Strategic Partnership
in the Digitally-networked World

UTokyo-TUM Workshop for Excellence, Diversity and Mobility
"Society with Automobiles, Robots, and AI"

February 15, 2018

Miho Funamori
National Institute of Informatics
Outline

1. Introduction
2. Internationalization of Universities
3. Open Education
4. Open Science
5. Closing Remarks—Strategic Partnership in the Digitally-networked World
Internationalization of Universities
What is Internationalization of Universities?

- A term which often fails to be a “means to an end”!
The Various Rationale of the Intl. of Universities

- Institutional level rationales
  - International profile and reputation
  - Quality enhancement/International standards
  - Student and staff development
  - Income generation
  - Strategic alliances
  - Research and knowledge production

What UTokyo is striving for:

- The University of Tokyo aims to be a world-class platform for research and education, contributing to human knowledge in partnership with other leading global universities.

  - Internationalization is to be pursued if it is to lead to this goal.
  - If not, other means than internationalization should be pursued.

Source: The University of Tokyo's Mission (http://www.u-tokyo.ac.jp/en/about/mission.html)
The Internationalization
of UTokyo 2010-2020:
Initiatives and Targets
(Proposal)

- University-wide
- School/Institution-wise

Source: The Internationalization of UTokyo 2010-2020: Initiatives and Targets (Proposal) (http://www.u-tokyo.ac.jp/content/400009826.pdf)
Different Goals of internationalization for different departments

- Engineering
  - Pursuing Bi-Lingual Campus

- Humanities
  - Pursuing Multi-Lingual Globalization

- Agriculture
  - Solving Global Issues through Agricultural Studies

- Economics
  - Be a Top School with Asian Perspectives

- Arts and Sciences
  - Enhancing Liberal Arts through Internationalization

- Medicine
  - Be an International Hub in the discipline

- Histriography
  - Collecting and Providing Japanese Historical Sources Internationally
Super-Kamiokande

- The World's Largest Underground Neutrino Detector
- The most internationalized facility and organization at UTokyo.

Super-Kamiokande is the large water Cherenkov detector. The construction was started in 1991 and the observation began on April 1st, 1996. The Super-Kamiokande is operated by an international collaboration of about 150 people and about 40 institutes from Japan, the United States, Korea, China, Poland, Spain, Canada, UK, Italy and France.

Source: About Super-Kamiokande—Overview (http://www-sk.icrr.u-tokyo.ac.jp.sk/sk/index-e.html)
The Changing Means of Internationalization

When we first started back in the 1990s, researchers came from all over the world to the small village Kamioka.

Now, with the proliferation of the Internet, we hold tele-conferences regularly across WGs. People are analyzing data over the Internet.

People do not come physically together anymore. However, people are collaborating tightly over the Internet.

To be continued...

Yoichiro Suzuki
Former Director
Kamioka Observatory

Source: White Paper on Internationalization of Todai (university-wide), p51-54
(http://www.u-tokyo.ac.jp/content/400009824.pdf)
Open Science Movement
What is Open Science?

... Science has always been open!
Definition: Open Science

- Said to have no fixed definition
- General understanding:
  - New ways of doing research and organizing science
  - Enabled through digital technology
  - Reshaping academic value systems
Definition: Open Science

...Umbrella Term

- Pre-print
- Data-intensive
- Citizen science
- Open data
- Open code
- Open lab books/workflow
- Open access
- Collaborative bibliographies
- Alternative reputation systems
- Science blog
- Open annotation

Globalization and Collaboration

- More and more researchers working on international collaboration projects
  - Need for sharing and storing information
  - Need for online collaboration platform

Source: Open Science Framework
https://cos.io/our-products/open-science-framework/
European Open Science Cloud (EOSC)

- EOSC aims to accelerate and support the current transition to more effective Open Science and Open Innovation in the Digital Single Market.

- KEY FACTORS:
  - New modes of scholarly communication
  - Modern reward and recognition practices need to support data sharing and re-use.
  - Core data experts need to be trained and their career perspective significantly improved.
  - A real stimulus of multi-disciplinary collaboration requires specific measures in terms of review, funding and infrastructure.
  - The transition from scientific insights towards innovation needs a dedicated support policy.

Source: European Commission: Realising the European Open Science Cloud
https://ec.europa.eu/research/openscience/pdf/realising_the_european_open_science_cloud_2016.pdf#view=fit&amp;pagemode=none
Research Data Infrastructure for Open Science

Discovery Service

- Linking Func between Article and Data
- Researcher and Research Project Identification and Management Func
- Data Exchange with International Discovery Service

Metadata Management

International Metadata Aggregator

DOI

Subject Repository

Research Data Mng
User Interface
Access Control
Metadata Mng

Research Data Management System

RDM Platform

- High Speed Access using SINET5
- Data Sharing Func using Virtual NW and ID Federation
- Effective Data Storage Switcher

Exp Data

Data Depositor

Article

Search/Find

Data User

Journal Article

Supplemental Data

Institutional Research Data Mng

Public
Shared
Private

Exp/Store

Archive

Published Platform

- Data oriented Self-Archiving Func
- Versioning and auto-Packaging Func
- User Dependent Personal Data Pseudonym Func

Storage Area for Long-term Preservation

Storge Area for Long-term Preservation
Open Education
MOOCs
The Savior of higher ed

free!

massive

open access

Courses with credit
Raison d‘Etre of Universities in the Digital Age

"The purpose of education is not to make men and women into doctors, lawyers and engineers; the purpose of education is to make doctors, lawyers and engineers into men and women."

What is the Raison d‘Etre of Universities if information passing can be entrusted to online learning?

“Ultimately, learning is a social experience. Harvard is Harvard not because of the buildings, not because of the professors, but because of the students interacting with one another.”

W.E.B. Du Bois
Sociologist
Pan-Africanist

Terry Aladjem
Executive Director, the Derek Bok CTL, Harvard U

Human development
Bonds with Mentor
Peers
Campus Life
Life Compass
Solidarity

Inside Higher Ed (2012.9.11) MOOC’s Missing Pieces
Harvard Magazine, “Twilight of the Lecture: The trend toward “active learning” may overthrow the style of teaching that has ruled universities for 600 years,” (March-April 2012)
Strategic Partnership in the Digitally-Networked Age
What matters in digitally-networked world

The way of collaboration has changed greatly with the Internet. However, people still come together to discuss and interact.

Though the Internet can send information, it cannot send PEOPLE. Research is not merely exchange of information but interaction between people.

Where do people gather physically beyond the digital networks? Only to places with attractive researcher and research!

Source: White Paper on Internationalization of Todai (university-wide), p51-54 (http://www.u-tokyo.ac.jp/content/400009824.pdf)
Strategic Partnership in the Digitally-networked Age

- UTokyo and TUM had close relations built over multiple-layered exchanges.
- Let us built a strategic partnership on this historical exchanges, assisted by the concurrent information technology, which will lead us to a dynamic and closely tight partnership best suited for the 21st century.