SP917: Research Seminar in Technology Strategy and Policy

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Course Description:

This seminar introduces doctoral students to the extensive literature in the strategic management of technological innovation and addresses topics in technology strategy and policy.

The course takes a broad approach to these topics, reviewing studies in the economics of technical change, the sociology of science and innovation, the strategic management of technology. Early course sessions focus on the nature and timing of technological innovations, including manner in which technological innovations alter the competitive landscape and yield new industries. Readings in later sessions address the interaction between incumbents and entrants, commercialization strategies, and other forms of firm heterogeneity. Later readings address issues associated with science and technology policy and economic growth.

The course will be discussion-oriented and will involve a high degree of engagement from all participants. A chief goal of the seminar will be the preparation of students to conduct research on issues associated with the technology strategy. The seminar and will conclude with students preparing a research proposal/paper related to course topics.

Eligibility:

The course is open to all students at Boston University and the wider academic community. Students at neighboring schools are very welcome: I would be grateful, though, if non-BU students would check in with me prior to registering. Students who are not enrolled in a doctoral program are also welcome, but should check in with me before registering officially.

Requirements & Conduct:

The two main requirements for the course are (a) regular attendance and participation and (b) a final research paper. There will be both required and optional readings for each session. The set of required and optional readings may vary based on course enrollment; we will discuss this during the semester.

Each participant should be prepared to discuss each of the required readings in each session of the seminar. In addition, each participant will have primary responsibility for making a formal presentation of one of the readings to the class. The presentation should be supported by overhead or PowerPoint slides, along with enough hard copies of the slides for all the seminar participants. We will allocate primary responsibility for papers over the course of the semester.
Course Overview:

The intended set of discussion topics appears below. These are discussed in greater detail in the readings/sessions part of the syllabus. The syllabus will be flexible over the course of the semester, and time on the schedule will be reserved include one student research session (in which students will present their own research ideas) and, possibly, one or two guest presentations over the course of the semester.

I. Introduction
   A. Issues in Technology & Strategy
   B. Measuring Innovation
   C. Research Methods

II. Patterns of Technological Innovation
   A. Creative Destruction & Evolutionary Change
   B. Technological Trajectories
   C. Diffusion

III. Technology Competition
   A. Incumbents & Entrants
   B. Opportunities & Appropriability
   C. Commercialization
   D. Firm heterogeneity - capabilities, knowledge, and organizing for innovation
   E. Inter-organizational Relationships (tentative)
   F. Knowledge Spillovers & the Geography of Innovation

IV. Science, Technology Policy, & Economic Growth
   A. Economics of Basic Science
   B. Technical Change & the Sources of Economic Growth
   C. Institutions & Innovation: National Innovation Systems, the Role of the Government in Innovation, and University/Industry Interactions

V. Researching Technology Strategy & Innovation

Readings/Session Details (PRELIMINARY):

Master copies of all readings will be available at the Strategy & Policy front desk (on the 6th floor of the School of Management Building, Commonwealth Ave side). (I will also see about putting copies on reserve at the Pardee Library in the BU School of Management.) Required readings are starred and in bold type. (Note that these are subject to review and change.)

PART I: Introduction - Issues in Technology & Strategy

Session 1: Issues in Technology & Strategy


Session 2: Measuring Innovation & Research Methods


* Scott Stern, “Do Scientists Pay to Be Scientists?” *NBER* WP 7410.


PART II: Patterns of Technological Innovation

Session 3: Creative Destruction, Evolutionary Change, and Knowledge Accumulation


**Session 4: Technological Trajectories & Industry Life Cycles**


**Session 5: Diffusion**


**PART III: Technology Competition**

**Session 6: Incumbents vs. Entrants (and the Schumpeterian Hypothesis)**


Session 7: Appropriability and Commercialization


**Session 8: Firm heterogeneity, capabilities, knowledge, and organizing for innovation**


**Session 9: Inter-organizational Relationships (tentative)**


Session 10: Knowledge Spillovers and the Geography of Innovation


Session 10½: Knowledge Spillovers and the Geography of Innovation (II)


Session 10¾: Knowledge Spillovers and the Geography of Innovation (III)


Session 10: Recommended Supplemental Readings – Knowledge Spillovers and the Geography
PART IV: Science, Technology Policy, & Economic Growth

Session 11: Economics of Basic Science


Session 12: Technical Change & the Sources of Economic Growth


