Evidence-based Science & Technology Policy Design

Guidance

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Aim of the Course

Objectives

- **To develop skills to design a solution (a policy) for a problem**

- **in the STI (Science Technology Innovation) context**

- **in a scientifically informed manner**

Why STI?

- **Relevant**: STI shapes the foundation of the contemporary society and thus make a major arena of public policy.

- **Challenging**: The complex nature of the STI system poses various challenges in effective policymaking.

- **Feasible**: Recent development of Science of Science (SoS) offers theoretical frameworks and technical tools.

Source: Science 359 (6379)
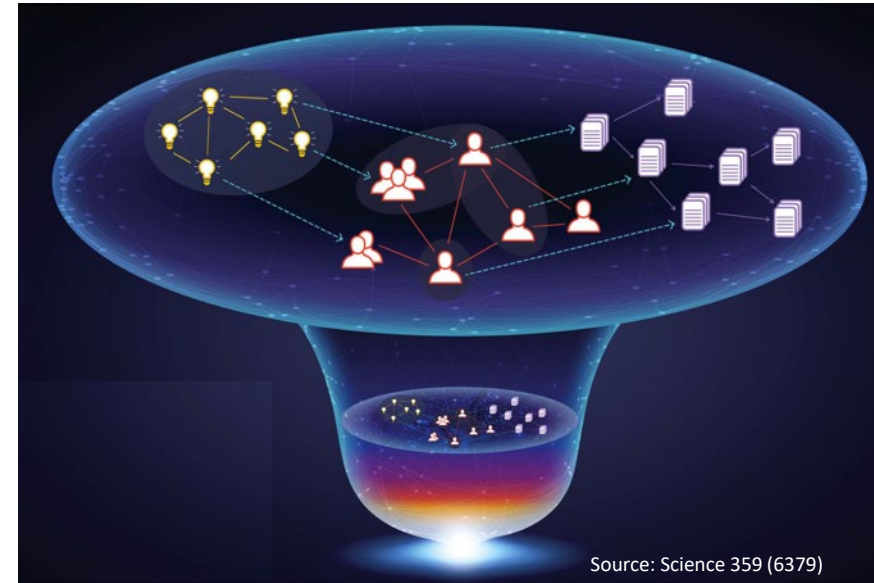
Science of Science: An interdisciplinary research field that aims to deepen our understanding of the factors that drive successful science; to provide tools and policies to accelerate science; and to address societal, environmental, and technological problems more effectively.

Overview of the Course
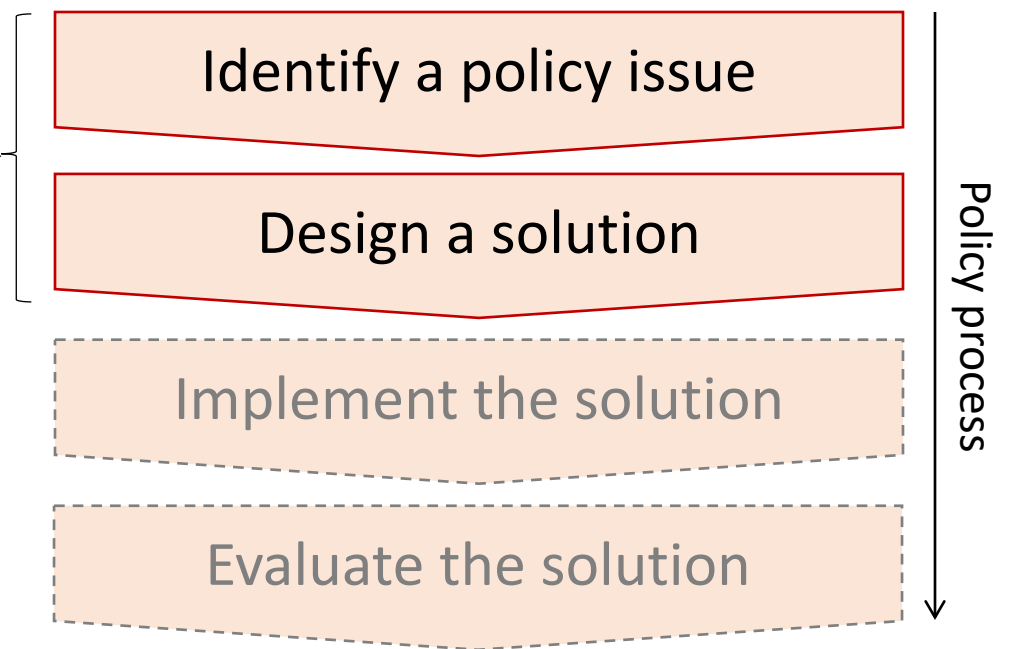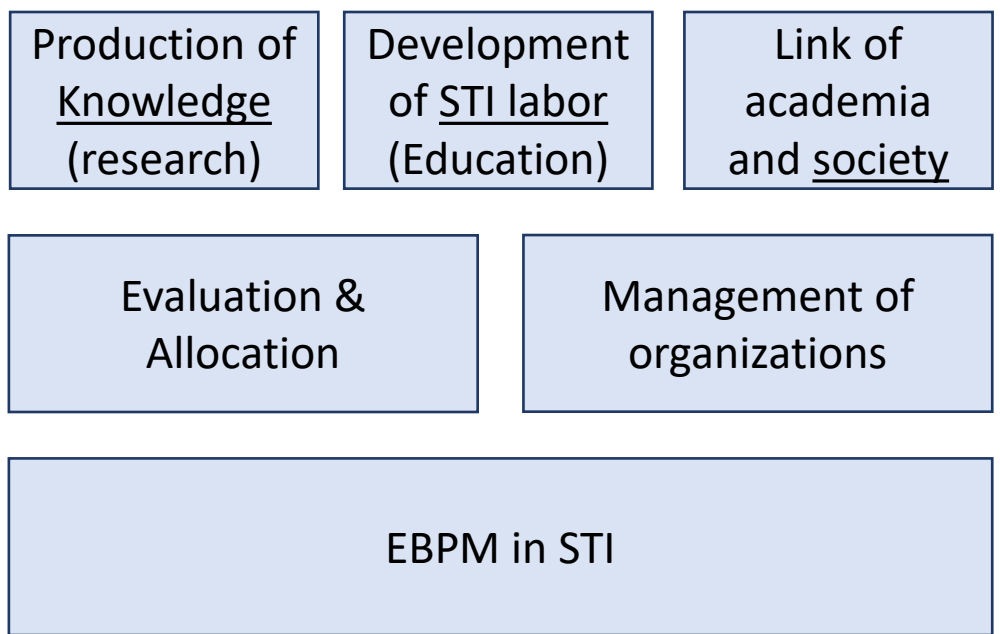
Part 1

Part 2

Research seminars	+	Project

*Research talks given by expert in selected STI topics

*Practice to design and propose a solution for a policy agenda of your choice

Production of Knowledge (research)	Development of STI labor (Education)	Link of academia and society

Evaluation & Allocation	Management of organizations

EBPM in STI

Identify a policy issue

Design a solution

Implement the solution
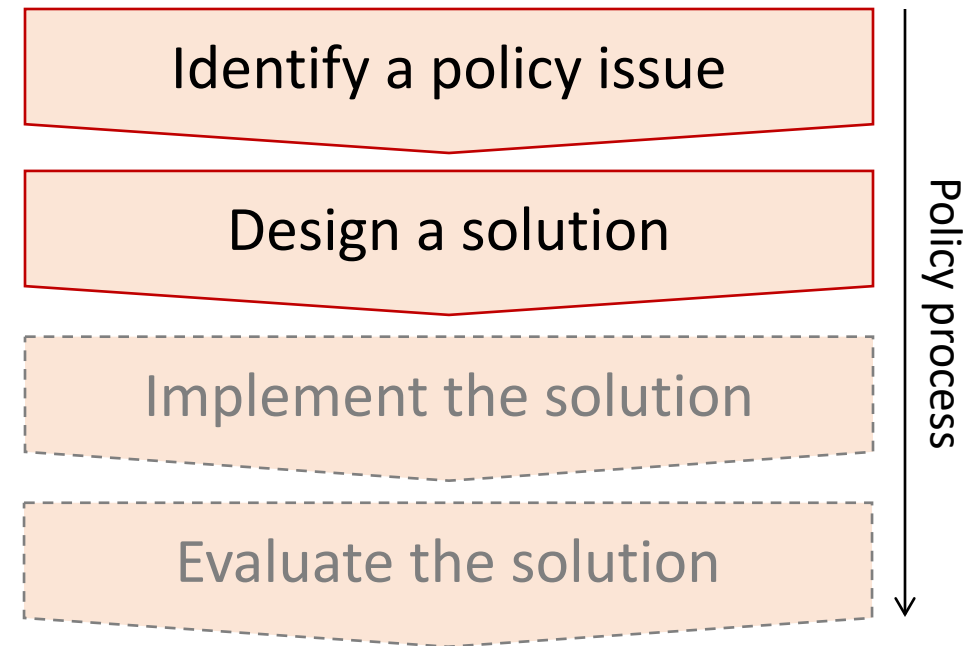
Evaluate the solution

Policy process

Project

- Based on your own interest
  - Broadly related to an STI issue

- Individual basis
  - (Depending on enrollment)

- Weekly feedback for each student

- Step-by-step approach to reach the final proposal
  - TIPs instructed on a weekly basis

Part 2

Project

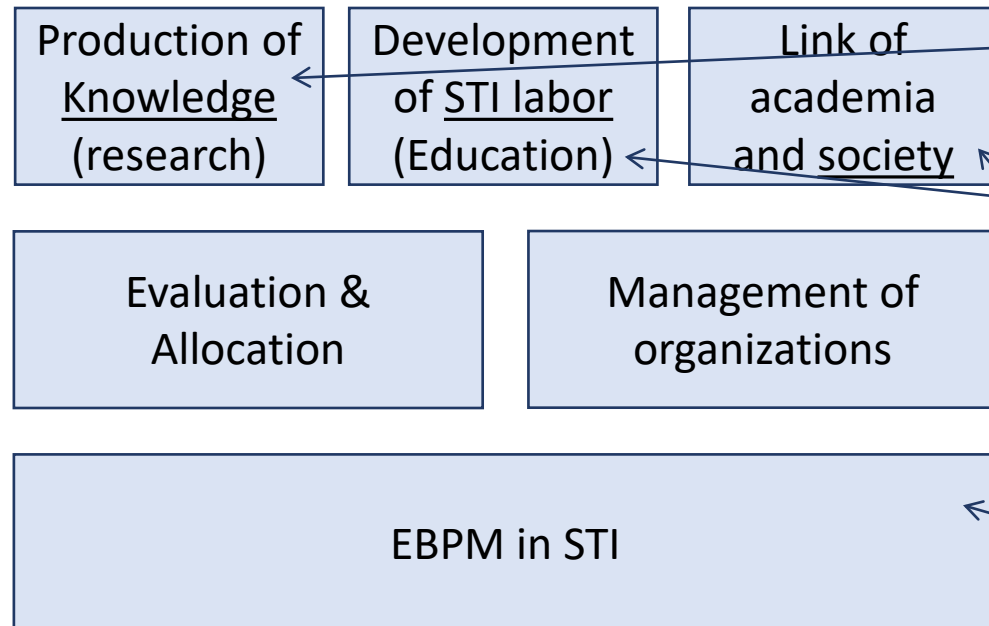*Practice to design and propose a solution for a policy agenda of your choice

Identify a policy issue

Design a solution

Implement the solution

Evaluate the solution

Policy process

Seminars (Lectures)

Part 1

Research seminars

*Research talks given by expert in selected STI topics

Production of Knowledge (research)	Development of STI labor (Education)	Link of academia and society

Evaluation & Allocation	Management of organizations

EBPM in STI

To gain inspiration for your project

- What kind of policy issues exist?
- What kind of "evidence" exists?
- How such evidences are used for policymaking?

Invited experts

Dr. Masatsura Igami (伊神 正貫 先生)
MEXT, NISTEP, Director of Center for S&T Foresight and Indicators

Dr. Mari Kawamura (川村 真里 先生)
UTokyo, Sch of Education, Assistant Professor / MEXT, NISTEP, Senior researcher

Prof. Seokbeon Kwon
UTokyo RCAST / Sungkyunkwan Univ, Dept. of Systems Management Engineering, Assistant Professor

Dr. Shinichi Akaike (赤池 伸一 先生)
MEXT, NISTEP, Principal Senior Fellow

Science of Science (or of STI)

"An interdisciplinary research field that aims to deepen our understanding of the factors that drive successful development of STI; to provide tools and policies to accelerate science; and to address societal, environmental, and technological problems more effectively."

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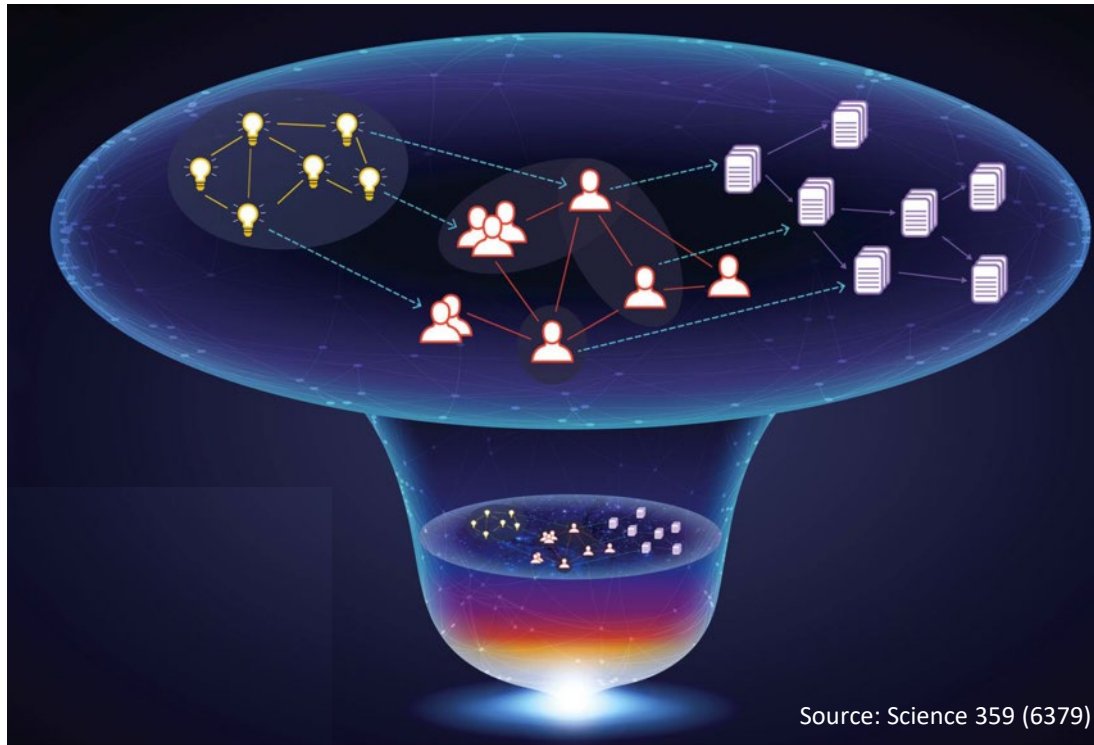
SoS Tools & data
- Visualization of STI output (metrics)
  - Knowledge
  - Technologies
  - STI human resources
- Empirical evidence for causal effects
  - Input -> Output
- Theoretical models

Visualization of STI
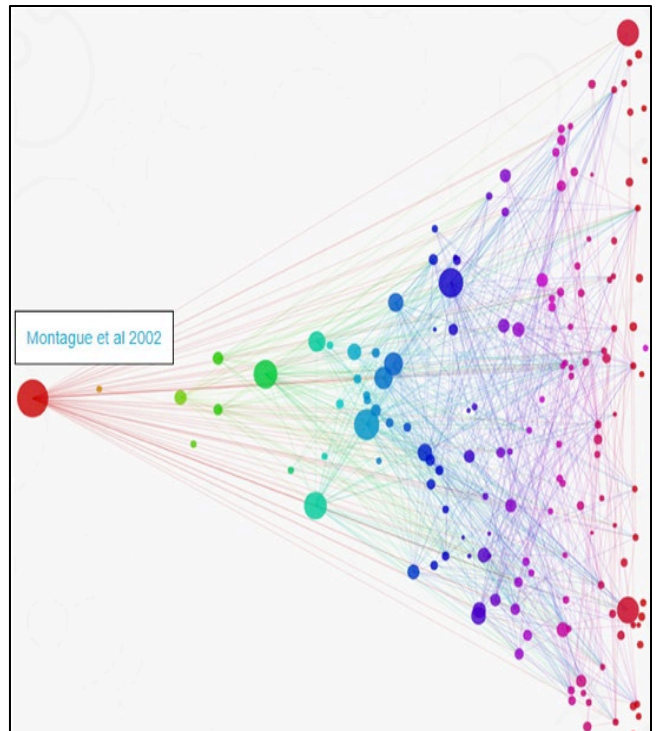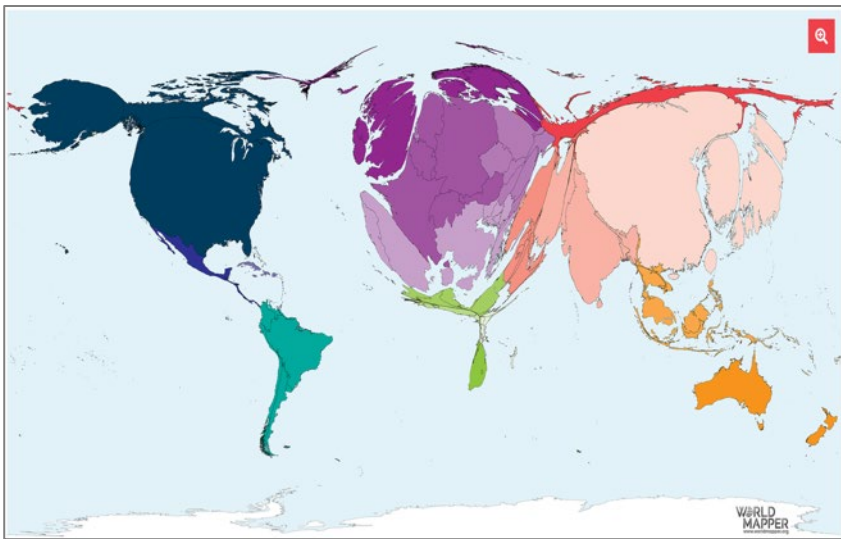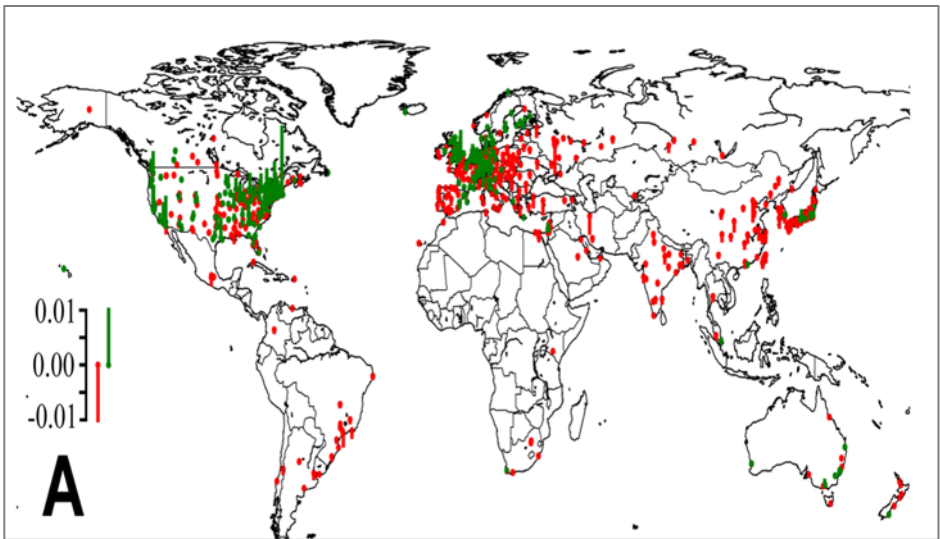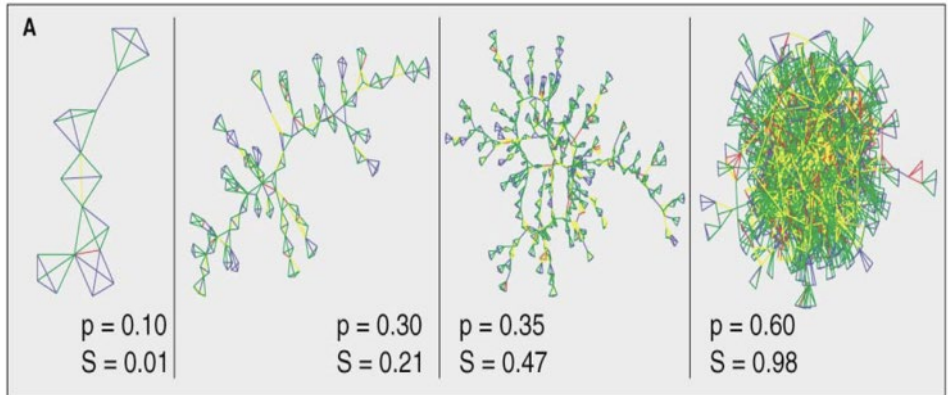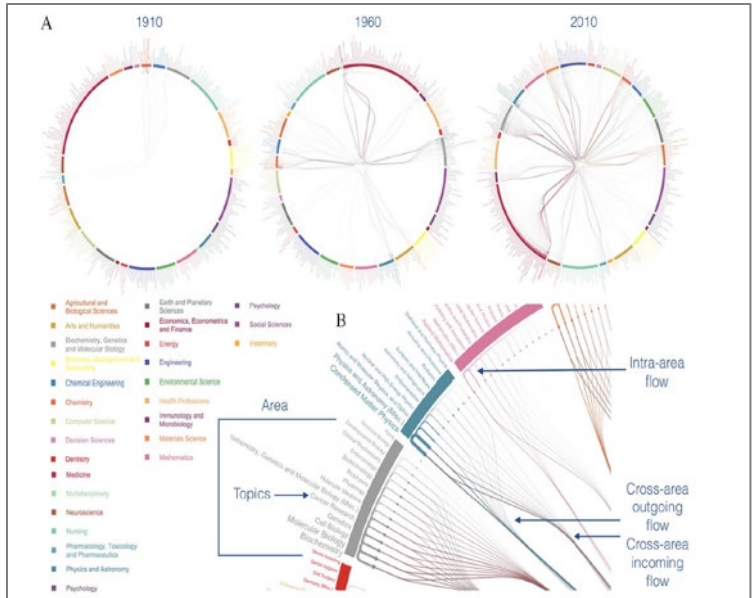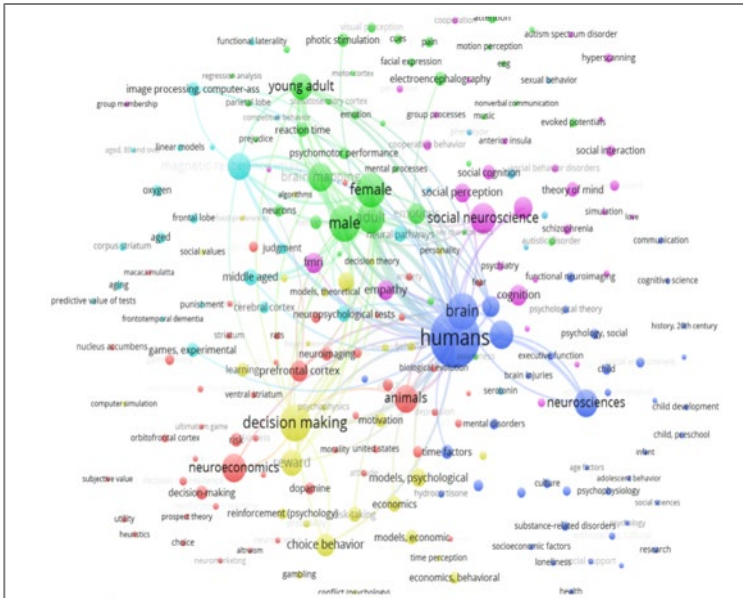
Why should you take this course?

<u>Focus on Problem Finding and Formulation</u>

- The outcome of a policy (or any work of problem solving) is determined to a large extent by how you formulate a problem.

- Not many courses are designed for the <u>upstream</u> skills
  - A thesis project may be an opportunity.
    - But, it may be the supervisors who do the upstream skills.
    - It takes time. This course is time-efficient.

- The skills are applicable to a broader range of problem solving:
  - Policies not only STI policies
  - Organizational strategy, consulting, etc.
  - Any research project

- Skills for this upstream step complement skills for more downstream steps
  - Such as techniques for data analysis, etc.

Schedule & Logistics

Week	Day	Topic
1	Sep 29	Introduction
2	Oct 6	Evaluation and resource allocation
3	Oct 13	Link of academia and society [Prof. Kwon]
4	Oct 20	Production of knowledge [Dr. Igami]
5	Oct 27	Management of organizations and teams
-	Nov 3	(Holiday)
6	Nov 10	Development of STI labour [Prof. Kawamura]
7	Nov 17	EBPM in STI [Dr. Akaike]
8	Nov 24	Project 1
9	Dec 1	Project 2
10	Dec 8	Project 3
11	Dec 15	Project 4
12	Dec 22	Project 5
-	Dec 29	(Holiday)
13	Jan 5	Project 6

- Language policy
  - Delivered in English
  - You may use Japanese for communication with the instructor (Q&A, project, the final report).

- Class information
  - ITC-LMS

- Office hour
  - By appointment
  - shibayama@ifi.u-tokyo.ac.jp

Sum up

Come to class

1pm on Oct.5 (Tomorrow)

IAR 1213A