Devices (Zimmerman)*

- Will the Internet converge with Cellular and/or Radio and TV?
- This paper focuses on PDAs
  - \* *Apple's Newton*
  - \* *Palm Pilot*
  - \* *Wearable Computers*
- Bandwidth Bottlenecks in the Airwaves
- Distance issues, others

## *Wireless Networked Digital Devices (Zimmerman)*

- Wireless networked digital devices: A new paradigm for computing and communication
  - \* T.G. Zimmerman
  - \* IBM Systems Journal Volume 38 No. 4
  - \* <http://www.research.ibm.com/journal/sj/384/zimmerman.html>