

## INTRODUCTION

- Goingeasy.org is a social network designed especially for visually impaired individuals and their friends and family.
- It was designed with accessibility as the main design concern.
- And contained additional content like accessible maps, local shopping coupons, forums, job postings to encourage people to visit.
- In spite of initial success in attracting users and generating activity, the network stalled in a few months.
- In this work, we examine the reasons for decay of such a network and examine potential ways to boost the activity on the network.

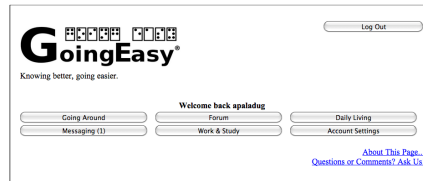


Fig 1. Homepage of goingeasy.org

## REASONS FOR THE DECLINE

- Facebook users primarily hesitate using multiple social networks.
- Our network being a small region based community and has few users. Also, we learnt that the users know each other outside the network in most cases.
- Users did not like checking back on the network, multiple times a day when they did not find enough new content.
- Users were overlooking posts.
- Some of the posts get very personal owing to the fact that some of the users knew each other prior, that the new users didn't find it relevant.
- Over a period of time, owing to these factors, the usage and content declined and stalled.
- This has been the case with two other social networks developed for visual impaired individuals.
- Facebook is still the preferred choice of network, but the users preferred not to talk about visual impairment related issues on it.

## PROPOSED APPROACH

### Recommendation System:-

- Eliminates the need for the user to log in multiple times a day to check for content.
- Based on user preference, only relevant content triggers the recommendation system.
- The model analyses user interests from his previous posts.

### Keywords and Topics:-

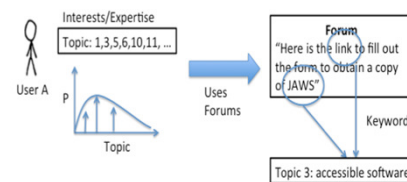


Fig 2. Illustration of keywords and topics

### Latent Topics:-

- Dirichlet Processes are used to model keywords in terms of latent topics
- Hierarchical Dirichlet Processes (HDP) are used to model users-topic-keyword correlation.
- This work is inspired by the author-topic model proposed by Steyvers et al who used Latent Dirichlet Processes to do the same.

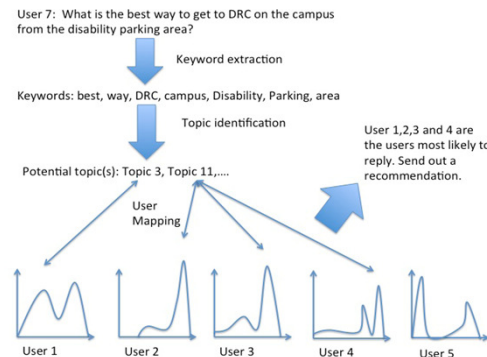


Fig 3. Illustration of users, topics and keywords.

- We chose HDP to provide for expansion in content and users.
- We faced the problem of not having a big enough training data set to achieve convergence.
- To solve this problem, we started looking at ways to expand our dataset by learning from other existing social networking sites.

### Bigger Network as an Ally:-

- We realized that organizations for visually impaired individuals like AFB, NFBC, etc have their own Facebook pages.
- There is a moderate amount of activity on these pages.
- We also identified a few local organization chapters that have active pages.
- We used a web crawler to mine data from these pages.
- Using this information, we expanded our training set and obtained better results.
- 3 layer HDP model was developed and implemented.
- We used email as a way to inform the users of new relevant posts on the network.

## EVALUATION

- Unattended posts in 1 week interval went from 20% to none.
- Response rate to each post in 1 week interval from an average of 3 responses to 6 responses.
- Conversion rate of a recommendation is 76%.
- Rekindled discussion on older posts.
- Users mentioned that they liked the occasional prompts and found it helpful.
- They liked the fact that they did not get a notification for every post/activity.
- Having email prompts made the recommendation system accessible.

## CONCLUSION

- The results from the above case study confirm what marketing folks know, email messages can motivate people in an online community by constantly reminding them of opportunities to contribute.
- Making the members feel unique and appreciating their contribution made a significant impact in increasing the participation in the network.

## REFERENCES

- [1] Steyvers, M., Smyth, P., Rosen-Zvi, M., & Griffiths, T. (2004). Probabilistic author-topic models for information discovery. The Tenth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining.
- [2] Teh, Y. W., Jordan, M. I., Beal, M. J., Blei, D. M. Hierarchical Dirichlet Processes.
- [3] Farzan, R., Dabbish, L., Kraut, R., Postmes, T. Increasing Commitment to Online Communities by Designing for Social Presence. In CSCW 2011.