Information Technology for Social Impact

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IT University of Copenhagen (ITU)
- Established in 1999
- Youngest university in Denmark at 20 years old with over 200+ researchers, 300+ staff and 3000+ students
- Teaching and research-based tertiary institution concerned with information technology (IT) from a Technology, Business and People perspective

Open Entrepreneurship
- Four year initiative funded by Industriens Funden
- Made up of four Danish universities: ITU, DTU, AU and AAU
- Goal is to increase the number of research-based start-ups / spin-outs by matching researchers to entrepreneurs to create a start-up team
Designing technology is to create social impact, rather than an end in itself.

ICT initiatives are best created in an open co-creation process, inclusive of all relevant stakeholders.

ICT for development in the Global South may create improve the lives of people in terms of improved livelihoods, capacity building, healthcare, all contributing to more resilient communities.
Bac., Social Anthropology, Aarhus University

Master, Computer Science, IT-University of Copenhagen

PhD, Computer Supported Cooperative Work (CSCW), IT-University of Copenhagen
Hasib Background

Educational

- BSS in Sociology, Shahjalal University (SUST), Sylhet
- Master In Development Studies (MDS), North South University
- PhD (Ongoing), ICT for Development (ICT4D), IT-University of Copenhagen
- Design Thinking, MIT
- Internet Governance, Yonsei University, Korea
- World Bank ICT and Entrepreneurship, State University of New York (SUNY) Korea

Professional

- 8 years in ICT for Development (ICT4D) Project/Program implementation
- 4 years in NGO/Development Sector
We will now discuss and give examples from three project that aim to create impact in each its unique way:

*Krishi Kontho*: impact through an agricultural information system in Bangladesh

*Rohingya mHealth*: impact through the development of a mobile healthcare infrastructure in Bangladesh

EcoKnow: Impact through the digitization of administrative practice in Denmark
Krishi Kontho is an agricultural information service that utilises pre-recorded voice messages, and SMS, that are pushed to smallholder farmers mobile phones at intervals carefully choreographed with the life cycles of their crops.

We present the design of the service, and we present the result of an eleven-month field trial in rural Bangladesh.
Christian Aid in Bangladesh

Christian Aid first worked in Bangladesh in 1972 after the Liberation War and today we work in the most vulnerable districts, using integrated approaches to disaster risk management, climate change, resilient livelihoods, emergency preparedness and response, inclusive market development, gender and social equity.
1. The field manager collects basic information on the individual farmers, such as their names, phone numbers, crop types, and planting dates.
2. The field manager enters this information into the Krishi Kontho system.
3. The agro-manager configures and adds the messages to be sent to the farmers' phones.
4. The service automatically calls the farmers and deliver the recorded voice messages to the farmers at set times and intervals. The voice message are accompanied by SMS that replicate the technical specifics of the voice messages for later use.
2. If you plant Chili directly in the field, without seeding bags, then two and half kilos of seeds will be appropriate for 33 decimals of land.
You can spray detergent to control the pest ‘Green Peach Aphid’ in your chili plants. Use 5 grams per liter of water and spray evenly and lightly.
Methods of the field trial

Mixed method approach

Baseline of crop yields and production cost

Control group

Focus groups

Semi-structured interviews

Participant observation
The Krishi Kontho service was put to its field trial in the area of Upazila Fulchari.

Ninety percent of the geographical area of Fulchari Upazila, is comprised of what is known as Chars. These islands are made of sediments naturally occurring from the gradual accretion of silt and sand in the main rivers that runs through the area.

A Char island may have a lifespan of for example ten years or so. It emerges out of the river, so to speak, only to be submerged by the river again some years later. In the interval, these numerous Char islands are used for residence and farmland by thousands of farming communities.
The findings of the field trial

<table>
<thead>
<tr>
<th>Farmers Group</th>
<th>Crop</th>
<th>Yield compared to the previous year</th>
<th>Production cost compared to the previous year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intervention group</strong></td>
<td>Chili</td>
<td>Up 14%</td>
<td>Down 4%</td>
</tr>
<tr>
<td></td>
<td>Maize</td>
<td>Up 10%</td>
<td>Down 8%</td>
</tr>
<tr>
<td><strong>Control group</strong></td>
<td>Chili</td>
<td>Up 9.5%</td>
<td>No change</td>
</tr>
<tr>
<td></td>
<td>Maize</td>
<td>Up 4%</td>
<td>No change</td>
</tr>
</tbody>
</table>

Summary of the quantitative inquiry
The displaced Rohingya now in Bangladesh are experiencing a humanitarian crises. More than 671,500 Rohingya have entered Bangladesh following the Myanmar military attacks. Many of the Rohingya in the camps are malnourished and suffer from poor physiological well-being.
The project aims to increase their access to healthcare. The partners in the project are the IT University of Copenhagen (ITU) and Friendship (an NGO).

At present, Friendship provides healthcare services to the Rohingya through a network of clinics staffed by paramedics using an mHealth application. The ITU will expand the mHealth services with Friendship.

**Funded by Novo Nordisk Fonden**
(1) Initial assessment of ongoing mHealth initiatives,

(2) Creation of action plan

(3) Extension of prenatal and postnatal healthcare

(4) Design of two new mHealth modules on nutrition and mental well-being,

(5) Integration of the new modules into the existing mHealth system, and

(6) Final assessment of the project.
Vision

The vision of EcoKnow is to create value both for the society and the participating partners by developing world-leading solutions for the effective digitalisation of knowledge work processes that empower case workers and citizens to plan evidence-based optimal process flows for the individual case, while guaranteeing both efficiency and compliance with the law.

The project brings together knowledge from leading national and international researchers, municipalities, representatives for case workers, key industrial partners, digitalisation consultants and lawyers, researching and developing methods for co-creation, technologies for real-time analysis of process logs (process mining) and adaptive case management through a multi-disciplinary situated design process.

Funded by The Danish Innovation Fund
The project follows a multidisciplinary situated design process, bringing together key vendors of work process digitalisation and business intelligence (**KMD, DCR Solutions, Infoventure** and **MAPS Italy**), key stakeholders for the dissemination and acceptance of the developed solutions (**Syddjurs, Gladsaxe** and **Copenhagen Municipality, Globeteam, Kammeradvokaten, Dansk Socialrådgiverforening, KL, OS2, CFIR, Infinit**) and leading national and international researchers from KU, ITU, DTU, Tartu University, ETH Zurich and VU Amsterdam. The researchers cover three scientific disciplines:
1) Ethnographical studies of work-practices, software development and computer supported cooperative work
2) Theoretical computer science studies in formal process models, process-mining, security and compliance monitoring and adaptive case management technologies
3) Empirical studies of the understandability and usability of work process descriptions
EcoKnow Product – DCR Graphs

Modeled in DCR graphs
a. Cases
b. Timeline
c. Sorting
d. Timeline
   a. documents
   b. journal Note

"All instance of the case"
Thanks for listening

Any questions, please?