

Information Technology for Social Impact

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Hasib Ahsan, PhD fellow, IT University of Copenhagen

WRC SYMPOSIUM, September 13th 2019

IT University of Copenhagen - Open Entrepreneurship



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 Fonden
- 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.

Lars background

Bac., Social Anthropology,
Aarhus University

Master, Computer Science, IT-
University of Copenhagen

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

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Research interests
Information and Communication Technology for Development (ICTD), CSCW,
Computer Supported Cooperative Work (CSCW)

Lars Rune Christensen's research is on the intersection between information technology and ethnography. His focus is on developing a systematic, conceptual foundation for understanding, designing and integrating computational artifacts in practice, especially in the Global South and in relation to e-government in Denmark.

Research projects (funded)
EcoKnow: Effective, Co-created & Compliant Case Management for Knowledge Workers (<https://ecoknow.org>)
TRACE (<http://www.rnm.dk>): Clinical Efficacy, Benefits and Usability of e-VNS
CompArt (<http://www.compart.ku.dk>): Computational Artifacts
Infinit: Public and Private Partnerships in Healthcare Innovation

PhD scholars
Jensik Friberg Lindgaard
Anette C.M. Petersen
Rashi Ahnan

Selected publications
Christensen, L.R., Ahnan, H., Rasmid, M. & Dos, B.K. (2016). Are You Magicians? The Collaborative Work of an Agricultural Information Service. In the Proceedings of the Tenth International Conference on Information and Communication Technologies and Development, Ahmedabad, India. ACM.
Christensen, L. R., Ahnan, H. and Ahnani, E. Krichi Kerthi: an agricultural information service in Bangladesh. In Proceedings of the 10th Nordic Conference on Human-Computer Interaction/Oulu, Norway, 2018). ACM.
Lindgaard, J.F. & Christensen, L.R. (2018) Alluvioy Machines: Encounters with Android Life. In the Proceedings of the 10th Nordic Conference on Human-Computer Interaction/Delft, Norway, 2018). ACM.
Christensen, Lars Rune & Thomas Hildebrandt (2017). Modelling Cooperative Work at a Medical Department. Proceedings of the 8th International Conference on Communities and Technologies. Troyes, France. ACM.
Christensen, L.R. (2016). On Interplay in Chemotherapy: an Ethnography of Tool in Medical Practice. Computer Supported Cooperative Work (CSCW): The Journal of Collaborative Computing and Work Practices. Volume 25, Issue 1, pp 1-36
Christensen, L.R. & Harper, E.H. (2016). The Many Faces of Computational Artifacts. CSCP 16: 12th International Conference on the Design of Cooperative Sys

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Topics
allen energy Computer
Supported Cooperative
Work (CSCW) data digital
energy environmental
futures ethics ethnography
futures Human-Computer
Interaction (HCI) Information
Systems (IS) In-
frastructure launch phd
PhD course research Sci-
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Innovation (STI) sustainability
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Study Programmes
Bachelor in Global Busi-
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Data as Relation - Govern-
ance in the Age of Big
Data
Digital Innovation &
Management MSc
Energy Futures Research
Cluster

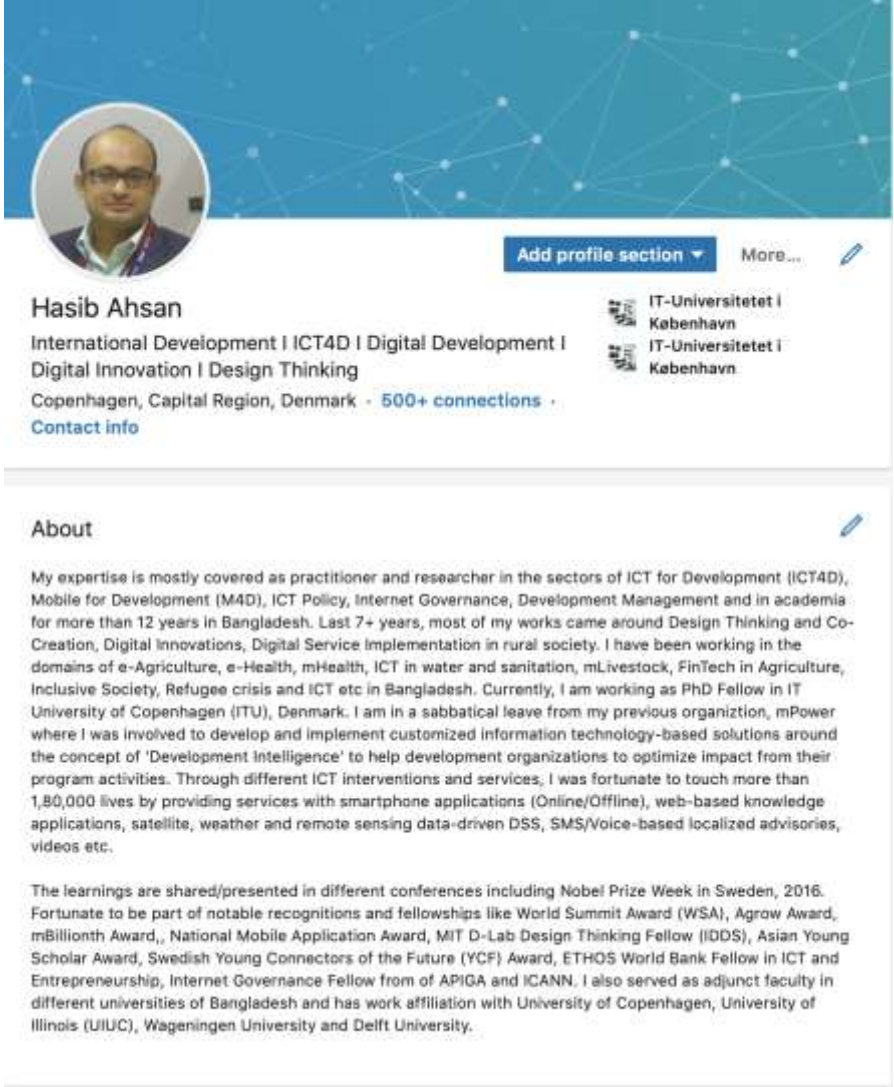
Hasib Background

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



The image shows a LinkedIn profile for Hasib Ahsan. The profile picture is a circular headshot of a man with glasses. The background of the profile banner is a blue network diagram. The name 'Hasib Ahsan' is displayed in bold. Below the name, the headline reads 'International Development | ICT4D | Digital Development | Digital Innovation | Design Thinking'. The location is 'Copenhagen, Capital Region, Denmark' and it shows '500+ connections'. There are two university logos on the right: 'IT-Universitetet i København' and 'IT-Universitetet i København'. The 'About' section contains a detailed paragraph about his expertise in ICT for Development, M4D, ICT Policy, Internet Governance, and Development Management, along with a list of awards and fellowships.

Hasib Ahsan
International Development | ICT4D | Digital Development | Digital Innovation | Design Thinking
Copenhagen, Capital Region, Denmark · 500+ connections · [Contact info](#)

About

My expertise is mostly covered as practitioner and researcher in the sectors of ICT for Development (ICT4D), Mobile for Development (M4D), ICT Policy, Internet Governance, Development Management and in academia for more than 12 years in Bangladesh. Last 7+ years, most of my works came around Design Thinking and Co-Creation, Digital Innovations, Digital Service Implementation in rural society. I have been working in the domains of e-Agriculture, e-Health, mHealth, ICT in water and sanitation, mLivestock, FinTech in Agriculture, Inclusive Society, Refugee crisis and ICT etc in Bangladesh. Currently, I am working as PhD Fellow in IT University of Copenhagen (ITU), Denmark. I am in a sabbatical leave from my previous organization, mPower where I was involved to develop and implement customized information technology-based solutions around the concept of 'Development Intelligence' to help development organizations to optimize impact from their program activities. Through different ICT interventions and services, I was fortunate to touch more than 1,80,000 lives by providing services with smartphone applications (Online/Offline), web-based knowledge applications, satellite, weather and remote sensing data-driven DSS, SMS/Voice-based localized advisories, videos etc.

The learnings are shared/presented in different conferences including Nobel Prize Week in Sweden, 2016. Fortunate to be part of notable recognitions and fellowships like World Summit Award (WSA), Agrow Award, mBillionth Award, National Mobile Application Award, MIT D-Lab Design Thinking Fellow (IDDSS), Asian Young Scholar Award, Swedish Young Connectors of the Future (YCF) Award, ETHOS World Bank Fellow in ICT and Entrepreneurship, Internet Governance Fellow from of APIGA and ICANN. I also served as adjunct faculty in different universities of Bangladesh and has work affiliation with University of Copenhagen, University of Illinois (UIUC), Wageningen University and Delft University.

Three of our projects

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

Briefly put

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.



The partners



Our global work



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.



Make better decisions

OUR SERVICES

IMPACT

- 228+ Communities
- 258+ Livelihoods Organisations
- 85+ Organisations
- 47+ Job Training
- 13+ Countries



RESEARCH

RESEARCH



গণ উন্নয়ন কেন্দ্র
Gana Urriyan Kendra



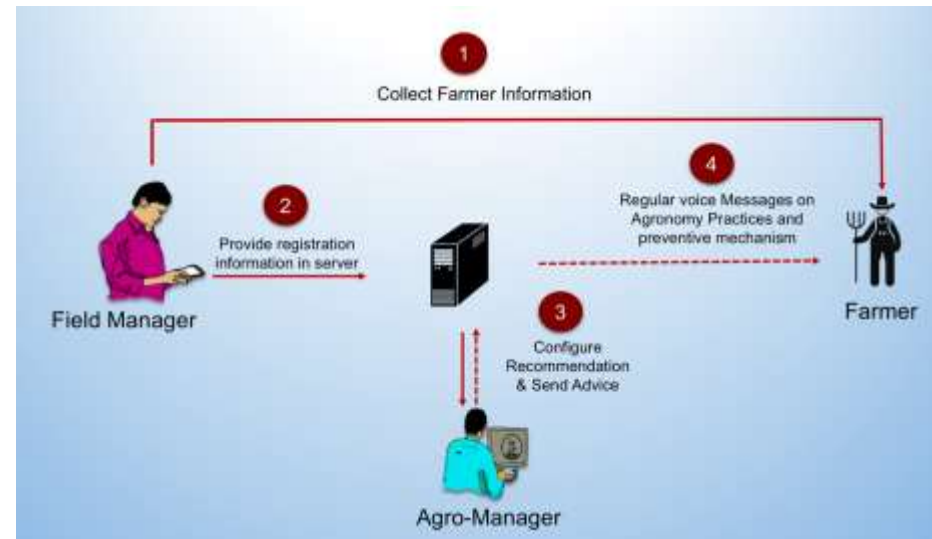
RESEARCH

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Krishi Kontho design

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.



২. ভুট্টার জমিতে জেঁা
থাকা অবস্থায়, (৩ / ৪) বার
চাষ দেওয়ার পর মই দিয়ে
মাটি বুর বুরে করতে হবে
এবং আগাছা ও আর্বজনা
পরিষ্কার করে নিতে হবে।

*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.*



**Recording of voice messages with
agricultural advice for the Krishi Kontho
service.**

মরিচের জাব পোকা দমনের জন্য হলুদ রং এর ফাঁদ ব্যবহার করা, গুড়া সাবান (৫গ্রাম/ লি) পানিতে মিশিয়ে ভালভাবে স্প্রে করা, অথবা ইমিডাকো রপ্রিড গ্রুপের ঔষধ নির্দিষ্ট মাত্রায় ব্যবহার করা।

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 deployment area

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

| Farmers | Crop | Yield compared to the previous year | Production cost compared to the previous year |
|--------------------|-------|-------------------------------------|---|
| Intervention group | Chili | Up 14% | Down 4 % |
| | Maize | Up 10% | Down 8 % |
| Control group | Chili | Up 9,5 % | No change |
| | Maize | Up 4 % | No change |

Summary of the quantitative inquiry

Rohingya mHealth: Increasing Access to Healthcare for the Rohingya Community in Camps in Bangladesh

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.



Rohingya mHealth: Partners

The project aim 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



Rohingya mHealth: Project activities

- (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.



Effective co-created & compliant adaptive case management for Knowledge workers

EcoKnow Innovation Foundation Grand Solutions Project 2017-2021

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

Law
text

Modeled in
DCR graphs

The screenshot displays the EcoKnow software interface. The main window shows a complex DCR graph with nodes and edges, representing a process model. The graph is titled "HOW to Underretting v3" and includes various sub-diagrams and data points. On the right side, there is a "Highlighter" window displaying a legal text document. The text is highlighted in blue, and the highlighter interface includes a search bar and a list of search results. The text in the highlighter is in Danish and discusses legal provisions related to "Underretning" (notification) and "DCR" (Data Collection Rule).

Open Case Manager

Syddjurs KOMMUNE

Mine sager > Matias

Matias

Tilføj indsats
Tilføj Journalnotat

Aktiviteter der har behov for din opmærksomhed

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Velkommen Nicklas Pape Healy

Hjem Mine Sager Sag Proces Processer

198781 OBS!

Tilføj vigtig information...

Sager | Tidslinje

2019
Marts

07/03-2019 19:8779 Orientering om modtagelse

07/03-2019 19:8779 Orientering om modtagelse

07/03-2019 19:8760

07/03-2019 19:8750 Orienteringskrivelse fra

"All instance of the case"

Thanks for listening

Any questions, please?