Giving People Voice

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Internet users

People with access to the Internet. More info »

Data source: World Bank, World Development Indicators - Last updated October 1, 2010

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The Internet for the Rest

- Within the next decade, the rest of the World will gain access to the Internet
- Designing for the future of the Internet means addressing *contextual diversity*
- For most users, it will not be via a computer, or in an office
Who’s Missing?

• Access ≠ Active Participation
• Large populations in Africa, Asia, and Latin America (and here!) coming online
• Poor, indigenous, uneducated, low-literacy, vernacular speakers getting left out
• Incredible diversity is embedded within these communities
The Technocratic Fallacy

- **Assumption**: Everyone will learn to read and write English; and will use computers running a traditional OS

- **Responses**:
  - It will take another two generations
  - Still won’t cover everyone
  - Will be significantly less diverse
Internet as Space; Internet as History

• More of the world’s commerce, governance, communications and leisure is being mediated by technology

• The web serves as a record of the events, ideas and sentiments of our generation

• Will the poor and dis-enfranchised be systematically excluded?

• Can we make their voices heard?
* Introduction

* Awaaz.De: Voice Social Media
* LocalGround: Paper Mapping
* Summary and Conclusion
Awaaz.De: Social Media for the Rest
Farmers Need Information

- Knowledge about inputs
- Dealing with pests and diseases
- New practices, technologies
- Access to markets, capital, weather, government programs, etc.
Agricultural Extension?

- Traditional extension programs are costly; still don’t reach most farmers
- Low-literacy, local language, remote
- Ignore local experience and expertise
- Ag-dealer - de facto local knowledge hub
Giving Farmers a Voice
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குழு சின்னம்: 12.10.02

குழுவின் வளர்ச்சி விளையாட்டு 1080

குழுவின் கணிதப் பாது 1600

Group Investments

Bank balance 6850
Design for Low-literacy

- Leverage existing representations
- Use icons that are familiar and realistic
- Provide guidance throughout the task
- **Numbers are more accessible than text**
- **Vernacular speech is most successful**

Published at ACM CUU 2003 (Best Paper Award)
Orality

• **Oral communities** have their own ways of representing and managing information

• **Aggregative** - tolerant of repetition, redundancy and inconsistency

• **Situational** - tied to specific situations and people; not abstract concepts

• **Dialectic** - reinforced by dialogue

*Orality and Literacy: The Technologizing of the Word, Walter Ong, 1982*
Awaaz.De

- Farmers and experts use an IVR-based voice system to:
  - record questions
  - provide answers
  - listen to prior questions and answers
  - Popular questions re-broadcast on radio
  - Usenet w/ voice, radios and dumb phones

Published at ACM CHI 2010 (Best Paper Award)

w/ Patel, Chittamuru, Jain, Dave
Development Support Centre (DSC)

Non-governmental organization (NGO) working on enhancing natural resource management and agricultural productivity.
Pilot Deployment

• Eight months (Dec 2008 to July 2009)
• Toll-free phone number
• 63 small & medium farmers
• All males between 18-60
• Across 4 regions of Gujarat
Novelty effect

13 new users
- 690 ques / 286 ans (122 from farmers)
- Lurking constituted 73% of traffic
- Average of ~5 minutes per call
45 / 63 called at least once

Top 3 callers were:
- Progressive, experimental farmers
- Age less than 30
- Geographically remote
- Education less than 10th grade

Top ten callers = 80% of calls

Power law distribution
91% of calls used touchtone.
Current Status

• Launched as hosted online service

• Other Applications:
  • Agriculture #2 (w/ DG and Pradan)
  • Education (w/ Sesame India)
  • Labor Rights (w/ Labor Voices)
  • Health, Women’s Empowerment
  • Entertainment
Research Directions

• Organizing content for oral users
• Establishing trust, reputations
• Using data to improve ASR
• Automatic tagging
• Connecting to diaspora
• Impact assessment
Local Ground

Mapping for the Rest
Communities & Planning

• Marginalized communities are left out of the planning process
• Dams, irrigation, infrastructure, public projects
• This is as common in our own backyard as anywhere else
Nystrom Village Housing
Maritime Center
Nystrom Elementary
Martin Luther King Jr. Park

**NURVE** (Nystrom Urban ReVitalization Effort)
Giving Youth a Voice
Giving Youth a Voice

- Residents know a lot more about an area than is in planning documents.
- They know what they want to happen.
- How can we document local geospatial knowledge and ideas?
- Little to no access / experience with PCs, mapping software.
LocalGround.org

1. Print
2. Annotate
3. Scan or photograph
4. Upload
5. Edit
6. Visualize

To Appear at ACM DEV 2010 w/ van Wart and Tsai
1. Print Bar-Coded Paper Map

Print a Bar-Coded Map

1. Search
   kennedy high school, richmond ca
   go

2. Print
   - Landscape
   - Landscape + Margin
   - Portrait
   - Portrait + Margin
   - Generate Map

3. View Results
   - Map Image
   - KML File
   - Print PDF

1. Mark your favorite place at Kennedy. Why do you like it?
2. Mark a place that isn't being used well. How you might improve it?
3. Mark a place that you've never noticed before today. Why do you think you haven't noticed it before?
2. Annotate Map in Color

[Map with various annotations]

1. Mark your favorite place at Kennedy. Why do you like it?
2. Mark a place that isn’t being used well. How you might improve it?
3. Mark a place that you’ve never noticed before. Why do you think you haven’t noticed it before?
3. Scan or Photograph Map
4. Upload Maps

You're Uploading A Scanned Map

You're here because you have a paper version of a printed map and you'd like to send a scanned version to trace into OpenStreetMap. Your scan should be a reasonably-high resolution (200+ dpi) image file, such as a JPEG. A PDF file will not work.

Name:
Group:
Mapping Event:
Description:
Upload File:
5. Edit Data
6. Visualize and Present Data
Nystrom Village Housing

Maritime Center

Nystrom Elementary

NURVE (Nystrom Urban ReVitalization Effort)

Martin Luther King Jr. Park
Street Light Outages

View map here: http://tinyurl.com/streetlight-outages-2010

NAME: S 6th Street
LOCATION 1: 377 S 6th Street
LOCATION 2: between Maine Ave and Virginia Ave
SERIAL NUMBER 1: 77971
SERIAL NUMBER 2: N/A
SERIAL NUMBER 3: N/A
POLE TYPE: wood
RECORDED BY: Joyce
COLLECTED ON: 20 April 2010
COMMENTS: N/A
LAT/LONG: 37.92693596360593,-122.36391390

NAME: Florida Avenue
LOCATION 1: 1006 Florida Avenue
LOCATION 2: just East of S Harbor Way
SERIAL NUMBER 1: 110398385
SERIAL NUMBER 2: 7892
SERIAL NUMBER 3: 892
POLE TYPE: wood
RECORDED BY: Lola
COLLECTED ON: 20 April 2010
COMMENTS: N/A
LAT/LONG: 37.92935400611216,-122.35983569

NAME: S Harbor Way
LOCATION 1: 350 S Harbor Way
LOCATION 2: between Maine Ave and Virginia Ave
SERIAL NUMBER 1: 110233293
SERIAL NUMBER 2: N/A
SERIAL NUMBER 3: N/A
POLE TYPE: wood
RECORDED BY: Sarah
COLLECTED ON: 20 April 2010
Visioning a New Nystrom
Nystrom Village Housing
Maritime Center
Nystrom Elementary
Martin Luther King Jr. Park
NURVE (Nystrom Urban ReVitalization Effort)
Basketball Court
visioning, basketball

Basketball court
People on the corner, outside of the methadone clinic.
Engaging City Hall
Lessons Learned

- Paper made the process fun
- Minimal training & supervision
- Obtained “out-of-band” information
- Digitization makes information legitimate; allows comparison with formal sources
- Impact requires continued engagement
Current Status

- LocalGround.org
  - Open source prototype
  - Developing hosted version
  - Exploring other applications

- Nystrom
  - Still underfunded
  - Students discouraged; but want to continue
  - Y-PLAN plans to go national w/ Local Ground
What's the Big Picture?
Drawings and Voices?
Will it Scale?

- Labor is cheap in developing world
- “Cognitive surplus” in developed
- Process over time; on demand
- Don’t need much structure initially
- Anything is better than status quo
Conclusion

• Designing for the future of the Internet requires addressing contextual diversity

• Reaching new audiences means unpacking assumptions of computing interfaces

• Combining low-tech interaction with online, distributed processing has both immediate value and immense potential
Thanks for all the fish!

- Kuang Chen, Rose George, Paul Goodman, Kurtis Heimerl, Akshay Kannan, Neha Kumar, Meena Natarajan, Neil Patel, Joyce Tsai, Sarah van Wart
- CCD, DSC, Digital Green, Pradan, Labor Voices, Sesame India, Y-Plan, Center for Cities and Schools, Kennedy High School
- Farmers of Gujarat and Kids of Richmond!