

PUBP 726 Telecommunications Policy (as of 8/17/03)

**School of Public Policy
George Mason University
Syllabus- Fall Term 2003**

**PUBP 726 Telecommunications Policy Wednesday (7:20-10 PM) Room 205
Innovation Hall**

Instructor: Stephen Ruth, Professor of Public Policy and Technology Management
(ruth@gmu.edu);

Office : Room 203B Finley; Phone : 703 993 1789; Office hours: by appointment;
URL for the course: <http://www.icasit.org/classes/pubp726fall2003/index.html> &URL for
instructor: <http://www.icasit.org/ruth/index.htm>

Co-Instructor: Jiwan Giri, PhD Candidate, School of Information Technology
(jgiri@gmu.edu)

Catalog Description of Course : "This course examines salient issues associated with Telecommunications and Electronic Commerce in the context of public policy questions facing decision makers - in government, education and business. Examples: privacy, electronic signatures, digital divide, bandwidth auctions, IP telephony, CRM, Bluetooth, Internet taxation, etc."

Companies that have participated in this series: American Management Systems; Learning Tree International, Inc., ICASIT (GMU), Globalnet, Inc., VSE Inc., BTG, Inc., Computer Sciences Corp., EDS, The World Bank, SAIC, Bell Atlantic, EDS and many others.

Please read this syllabus and scan the course handouts carefully. Then please examine the course CDROM. It has several materials that will be useful in the course: TV lectures, audio/Powerpoint lectures, and other resources. Specifically this CDROM includes the following materials:

1. Audio/PP Lecture 1, a combination audio and PP presentation (this includes a detailed description of the course syllabus plus comments on Assignment 1 and Questions 1, 2 and 3 and other course details
2. Several video lectures
3. *AHDR 2002*
4. Copy of the syllabus

Earlier Courses in This Series This course is the fourteenth in a series of semester-long seminars, each of which has examined some specific aspects of the problems inherent in trying to coax profitability from Information Technology (IT). Earlier courses have focused on topics such as leveraging IT in the context of international telecommunications, expert systems, IT and organizational learning, human factors in computer system design, electronic commerce, decision support systems, IT and the

European Union, teamwork in cyberspace and, international knowledge management, and others. (These earlier courses can be found on the ICASIT web site at icasit.org -- use the "Education Innovations" tab). The focus for the current course is the public policy ramifications of the Internet Age.

Overview and Description-Approaching the Course Topics from Three Perspectives: Review of Intellectual Territory, Broad Analysis of Selected Major Themes and Individual, Focused Research

The aim of this course is to examine some of the key issues associated with telecommunications, Electronic Commerce and the global Internet and to integrate those issues into the questions facing today's decision makers - in government, education and business. We will approach this broad subject from three perspectives in order to permit maximum coverage and ample customization of course material to students' needs. First, there will be a mini-tutorial on the intellectual territory surrounding the use of the Internet, with particular emphasis on Electronic Commerce and the technology surrounding it. Some of the lectures and study materials will be provided off line, enabling us to concentrate more on the issues during the lectures. The aim is maximum breadth, to cover as many of the most important concepts, terms, cases and challenges as possible.

The second, and most significant, perspective is that of public policy. To what degree will the increasing use of Internet and Electronic Commerce in delivering government services change standards of living in the US and overseas? Is the "Digital Divide", domestically and globally, a serious problem, and if so, what can be done to alleviate its effects? What economic effects will broadband proliferation have on the body politic? Is there too much bandwidth? One of our previous speakers made the case that if all the fiber lines already available in the world were lit (activated) there would be more than enough bandwidth for everyone already. Will telemedicine and other Internet interventions cause major reductions in the death rates due to starvation in the world's poorer countries or will twenty thousand children continue to die of hunger and malnutrition every day? We will divide these policy matters into several dozen segments (see page 5 for partial list) and each student in the course will be asked to select four of them for more detailed emphasis.

The third perspective is the student's own. A term paper or other type of research activity will allow each person in the course to select a subject for more detailed review. This research perspective has only one goal-to permit the student to learn more about a topic within the course's coverage by delving more deeply into the literature surrounding it.

Assignments: The selection of assignments is based on providing each student with the breadth needed to take advantage of the rich array of resources offered, but, most importantly, to give a challenging academic experience. The course requires a lot of writing. There are three major assignments:

Reminder to students in this course: You must be prepared to dedicate about 5-8 hours per week outside of class to meet the normal workload, all of which is writing, research and analysis. Please do not enter the course if you cannot dedicate this kind of time. Also attendance is crucial since 10 percent of the course grade is based on class contributions.

Assignment 1 (5% of course grade—due first week) What’s behind Assignment 1?
This crucial homework assignment has as its object that each student to become familiar with the full range of study resources that are available in this course. These resources are of three different types:

Type 1: Subscriptions to three On line newsletters There are three on line reports that must be subscribed to immediately : First Cyberatlas-- To subscribe, unsubscribe, or to change the e-mail address where you receive the CyberAtlas newsletter, visit the CyberAtlas page of internet.com's e-mail newsletter section: <http://e-newsletters.internet.com/cyberatlas.html>. Second, go to the course web site and click on the section titled “Additional Resources”, and subscribe to two other newsletters of your choice.

Type 2 : Web-based articles, books and newsletters At the course web site there are over thirty sections dedicated to major course topics. Each is a very detailed list of links to useful sources. This section will be an integral part of the course work—please learn to use it well

Type 3 : Links and sources provided in the Turban text The assigned text has a wealth of resources in each chapter. For each assigned chapter, use some of the links given to learn more about the assigned reading . For example in the first Turban chapter there is a section called “Business Models”, which contains a URL to lead the reader to each of the models described, like doubleclick.net, e-steel.com, insweb.com, etc. Use these links as you read the assigned chapters.

Assignment 1 deliverable Once you have spent a few hours learning about these sources (paragraph above), go to the type 2 group of articles books and newspapers at the class web site and find one new link that can be added to twenty of the categories at the course site: Bluetooth, Distance Learning, etc., you can select the twenty categories. The link should be appropriate, current and unique—that is, not a duplicate of what is already on the list. **The immediate deliverable for Assignment 1 is twenty new (unique) links and a short sentence describing each. Three of these selections must lead directly to audio or video content related to the topic. A sample of an excerpt of the completed Assignment 1 is below: Time required for Assignment 1: about 5 hours. Remember the links must be current and unique—no repeats of those already shown on the web site.**

-----Sample of three of twenty sites for Assignment 1, due first week----

1. [Broadband](#)

<http://www.internetnews.com/>

This website provides several significant, current articles on Broadband.

2. [Cyberthreats](#)

http://www.itac.ca/client/ITAC/ITAC_UW_MainEngine.nsf/ALL/6192EB38740F6B7E852569A50002AB3F?OpenDocument

Website of Information Technology of Canada containing papers, legislations and other documents on cyber security.

3. [Digital Divide](#)

<http://www.pbs.org/digitaldivide/index.html>

The section of Digital Divide on the website of PBS (Public Broadcasting Service), which contains news, learning tools and useful links concerning the issue of digital divide.

<http://www.digitaldivide.org/>

Website focusing on policy solutions of Digital Divide, “The movement to end the Digital Divide has moved to a crucial new phase. Indeed providing meaningful access to the Internet for the entire six billion population is the only way to achieve sustained growth for the economy as a whole.”

-----End of samples for Assignment 1-----

Assignment 2 (30 percent) Examining and assessing the intellectual territory There will be a tutorial going on throughout the course, a body of knowledge about international public policy issues in Electronic Commerce, telecommunications and their associated technologies. During the first two weeks of the course there will also be a brief assignment (Assignment 1 above) that introduces the use of the course’s extensive research resources, a crucial preliminary for Assignment 2 exercises. For Assignment 2, we will cover almost half of the chapters in Turban's popular textbook throughout the semester and many other sources introduced by lectures and handouts. Assignment 2 consists of ten questions associated with lectures and assigned reading. The first three of these question segments are discussed in the course CDROM and can be found at the end of this syllabus and the course CDROM has some helpful comments in Audio Lecture 1 on answering these questions successfully. The remaining seven questions will be provided later. Assignment 2 questions will be collected approximately every three weeks but can be submitted as early as the student desires. Assignment 2 requires about 30 hours outside of class. Samples of student answers to previous Assignment 2 questions will be made available in class.

Note: The course CDROM has several resources that will be used throughout the semester. Detailed comments on Assignments 1, 2, 3 and 4 will be found in Audio/Powerpoint Lecture 1 on the CDROM

Grading Assignment 2 questions

Grades on these exercises will be assigned on the following characteristics, listed in order of importance:

- Coverage of appropriate key points
- Breadth of sources/URL’s used
- Writing (clarity, grammar, punctuation, word usage, etc.)
- Documentation

Deliverable for Assignment 2: Responses to the ten questions over the semester, beginning with the first three at the end of this syllabus.

Assignment 3 (35 percent) : four concise technology summaries Throughout the course there will be continuing emphasis on discussion of key IT issues that have public policy implications. Examples are:

2G,2.5G,3G,4G Etc	Globalization
Ambient intelligence	Internet Connectivity Indicators
Bluetooth	IP Telephony
Broadband	Nanotechnology
Coltan	Napster
Copy Protection	Network Readiness Indices
Cyberterrorism	Outsourcing
Cyberthreats	Piracy
Diffusion of technology	Pornography
Digital Divide	Privacy
Digital Rights management	Radio Satellites
Distance Learning	Spectrum Allocation
DMCA	Standardization
E Fraud	Surveillance
E Government	Taxation
E Voting	Telematics
E Waste	Telemedicine
E Commerce	Telegeography
Electronic Government	UCITA
Fiber glut	Ultra Wide Band
E Gambling	Universal Service
Interference of radio and wireless signals	Wifi
	Wireless Security

We will also discuss other, late-breaking technology issues, as they evolve. Each student will be asked to report on four of these topics, two of which will be selected by the instructor, to provide broadest possible class coverage.

Required tasks for assignment 3. For each of four selected topic areas a concise summary document is required, of 1500 words (plus footnotes and diagrams) briefly describing the four selected issues according to the following format:

- Succinct description of the selected issue
- Summary of the most significant components of this issue
- Discussion of the public policy implications involved

This must be original work with attribution clearly indicated. Samples of Assignment 3 student papers will be made available in class.

Assignment 4 (30 percent) Research Project (individual or team of two). The last six weeks of the course are primarily dedicated to using the knowledge gained during the first two months to investigate an area of interest to the student. The project can be a traditional research paper, a case study, an experiment, a collaboratory or some other approved project. Since the weight of the project is almost a third of the final grade, the deliverable must be formidable—well planned and well executed. About 40 hours outside class (about 8 hours per week) will be required for this phase and the project must be completed by exam week or earlier. Details of the expected format and depth of this paper will be posted in the class web site and shown in class.

Class participation: 10 percent About ten percent will be imbedded in each of the four activities described above to class participation in various forms.

Importance of good writing skills Research is useless unless it can be presented interestingly. Students in this course will be expected to do considerable writing, a normal requirement in graduate courses in public policy. From the outset, the highest standard of writing will be expected. Here are some of the requirements:

- **Format:** All work will be submitted in MS Word Times New Roman 14 format single-spaced.
- **Structure:** The normal breaks between paragraphs will be observed, using *Terabian* or any other style guide you choose. (A popular style guide in SPP is Diana Hacker, A., *Pocket Manual of Style*, (New York, St. Martin's Press, latest edition). Work should be neatly arranged with clear demarcation of sub units.
- **Grammar:** Impeccable word usage and grammar will be expected in all submitted work. Students may wish to submit work early to someone else—a friend or colleague—for a review of style, grammar and other details. Papers with more than a very small number of errors in grammar and usage will be returned without a grade.
- **Method of submission:** All papers will be submitted to the instructor by email as attachments using the GMU system with clear indication in the subject line of the message. For example: Julia Jones, Assignment 2-Part 3

Instructor / office hours: The instructor, Dr. Steve Ruth, is available on email (ruth@gmu.edu) and in his office, room 203 B, Finley Hall. Dr. Ruth's office phone is 993 1789 and his home phone is 536 5343. Office hours are available by appointment most days.

Using the WWW and Email This course depends heavily on the use of the Internet and email as a normal mode of linking the students to the instructor, to Web-based resources and to each other. All members of the class will be expected to review their E mail three or four times each week, at least. Please use a high speed connection, either one of the hundreds at GMU campuses or at home or office.

How should you use the course packet? The course packet contains the syllabus, the class CDROM and several readings that should be helpful. It is an easy-to use summary of what the course is about and supplements this syllabus.

Exchanging some class time for technology and other interventions This course takes advantage of new findings about university teaching. Many students, especially those who have full time jobs, appear to be quite willing to exchange some class hours on campus for assignments that can be completed in other locations through the use of technology available to them. They can learn as much or more in many courses if the traditional 40 hours per semester of "face time" in class with a teacher (contact hours) are partially replaced with special assignments that do not require face-to-face meeting. This work can be more independent, discovery-oriented and difficult, and planned properly, can replace some contact hours. By experimenting with this concept in close to a dozen courses, we have found that students enthusiastically support the approach --as long as close contact with the instructor is maintained and the content is challenging and in the mainstream of the subject involved. (For more on this approach see Professor Ruth's articles at <http://horizon.unc.edu/ts/cases/1999-09.asp> and <http://www.educom.edu/web/pubs/review/reviewArticles/32532.html>)

Is the class more difficult than traditional graduate courses? No. About the same hours of preparation are required for this course as for others in the program. The class only meets eight or nine times, less than the normal number, so students will be able to accomplish the required work by doing a lot on their own, as well as in teams and groups.

Do you need any technical preparation to succeed in this course? No. A person with deep technology skills will be able to spend a few hours less on the course overall, but in general there is no indication among the hundreds of grad students who have been through this type of course that being powerful technically gives any edge whatever.

Predicting success There are several factors that predict success in this course:

Keeping up with the assignments It is impossible to succeed in this course if you get behind. The material is presented through books, lectures, television, World Wide Web, Internet, audiocassettes and videocassettes and the sequence is definitely time-dependent. Students who finish this type of course get very good grades on average, but their experience indicates that it is crucial to stay on top of the assignments. This is a tough course.

Attending and participating in classes A major segment of the course grade involves integrating the lectures, in class, on audiocassette and on television, into assigned projects--so it is vital that you plan to attend the classes and to participate actively in the email-based dialog. And when you cannot attend please have a friend or colleague take notes for you. Class participation is a component of the final grade

How Much of Your Time is Required for This Course? Depending on your previous background, the course will require between 6 and 8 hours per week outside of class, about average for a graduate course, especially since the number of class lectures is reduced in exchange for independent study. For some, even more time may be required. For a few, less. Surprisingly, the students who are already proficient in information technology are frequently not as successful in this type of course as those who are less

		in E Commerce	in Government ; International perspectives on technology diffusion	
9/17 No class	Turban Chapter 15 ; Video lecture 1 from course CDROM	Security and Electronic Payment Systems; Fulfillment	Napster Issues; Fixed Wireless, Internet Taxation;	Assignment 2- questions 1-3 due
9/24	Turban Chapter 17	Radio Satellites, Regulatory Environmen; the Supply Chain; Broadband, Radio Satellites, Spectrum allocation	Regulatory Environmen; the Supply Chain; International Telecommunications Union (ITU)	
10/1 No class	Turban Chapter 13 ; Video Lecture 2 on course CDROM; <i>HDR 2002</i> (on course CDROM)	CRM; Audio Fingerprint; Cyberthreats	The Patriot Act; Distance Learning; Cyberthreats	Assignment 3 parts 1 and 2 due
10/8	Turban Chapter 19 Lecture 4 (video) from course CDROM	DoCoMo and I Mode; M Commerce; Cyberthreats	Islam and the Internet IP Telephony	Assignment 2 Questions 4-6 due;
10/22	Lecture 5 (Audio/PP) from course web site (This lecture contains questions 7-10 of Assignment 1)	3G Impacts; 3D TV	Privacy , Security and Public Policy	Outline for Assignment 4 due
10/29		Nanotechnology; Telemedicine;	ICASIT matrix of E Government indicators	Assignment 3- parts 3 and 4 due
11/5	Class handout	Network Readiness	Cyberthreats	
11/12	Class handout	Ethical and legal Issues;	E Government and public policy	
11/19	Review	Individualized studies for term paper	Individualized studies for term paper	
12/3	Review	Individualized studies for term paper	Individualized studies for term paper	Assignment 4 due

Grading Scale; A,A-, B+ B, B-, C, F

Required text: Efriam Turban , *Electronic Commerce 2002 : A Managerial Perspective* Prentiss Hall 2002.

Recommended text (not required) :Douglas Holmes, *e.gov E Business Strategies for Government*, London, Nicholas Brealy Publishing, 2001

WWW -based resources: Discussed in detail in Assignment 1 above. Extensive resources for the course are available at the course web site. Examples are:

George Bennett SPP research site:

http://mywebpages.comcast.net/georgebennett/GMU/adv_data_portal_ns.htm

ICASIT site <http://www.icasit.org/ecommerce/index.html> for technology topics

ICASIT site <http://www.icasit.org/ecommerce/resources.html> for other on line resources

Other resources: Other reports and publications will be distributed in class—about eight additional handouts planned—no cost to students..

Assignment 2 Questions 1 through 3*

Question 1 has three parts:

- a. Read the attached Washington Post editorial carefully and then read several comments on the importance of cybersecurity threats compared to threats from other dangers like nuclear and biological. Use several perspectives, including that of Dr. Dorothy Denning, which can be found at http://www.ssrc.org/sept11/essays/denning_text_only.htm. To discuss and compare the different views on cybersecurity.
- b. In Turban Chapter 2 discuss Porter's Competitive Forces model and devise at least two IT examples for each of the five forces involved. Explain each briefly.
- c. Examine the findings of the Network Readiness Index, developed by Harvard University and compare its approach with other network readiness indices.

Question 2 has three parts:

- a. Turban Chapter 17 lists seven legal and ethical issues on page 733. Set up a simple matrix showing information about at least the following three topics related to these issues:
 - Top two most significant challenges
 - Government agencies and offices most concerned with enforcement
 - Significant technology issues, if any (like digital watermarks)
- b. Subscribe (free) to the *New York Times* on line (start at NYT.com) and set up your preferences for receiving *Circuits*, the weekly IT summary, which appears on Thursdays. Select three major technology stories in at least two different recent *Circuits* and discuss them in the context of public policy implications.
- c. Attend Video lecture 1 on CDROM. Discuss the implications of Internet voting in the context of "thin democracy" and other democratic forms. This term "thin democracy" is used in the lecture and comes from an article in the *Communications of the ACM*, one of the premier IT journals. Using the University's library system, download and print the article before doing any writing. Be sure to include examples of other approaches to thin democracy or related ideas.

Question 3 has three parts:

- a. Using “gini” coefficients or another approach, compare the digital divide and the financial divide briefly and comment on any possible government intervention required in the context of the digital divide. Show a diagram or two and be sure to explain your terms
- b. What is the bandwidth of the world? Examine various global listings on this subject and also comment on the top cities in the world with respect to bandwidth. (London is number one) Do you see any public policy implications?
- c. Compare Electronic Commerce transaction volume and financial data for the US and Europe and comment on the implications. Do many other nations in the world beyond US and Western Europe have major EC volume?

*Brief suggestions for answering assignment 2 questions 1 through 3 are in the class CDROM in Audio PP lecture 1