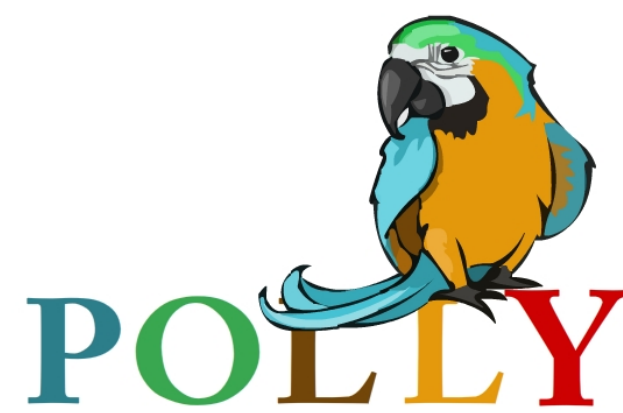


VIRAL ENTERTAINMENT AS A VEHICLE FOR DISSEMINATING SPEECH-BASED SERVICES TO LOW-LITERATE USERS



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Introduction

Entertainment has recently been shown to be a powerful motivator for mastering new technologies. We therefore set out to use viral entertainment to introduce telephone-based, speech-based services to low-literate people in developing countries. We describe Polly, a simple voice manipulation and forwarding system that went viral in Pakistan last year. Seeded once by 32 low-skilled office workers in a Pakistani university, in 3 weeks Polly amassed 2,032 users and 10,629 interactions. From analyzing the traffic and its content, it is evident that Polly has been used extensively for entertainment and social contact, but it has also been put to an unintended use as a voicemail and group messaging facility. This demonstrated the potential for speech based services, and the pent-up demand for entertainment, among our target population. Also of note, Polly's viral spread crossed gender and age boundaries and even established itself in a female population. However, it appears to have not crossed socioeconomic boundaries.

Voice Manipulations

- ☐ An *I-have-to-run-to-the-bathroom* effect, achieved by a gradual increase of the pitch,
- ☐ A *drunk chipmunk* effect, achieved with pitch and pace modification,
- ☐ Converting the voice to a *whisper*, achieved by replacing the excitation source of user's voice with noise
- ☐ Adding *background music*.
- ☐ The original, *unmodified* voice of the user

Analysis

System Stats

- ☐ Number of users seeded with: 32
- ☐ Total number of days online: 21
- ☐ Total number of users: 2,032
- ☐ Total number of interactions: 10,629

Users and Interactions

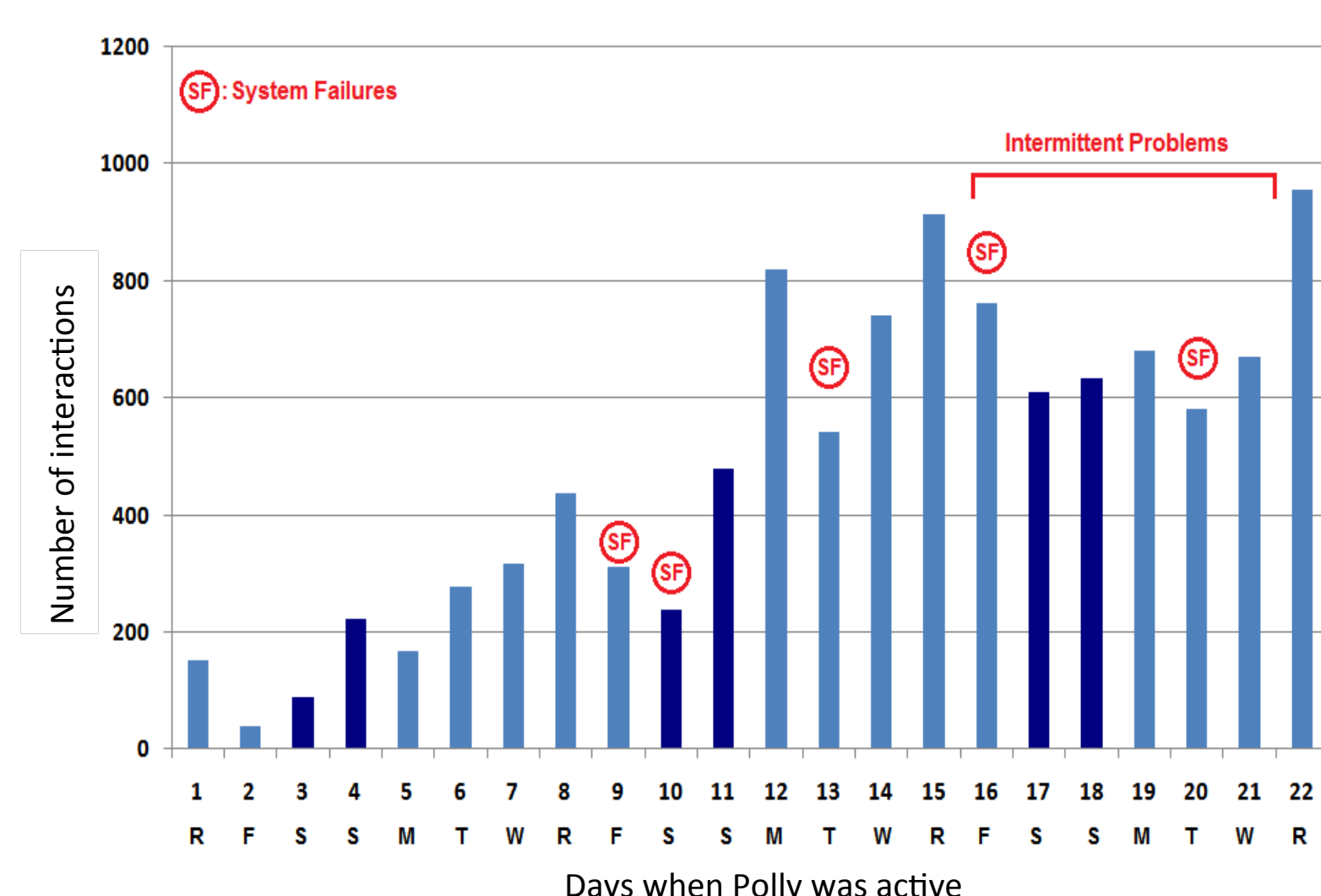
	User Initiated	System Initiated (delivery)
User made new delivery requests during interaction	4,340	699
User made no delivery request during interaction	2,444	3,146
Total	6,784	3,845

Active Interactions

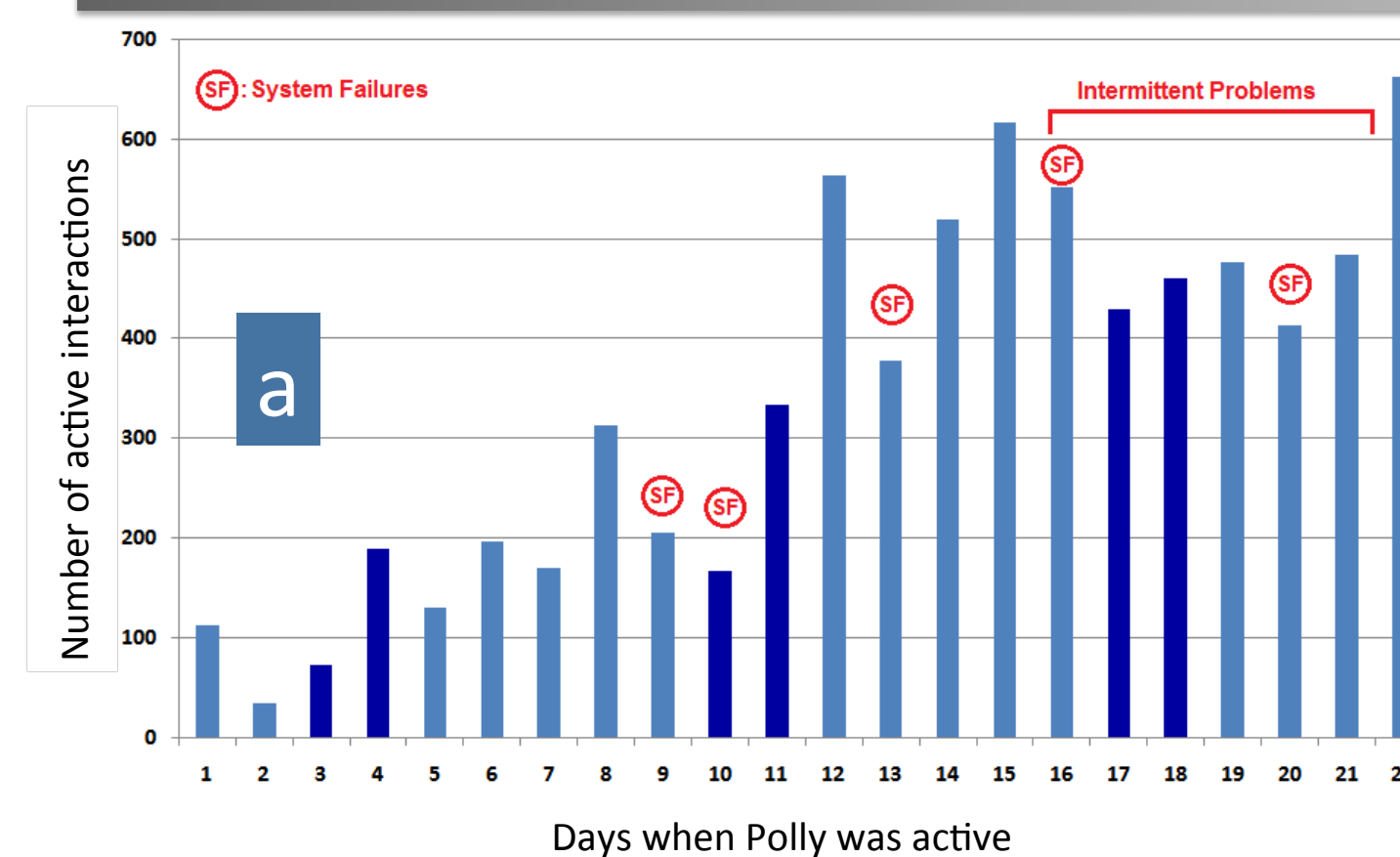
	Call Initiators	Call Receivers
New delivery requests made during call	525	313
No delivery request made during call	476	1,723
Total	613	1,843

Active Users

Daily Traffic

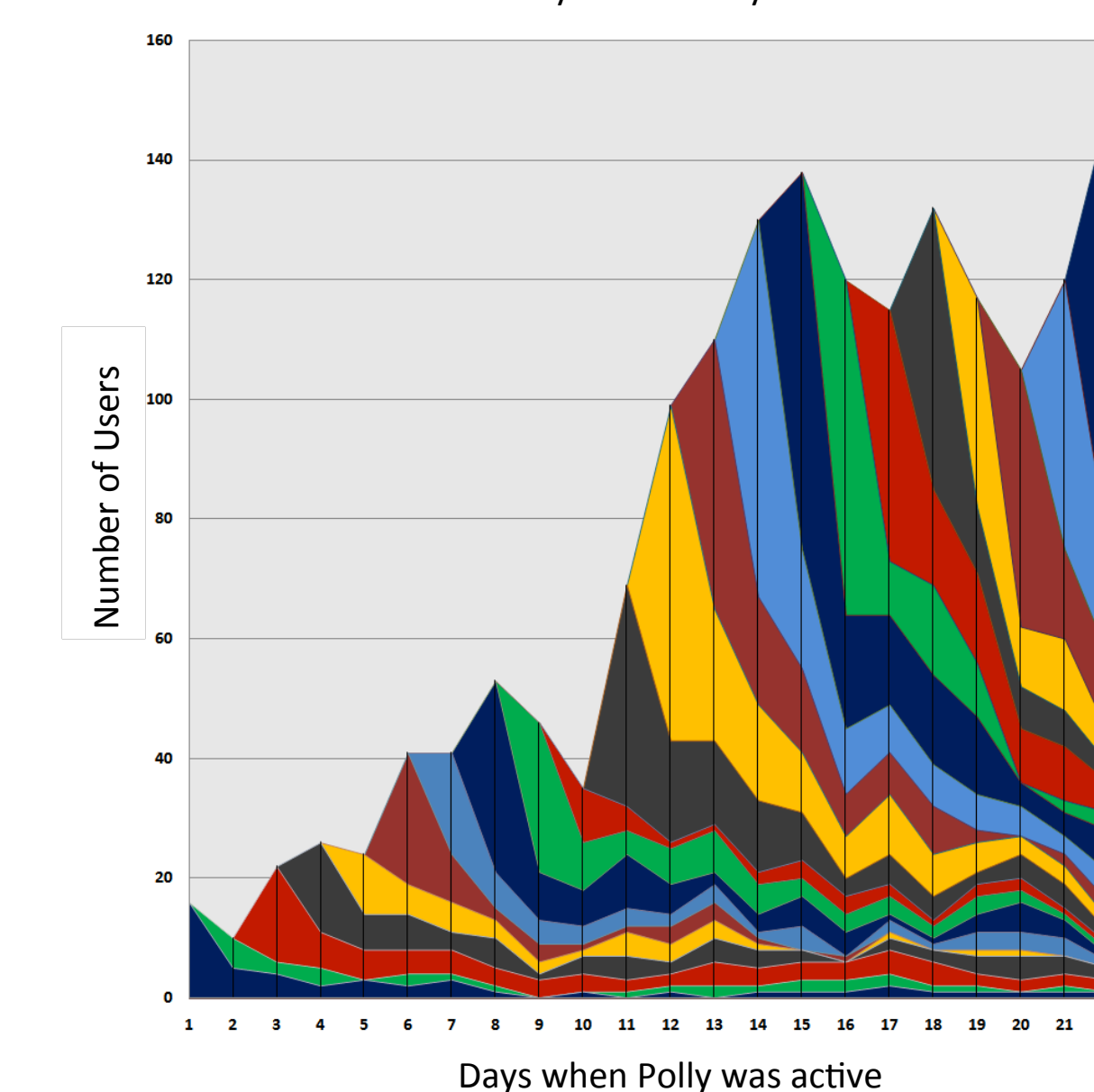
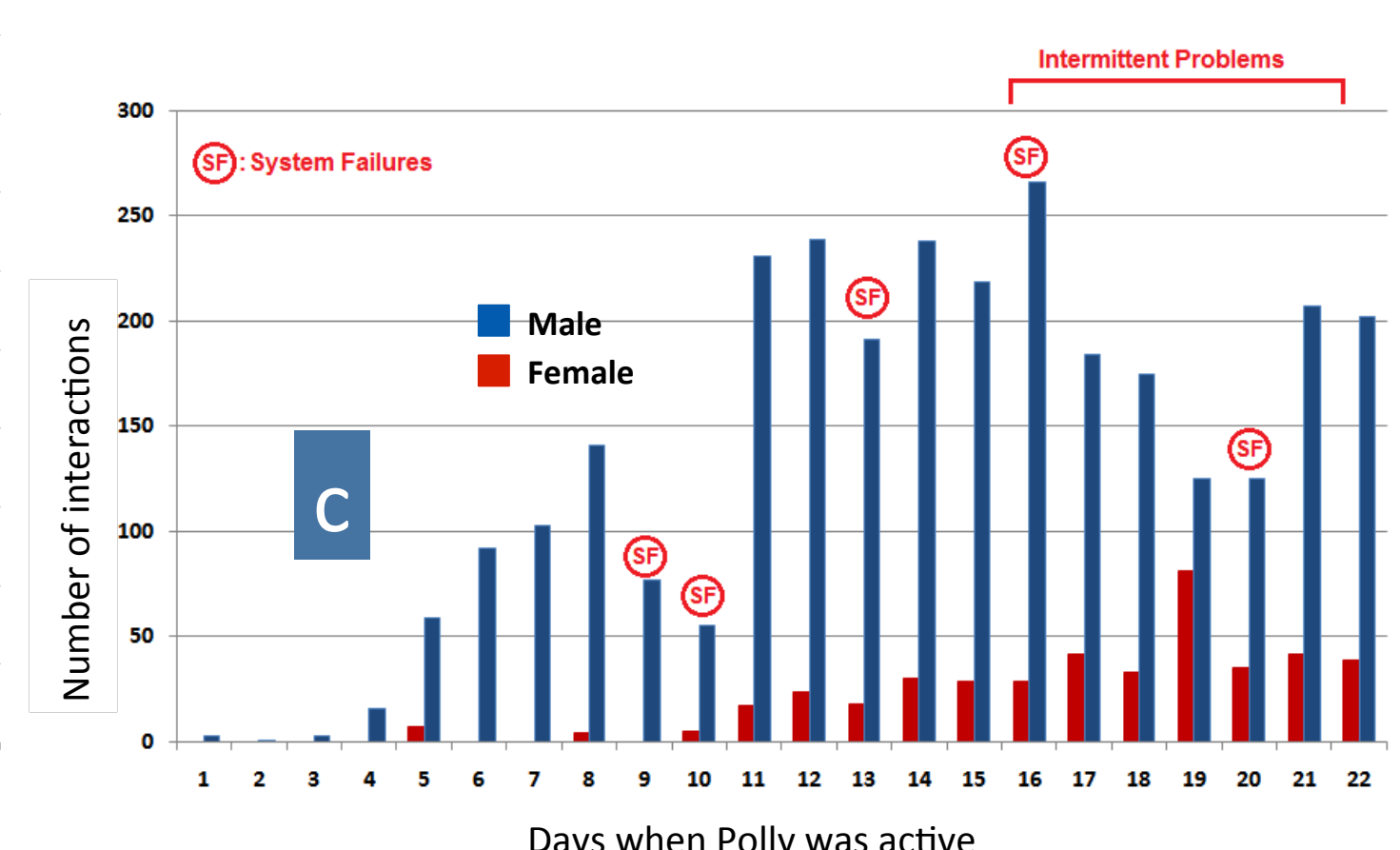
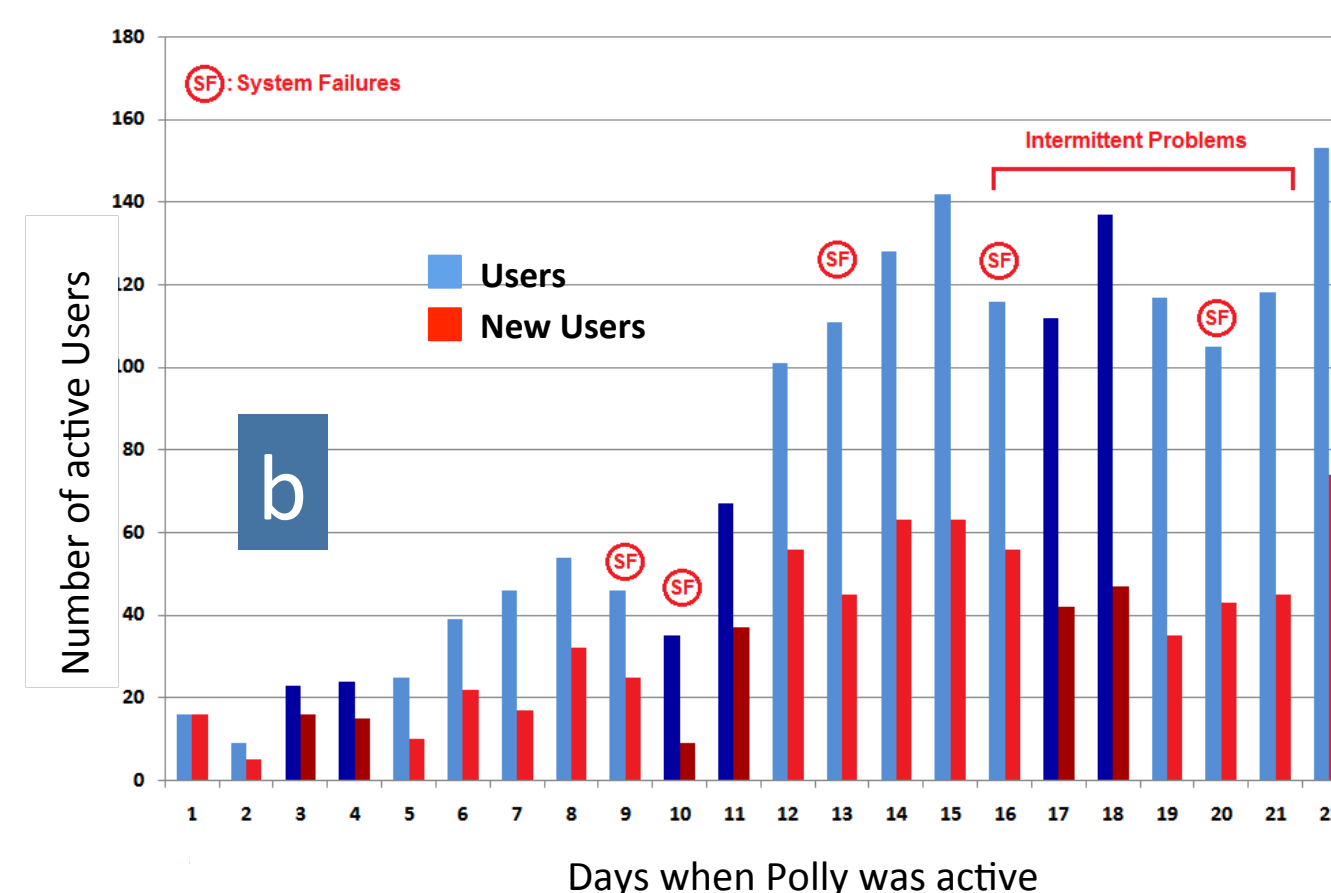


Analysis (cont.)



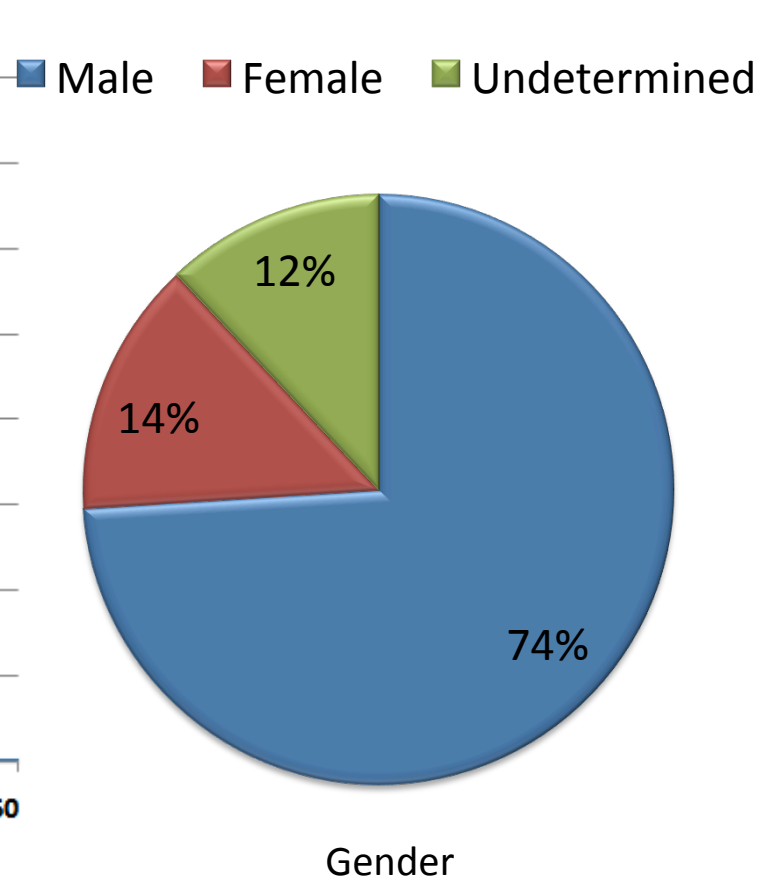
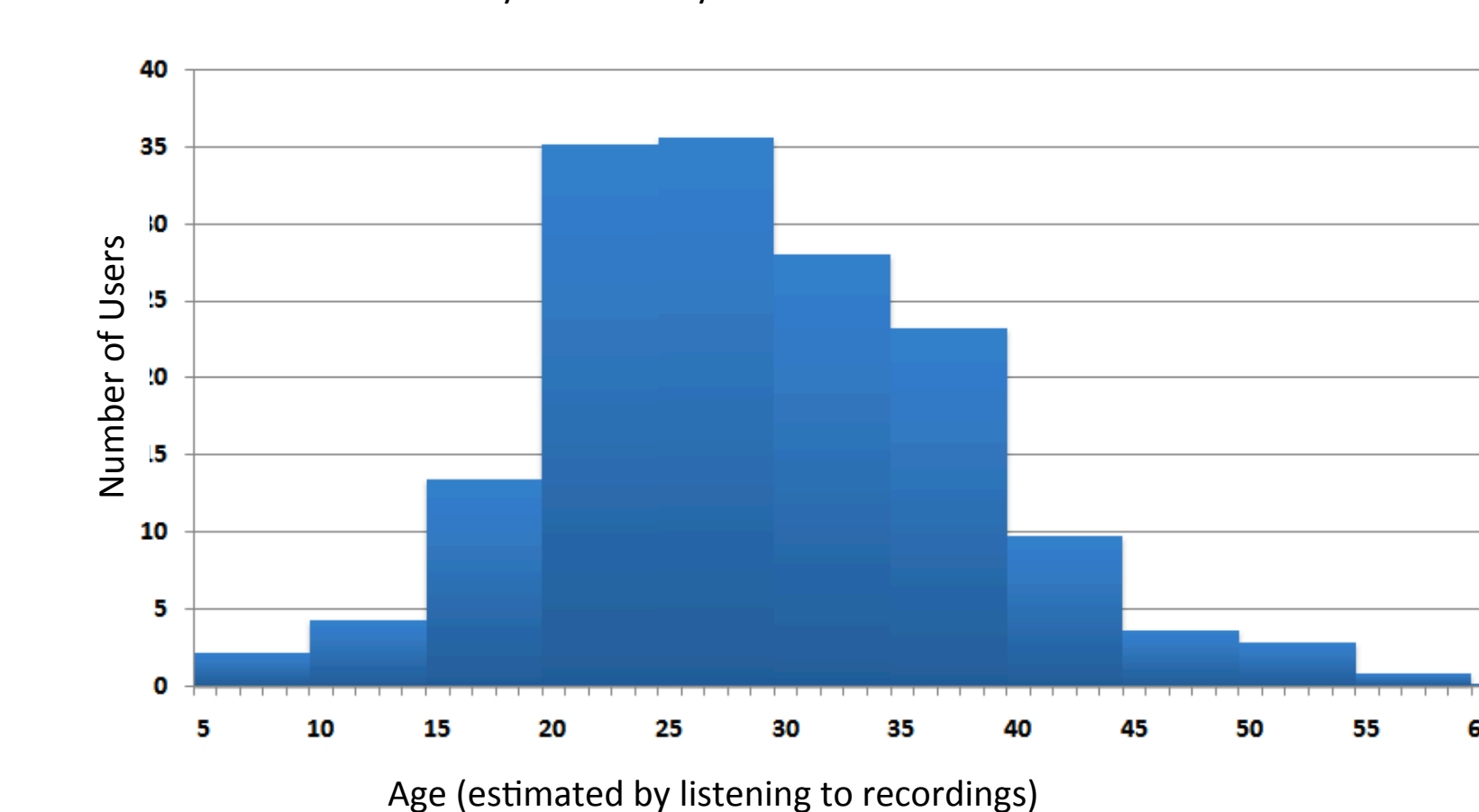
Polly's daily growth in terms of (a) interactions, (b) users, and (c) gender

Growth



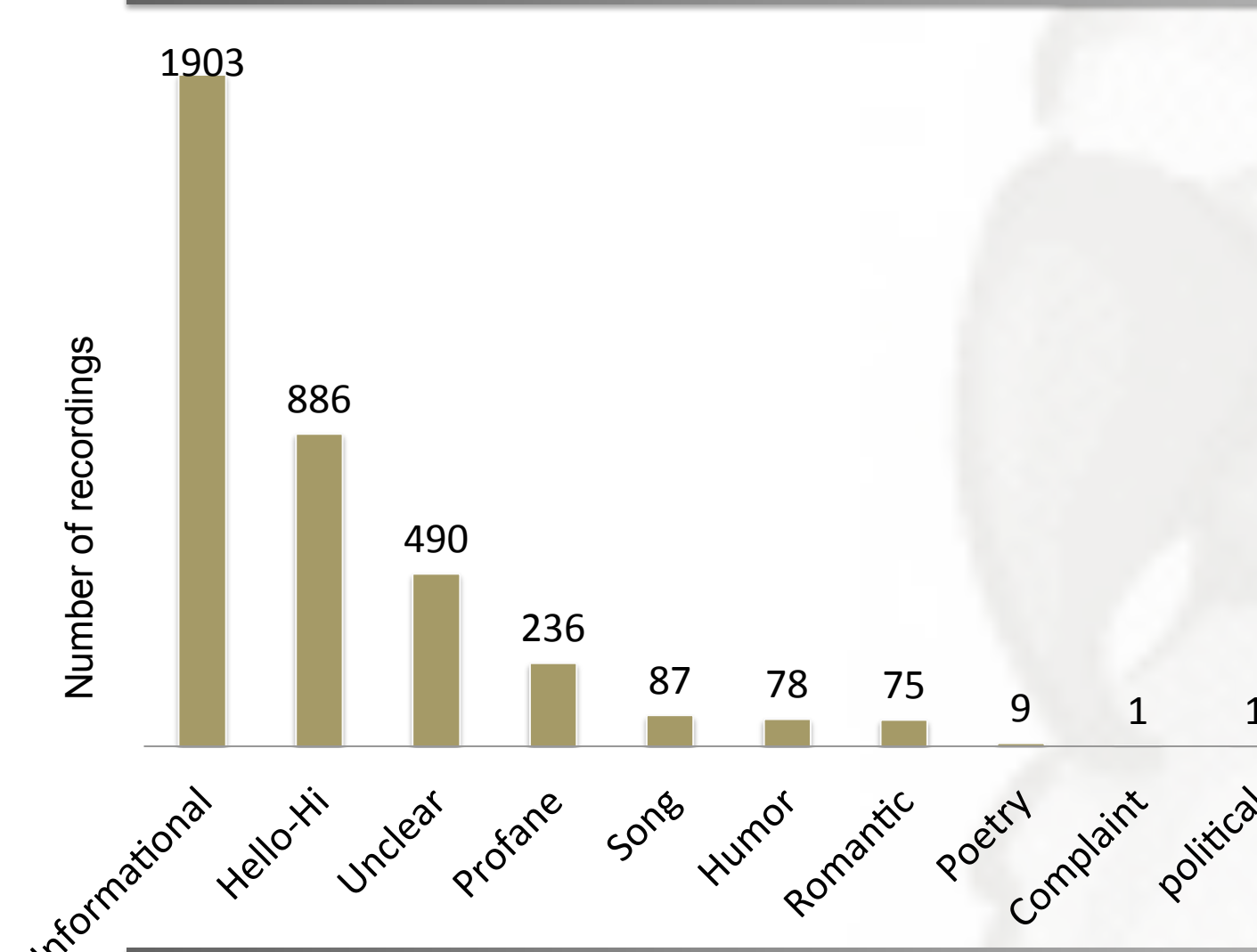
Number of Active Users each day. Each color corresponds to users who started using Polly on a given day. About 10% of users continue to use Polly long term.

User Retention



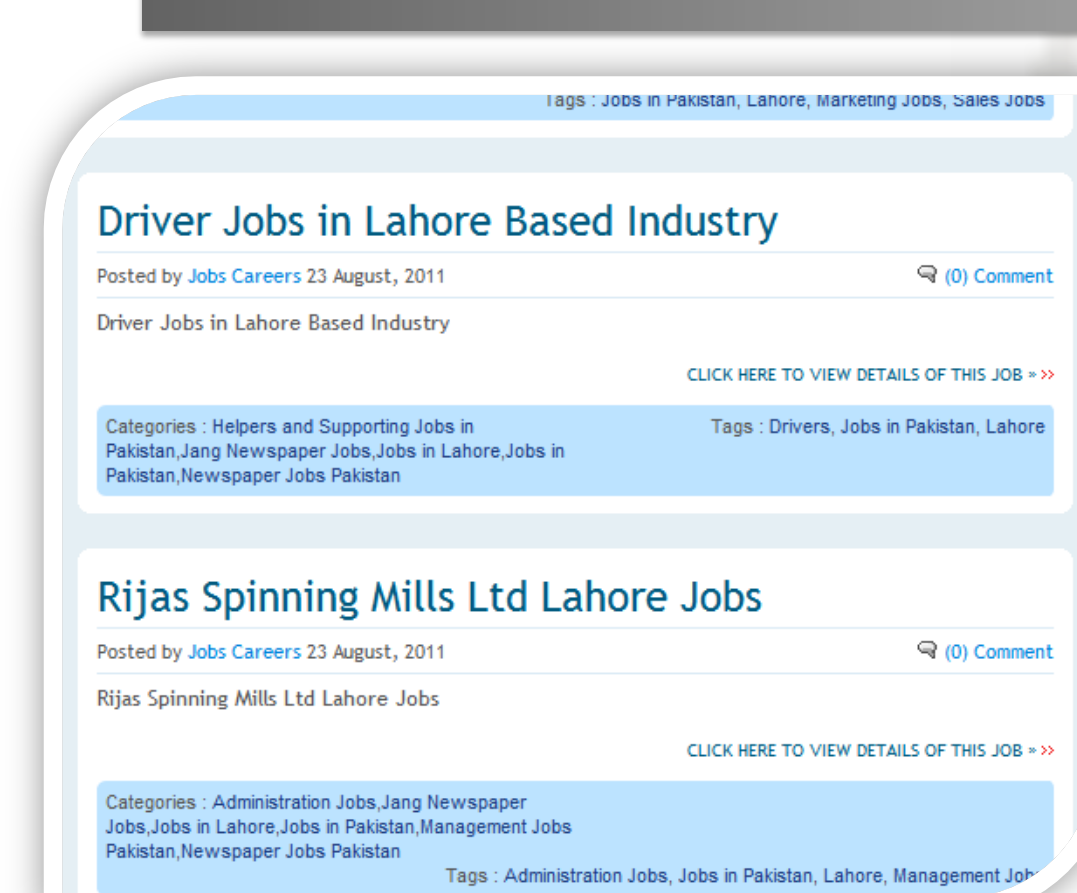
Demographic

Types of Messages and Feedbacks



Feedback Type	%
Interface/functionality related feedback and complaints: too long turn-around time of message delivery; poor call/sound quality; busy network; too short message recording time; increase/rearrange sound effects etc.	49%
General appreciation including mentioned reasons such as: a way to connect to friends; a means of having fun; free service etc.	47%
Confused Users: pressing keys or saying "hello"	7%
Irrelevant feedback including: songs; messages for friends; irrelevant messages for Polly etc.	5%

Future work



Polly is being re-launched with updates as per user feedback & has a new job related application for the low literate.



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