Microsoft

Design Principles to Create Sustainable Community Media Networks

Appropriate Computing Technologies
for Development (ACT4D), IIT Delhi

gramvaani
Voice of the Village
Technology. Media. Development

Microsoft Research
Faculty Summit
2015
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Joint work with…

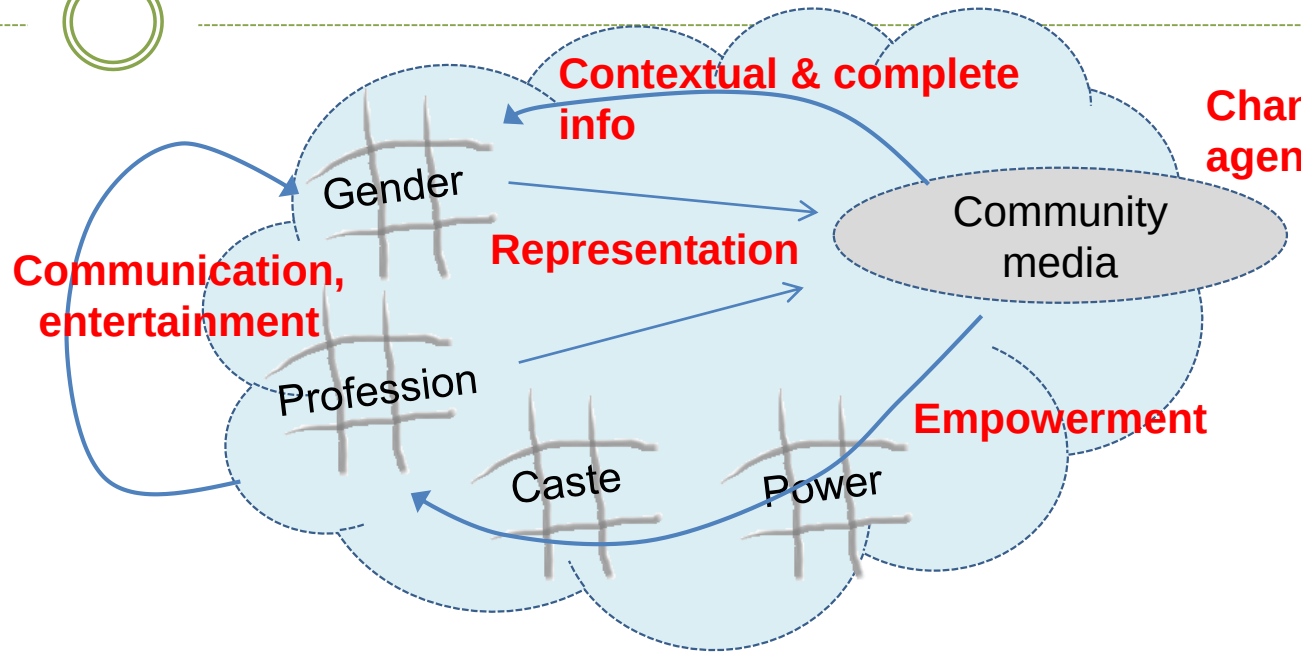
- The Gram Vaani team: Mayank, Parminder, Bala, Zahir, Kapil, Dinesh, Sayonee, Aparna, Rohit Singh, Rohit Jain, Ritesh, Paro, Sultan, Lokesh, Aravindh, Biswajit, Sangeeta, Smita, Veer, Saraswati, Suvasis, Ashok, Preety, Deepak Jha, Deepak Kumar, Deepak Jaiswal, Shweta, Aarti, Vinod, Ruby, Amrita, Ritu, Vasanti, Ashish Tandon, Dasami Moodley, Vidya, Shambhu

- IIT Delhi students: Arvind, Dipanjan, Prateek, Abhishek Katyal, Rohit Bhatia, Deepak Martin, Amitsingh, Gaurav Luthra, Gaurav Agarwal, Quamar Niyaz, Sameer, Rahul, Asheesh, Piyush Agarwal

- Collaborators: CEDPA, Sesame Workshop, PFI, Development Alternatives, Gurgaon ki Avaaz, JEEViKA, PHRN, Gram Swaraj Abhiyan, Digital Green, CREA, Jean Dreze, Reetika Khera, and many others

Community media in rural areas in India

- Variety of mechanisms
  - Community radio
  - Community video
  - Wall newspapers
  - …



खबर लहरिया

हवै अधियार

भरा हवै गन्दा पानी
नहीं बनै देत नाला

मारे में डाकू

पशु अस्पताल मा लाग हवै ताला

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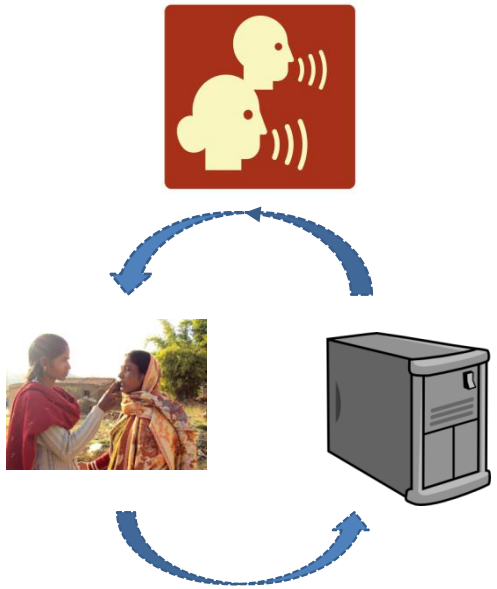
Mobile Vaani: A voice based community media platform using phones

1. Speak



Users speak and listen to contributions over our intelligent IVR platform

2. Moderate + Share

Content moderated locally and centrally, then published on IVR, web

3. Connect to stakeholders

Inputs connected to government (local + other) , NGO partners, social enterprise partners

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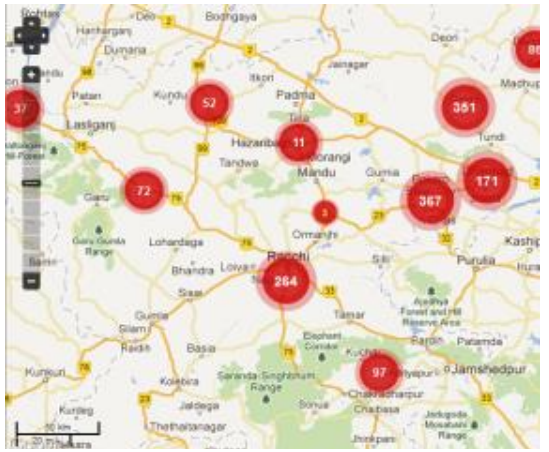
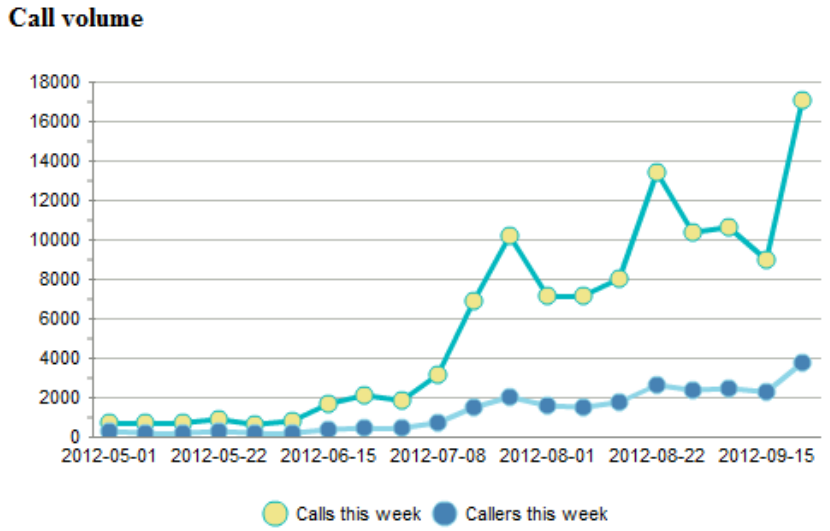
Traction on Mobile Vaani

- 90% community sourced content
  - Local news
  - Interviews and informational services
  - Opinion on topical issues
  - Guided discussions and campaigns
  - Grievances and feedback on government schemes
  - Cultural artifacts including folk songs and poems

- Current reach
  - 10,000+ calls per day
  - 8min average call duration
  - 1,000,000+ unique callers
  - 2,500,000+ households reach





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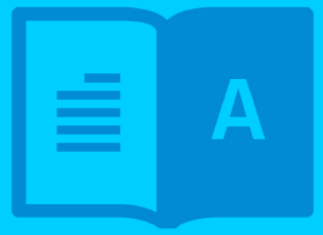
Context: To help people understand through examples

STORIES OF
VAANI CREATE BEHAVIOUR CHANGE FOR SOCIAL GOOD
EDUCATION



I listened to a campaign on early marriage. After hearing other people's experiences with early marriage I decided to only marry after I have finished school.
–
Kishore, Student Bihar

STORIES OF
VAANI CREATE BEHAVIOUR CHANGE FOR SOCIAL GOOD
HEALTH

I comment on the health channel and spread awareness among people on health services like free medicines and Mamta Vahan. Through my contributions this helped me gain respect in the community and helped my work as an Asha.
–
Kunti, Asha Worker

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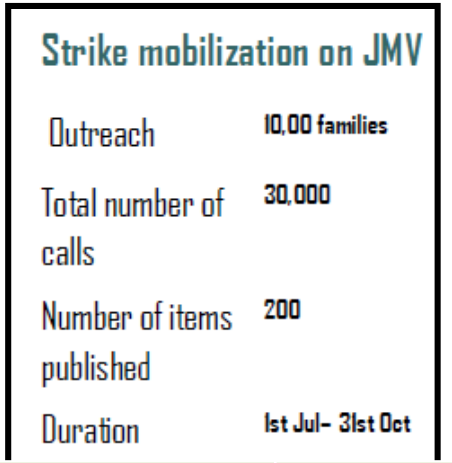
Completeness: To help people see other viewpoints

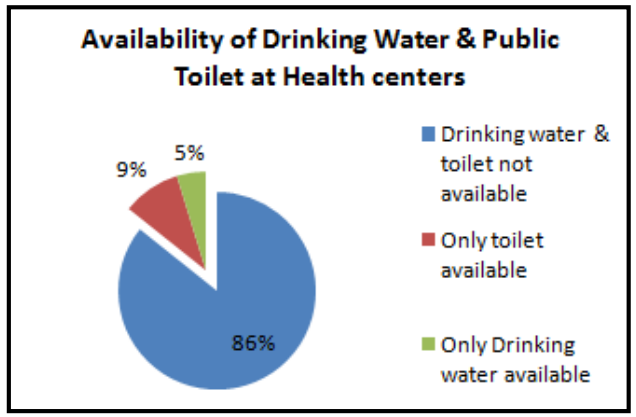
Para Teachers Mobilize State wide strike using Jharkhand Mobile Vaani

Jharkhand, state wide: Month long para-teachers strike paralyzes all schools across the state. Demand for permanent positions and increased salaries. Parents rebut with accusations of negligence of duty. Teachers send their petition to the government. District administrators respond with their point of view. A great example of multi-stakeholder discussions on the platform

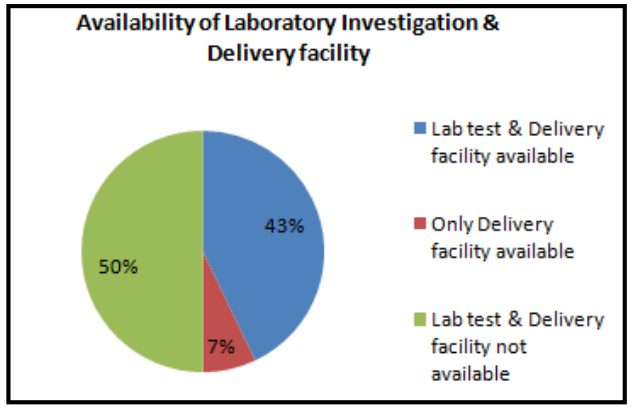


	Strike update	Problems caused	Valid cause	Invalid cause	Request to government	Request to para teachers
Para-teachers	24%	7%	31%		37%	
Activists	10%	24%	20%		31%	3%
Students		43%	4%	34%		
Parents	4%	38%	9%	38%		
Govt						90%
Media	53%	17%	23%		5%	

Platform for collective action and accountability



- Stories carried by several regional media publications
- Testimonials about 5 health facilities that have improved since campaigning started on Jharkhand Mobile Vaani
- Estimated 100,000 people thus indirectly impacted



Koderma, Jharkhand: Drive against alcoholism especially illegal sales started on Mobile Vaani by women volunteers. Eventually led to termination of a local shop in the neighborhood

Dhanbad, Jharkhand: MV campaign on migration brought out a pending widow pension case that required maintenance of a local migrant worker register to make payments. Over the next few months, several other areas demanded uptodate registers in their villages

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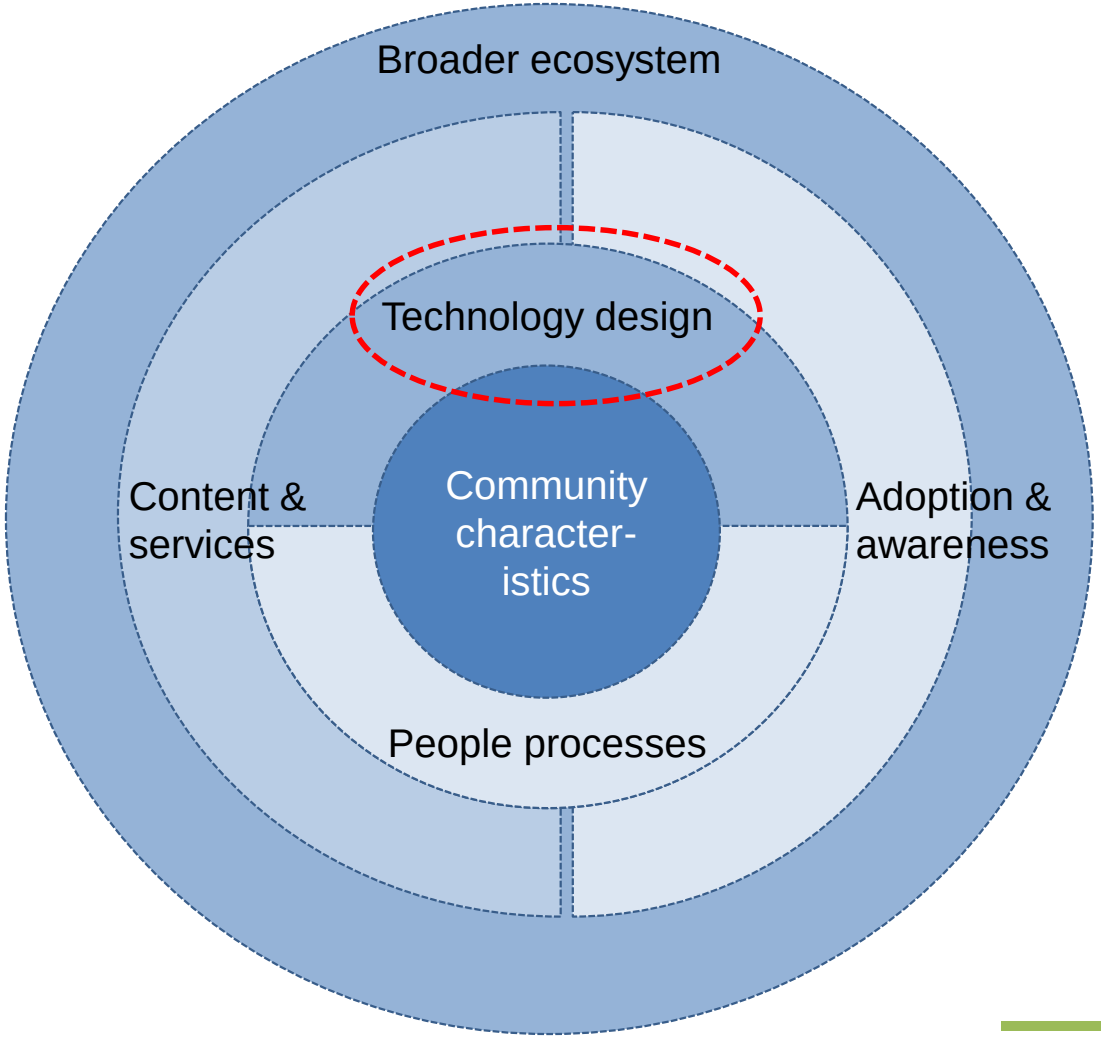
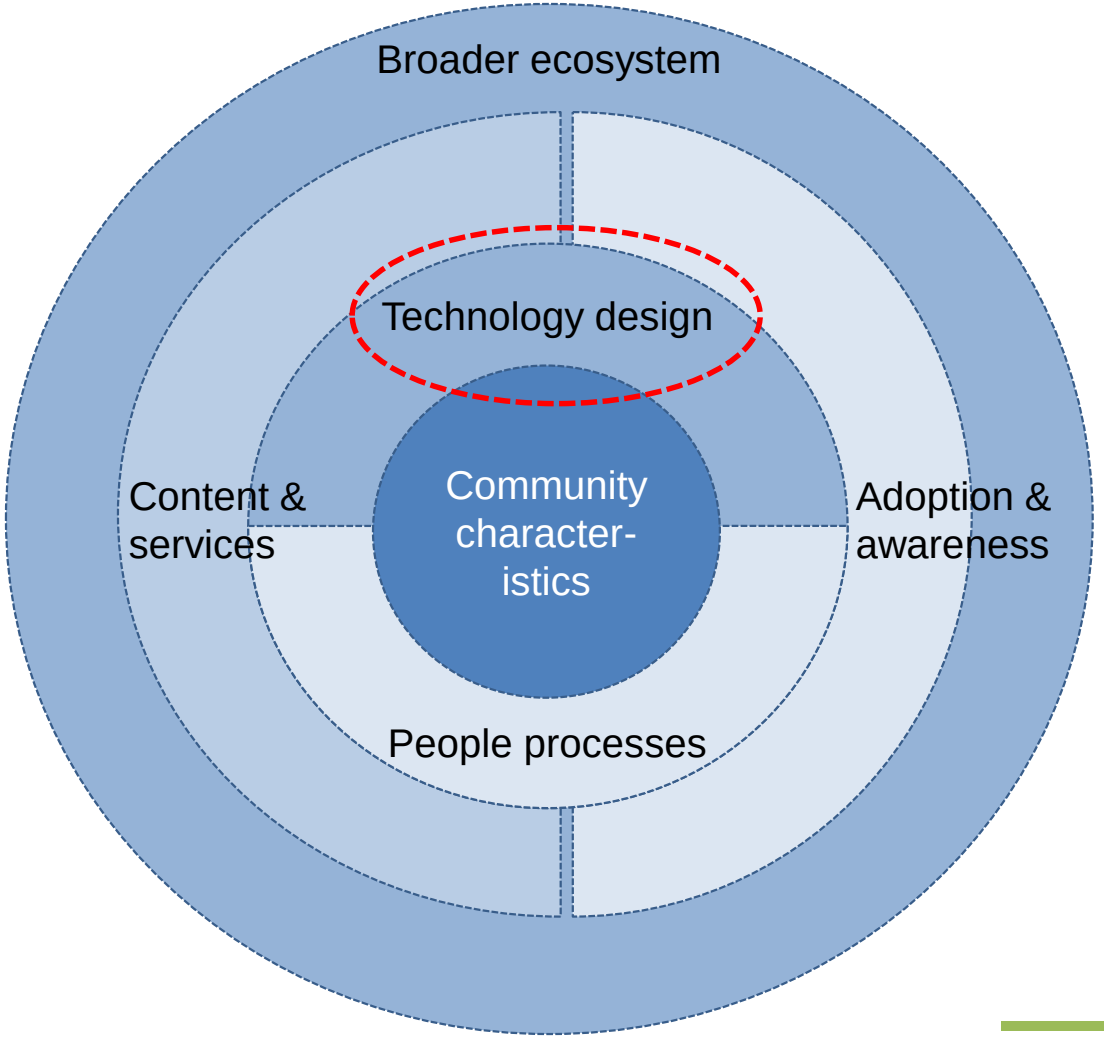
Our learning: The ICTD onion



Our learning: The ICTD onion



Software engineering and design processes

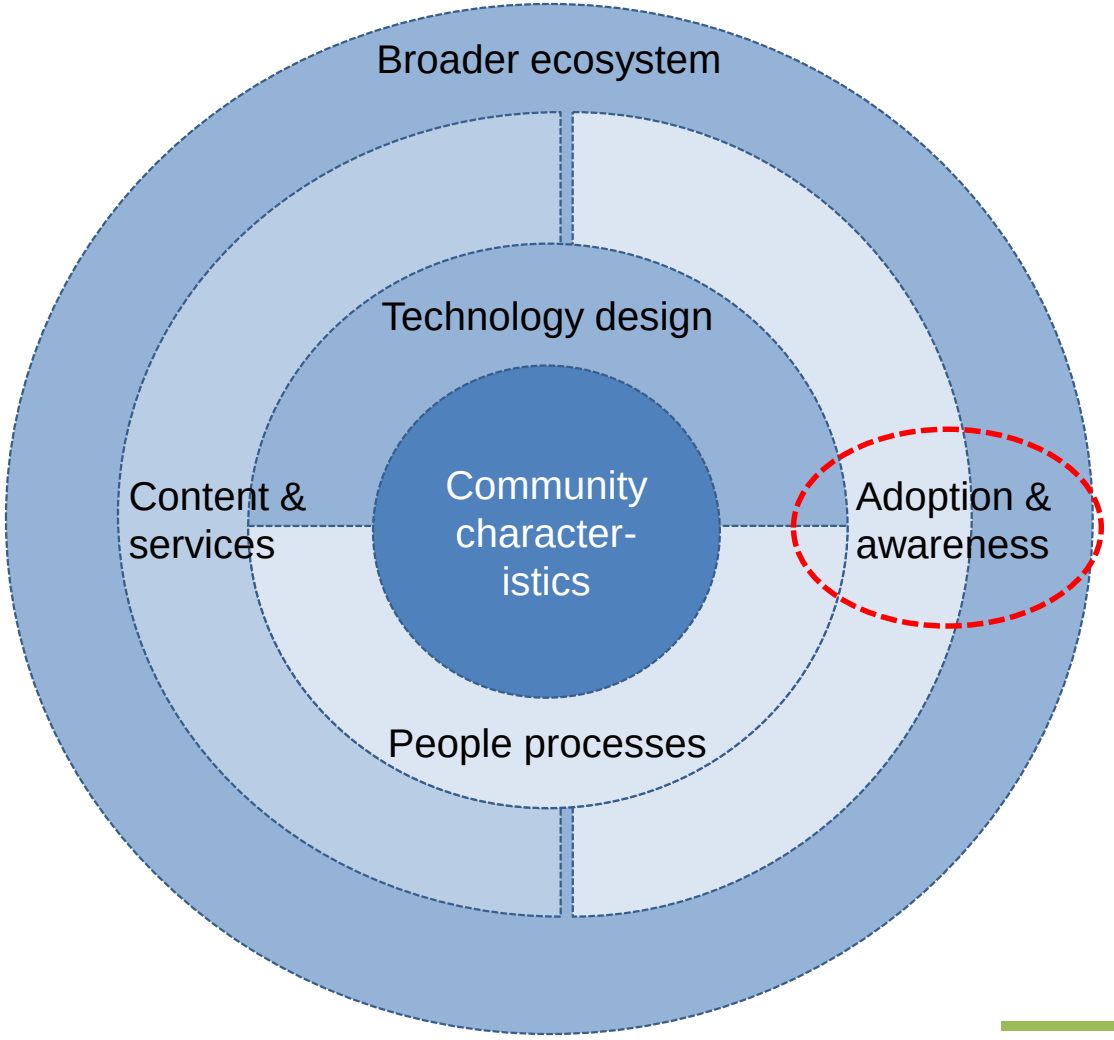
Technology architecture

Ease of use, task completion, data collection accuracy, cost

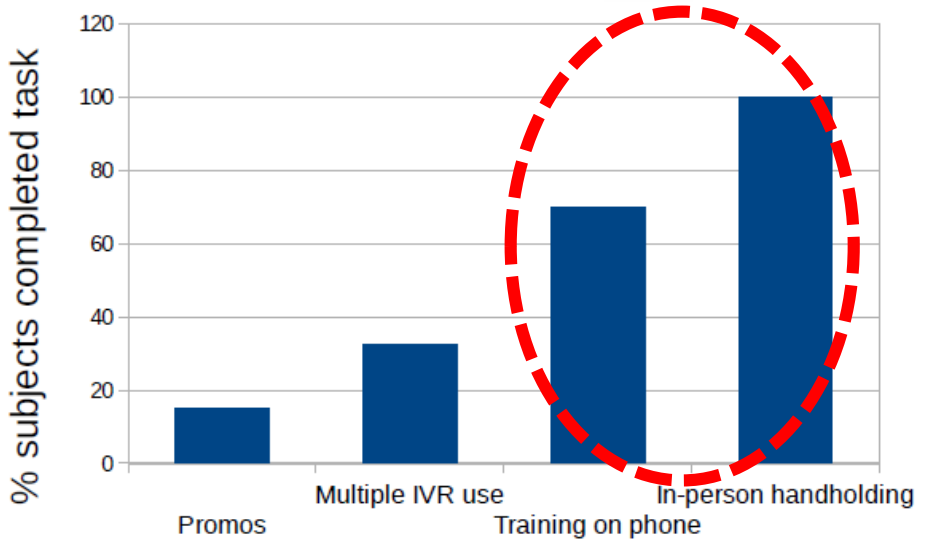
Machine learning, recommendations

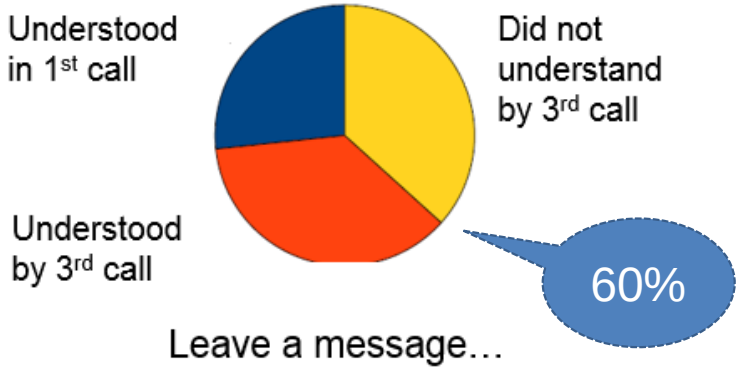
Technology support and scaleup

Unpeeling the onion: Adoption and awareness

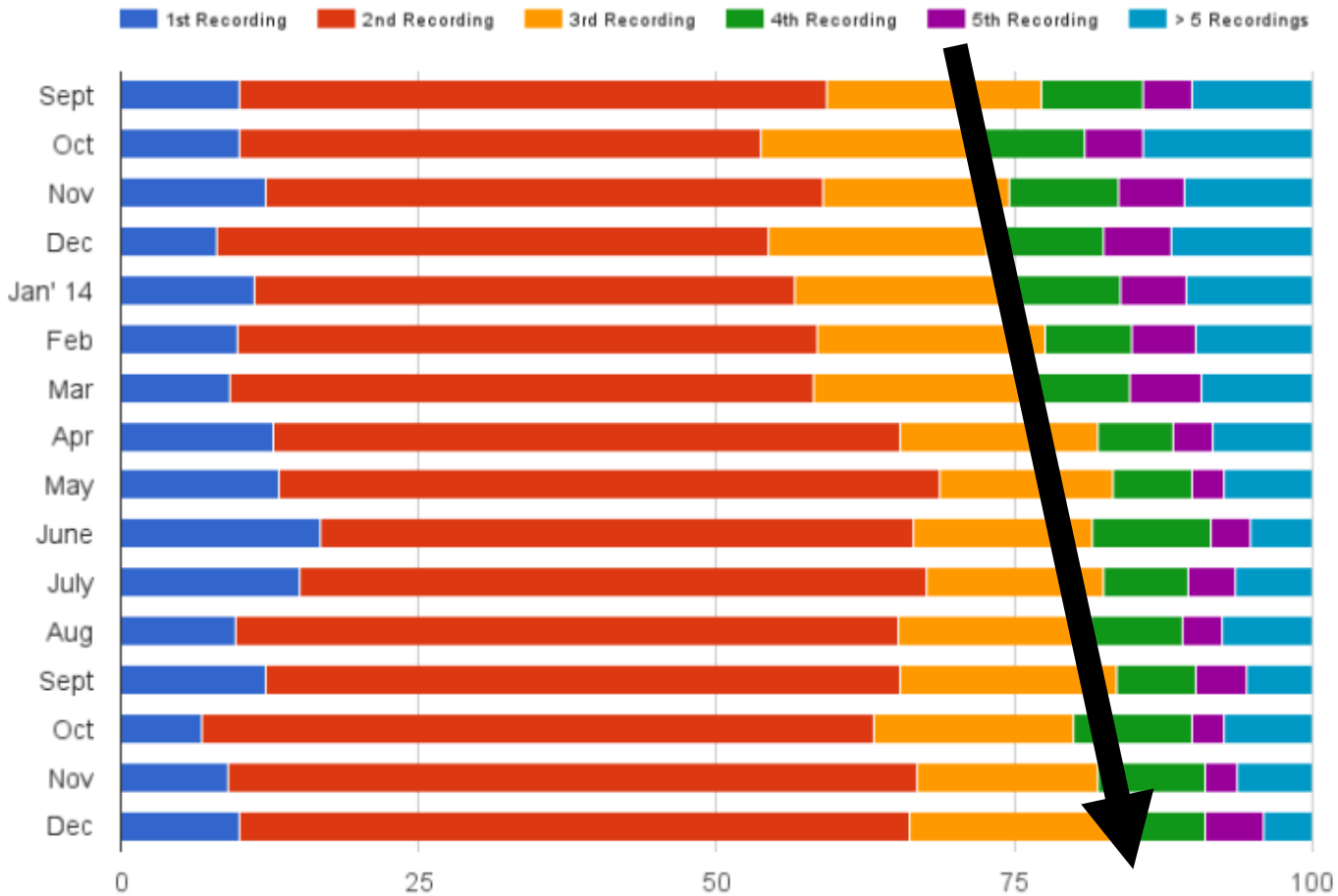


User training and capacity building





Offline in-person training/demos are imperative



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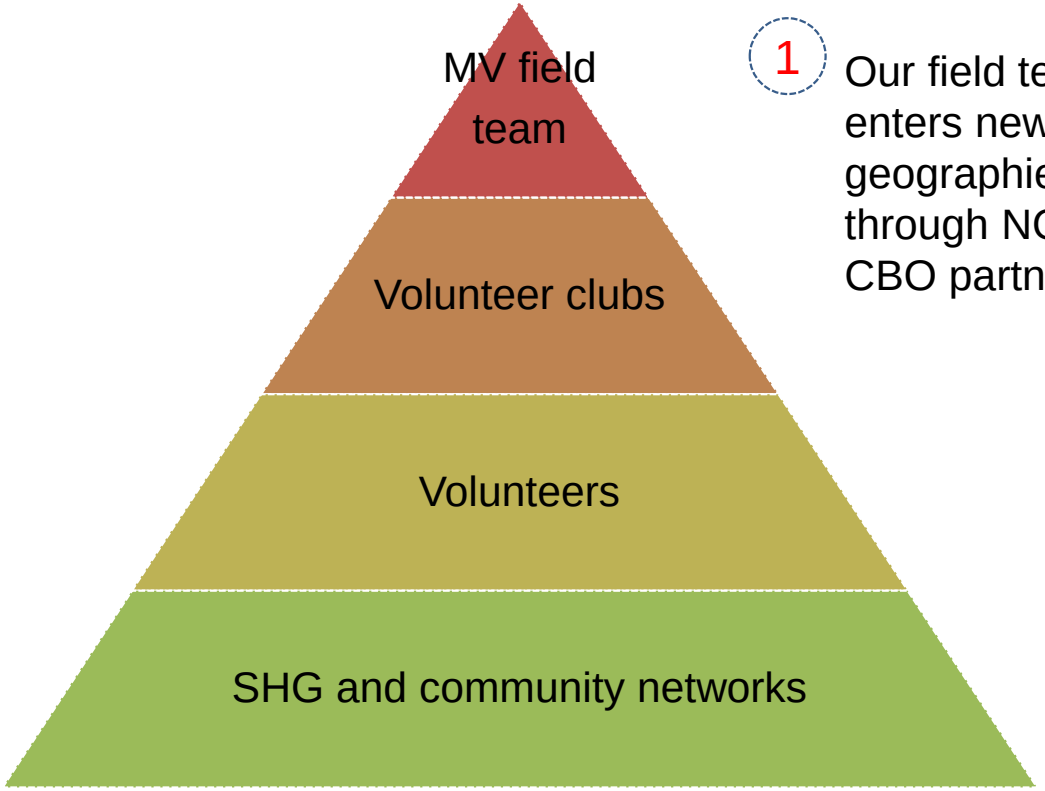
Offline methodology for acquisition and training of users



1 Our field team enters new geographies through NGO/ CBO partners

2 We begin with identifying volunteers from the community

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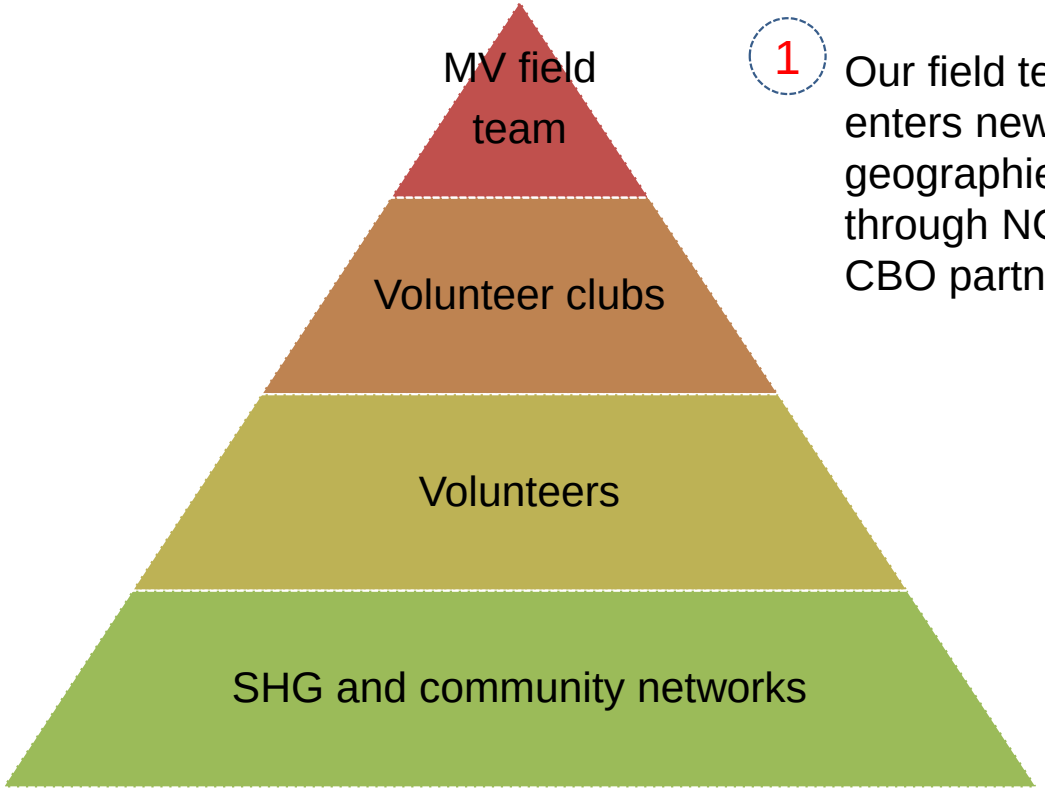
Need for institutional structures and community ownership

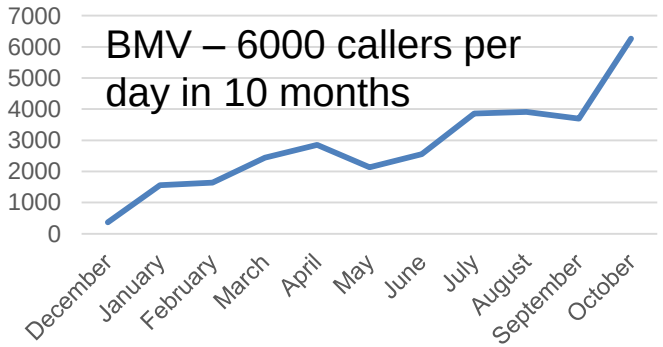


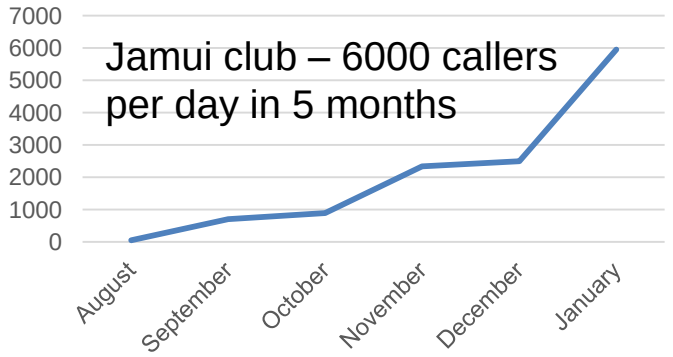
1 Our field team enters new geographies through NGO/ CBO partners

2 We begin with identifying volunteers from the community

3 Over time, volunteers are then organized into clubs

4 Clubs are mentored closely by the field team





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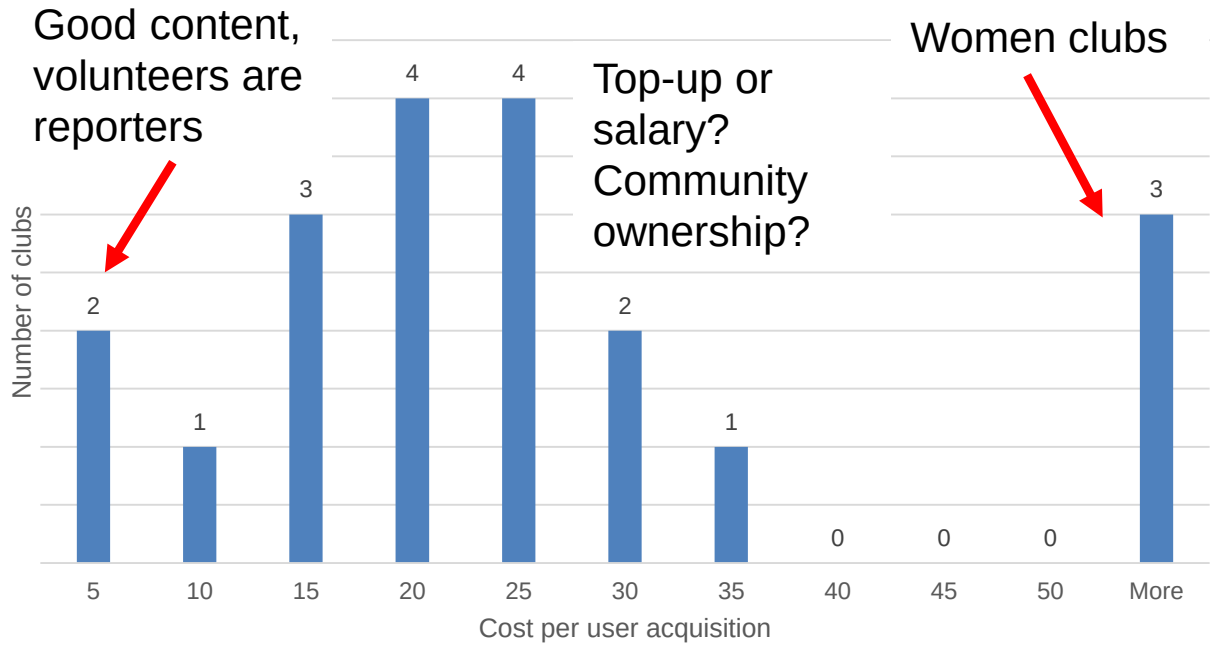
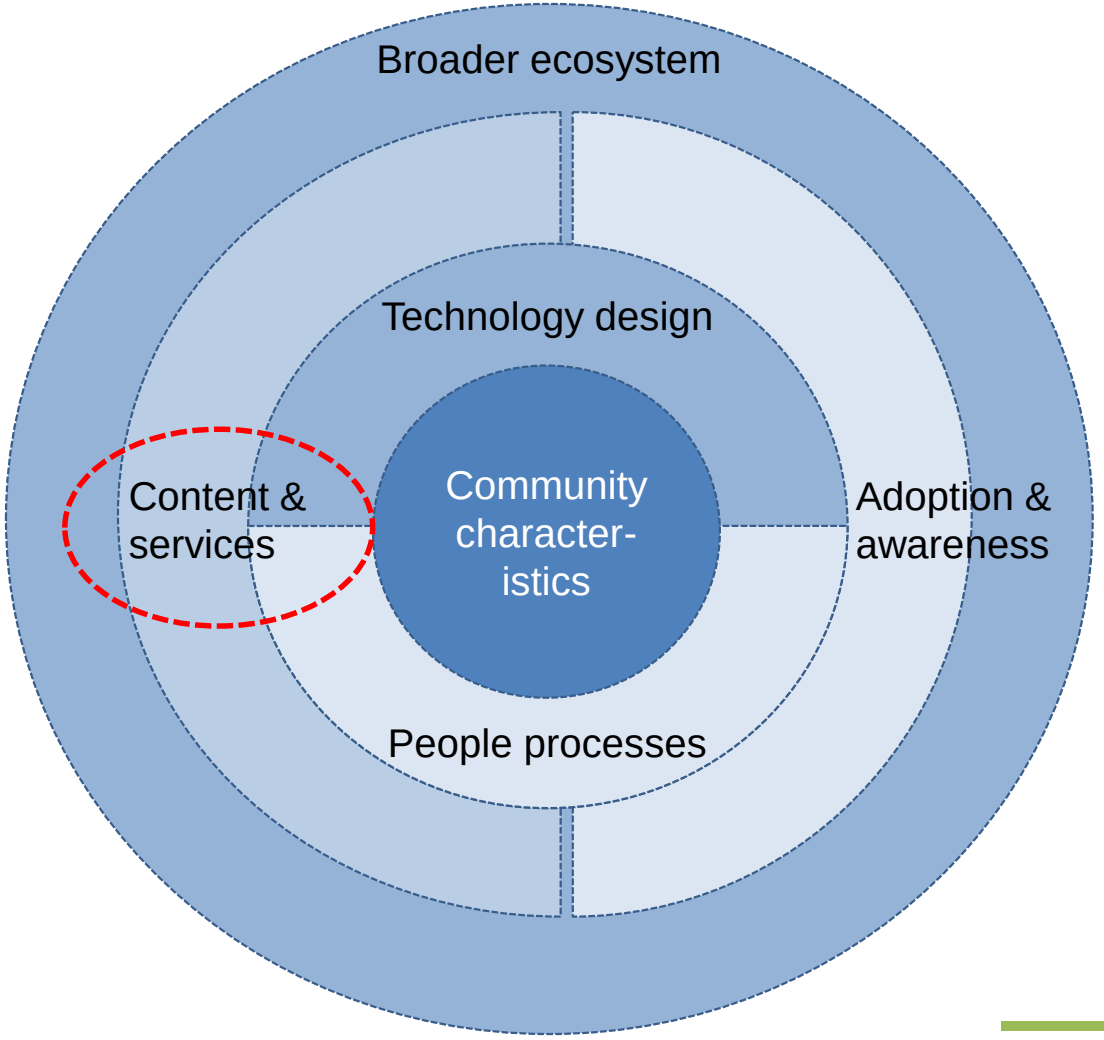
Decision to grab low hanging fruit, or go after harder social impact?

High degree of heterogeneity in club effectiveness

Formula driven growth can be achieved, but what is our mission?
Investment Vs grants?

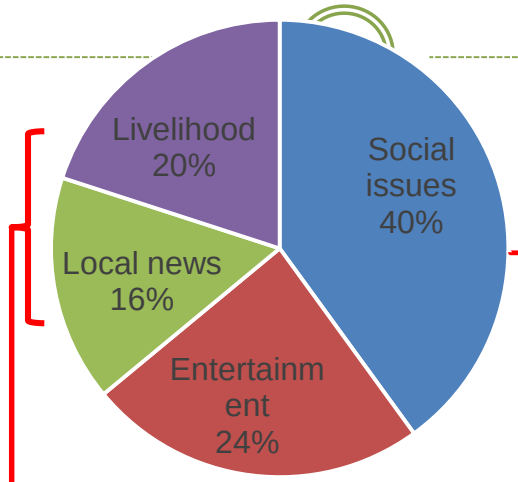


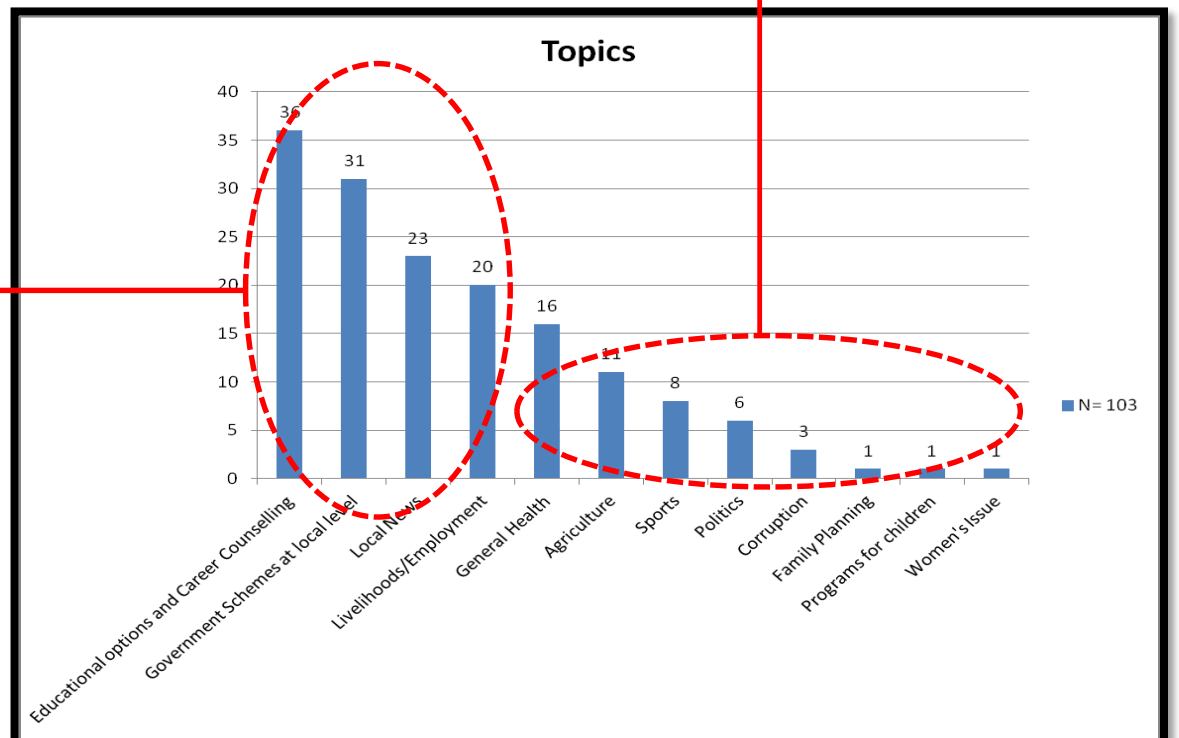
What services do users actually want



Field visits & volunteer feedback to understand information needs

- What is MV for you?
- What do you want to hear on MV?
- Challenge: How to change the character of the system?





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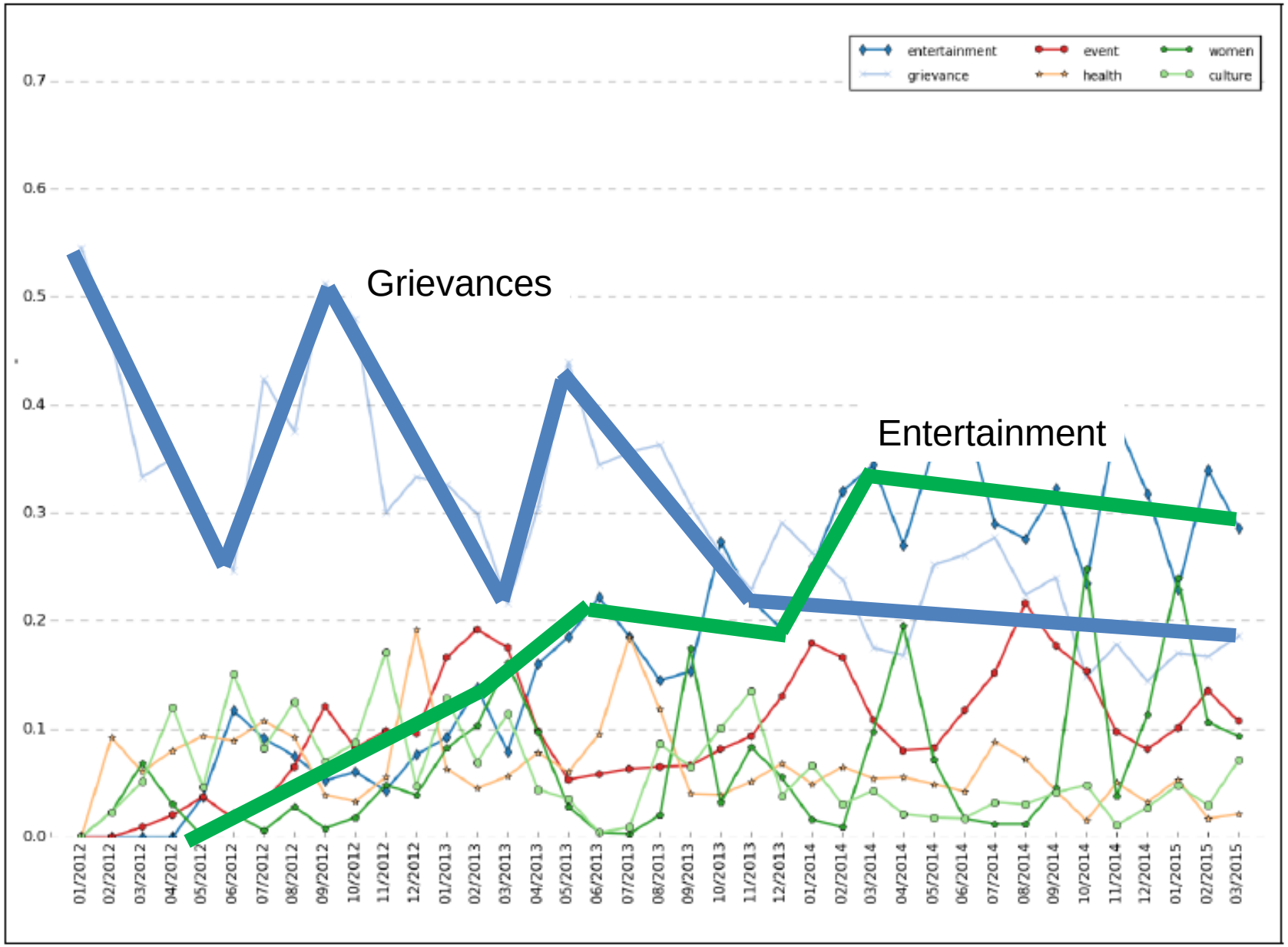
We are a media company!

- Agriculture solutions
- News
- Straight from the heart
  - Contributions on travel experiences, childhood memories
- Story telling
  - Solicit ideas on legends and folk tales
  - Famous writers like Premchand and Bhishm Saini
- My life and times
  - Interviews of vegetable sellers and local merchants
- Employment channel, Children's slot, Talent competition…



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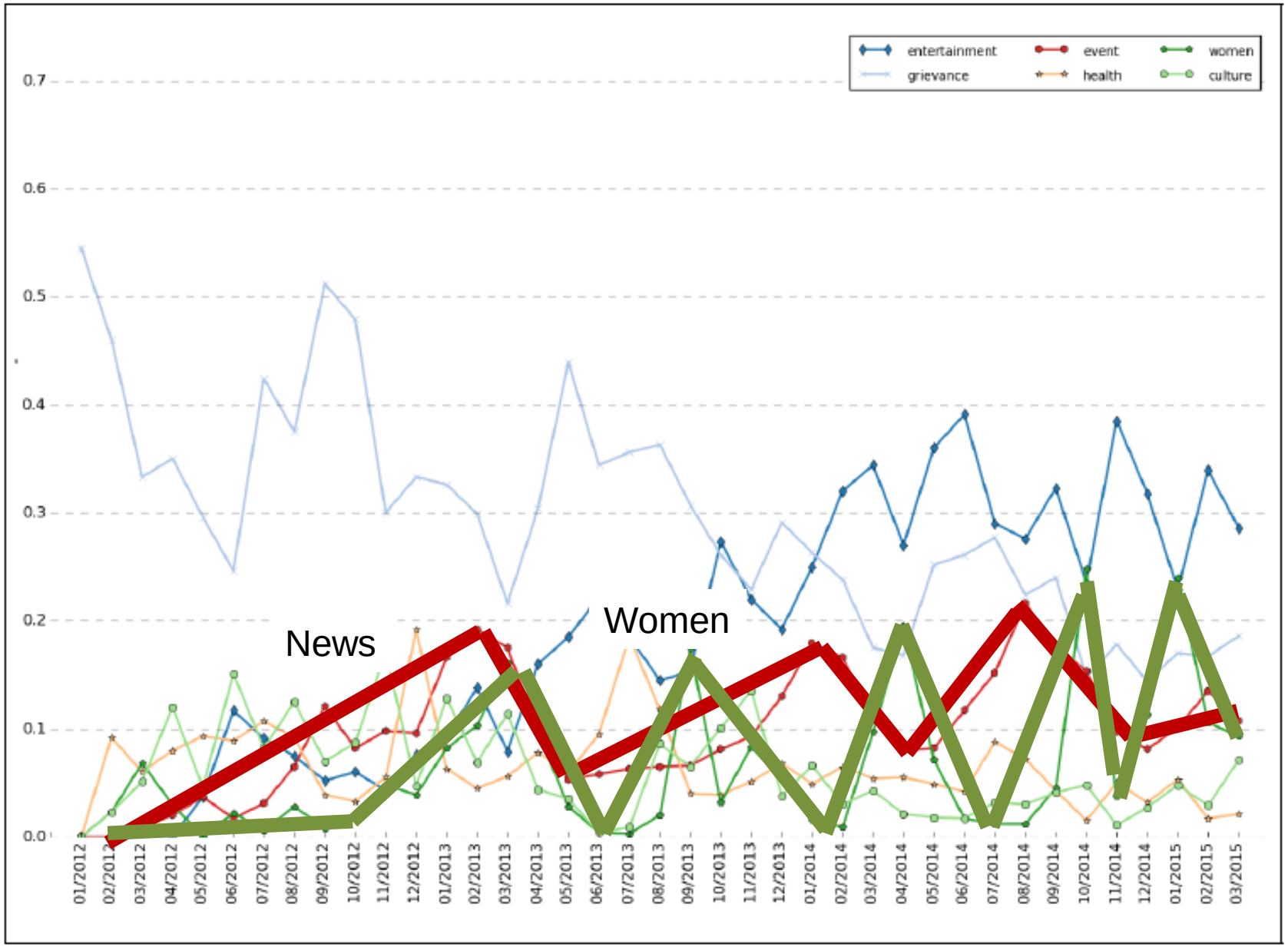


Systematizing information contextualization: Campaign methodology

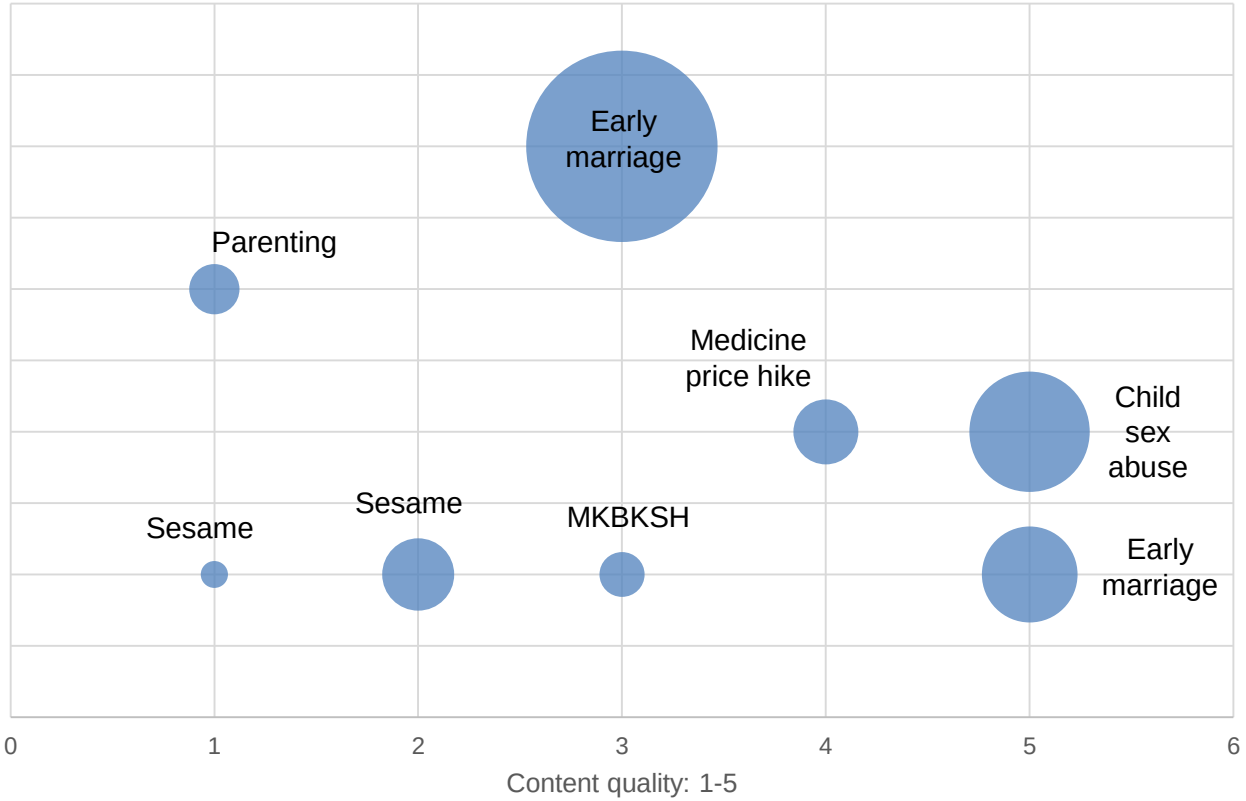
Selection of appropriate campaign method → Develop content plan and message matrix together with partner → Weekly episodes on different topics through guided sourcing of messages from community → Analysis and impact assessment

Need to explore more. Impact? → Game

Non-contextual comments

Bulk of our campaigns → Discussion

"Mass" content does not work → Serial episodes



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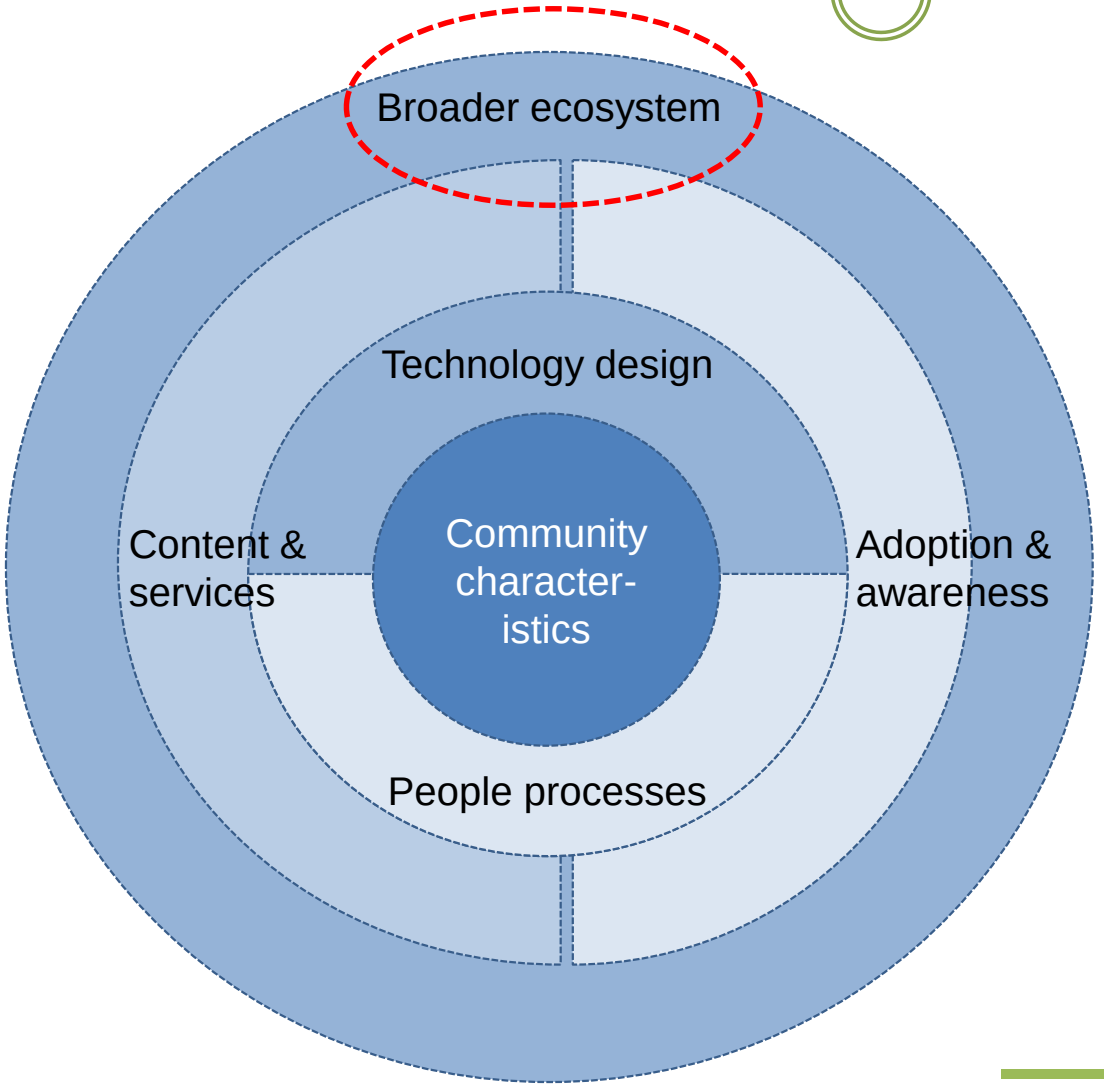
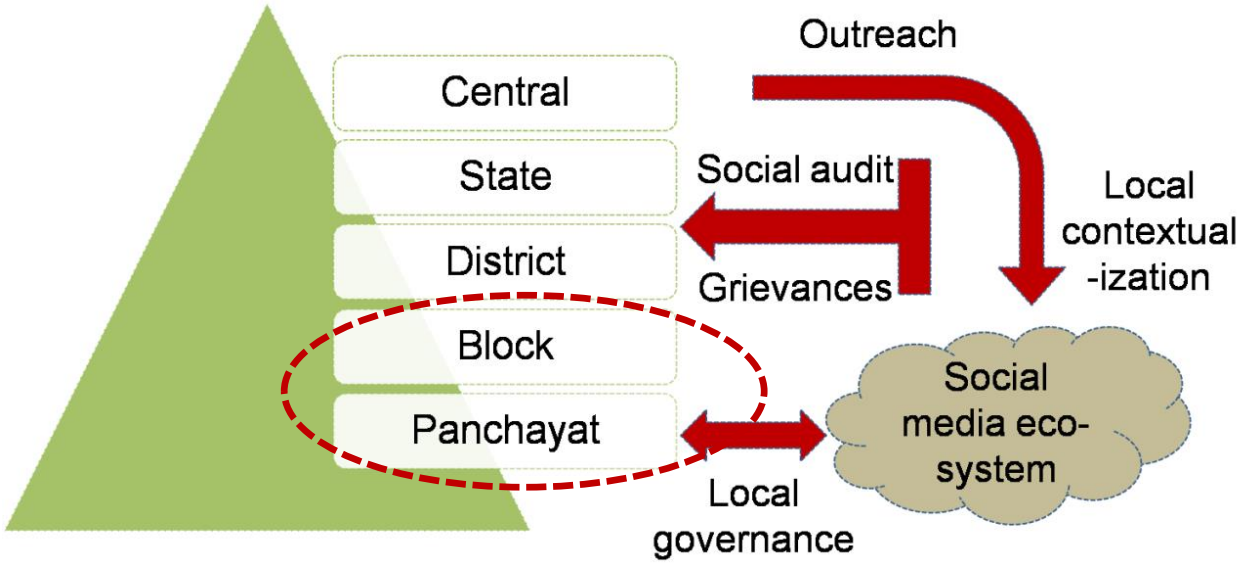
Scaling impact: Understand the political economy of the ecosystem



Platform to help communities build local accountability loops?



Fear of escalation can makes things work at the local level

But can this be formalized for scaleup?

Needs volunteer training and mentoring

People reported on a few officials who were demanding bribes for UID enrollment. The site was visited by the block development officer and the officials were fined

A village ignored by health agencies was reported to have had 3 malaria deaths in the last one week. A mobile ambulance was immediately dispatched, with fumigation equipment and first aid

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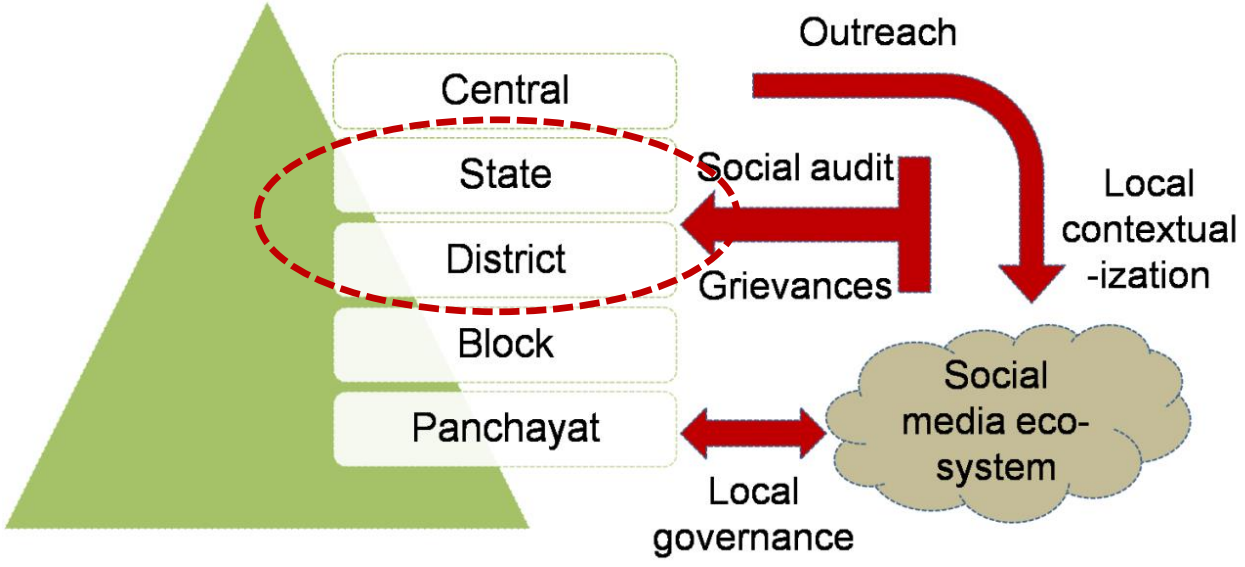
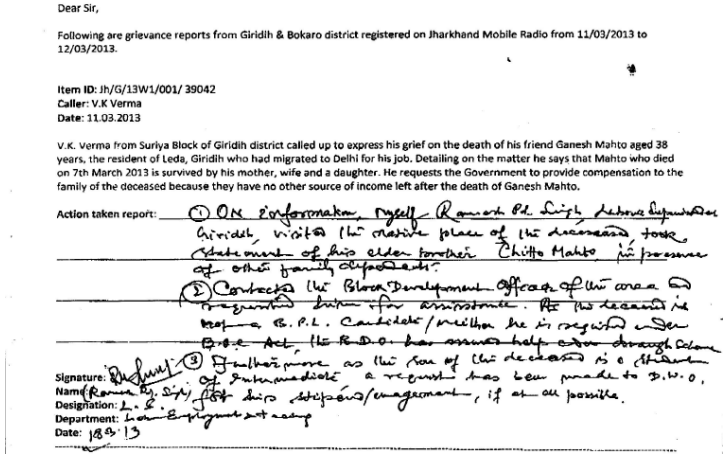
Or, formally build accountability loops?



Adoption largely depends on conscientiousness of officer

However, inefficient in implementation since it is top-down

Pioneering a civil society assisted grievance redressal system for RSBY



Dear Sir,

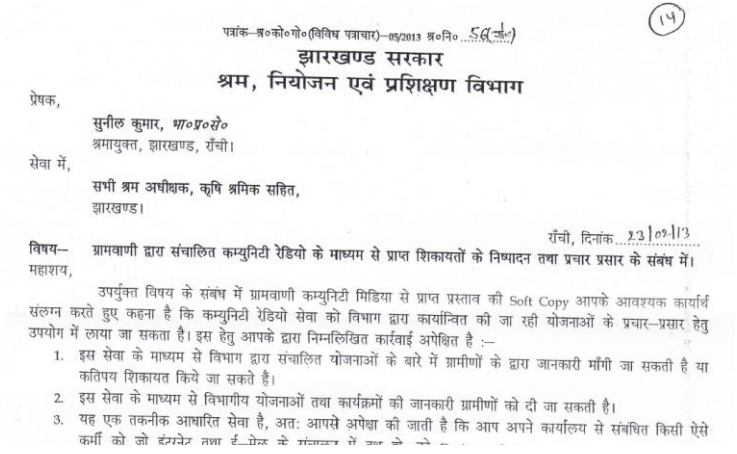
Following are grievance reports from Giridih & Bokaro district registered on Jharkhand Mobile Radio from 11/03/2013 to 12/03/2013.

Item ID: Jh/G/13W1/001/ 39042
Caller: V.K Verma
Date: 11.03.2013

V.K. Verma from Suriya Block of Giridih district called up to express his grief on the death of his friend Ganesh Mahto aged 38 years, the resident of Leda, Giridih who had migrated to Delhi for his job. Detailing on the matter he says that Mahto who died on 7th March 2013 is survived by his mother, wife and a daughter. He requests the Government to provide compensation to the family of the deceased because they have no other source of income left after the death of Ganesh Mahto.

Action taken report: ① On information, myself Ramesh Pd. Singh, Labour Supervisor Giridih, visited the native place of the deceased took statement of his elder brother Chitto Mahto in presence of other family dependents.
② Contacted the Block Development Officer of the area and requested him for assistance. As the deceased is not a B.P.L. Candidate/neither he is required under B.O.C. Act, the B.D.O. has assured help under drought scheme.
③ Furthermore as the son of the deceased is a student of Intermediate a request has been made to D.W.O. for his stipend/engagement, if at all possible.

Signature:
Name: Ramesh Pd. Singh
Designation: L.S.
Department: Labour Employment & Training
Date: 18.3.13



पत्रांक–श्र०को०गो०(विविध पत्राचार)–05/2013 श्र०नि० 56(...)

(14)

झारखण्ड सरकार
श्रम, नियोजन एवं प्रशिक्षण विभाग

प्रेषक,

सुनील कुमार, भा०प्र०से०
श्रमायुक्त, झारखण्ड, राँची।

सेवा में,

सभी श्रम अधीक्षक, कृषि श्रमिक सहित,
झारखण्ड।

राँची, दिनांक 23/02/13

विषय– ग्रामवाणी द्वारा संचालित कम्युनिटी रेडियो के माध्यम से प्राप्त शिकायतों के निष्पादन तथा प्रचार प्रसार के संबंध में।

महाशय,

उपर्युक्त विषय के संबंध में ग्रामवाणी कम्युनिटी मिडिया से प्राप्त प्रस्ताव की Soft Copy आपके आवश्यक कार्यार्थ संलग्न करते हुए कहना है कि कम्युनिटी रेडियो सेवा को विभाग द्वारा कार्यान्वित की जा रही योजनाओं के प्रचार–प्रसार हेतु उपयोग में लाया जा सकता है। इस हेतु आपके द्वारा निम्नलिखित कार्रवाई अपेक्षित है :–

1. इस सेवा के माध्यम से विभाग द्वारा संचालित योजनाओं के बारे में ग्रामीणों के द्वारा जानकारी माँगी जा सकती है या कतिपय शिकायत किये जा सकते हैं।
2. इस सेवा के माध्यम से विभागीय योजनाओं तथा कार्यक्रमों की जानकारी ग्रामीणों को दी जा सकती है।
3. यह एक तकनीक आधारित सेवा है, अत: आपसे अपेक्षा की जाती है कि आप अपने कार्यालय से संबंधित किसी ऐसे कर्मी को जो इंटरनेट तथा ई–मेल के संचालन में ...

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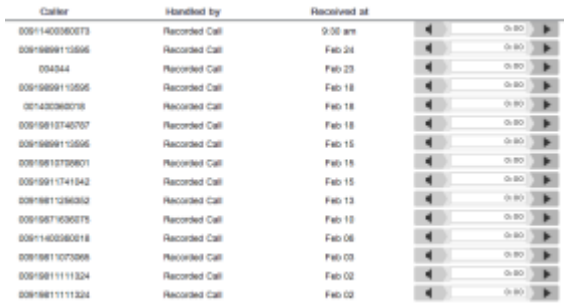
Or, do a hybrid through the political system?

1 A governance focused NGO, Action India, approached Gram Vaani to build a ‘better grievance redressal system’

2 Community members call into a toll-free number to leave complaints



3 NGO listens to complaints and categories/transcribes them on the Internet

4 Youth wing of NGO files complaint officially, and sends a report to the local councilor

Redressal statistics also displayed on website (and wall newspapers)

5 Internal pressure dynamics thus created were used to improve grievance rates on ration, pension, and sanitation. New toilets and public works were sanctioned

gramvaani

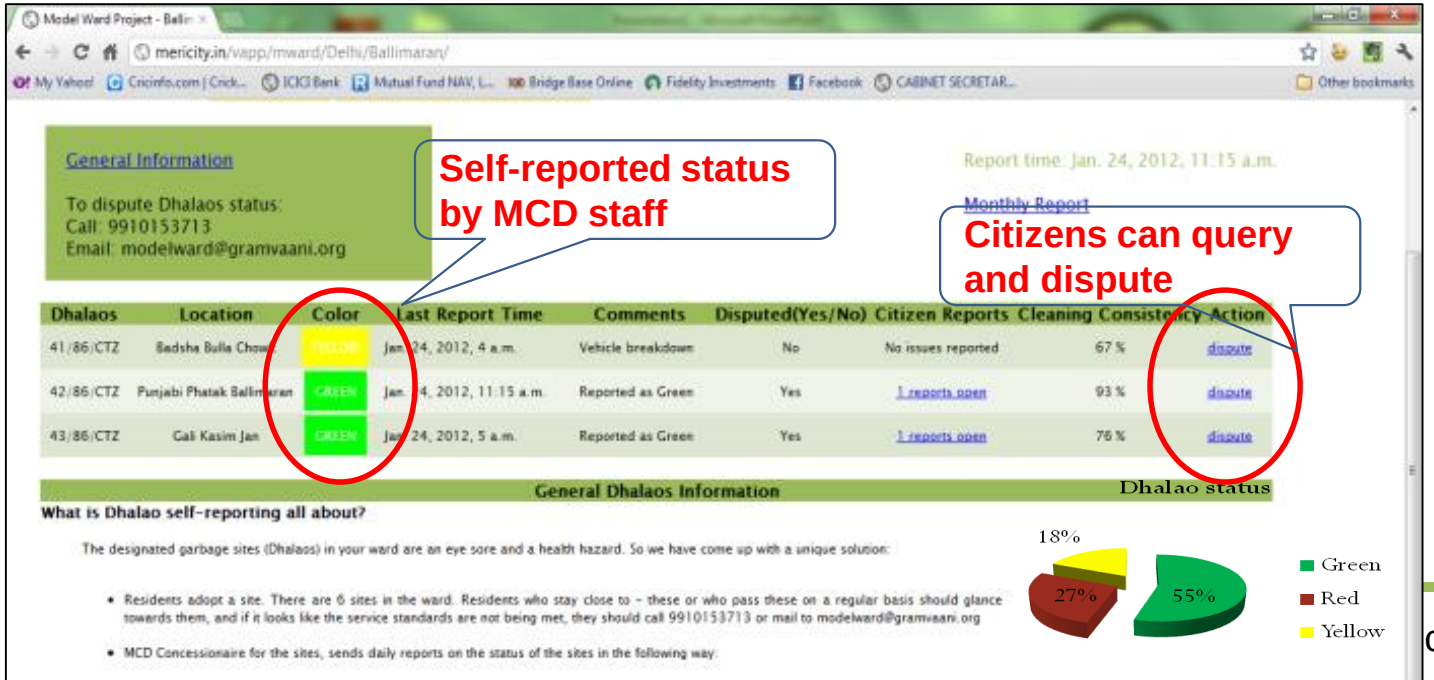
Or, do it through the administration and link it with performance?

1 Municipal Corporation of Delhi approached Gram Vaani for phone based citizen monitoring of waste disposal in the city

2 Our server makes and receives calls/SMS from contract staff on their deliverables

3

Community members query the status and dispute it if they want



4

Status and disputes were made available on a web dashboard and reviewed by the MCD commissioner; City Representatives post responses on Facebook

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Design principles to create sustainable community media networks

- ✓ Usable and appropriate technology design
- ✓ Build a sense of community and ownership. Institutional structures should be nurtured
- ✓ Create content formats that encourage contextualization by the community itself

- ✓ Work in partnership with other stakeholders to give the platform a larger voice. But understand the political economy of the ecosystem
- ✓ Unsolved problem: Financial sustainability!

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Thanks

Gram Vaani Community Media

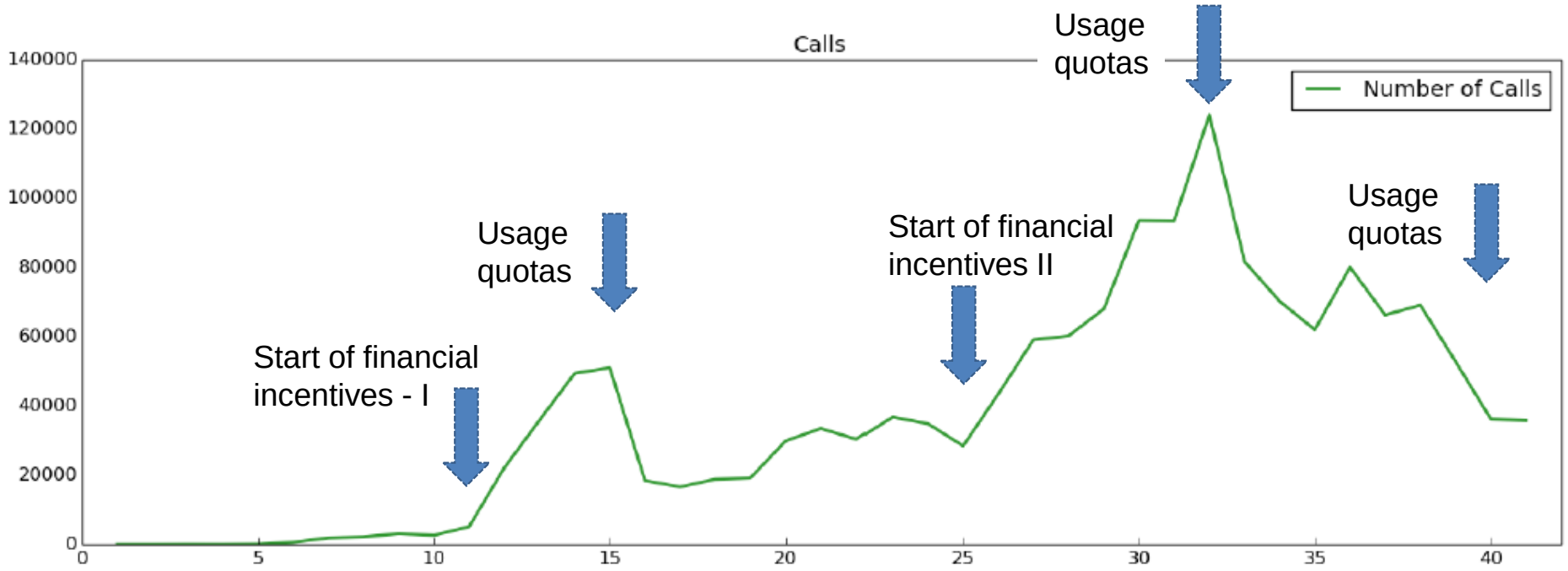
Website: **http://www.gramvaani.org**

Email: **contact@gramvaani.org**

Future work

- Replicate learning to mobile apps
  - Build peer-to-peer or intermediary driven training and adoption processes for our apps
  - Leverage the stronger Internet ecosystem that already consists of platforms such as online social networks
- Can the learning be applied to adoption of mobile Internet itself? Potential to be a key revenue driver!
- Consolidate offline processes including volunteer recruitment, training, club composition, and club mentoring
- Possibility of USSD integration to ease IVR navigation
- Shortcode based VAS access for user subscriptions

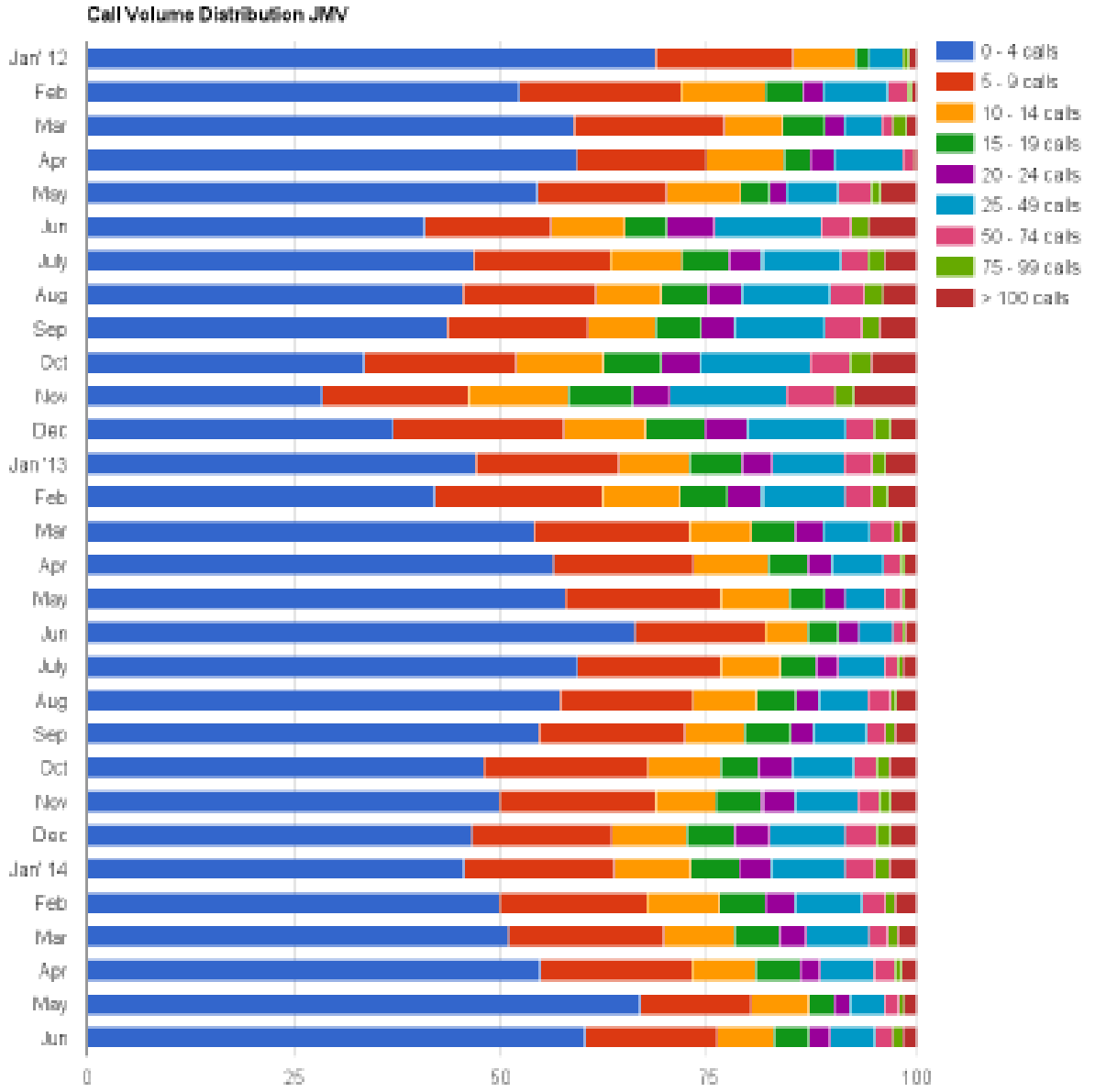
Cash flow management



Significant second order effects on user retention as well

User retention

- Users who call just once ranges from 25% to over 50% some times. Correlated with quotas imposed
- Quotas have lower correlation with retention rates of older users
- 45% of new users claimed they were actually old users calling from a new phone number



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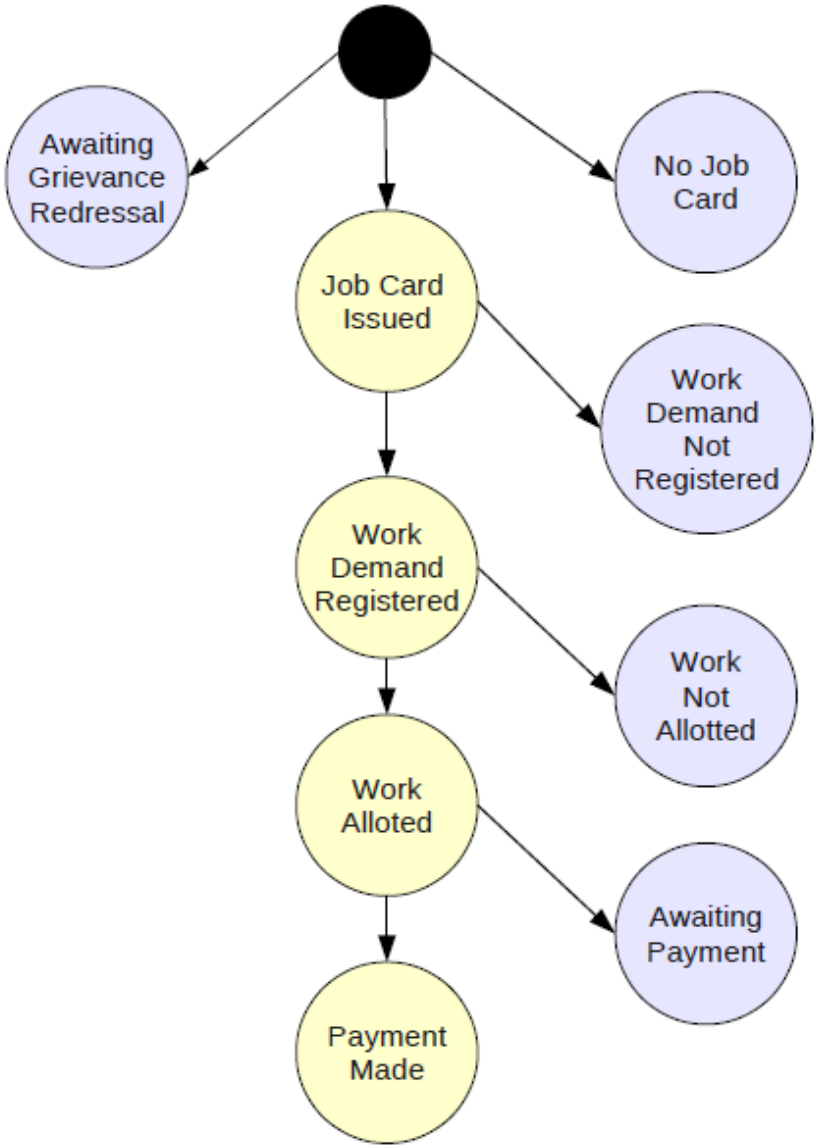
Another example: Citizen verification of official data



- Joint work with Stanford Liberation Technologies and IIT Delhi
- People enrolled with job card + mobile phone information
- MIS status for job cards picked up from the website, and converted into voice messages
- People could file a grievance if they noticed a discrepancy
- Initial work: 52 people pinged, 30 detected a problem, 23 filed a grievance

UNIT ECONOMICS

COST PER USER

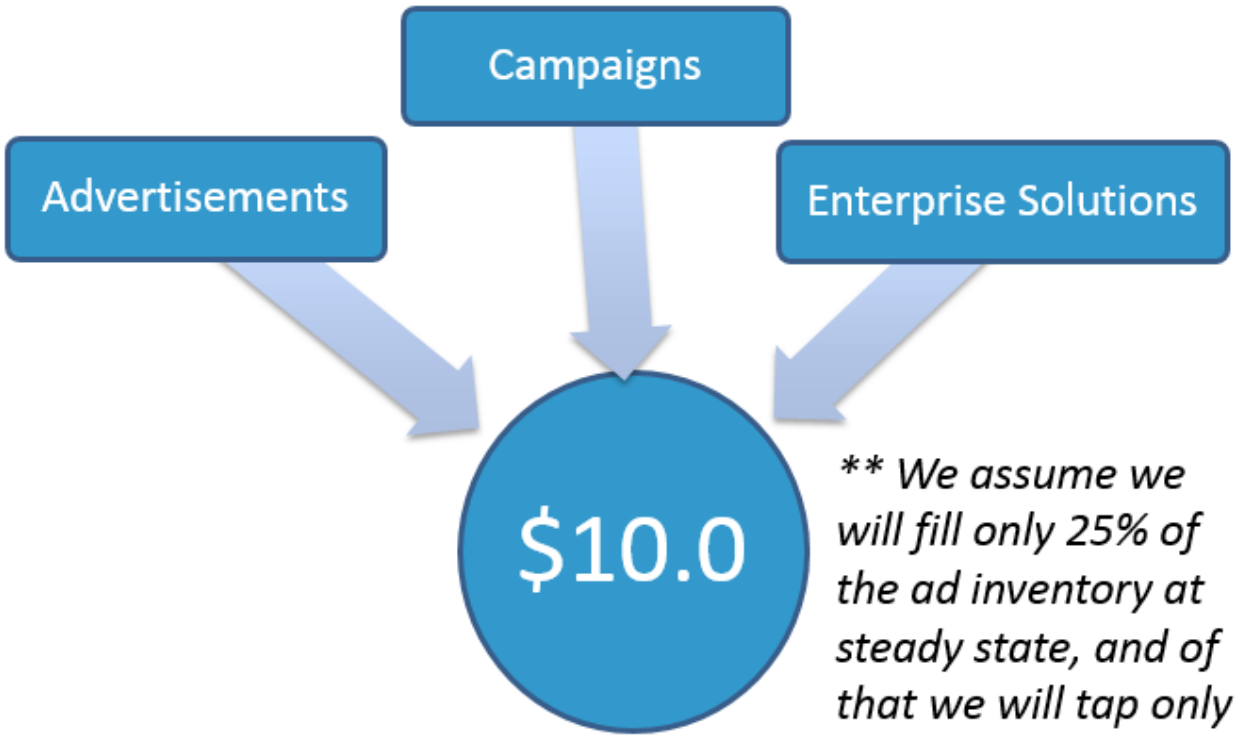
$0.3

Acquisition cost (to acquire users at 15% month on month growth)

$1.5

Engagement cost (will drop as users migrate to using data services)*

POTENTIAL ANNUAL REVENUE PER USER



*** We assume we will fill only 25% of the ad inventory at steady state, and of that we will tap only 20% in year-1*

*Average call time of 9 minutes
*Users call 4 times per month, 25% of users stick for a year, 45% for a quarter

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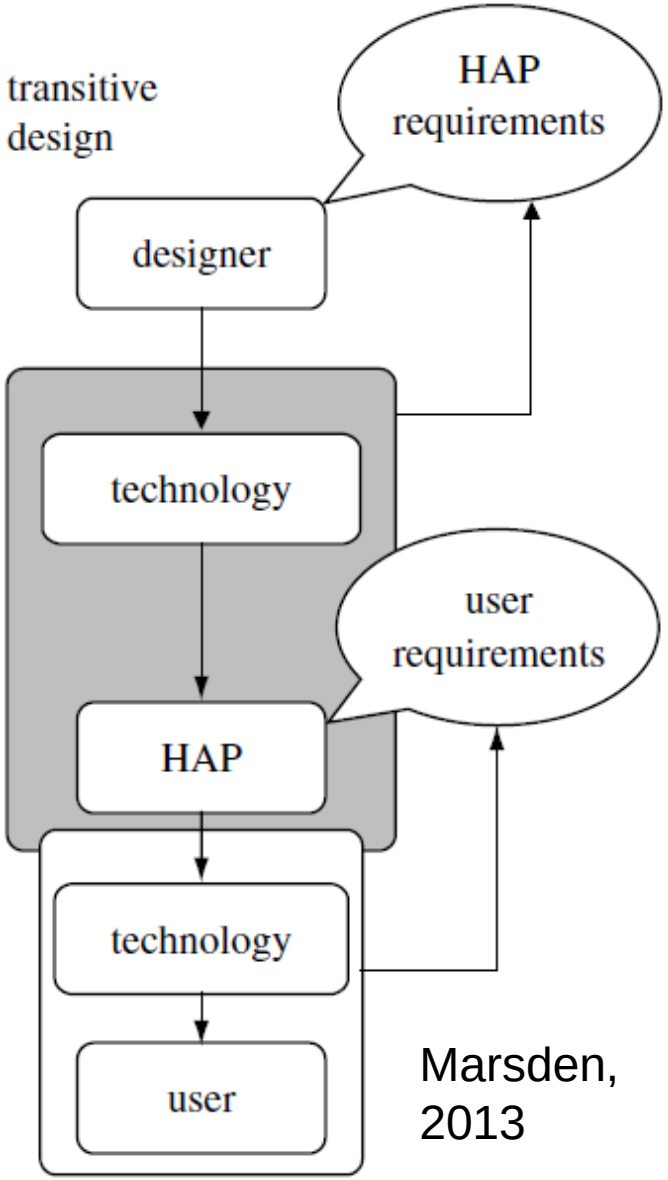
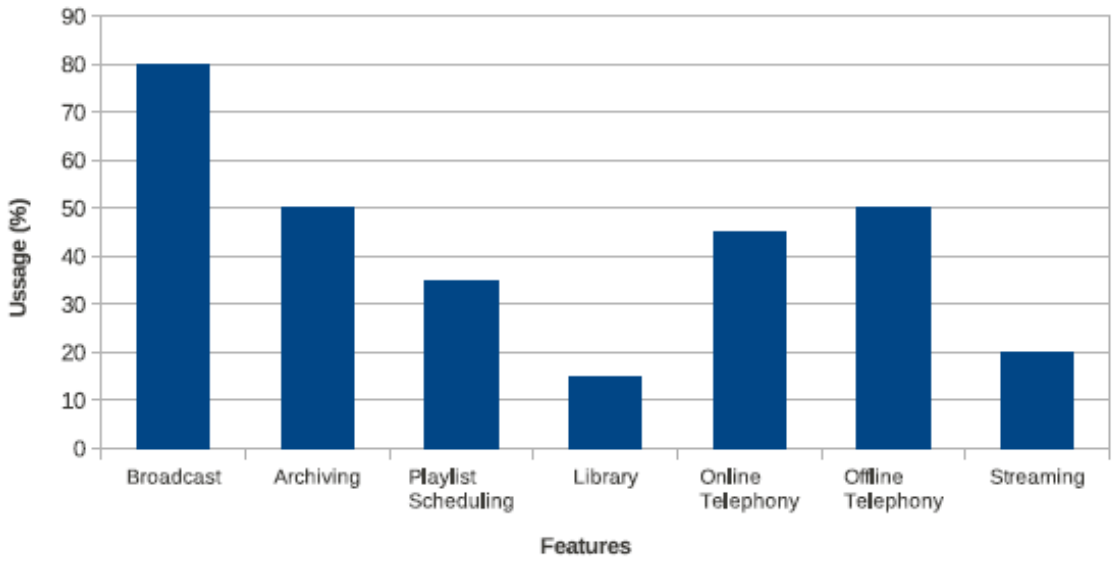
Appropriate technology design

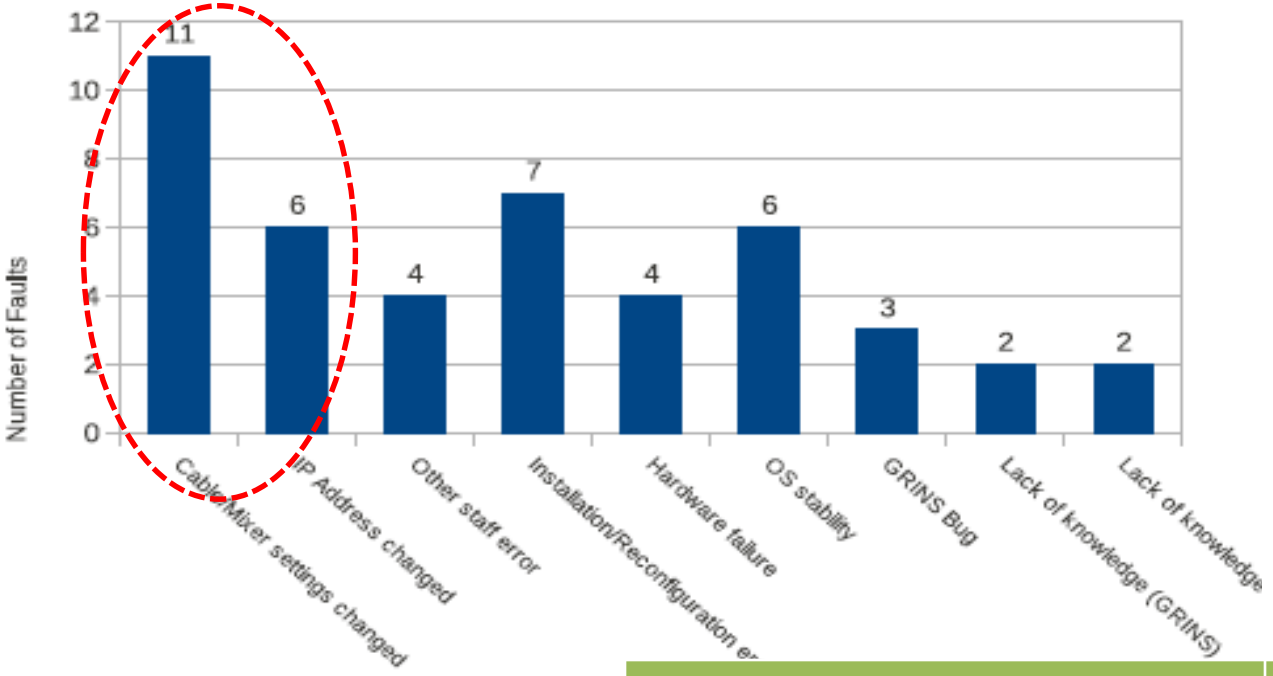


Marsden, 2013



- Observe the users to understand gaps to be addressed through ICTs. But also identify good pilot partners/power users who can give actionable feedback.
- Software engg. currently is a hit and miss affair

Technology support



Most faults occur when people tinker with cables and other moving parts. Impossible to avoid!

Moved to a cloud deployment with Mobile Vaani

Most debugging needs to be done over the phone but hard to resolve over the phone alone with a local unskilled tech resource

Mode of communication	Faults identified	Faults resolved
Phone calls	57	16 (28%)
Remote desktop	9	9 (100%)
Remote desktop & phone	9	6 (67%)
Reverse SSH	6	5 (83%)
Reverse SSH & phone	2	2 (100%)
Physical visit	6	6 (100%)

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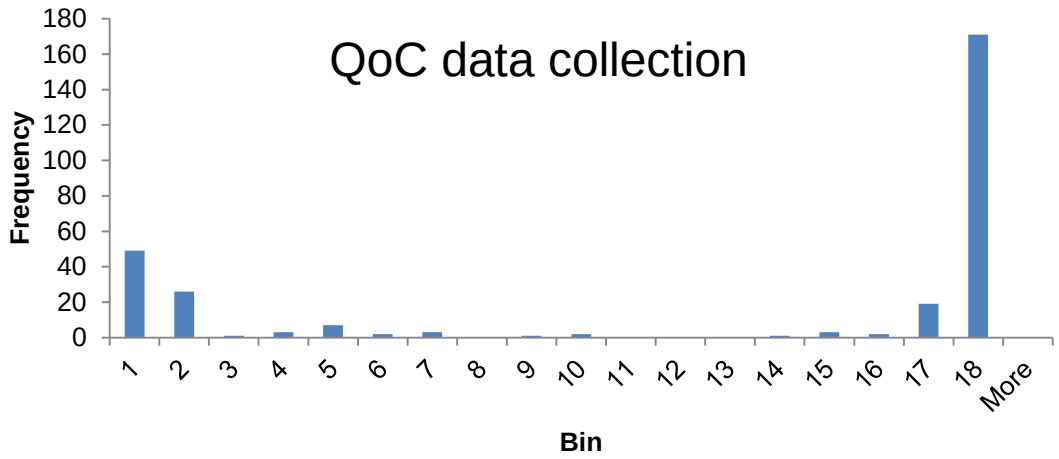
Technology efficacy

Data collection

- 84% of responses match those given to a live operator
- 79% of users understood more than 80% of the questions

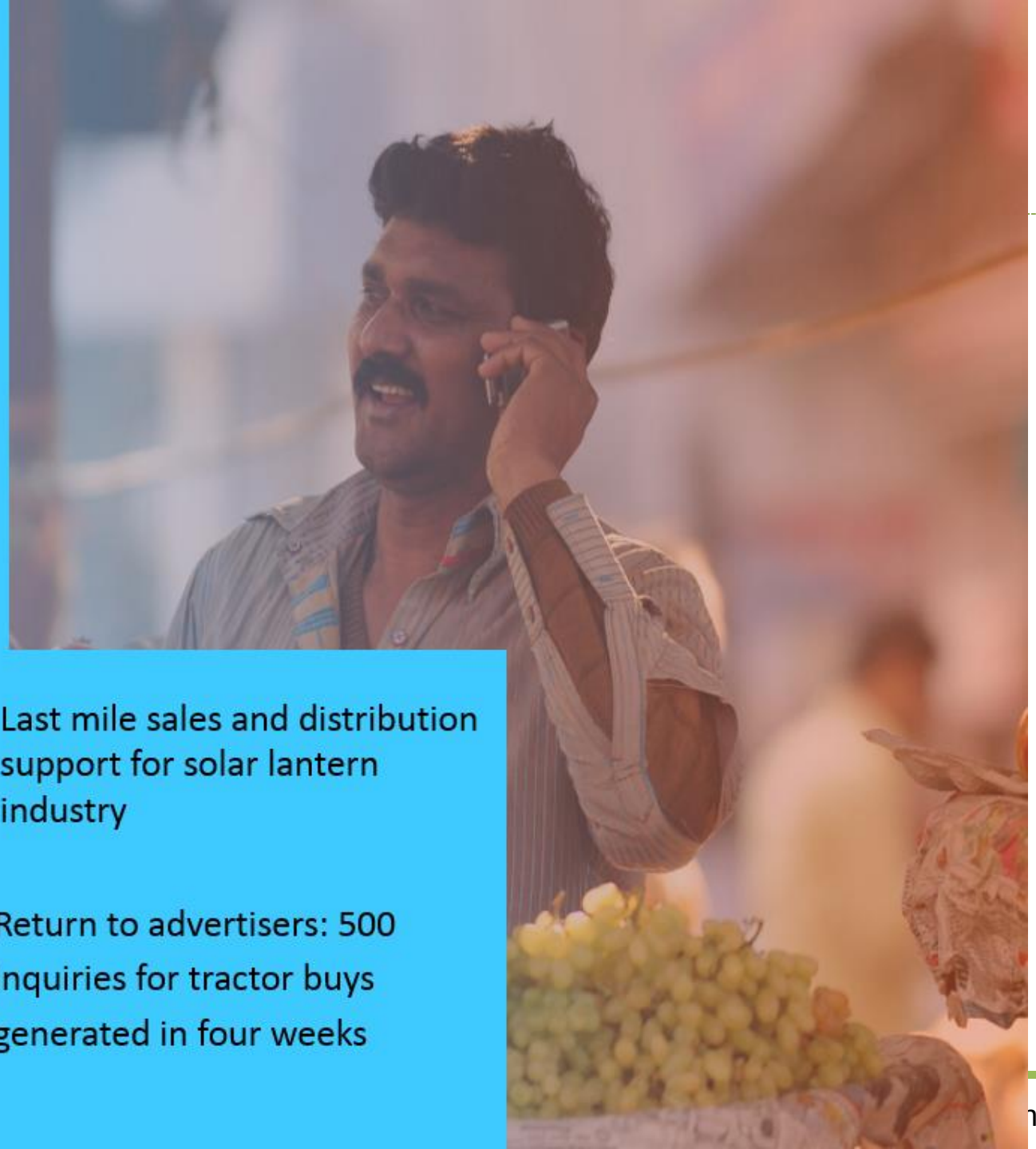


Crowd-sourced voting

- Linear list of thumbs-up thumbs-down Vs best-of-two Vs best-of-four
- No significant difference in task completion, nearly 100% for all
- Cultural preferences though: Did not want to call a song bad!

RURAL ADVERTISING

Targeted advertising in local language, plus value added services (direct lines to sales agents, FAQs and local people's product reviews)



greenlight planet

Last mile sales and distribution support for solar lantern industry

NEW HOLLAND AGRICULTURE

Return to advertisers: 500 inquiries for tractor buys generated in four weeks

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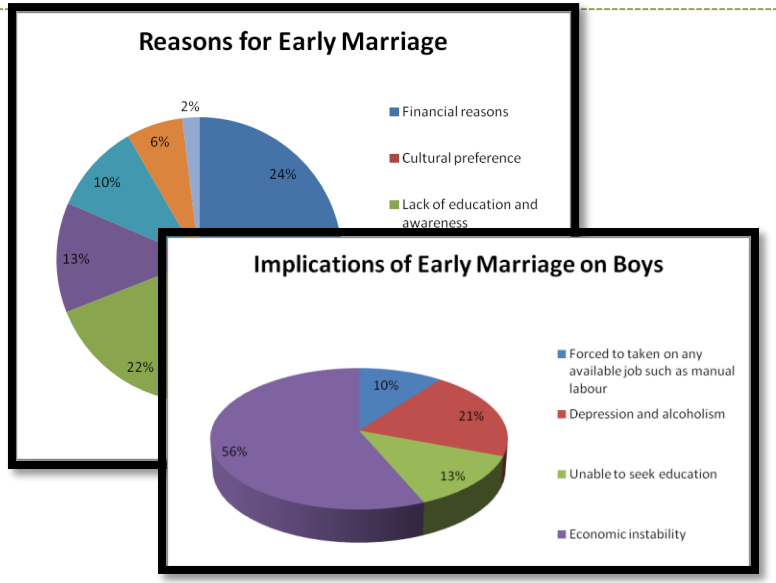
Getting a discussion going in the community: Early marriage

- Duration: 4 weeks
- Outreach: 100,000 households in Jharkhand
- Topics
  - Laws against early marriage
  - Reasons for early marriage
  - Implications of early marriage on the health of girls
  - Implications of early marriage on boys
  - Drama, *chutki ki kahani*, who was married at 14



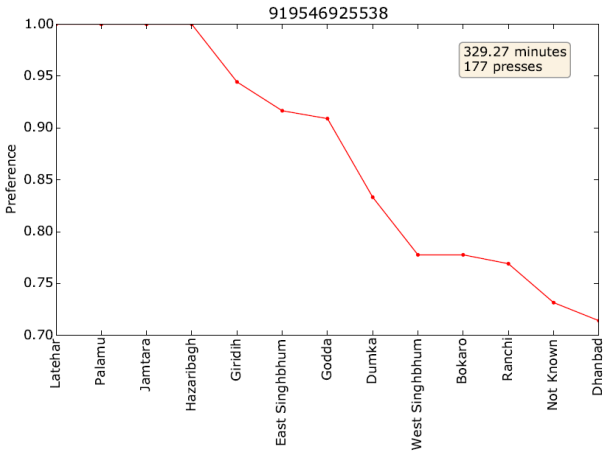
- Offline activity. 100+ volunteers recruited from across the state
  - Get pledges from Panchayats
  - Ask pandits and moulavis to visit weddings and condone early marriage
  - Get testimonials from school teachers
  - Form a committee comprising the Panchayat, teachers, religious leaders, and police

How to guide content consumption

- Currently consumption is closely in line with production
- Only a few users exhibit preferences by navigating through content

Preference

$$\frac{No\ of\ items\ heard\ for\ atleast\ T\ units\ for\ a\ particular\ category}{No\ of\ items\ presented\ for\ that\ particular\ category}$$



- Depending upon their age in the system, between 15% to 35% of users press keys to navigate
- Of that, only between 11% to 26% of users exhibit preferences in topic and location selection
- Challenges: How to inform? How to personalize? How to train even more?