

**1. Course Title (Course Code)**

Fundamentals of ICT4D (2261)

**2. Instructor**

Tomonari TAKEUCHI

**3. Term**

Fall 1

**4. Outline and Objectives**

The objective of this module is to understand the opportunities and challenges of utilization of Information and Communication Technology (ICT) for achieving sustainable development in the developing countries through recognizing and analyzing what ICT4D projects are like with using relevant conceptual frameworks and/or models.

**5. Goals (Attainment Targets)**

- (1). To be able to explain the overview of ICT4D and the worldwide trend of ICT4D attempts
- (2). To acquire skills and knowledge about conceptual frameworks and models to analyze success and failure factors of ICT4D projects from socio-technical point of view.
- (3). To understand relevant point of view to plan sustainable ICT4D projects

**6. Correspondence relationship between Educational goals and Course goals**

Educational goals			Course goals
High level ICT skill	Basic academic skills		
	Specialized knowledge and literacy		(1)
Human skill (Tankyu skill)	Ability to continually improve own strengths		
	Ability to discover and resolve the problem in society	Problem setting	(2), (3)
		Hypothesis planning	(2), (3)
		Hypothesis testing	(2), (3)
		Practice	
	Fundamental Competencies for Working Persons	Ability to step forward	
		Ability to think through	
		Ability to work in a team	
Professional ethics			

## 7. Course Requirements

None.

## 8. Textbooks

None.

## 9. Reference Books

Duncombe, R. (2006) 'Analysing ICT Applications for Poverty Reduction via Micro-enterprise Using the Livelihoods Framework', Development Informatics Working Paper Series, Paper No. 27, IDPM, University of Manchester.

Farrell, G., and Isaacs, S. (eds) (2007) Survey of ICT and Education in Africa: A Summary Report, Based on 53 Country Surveys, infoDev/World Bank, Washington, D.C.

Heeks, R. B. (2008) 'The ICT4D 2.0 Manifesto', Development Informatics Working Paper Series, Paper No. 30, IDPM, University of Manchester

Heeks, R. B. (2006) Implementing and Managing eGovernment: An International Text, Sage, London.

Heeks, R. B. (2003) 'Most eGovernment-for-Development Projects Fail: How Can Risks be Reduced?', eGovernment Working Paper Series, Paper No. 14, IDPM, University of Manchester.

Heeks, R. B. (2002) 'Failure, Success and Improvisation of Information Systems Projects in Developing Countries', Development Informatics Working Paper Series, Paper No. 11, IDPM, University of Manchester

Kenny, C. (2006) Overselling the Web?: development and the Internet, Lynne Rienner, Boulder

Skouby, K. E., & Idongesit, W. (Eds.). (2014). The African mobile story. River Publishers.

Takeuchi, T (2012) 'FOSS as a driver: Perspectives from the ICT development agenda' in Free and Open Source Software Technology for Sustainable Development edited by Sulayman K. Sowe, Govindan Parayil and Atsushi Sunami, United Nations University Press

Toyama, K. (2015) Geek Heresy: Rescuing Social Change from the Cult of Technology, PublicAffairs

Unwin, T (2009) ICT4D: Information and Communication Technology for Development, Cambridge University Press

## 10. Evaluation

Goals	Evaluation method & point					
	term-end exam	quiz	report	presentation	deliverable	other
(1)	○			○		
(2)	○			○		
(3)	○			○		
Allocation	70			30		

### ■ Assignment1 : Presentation (30%)

Group presentation will be conducted in the middle of the course. In advance, several groups will be made according to individual interest in the development field (theme) such as education, health, agriculture, poverty reduction, industrial development, etc. Each group will choose a specific kind of ICT4D attempt such as m-banking, e-health (m-health), e-learning (m-learning), e-government (m-government), impact sourcing, FOSS4D(Free Open Source Software for Development) application, etc. Each group will research on the selected ICT4D attempt and prepare for the presentation and make a relevant handout. Then, each group will make 15-20 minutes presentation including Q &A with the relevant presentation materials. The presentation should include;

1. The overview of a selected ICT4D attempt
2. The opportunity (expected impacts) of the selected ICT4D attempt
3. The challenges of the selected ICT4D attempt
4. The solutions and/or recommendation to overcome the challenges

※ At least one conceptual framework and/or model introduced in this module should be used to analyze challenges and solutions in the presentation though it is also welcome to use a framework which you find out from reliable sources even if it is not introduced in this module.

※ Presentation is evaluated by the following points;

- Contents
- Presentation
- Time management of the presentation
- Handout

■ Assignment2 (Term-end exam) : 3500-5000 words Essay (70%)

Write an essay (3500-5000 words) on the theme that you do not choose for the assignment1 (Group presentation). The essay should include all of followings.

1. Abstract
2. The overview of the specific ICT4D project(s) selected as a case study in the selected field in specific country or region.
3. The outcome of the project(s).
4. Your evaluation on whether the project(s) is success (partially success) or failure (partially failure) and the reasons for your evaluation.
5. The analysis on success or failure factors
6. The lessons learned from the project(s) and/or the suggestions to improve the success rate of the ICT4D project(s).

※ At least one conceptual framework and/or model introduced in this module should be used to analyze success or failure factors although it is also welcome to use a framework that you find out from reliable sources even if it is not introduced in this module.

※ The essay is evaluated by the following points;

- Does it contain enough information for discussion?
- How logical is the discussion?
- Does anything you learned from this module is properly used for the discussion?
- Is there your own originality?
- Is the formatting style properly used as an academic paper?

## 11. Notes

1. In this module, there is no textbook. Handouts relevant to each theme will be distributed.
2. The contents of this module are relatively abstract because what this module mainly introduces are frameworks and models. In other words, you are required to think by yourself to relate the conceptual frameworks and practical projects as well as your own experience.

## Course Schedule

(Notice) This schedule is a tentative plan; there might be changes, additions, and revisions etc. at the time of delivering the course.

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### Lesson 1: Overview of ICT4D

(Lecture 90 min)

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In this session, various kinds of ICT4D projects in different fields are introduced to grasp what ICT4D is in the current world. The overview, impact, opportunities and challenges are explained and discussed. It is expected that each of you will share your experience working for and/or researching on ICT4D projects with the others, if any. The overview and one of the important notions in ICT4D that “ICT is not a SILVER BULLET (Panacea), but a powerful tool for development” are roughly understood at the end of the session.

1. Contents of this module (objective, each session contents, reading list, assignment, evaluation)
2. Introduction of ICT4D projects
3. The role of ICT “whether ICT is solution or not?”
4. Challenges of ICT4D

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### Lesson 2: Success and Failure Factors of ICT4D Project

(Lecture 40 min, Exercise 50 min)

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In this session, the reason of success and failure of ICT4D projects are discussed through analyzing ICT4D project case study as exercise. There are several factors affecting success and failure. To understand such factors, frameworks and methods are established by some scholars. Before introducing such frameworks in this module, it is important to think about a way to analyze by yourselves.

1. What is success and failure of ICT4D projects?
2. What are factors to affect success and failure of ICT4D project?
3. Exercise using case study to analyze success and failure factors

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### Lesson 3: Information Provision and Development Impact 1

(Lecture 40 min, Exercise 50 min)

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There are many ICT4D projects aiming to provide information for people who have few opportunities to receive valuable information. The projects, such as projects to distribute market information for rural farmers and projects for distance education, contribute to reducing the gap called digital divide. In this session, what kinds of information are really valuable for beneficiaries is discussed. This session also includes discussion on what is required to achieve expected impacts of the ICT4D projects in order for beneficiaries to utilize provided information.

1. Definition and difference of Data, Information and Knowledge
2. Condition for information receivers for useful application of information
3. Introduction of conceptual frameworks and models (CIPSODA model, DIK model, Information Chain model)
4. Exercise using case study to apply conceptual frameworks and models to analyze ICT4D projects

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**Lesson 4: Information Provision and Development Impact 2** **(Lecture 40 min, Exercise 50 min)**


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Can ICT4D projects aiming to reduce digital divide necessarily contribute to minimizing the information gap between city and rural areas? Or such projects reinforce the digital divide and even create a new gap? It depends on many factors such as educational level, economic power, social status, etc. This session focuses on this point of view through reviewing relevant theories and practices.

1. Drawback of participatory approach
2. How does ICT affect the have and the have-not?
3. What is required to achieve development impact by ICT4D project?
4. Introduction of conceptual frameworks and models (ICT4D Value Chain model)
5. Exercise using case study to apply conceptual frameworks and models to analyze ICT4D projects

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**Lesson 5: ICT4D Project and Design-Reality Gap** **(Lecture 40 min, Exercise 50 min)**


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In many cases, ICT4D project failure is caused by a gap between project design and reality which is named "Design - Reality Gap" by Heeks (Director of ICT4D master course in University of Manchester). In this session, factors which cause Design Reality Gap will be understood through case study.

1. What is Design-Reality Gap
2. Important factors for ICT4D projects (Introduction of Onion Ring model)
3. Exercise using case study to apply conceptual frameworks and models to analyze ICT4D projects

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**Lesson 6: Approach for ICT4D Project** **(Lecture 50 min, Exercise 40 min)**


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There is a problem of project planning approach behind the Design-Reality Gap in ICT4D projects. In this session, such a problem will be explained. To analyze ICT4D project success and failure from the difference of approaches, characteristics of several approaches in both information system development and national development are introduced.

1. What is an appropriate approach to design ICT4D project?
2. Different between Supply-Driven and Demand-Driven approaches.
3. Different between Hard and Soft approaches.
4. User-Oriented approach in information system development and participatory approaches in national development.
5. Exercise using case study to apply conceptual frameworks and models to analyze ICT4D projects

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**Lesson 7: Success factors for ICT4D** **(Lecture 40 min, Exercise/Discussion 50 min)**


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In this session, main success factors for ICT4D projects are explained through analyzing successful ICT4D projects such as M-PESA and Ushahidi in Kenya, Digital Green in India, and so on.

1. What is the success factors for M-PESA ?
2. What is the success factors for Ushahidi ?
3. What is the success factors for Digital Green ?
4. What is the success factors for e-Education?
5. ICT4D Champion

**Lesson 8: MDGs/SDGs and ICT4D****(Lecture 40 min, Exercise 50 min)**

In this session, relation between Millennium Development Goals (MDGs)/Sustainable Development Goals and ICT is discussed. In each development themes, what kinds of attempts are implemented and how such attempts contribute to achieving MDGs/SDGs are explained. The class will be divided into two teams (like ICT4D optimist and ICT4D pessimist) and the debate on “Whether or not national budget should allocate for ICT4D?” is conducted.

1. What is MDGs/SDGs?
2. Relation between MDGs/SDGs and ICT4D
3. Debate on “Whether or not national budget should allocate for ICT4D?”

**Lesson 9: 【Assignment 1】 Group Presentation****(Exam 90min)**

In this session, as the assignment 1, Group Presentation is conducted. Each group makes a 15–20 minutes presentation and shares the research output with other groups.

**Lesson 10: Project Design for ICT4D Project****(Lecture 40 min, Exercise 50 min)**

In this session, a check list is introduced to minimize the Design–Reality Gap to design ICT4D projects. Exercise using case studies to use the check list will be conducted and how to minimize the Design–Reality Gap is also discussed.

1. Introduction check lists to minimize the Design–Reality Gap (ITPOSMO and OPTIMIZM check lists)
2. What are drawbacks of factor approaches?
3. Introduction of the other frameworks and models.
4. Exercise using case study to apply conceptual frameworks and models to analyze ICT4D projects  
Geo processing

**Lesson 11: Evaluation of ICT4D Project****(Lecture 40 min, Exercise 50 min)**

In this session, methods of evaluation for ICT4D projects are introduced. How to evaluate ICT4D projects is somewhat emerging field and not firmly established. Issues on the evaluation methods are discussed from not information system development but national development.

1. Evaluation methods for ICT4D project
2. Issues on evaluation of ICT4D project
3. Introduction of several evaluation index and methods for national development
4. Exercise using case study to apply evaluation methods to analyze ICT4D projects

**Lesson 12: Practice to Analyze ICT4D Projects and Approach for Research (Essay Writing)****(Lecture 40 min, Exercise 50 min)**

In this session, students will be required to utilize the frameworks and models introduced in this module to analyze ICT4D project. A specific ICT4D project will be introduced for a case study. Then, students will analyze the ICT4D project from the points of failure and success factors, lesson learned, and potential solutions.

1. Introduction of ICT4D Project (by a practitioner (either NGO, consultant, or JICA expert))
2. Practice to analyze the ICT4D Project and make a group presentation

The other part is “Approach for Research (Essay Writing)”. To support students to write an essay (Assignment2) with sufficient contents, important viewpoints and pitfalls for ICT4D research are introduced.

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**Lesson 13: Trend of ICT4D**
**(Lecture 90min)**


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In this session, there are two topics. The one is “Trend of ICT4D”. In international society, ICT4D became a very important agenda along with technology evolution especially at the Kyushu–Okinawa Summit in 2000. Then, this agenda was discussed at the World Summit on the Information Society in 2003 and 2005. In this session, such a trend of ICT4D agenda in international society is explained. To grasp the big picture of the ICT4D trend enables you to plan appropriate ICT4D projects.

1. International society and ICT4D
2. Trend of ICT4D (from ICT4D 1.0 to ICT4D 2.0)
3. Reverse Innovation
4. Future trend of ICT4D (Internet → Social Media → Social Lab)

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**Lesson 14: JICA's ICT4D Projects**
**(Lecture 50 min, Discussion 40 min)**


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In this session, a wide range of ICT4D projects by Japan International Cooperation Agency (JICA) are introduced. In addition to a lecture, it is planned to conduct TV conference with a few project sites such as Indonesia. You can ask questions on ICT4D for project practitioners in this occasion. Knowledge on Japanese ODA and JICA's ICT4D projects will help you work for ICT4D field in future.

1. Introduction of ICT4D projects implemented by JICA
2. Lecture by and exchange opinion with Project practitioners of JICA's ICT4D projects
3. TV conference with project sites (probably, Indonesia)

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**Lesson 15: ICT Industry and ICT4D**
**(Lecture 30 min, Discussion 60 min)**


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In this session, some guests from organizations such as JICA, Japanese private company, University, etc. will be invited to exchange opinions about ICT4D. Presentations by student groups will be made to encourage such organizations to collaborate with developing countries. It is expected that it is good opportunity for you to have a relationship with Japanese organizations for potential ICT4D projects in future. Finally, the summary of this module is reviewed as the last session.

1. Presentation by student groups to encourage collaborating with developing countries
2. Exchanging opinions with the guests
3. Summary of this module