Course Syllabus

ISOM 2400 Global Information Infrastructure and Policy

- Winter Semester 2022/23
- Instructor: Prof. Xu Yan
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Course Description

An information infrastructure refers to the communication platform (e.g., the Internet, mobile Internet, social network, Internet of Things) that supports interactions among people, organizations and things. In the information society, an efficient information infrastructure is critical to business, economy and quality of life.

There are three key elements to the functioning of an effective information infrastructure that can empower the society.

Firstly, technology is the foundation. What does the next generation infrastructure look like? Why is the optical fiber so powerful for high speed transmission of signal? What is special about 5G?

Secondly, innovative business strategy is important. For example, what kind of business model can facilitate the adoption of mobile data services? How to leverage Web 2.0-enabled social network for business innovation?

Lastly, a sophisticated policy is critical. Issues concerned by policy-makers include: Should the network be operated by a monopoly or opened for competition? Should government own the network or let private and foreign investors to operate it? How to make sure low-income people are able to access the network so as to narrow the gap between information rich and information poor?

This course will provide a panorama review of the global information infrastructure from technology, social, business and policy perspectives. Such issues as universal service, digital convergence, next generation information infrastructure, cloud computing, network interconnection, the WTO's agreement on telecommunications, spectrum auction and digital transformation will be addressed. It will also discuss the growing importance of Web 2.0-enabled platform in business innovation.

This three credits course is a **Common Core Course** and is suitable for students from all backgrounds. No pre-requisite courses are required.

Learning Outcomes

Upon completion of this course, students are expected to be able to:

- recall and state fundamentals of information infrastructure from technology, social, business and policy perspective

- explain and interpret information infrastructure strategies from technology, social, business and policy perspectives

- analyze and evaluate the strengths and weaknesses of each information infrastructure strategy from technology, social, business and policy perspectives

- address business needs by formulating part of the corporate and public information infrastructure strategy from technology, social, business and policy perspectives

Teaching Approach

- Introducing the basic concepts of information infrastructure from technology, social, business and policy perspectives in lectures

- Using practical cases to interpret and illustrate policies, social implications and business applications of information infrastructure

- Discussions and simulations will be conducted so as to enhance students' understandings of information infrastructure

Assessment Scheme

- The mid-term assignment and the final exam will include multi-choice and filling the blank questions so as to test if student can recall or state knowledge of the fundamentals

- In addition to multi-choice and filling the blank questions, part of the short questions in the mid-term assignment and the final exam are designed to test student's ability to explain and interpret information infrastructure-related issues

Students will be graded on the basis of

a) a mid-term assignment (50%);
b) a final exam (50%).

Textbook:

Due to the extensiveness of this course, it is hard to recommend an appropriate textbook. Instead, suggested readings will be available in books reserved in the library or assigned on the course website throughout the lectures.

Class Hours and Venue:

- 3-6, 9-13, 16 January 2023, 14:00-17:20
- Class room: G012 of LSK Business Building (*Final exam will be taken in another classroom on 19 January 2023*)

Schedule:

January 3: **Introduction to the Information Infrastructure**
Reading:
1. Carr I Snyder (2003) *Management of Telecommunications*, McGraw-Hill Irwin: Boston, Chapter 1, 2, 3 (pp.71-94) (*For reference)*
2. Reading-1 ICT Facts Figures 2022

January 4: **Digital Convergence; Wireless Communications and Spectrum Regulation**
Reading:
1. Carr I Snyder (2003) *Management of Telecommunications*, McGraw-Hill Irwin: Boston, Chapter 3 (pp.94-123) (*For reference*)

January 5: **The Next Generation Information Infrastructure;**
Reading: Handout

January 6: **Business and Socioeconomic Implications of Information Infrastructure**
Reading: Handout

January 7-10: **Mid-term Assignment** (on-line assignment)

January 9: **Web 2.0 and Innovation**
Readings:
1. Schoshana Zuboff and James Maxmin (2002) The Support Economy: Why Corporations are Failing Individuals and the Next Episode of Capitalism *(For Reference)*
2. Eric Von Hippel (2005) *Democratizing Innovation*, MIT Press, downloadable for free from *http://web.mit.edu/evhippel/www/democ1.htm*, Chapter 1

January 10:   **Diffusion of Telecommunications Services; Case Study: SMS Adoption in Hong Kong and China**
Readings:
1. Everett M. Rogers (2003) *Diffusion of Innovation*, New York: Free Press, **Chapter 5** *(For Reference)*
2. Reading 2 - SMS in HK and China

January 11:   **Theoretical Framework of Information Infrastructure Deregulation**
Readings:
1. Geroski, *Barriers to Entry and Strategic Competition* 1990 (On reserve in the UST Library)*,* Part II, III, IV *(For reference)*
2. Reading 3 - Competition Theory

January 12:   **Organizational Restructuring of Information Infrastructure**
Readings:
1. Black, S.K. (2002*) Telecommunications Law in the Internet Age*, Morgan Kaufmann Publishers: San Francisco, Chapter 1,2 (*For reference)*
2. Fransman, Martin **(**2002) *Telecoms in the Internet Age: from boom to burst to--?* Oxford University Press: Oxford, *(For reference)*
3. Reading 4 - Divestiture of AT&T
4. Reading 5 -Telecom Restructuring-Martin Franceman

January 13:   **Network Interconnection; Local Network Competition in Hong Kong**
Readings:
1. Black, S.K. (2002*) Telecommunications Law in the Internet Age*, Morgan Kaufmann Publishers: San Francisco, Chapter 4 *(For reference)*
2. Reading 6 - Type III Interconnection (*For reference*)

January 16:   **Foreign Direct Investment in Telecommunications and WTO's Basic Telecommunications Agreement**
Reading: Reading 7 - China's telecom and the WTO (*For reference)*

January 19:   **Final Exam** (14:00-17:00)

Links to Related Websites

Government Sites

(1) [Office of the Communications Authority](http://www.ofca.gov.hk) at http://www.ofca.gov.hk

(2) [Commerce and Economic Development Bureau (Communications and Creative Industries Branch)](https://www.cedb.gov.hk/ccib/) at https://www.cedb.gov.hk/ccib/

(3) [Ministry of Industry and Information Technology (MIIT) of China](https://www.miit.gov.cn) at https://www.miit.gov.cn (Chinese only)

(4) [Audit Commission of Hong Kong SAR Government](http://www.info.gov.hk/aud) at http://www.info.gov.hk/aud

Operators in Hong Kong SAR

FTNS operators

(1) [HKT](http://www.hkt.com) at http://www.hkt.com

(2) [HGC Global Communications Limited](https://www.hgc.com.hk/) at http:// https://www.hgc.com.hk/

(3) [Hong Kong Broadband Network Limited](http://www.hkbn.net) at http://www.hkbn.net

Mobile Network Operators

(1) [Hong Kong CSL Limited](www.hkcsl.com) at www.hkcsl.com

(2) [China Mobile (HK)](http://www.hk.chinamobile.com) at http://www.hk.chinamobile.com

(3) [Smarton Mobile Communications Limited](http://www.smartone.com) at http://www.smartone.com

(4) [3 Hong Kong](http://www.three.com.hk) at http://www.three.com.hk

Operators in China

(1) [China Telecom](http://www.chinatelecom.com.cn) at http://www.chinatelecom.com.cn

(2) [China Unicom](http://www.chinaunicom.com.cn) at http://www.chinaunicom.com.cn

(3) [China Mobile](http://www.chinamobile.com) at http://www.chinamobile.com

Other Relevant Websites:

(1) International Telecommunications Union at http://www.itu.int

(2) Communications Association of Hong Kong at http://www.cahk.hk

(3) China Communications Professional Website at http://www.c114.com.cn/