

Rural Communications (ICT for Development)

(1) Guidance and Introduction

Jun-ichi TAKADA

Department of International Development Engineering
Tokyo Institute of Technology

Personnel

Lecturers:

- Jun-ichi Takada
 - takada@ide.titech.ac.jp
- Takahiro Aoyagi
 - aoyagi@cradle.titech.ac.jp

Background

- Communication infrastructure
 - is indispensable for the development of the industry and economy.
- Imbalance of the distribution
 - very severe in rural and remote areas
 - intolerable for the long time
- Progress of communication systems
 - From voice to data
 - Convergence to IP network

Syllabus

- Introduction
- Historical Aspects of Telecommunications 1 - Missing Link -
- Historical Aspects of Telecommunications 2 - 20 years after Missing Link -
- Communication technology
- Information Technology and Internetworking
- Free and Open Source Software
- Access Infrastructure 1 - Cellular Systems -
- Access Infrastructure 2 - Satellite Systems -
- Access Infrastructure 3 - Wireless Computer Network -
- Backbone Infrastructure - Optical link, Wireless backhaul, Satellite -
- E-learning 1 - Overview and Theory
- E-learning 2 - Instructional Design
- E-learning 3 - Information and Communication Technology
- E-learning 4 - Law and Economy
- E-learning 5 - Case study
- Case Presentation (in place of final exam)

Grading Criteria

- Report
 - With respect to relevant topics, students shall report the summary.
- Case presentation
 - Each individual student is assigned a case, and shall present the summary and the analysis of the case.

Small Assignment

- What is “development” in your opinion?
 - Note: Not “development” used in R&D
 - Please send your opinion by October 11 to Takada by e-mail

Textbooks / Reading Materials

- Report of the Independent Commission for Worldwide Telecommunications Development “The Missing Link,” December 1984.
- Tim Kelly, “Twenty Years of measuring the Missing Link,” October 2005.
 - <http://www.itu.int/osg/spu/sfo/missinglink/index.html>
- Other materials to be assigned later on.

Web Page for the Course

<http://portal.titech.ac.jp/>

- Contents to be distributed also by OCW-I
- For this week, I will distribute the slides to all of you by e-mail.

Difficulties in Rural Areas

- Low population density and long distances between settlement areas
- Unfavorable geographic and climatic conditions
- Unfavorable access from urban centers
- Low educational level, high illiteracy rate
- Hardly any job opportunities
- Low income per capita and per family

Difficulties in Rural Areas

- Increasing migration of the young to urban centers
- Unreliable and badly functioning (public) transport
- Irregular, if any, power supply
- Poor health care and medical services
- Lack of other government services
- Little participation in national affairs

Difficulties in Rural Area (input from past students)

- Geographic difficulty
 - Mountain areas
 - Remote islands
- Few experts of telecommunications for maintenance and drainage
- Security of infrastructure (thieves etc)
- Private companies avoid the service in rural areas
- Political instability and unsecure situation in some rural areas

Difficulties in Rural Area (input from past students)

- Ethics
 - In Bali, traditional regulation prohibits to build high tower
 - Conflict between traditional idea and new technology, e.g. Internet provides pornography

Difficulties in Rural Area

(input from current students)

- Long distance between urban and remote may degrade the reliability and raise the cost for communications.
- Number of telecommunication users is very small.
- Population is one big obstacle for communication service
- In Malaysia, backbone infrastructure between West and East area under the sea is not yet sufficient.

Difficulties in Rural Area

(input from current students)

- Some countries limit the contents of the traffic.
- Attitude of service providers sometimes discourage the local people for use.
- Limited number of services in rural area. Even if same infrastructure is established, smaller number of users may raise the cost.
- In some countries, even if funding is available, due to corruption or selfish people, infrastructure is not really developed.

Difficulties in Rural Area

(input from current students)

- There is lack of understanding of importance of telecommunications among rural people as they are not exposed with telecommunications. In Malaysia, Government is trying to describe the benefits to rural people.
- Although population require, technology may not fulfill. For most people want to have Internet, but mobile technology is still expensive to afford.
- People in rural areas are with low income and they can not afford the cost of telecommunications.

Telecommunications in Rural Area

- To trigger and sustain structural and economic development
- To improve the quality of life in rural and remote areas
 - Improvement of health and education through the use of telecommunications
 - New industries and other commercial operations
e.g. One Village One Product
 - Security
 - elimination of feelings of isolation
 - improvement of government administration

Telecommunications in Rural Area (input from students)

- With introduction of telecom and internet, there is possibility that traditional cultures are lost. (negative aspect)
- Employment of opportunities via credit transfer services, e.g. shops.
- Mobile banking and money transfer are very popular in Kenya and Ghana.
- Via telecommunication infrastructure, people do not have to migrate to urban as some works can be done at home. (tele-working)
- Response to disaster.

Reading Assignment

Report of the Independent Commission for
Worldwide Telecommunications Development
“The Missing Link,” December 1984.

- <http://www.itu.int/osg/spu/sfo/missinglink/index.html>
- Read page 1-70 of the above document.
Consider the answer to the following questions
while reading:
 1. What are the roles of telecommunications? After 27 years, what are new and obsolete roles?
 2. Itemize the issues about the telecommunications development.
 3. List the available technologies to solve the problems. After 27 years, what are the significant changes?

Lecture Schedule

- October 5, 12, 19, 26
- November 2, 9, 16, 30
- December 7, 14, 21
- January 11, 18, 25
- February 1