

INFO 6600: TECH FOR UNDERSERVED COMMUNITIES

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TODAY

- Discussion sign up
- Discussion: ICTD 1.0 vs. 2.0 (Fabian to lead)
- Case studies in Agriculture
- Activity

DISCUSSION SIGN UP

Date	Name		Date	Name
9/1	Fabian 😊		10/13	
9/8			10/20	
9/15			10/27	
9/22			11/3	
9/29			11/10	
10/6			12/1	

DISCUSSION (45-50 MIN)

ICT4D 2.0: The Next Phase of Applying ICT for International Development

Richard Heeks

Richard Heeks is one of the leading ICT scholars in the world. Professor of Development Informatics in the Institute for Development Policy and Management, part of the School of Environment and Development, he is also the Director of Centre for Development Informatics at the University of Manchester.

He is one of the pre-eminent and highly-cited academics in the emerging sub-discipline of "ICT4D" - ICTs for Development, and has written six books, more than 30 refereed articles, and over 100 other papers and reports.

In developing countries, the ICT sectors are lagging behind because there is lack of human resources. How can we go about developing this resource?

Of course the obvious answer is through education, particularly building up skills at undergraduate and postgraduate level. However, I would add two riders to that. First, that you need a careful analysis to see what skills are actually required in the ICT sector: for example, while technical skills are undoubtedly the foundation, we also find that softer skills - what one might call 'information systems' skills - are



BREAK (10 MIN)



TECH + AGRICULTURE



WHY IS AGRICULTURE A COMMON DOMAIN IN ICTD?



WHAT ARE THE CHALLENGES RURAL FARMERS FACE? CAN TECH HELP?

- Poverty
- Lack of education
- Low-literacy
- Language challenges
- Lack of knowledge
- Cultural norms/superstitions
-

TWO AGRICULTURAL ICTD USE CASES

- Digital Green
- Avaaj Otalo... now Awaaz.de

AVAAJ OTALO



AVAAJ OTALO: PREMISE

- Agriculture provides a means of livelihood > 50% of India's population.
- Most farmers are smallscale; (78% of farms are five acres or less).
- The Government invests heavily in its agricultural extension program
 - Trained field officers help communities address common problems and learn about new farming techniques or technologies.
- In a survey by the International Food Policy Research Institute, only 6% of respondents reported interacting with an extension officer.
- Farmers need access to high-quality agricultural information and advice.

AVAAJ OTALO: IDEA

- An interactive voice application for small-scale farmers.
- Farmers use basic mobile phones to interact.
- Paper: 7-month study with 51 farmers,
 - conducted interviews, collected usage data
- First time any of the farmers participated in an online forum of any sort

AVAAJ OTALO: FEATURES

- Announcement board: messages for all farmers
- Radio program re-plays
- Question and Answer forum
 - Most used
 - Must listen to all questions sequentially

AVAAJ OTALO: EXAMPLE Q&A

AO: Welcome to Avaaj Otalo! You can get to information by saying a single word, or by dialing the number. To ask a question, say 'question', or dial 1; to listen to announcements, say 'announcements', or dial 2; to listen to the radio program, say 'radio', or dial 3.

User: *(dials 1)*

AO: OK, you want to ask a question. To record your own question, press 1. To listen to the questions and answers of other farmer friends, press 2.

User: *(dials 1)*

AO: OK, you want to record a question. Please say your question slowly and clearly after the beep.

User: *How can I protect my cotton crop from mealy bugs?*

SYSTEM INTERACTION

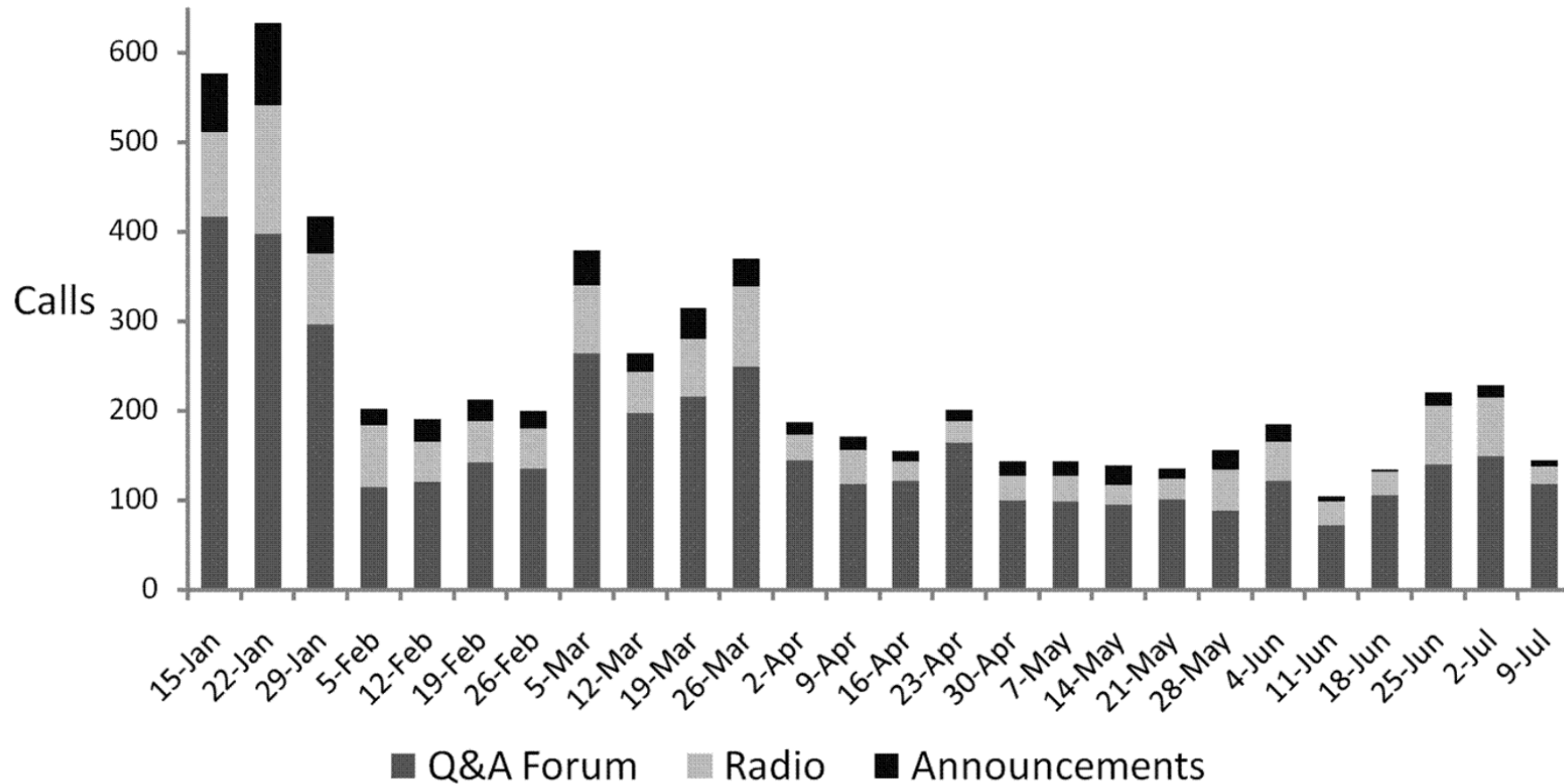


Figure 4. Number of calls to the three sections of AVAAJ OTALO, by week.

SYSTEM INTERACTION

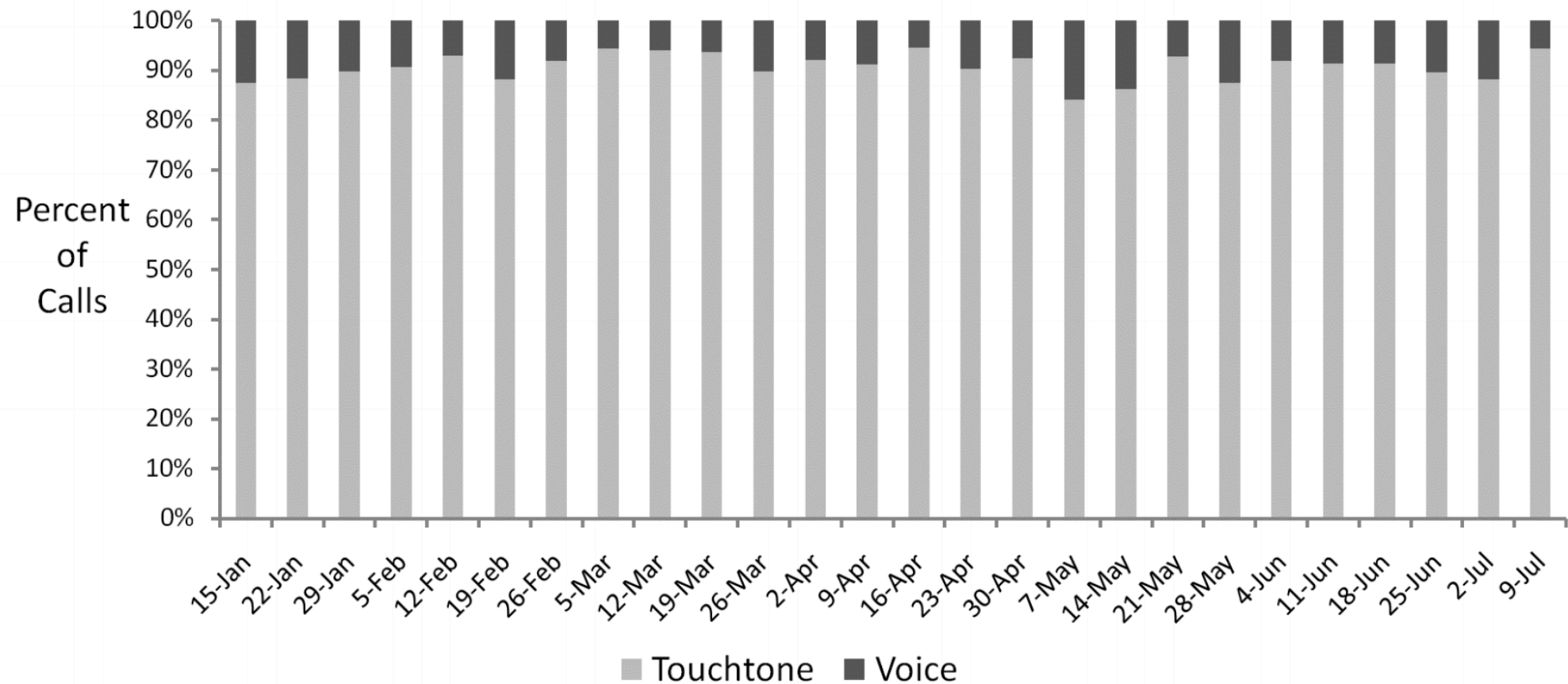


Figure 6. Input mode selection, by week.

IS THE SYSTEM USEFUL FOR FARMERS?

[By listening to other farmers' questions] I get new information about the new kinds of pests and diseases that are troubling crops and animals. I can be prepared for them. I can listen to other farmers' experiences and I benefit from this.

Yes, I have benefited [from listening to questions from other farmers]. One farmer had asked a question about how to deal with the hot wind that damages millet crop in this region. [The answer on AO] advised him to plant Rajka millet on the edges of the plot. I did that too and it saved my crop from being ruined. That was very useful.

LOCAL VS. EXPERT ADVICE?

I do not answer questions on AO because farmers cannot give proper answers to people's questions. Only an expert can do that. I know some answers but they are not *pukka* [authoritative] and there are *pukka* answers on AO, that is why I like AO. [A DSC staffer] gives accurate answers that work for [farmers] and so I prefer listening to him.

LOCAL VS. EXPERT ADVICE?

At one point a conflict developed between two users, one of whom was upset that his question was inaccurately responded to by the other. A third user sided with the question asker:

[Addressing the responder], you are my friend and it pains me to tell you this, but with regret I want to tell you to please stop posting answers, or else your number will be removed from Avaaj Otalo.

The responder defended himself by deferring to the authority of DSC.

[Addressing the asker], I have not responded to any of your questions; answers are actually given by DSC. Still if you feel that I directly give answers, you can check it. Also if you feel that I am guilty, then you can take necessary steps and deactivate my number.

USING AO FOR ENTERTAINMENT

Hello. Earlier [another user] had [made recordings] like this. Are you making fun of DSC by asking such questions? Or are you asking for information useful to farming? You have not been given this number for such mischief or for passing time. You have been given the number to obtain quality and timely information from DSC. Why did you register your number if you wanted to do such mischief? In a short time, I will also complain to [DSC].

ACKNOWLEDGING SOCIAL STATUS

Why would I use such a system [like AO]? Everybody's answer has the same value no matter how correct or incorrect it is. I am already respected in my community as someone knowledgeable in agriculture and my answers on [AO] will be treated just like anyone else's off the street. How does AO benefit people like me? In fact it does not even recognize the knowledge and wisdom I have gathered over the years.

OTHER USES

AO as Business Consulting

One Avaaj Otalo user ran a shop selling farming supplies as a means of supplementing his income as a farmer. Soon after AO was launched, he began posting questions to the forum asking for detailed comparisons of particular pesticides. Eventually, DSC staff discovered that he was using the responses to decide which pesticides to stock in his shop.

OTHER USES

AO as Advertising

In another case, several users posted questions asking about how to deal with wild pigs that were destroying their crops at night. One user described a strobe light he had built to effectively scare the pigs away. After touting the contraption's effectiveness, he provided contact details for anyone interested in purchasing it. Shortly after, another user offered for sale a competing solution he had developed using a siren, claiming that it was a much cheaper approach.

SUSTAINABILITY MODELS

- The Avaaj Otalo service was toll-free for the academic project/paper
- How can it be sustained?
- Spun-out company: Awaaz.de

BREAK (10 MIN)



ACTIVITY (20-25 MIN)

- Both of today's use cases are success stories.
 - Digital Green led to successful non-profit, lots of support, funding, etc.
 - Awaaz.de led to a spun-out, for-profit company that is doing well.
- Based on your new found knowledge of ICTD 1.0 and 2.0, list things that you think led to the success of these projects (as opposed to failure).
- How do you think “success” can/should be defined for these projects?
 - When can a project claim “success”?
- How do you think Ag + Tech space might have changed in the last 5-6 years?

NEXT WEEK

- Debate: The Digital Divide (reading posted)
- Case studies in Education (coming soon)