

Intro to Development Engineering

Textbook Overview

A New Discipline: Development Engineering

— — —

Chapter 1: The Role of Technology in Development

Burgess, Robin; Zipfel, Celine; Bishop, Menna

Chapter 2: The Development Engineering Framework: Innovate, Implement, Evaluate, Scale

Agnihotri, Anustubh; Gadgil, Ashok; Madon, Temina

Chapter 3: Asking the Right Questions (Ethics)

Toyama, Kentaro; Madon, Temina

Case Studies by Domain

— — —

Digital Governance: Connections among citizens, the State, bureaucrats, and intermediaries

Connectivity: Linking individuals across and within markets, communities, and firms

Energy & Environment: Fueling development, maintaining the environment, adapting to climate change

Agricultural Markets: Access to farm credit, precision agriculture (information), market linkages

Water, Sanitation and Health: Designing for healthy households: water, sanitation, and cooking

Human Capital: Education, job search, and workers' voices

Governance (Arman Rezaee)

— — —

Case Study: Monitoring bureaucrats and quality of service delivery, Pakistan
Arman Rezaee

Case Study: Biometric identification for public assistance, India
Muralidharan, Karthik; Nair, Ashwin

Case Study: Elections monitoring and voter engagement
Long, James

Connectivity (Richard Anderson)

— — —

Case Study: Community Cellular Networks, Philippines
Heimerl, Kurtis

Case Study: Voice based systems for social information exchange, Pakistan
Vashistha, Aditya; Raza, Agha Ali

Case Study: Open Data Kit, an infrastructure for survey data collection
Brunette, Waylon; co-author

Energy & Environment (Ken Lee)

— — —

Case Study: Economic impacts of rural electrification, Kenya
Lee, Kenneth; co-authors

Case study: Continuous Emissions Monitoring Systems for cap and trade, India
Sudarshan, Anant

Case Study: Adapting to extreme heat in urban environments - cool roof painting, India
Jina, Amir

Agricultural Markets (Lorenzo Casaburi)

Case Study: Mobile agricultural extension & precision agriculture, Ethiopia and India
Fabregas, Raissa; Kremer, Michael; Harigaya, Tomoko

Case Study: Digital trading and market access platforms
Nyarko, Yaw; co-author

Case Study: Fintech for rural markets, Sub-Saharan Africa
Aker, Jenny

Water, Sanitation and Health (Ashok Gadgil)

Case Study: Electrochemical arsenic remediation of water, India
Gadgil, Ashok; Amrose, Susan; Hernandez, Dana

Case Study: Mobile water access notifications, India
Kumar, Tanu; Hyun, Chris; Post, Alison; Ray, Isha

Case Study: Resource extraction from source-separated urine
Tarpeh, William; co-authors

Case Study: Sensor-enabled cookstove use monitoring, Sudan
Wilson, Daniel

Human Capital (Temina Madon)

Case Study: Electronic job search platforms, South Africa
Shaw, Patrick; Wheeler, Laurel; co-author

Case Study: Customized e-Learning platforms, Malawi
Pitchford, Nicola

Case Study: Worker voice technologies to improve factory productivity, India
Adhvaryu, Achyuta; Nyshadham, Anant