



INFORMATION TECHNOLOGY
UNIVERSITY

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Speech-based Social Media for Low-Literate Masses

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Summary

- Lack of Information and Connectivity are major impediments to Development
- Poverty and low-literacy are hurdles to connectivity and access to information
- To solve the problem of Social Connectivity we created a telephone-based, speech-based social media platform for the low-literate
- It went viral!
- User surveys revealed that a significant fraction of our users are Visually Impaired
- Interesting feedback and usage trends

SLT4D

Situations where information and connectivity are the missing links to Development



SLT4D

Situations where information and connectivity are the missing links to Development

- For people/masses who cannot read and write:
 - Speech and Language Technologies could be used to:
 - Disseminate information
 - Gather information
 - Social connectivity



The Three Challenges

REACHABILITY

UPTAKE

RETENTION



Reachability

Challenges:

- TV, radio are non-interactive
- PCs are not feasible
- Smartphones are not always feasible
- SMS assumes literacy

Speech over simple phones is a viable solution



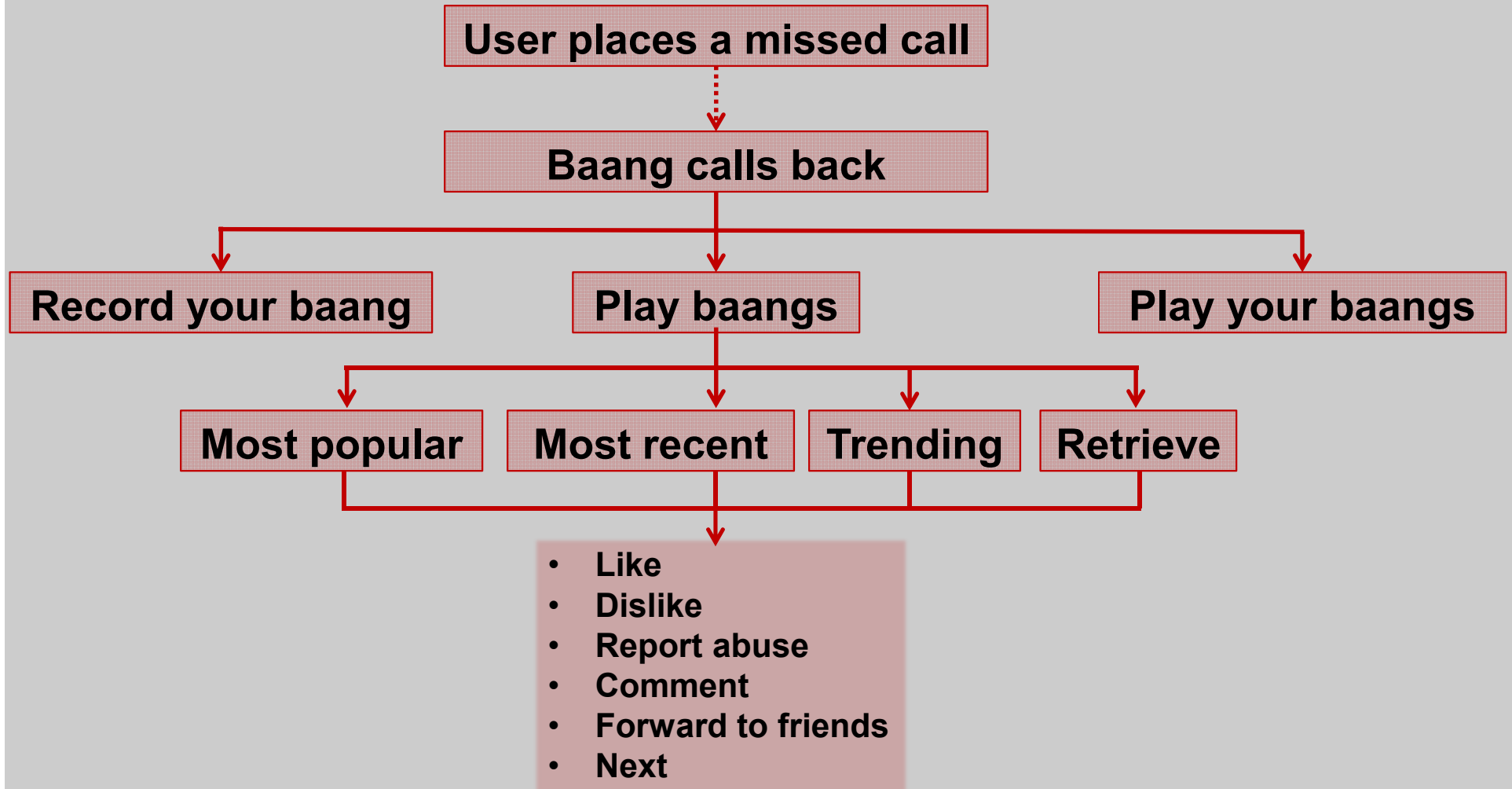
Uptake and Retention

Use Entertainment to spread
and
Social Connectivity to retain users!

Speech-based Social Media

- **Baang ()**: A voice-based, telephone-based community forum (Pakistan; 2015-16)
 - A voice-based “Reddit” for low-literates
- Users can:
 - Post short voice messages
 - Play messages recorded by others
 - Like/Dislike/Report/Comment/Forward

Baang ()



Baang Statistics

Within **71 days** of its launch *Baang* accumulated:

- **42,500** calls (by **1,550** users)
- **8,469** posts (by **888** users)
- Posts were played **393,448** times (by **1,524** users)
- **172 hours** of **spontaneous** speech data
 - 106 hours of posts + 66 hours of comments
 - Average recording duration: 45 seconds
- Interactions included:
 - **29,000** up votes (by **1,100** users)
 - **14,000** down votes (by **730** users)
 - **7,700** report abuse votes (by **600** users)
 - **11,000** comments (by **600** users)
 - Posts forwarded **2,083** times (by **191** users to **517** users)

Quality of Content

Out of 1,718 recordings:

- Actual content: 1,713
- Unclear/noise etc.: 6

(Surprisingly) Almost all the recordings contained carefully recorded, quality content

Out of 1,585 recordings:

- Civilized: 1,483
- Uncivilized: 102

The recordings were mostly polite and civilized
Report votes as indicators to filter inappropriate recordings



100 Top Voted Posts

- All 100 files contained actual content
- Civilized: 98 / Uncivilized: 2
- **Content Type:**
 - Naat: 34
 - Argument: 13
 - Poetry: 12
 - Dua, Hadees, Hamd: 10
 - Songs: 9
 - Famous quotes: 6
 - Quran recitation: 4
 - Random facts: 4
 - Advertisement: 2
 - Rude Language: 2
 - Requests for votes: 2
 - Personal introduction: 1
 - News updates: 1

Linguistic Distribution

Out of 1,638 recordings:

- Urdu: 1,403
- Pushto: 82
- Arabic: 55 (Recitation of the Quran)
- Punjabi: 45
- Saraiki 26
- English 14
- Sindhi 12
- Farsi 1

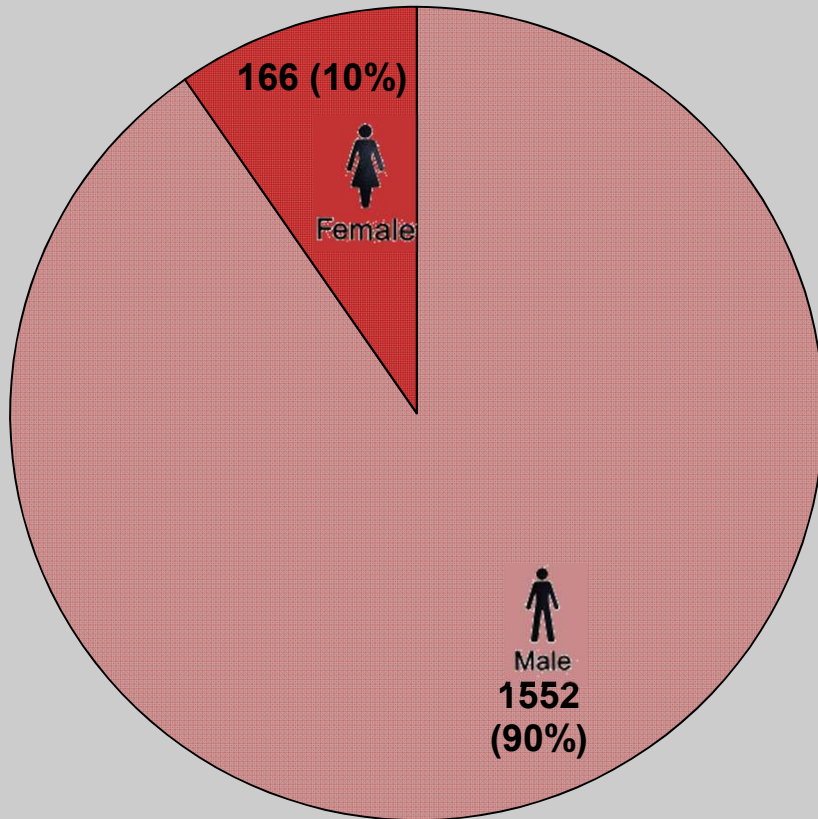
Mostly Urdu with a growing number of regional language content

Urdu is the Interface language

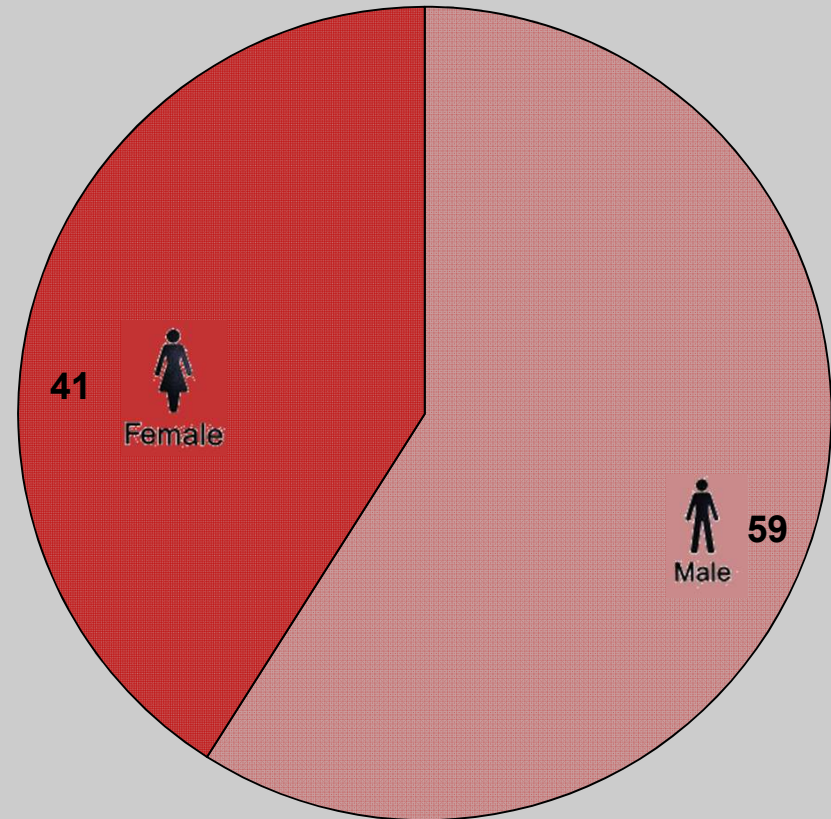


Gender Distribution

Out of 1,718 posts:

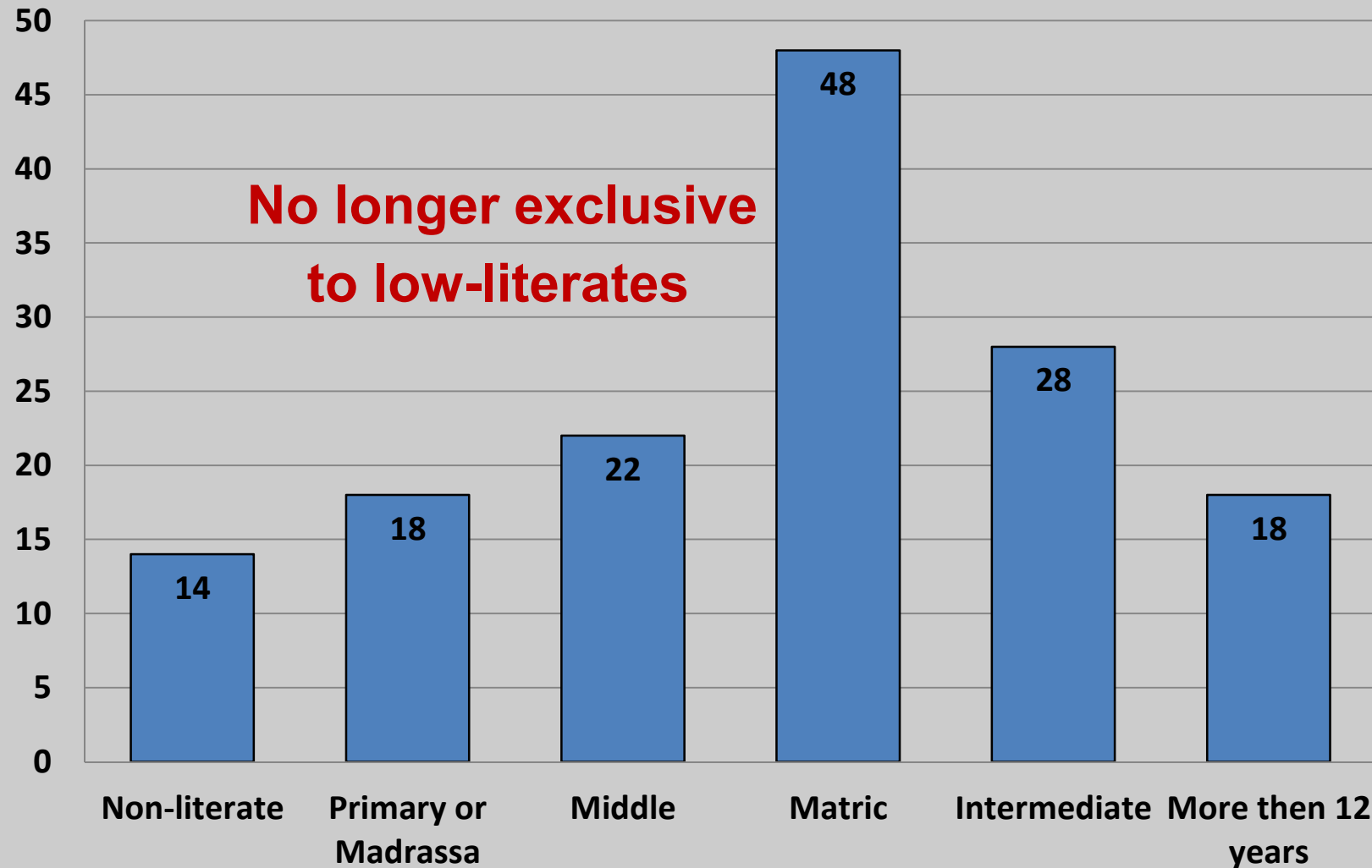


Out of 100 top voted posts:



Educational Background

Out of 148 surveyed users:



Geographic Distribution of 148 users



Visually Impaired Users

- Manual interviews of 146 randomly selected users revealed **56 (38%) blind** users!
- Analysis of posts revealed trends around:
 - Formation of support groups
 - Community response to disability abuse
 - Government officials offering to help blind individuals

Interesting User Feedback

- Filter out abusive content
- Audio books, stories, audio newspapers,... for the blind
- Service should remain free for the blind
- A separate channel for educational discussions
- A teacher offered to conduct free English Language lectures

For more details please visit

<http://aghaaliraza.com>

<http://www.cs.cmu.edu/~araza/>



Thank you!

