

Pinterest Analysis

Ads Activities within Social Network

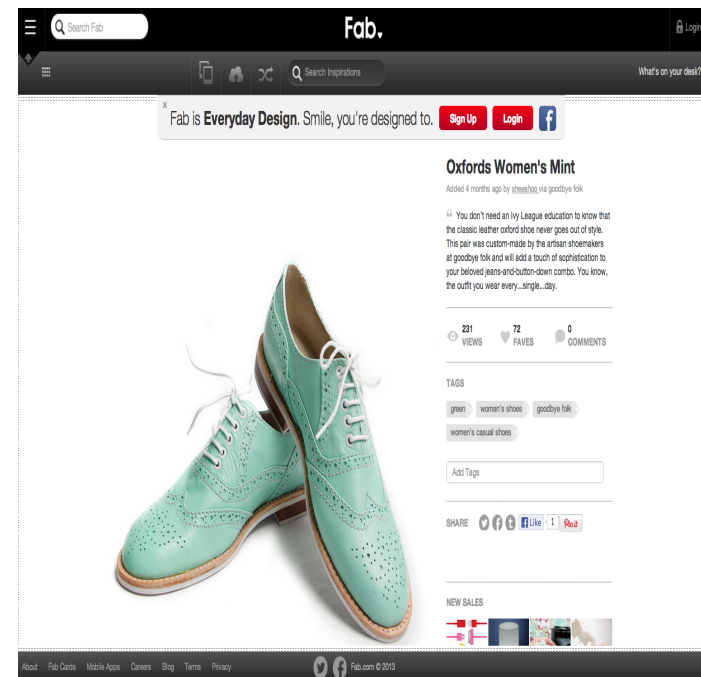
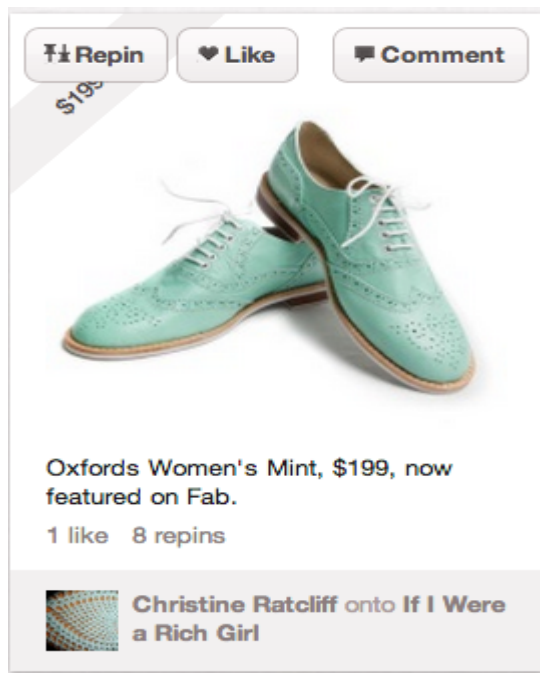
Xu Tian

Xiling Sun

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Background

- Pinterest is a pinboard-style photo-sharing website (aka: Image-based Twitter)
- Users activities: pin, like, repin, comments, follow



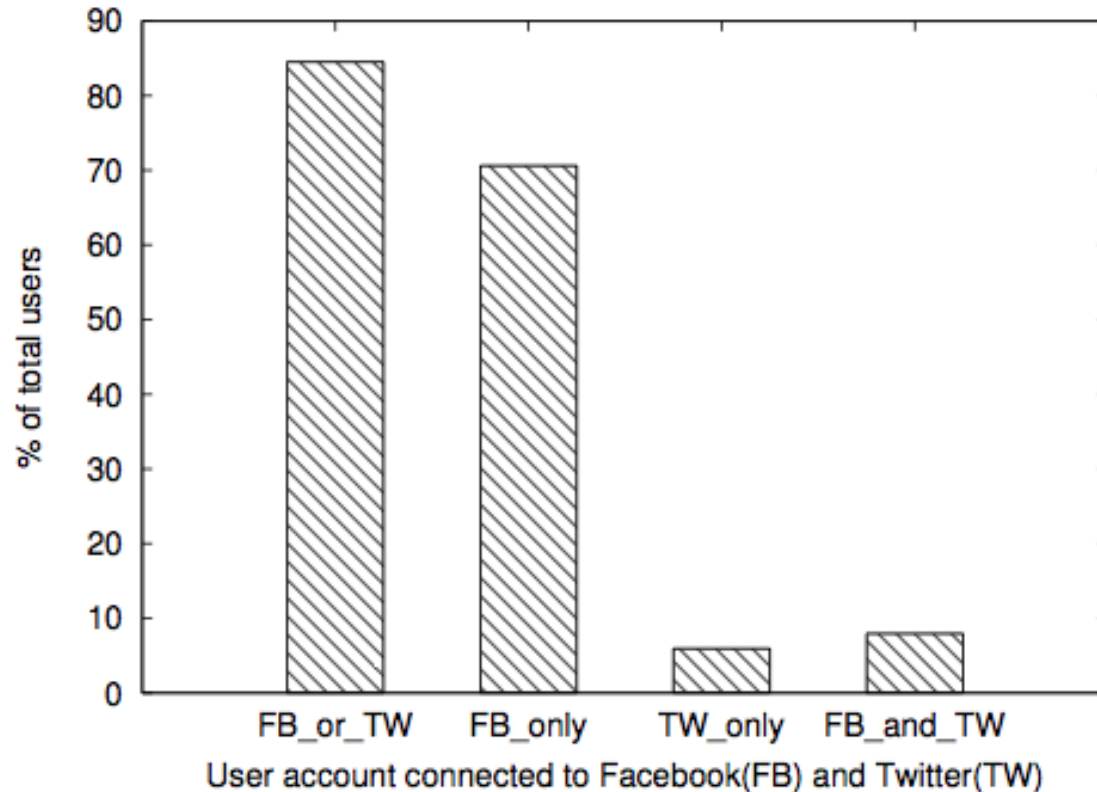
Objective

- Understand the OSN users and their composition
- Understand Pinterest user activities
- Modeling information(pin/ads) diffusion from OSN users

Our Work

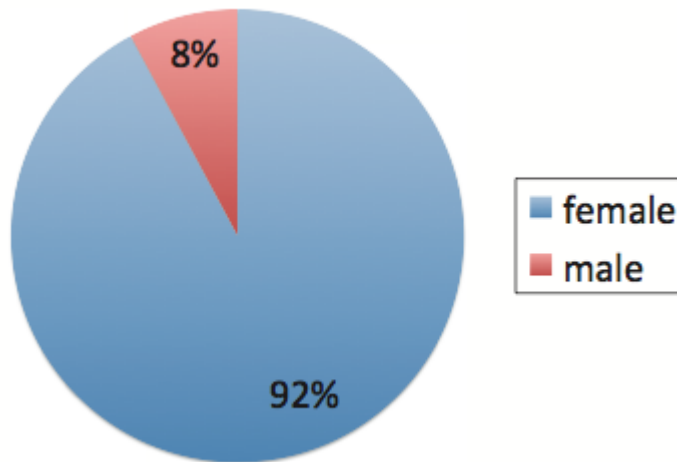
- Pinterest User Analysis
- Pinterest Activity Analysis
- Pinterest Propagation Analysis

1 User Analysis

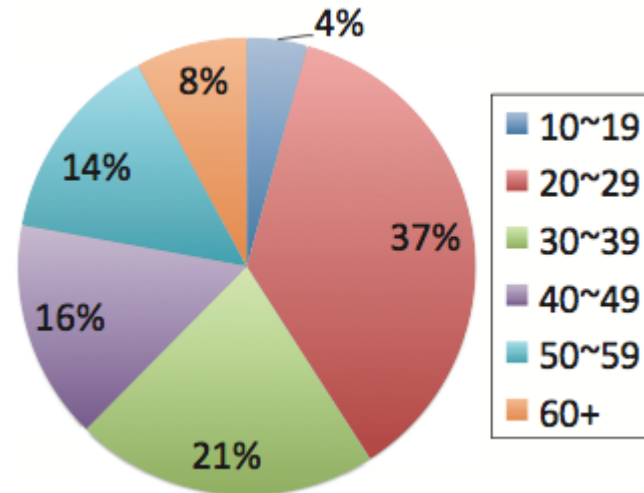


Facebook is the foundation of the most Pinterest Users

1 User Analysis



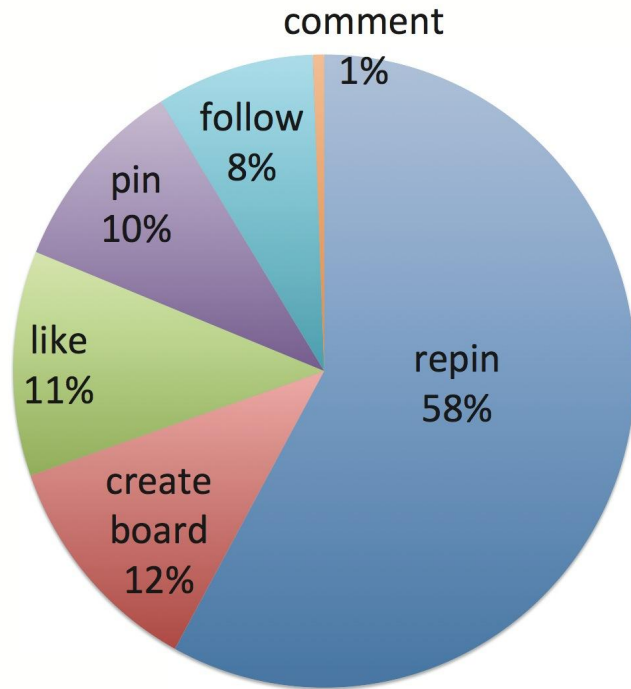
User Gender



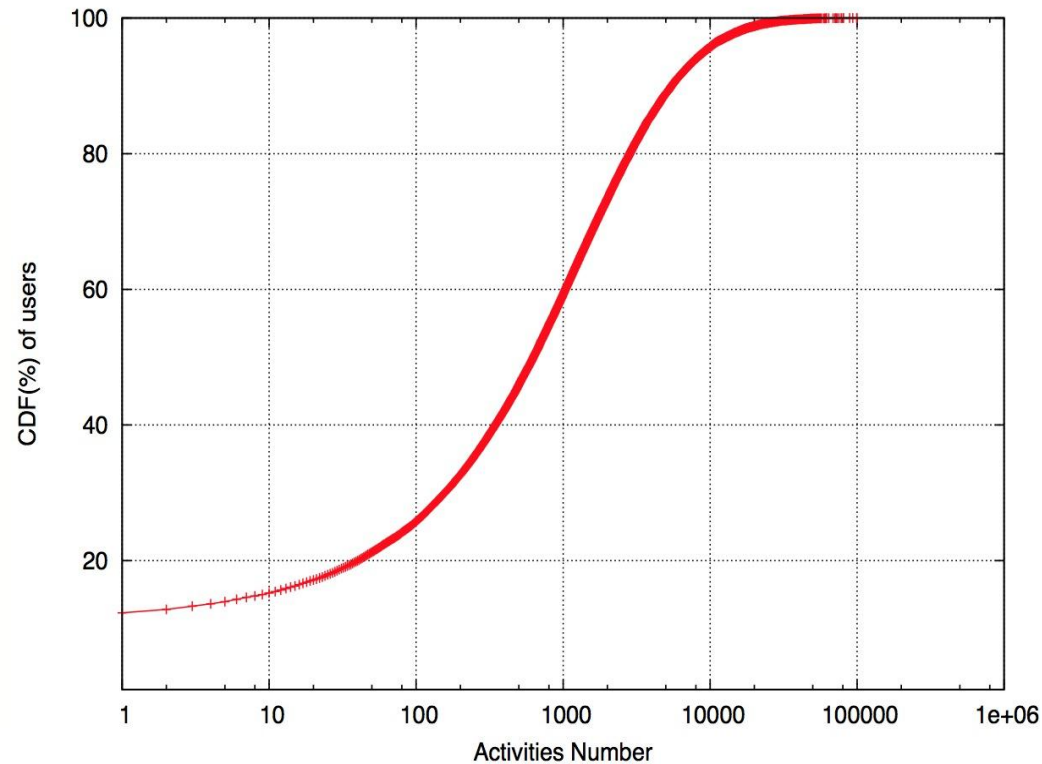
User Age

Young Female dominant among all users

2 Activity Analysis



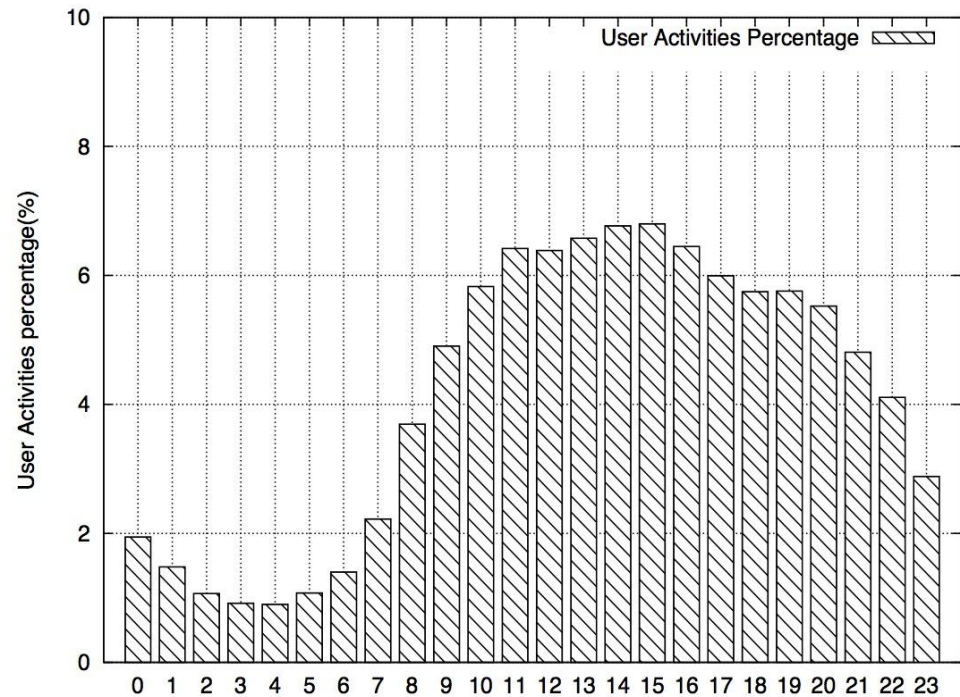
Fraction of user actions devoted to each activity.



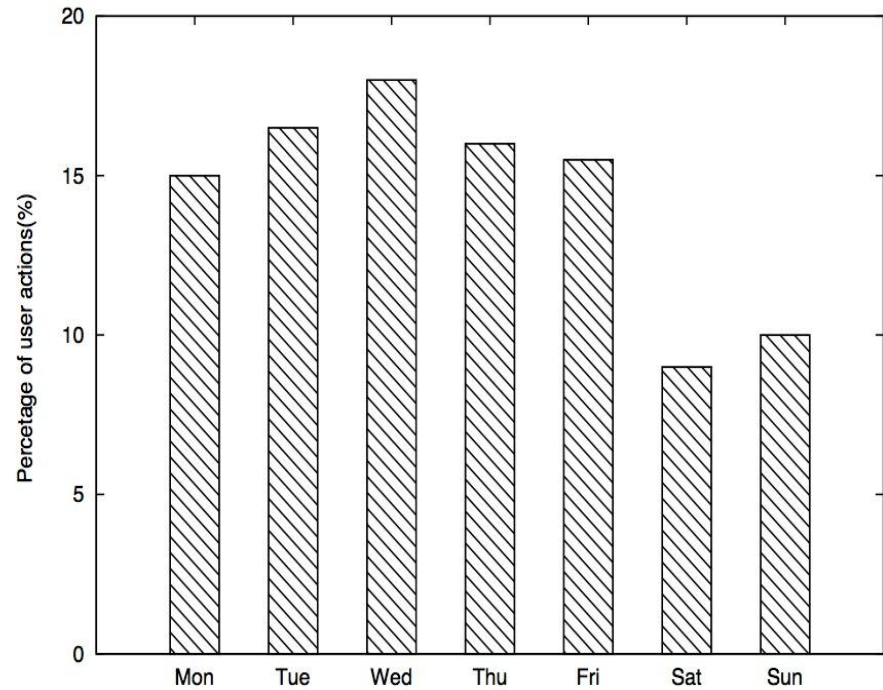
CDF of the number of activities from each user

- 6 activities and "repin" is dominant
- A small fraction(5%) of users with No. of activities larger than 10,000

2 Activity Analysis



Percentage of user activities per hour in one day

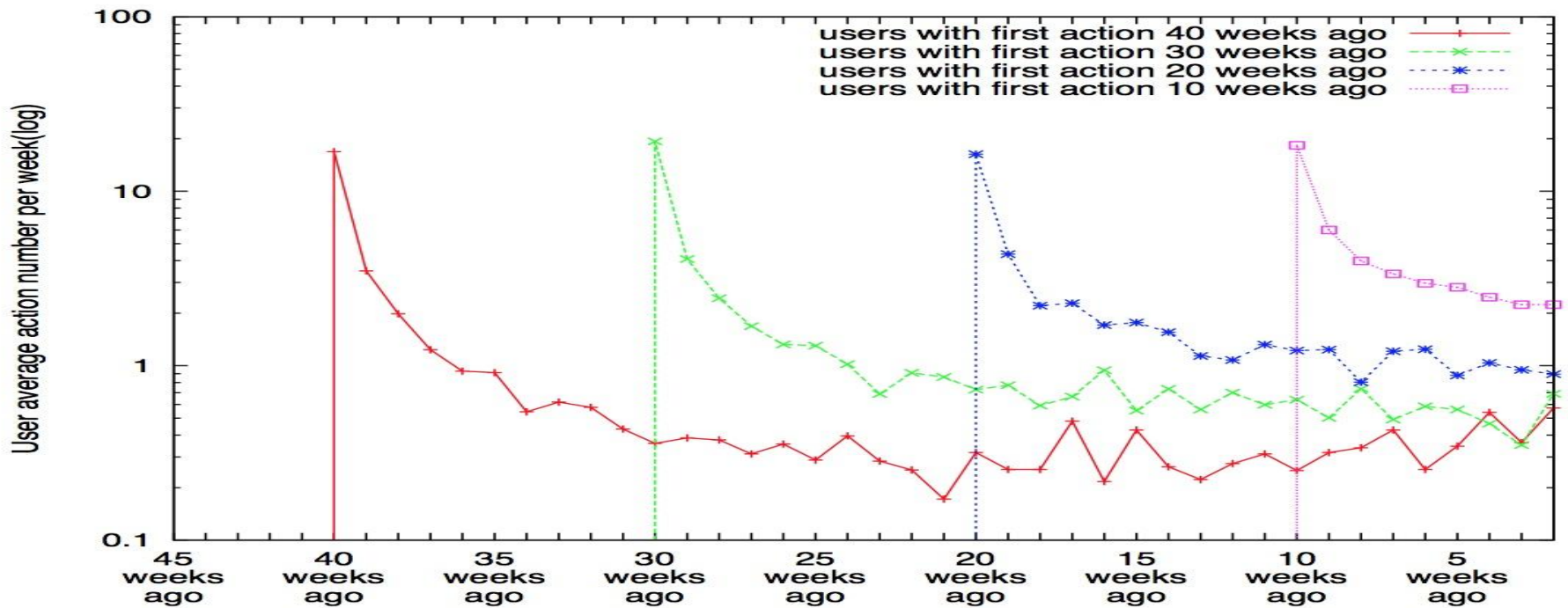


Percentage of user activities in each day in one week

Active Periods of users

- in one day: Afternoon and Evening
- in a week: Weekdays

2 Activity Analysis

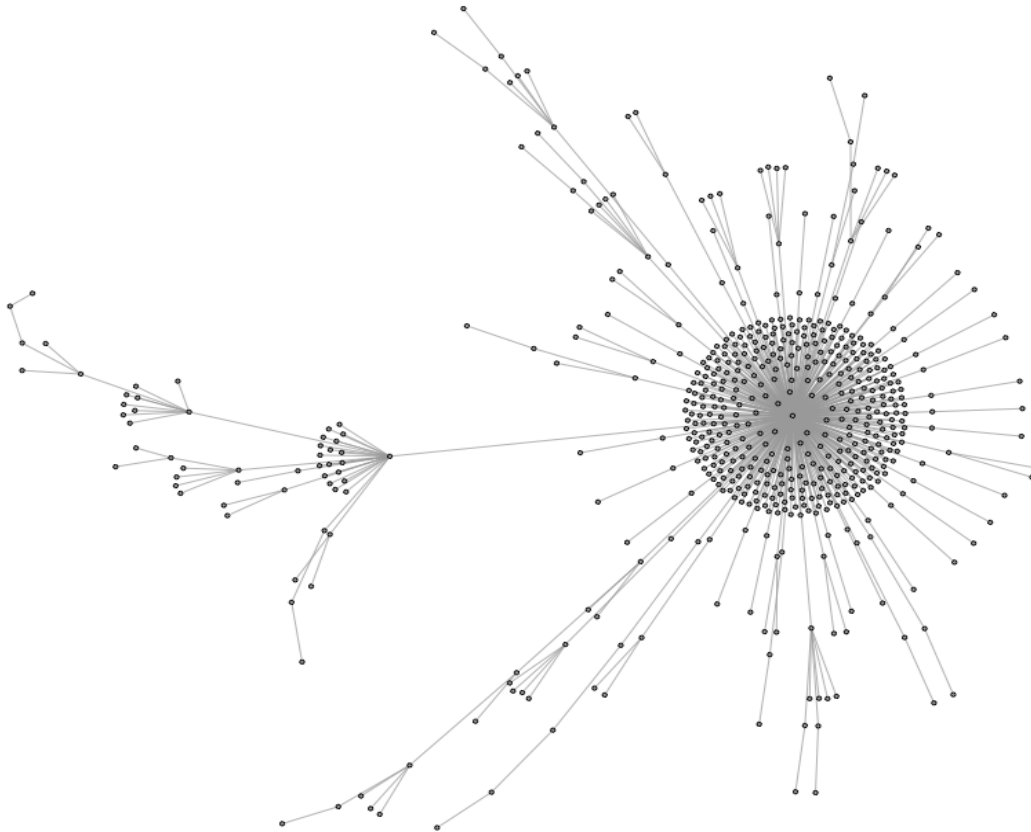


A histogram of the total number of actions observed for the last 45 weeks

- Users are most active exactly at the account creation time.
- Then a relatively rapid drop-off
- After 5 to 10 weeks, user activities per week below 1

3 Propagation Analysis

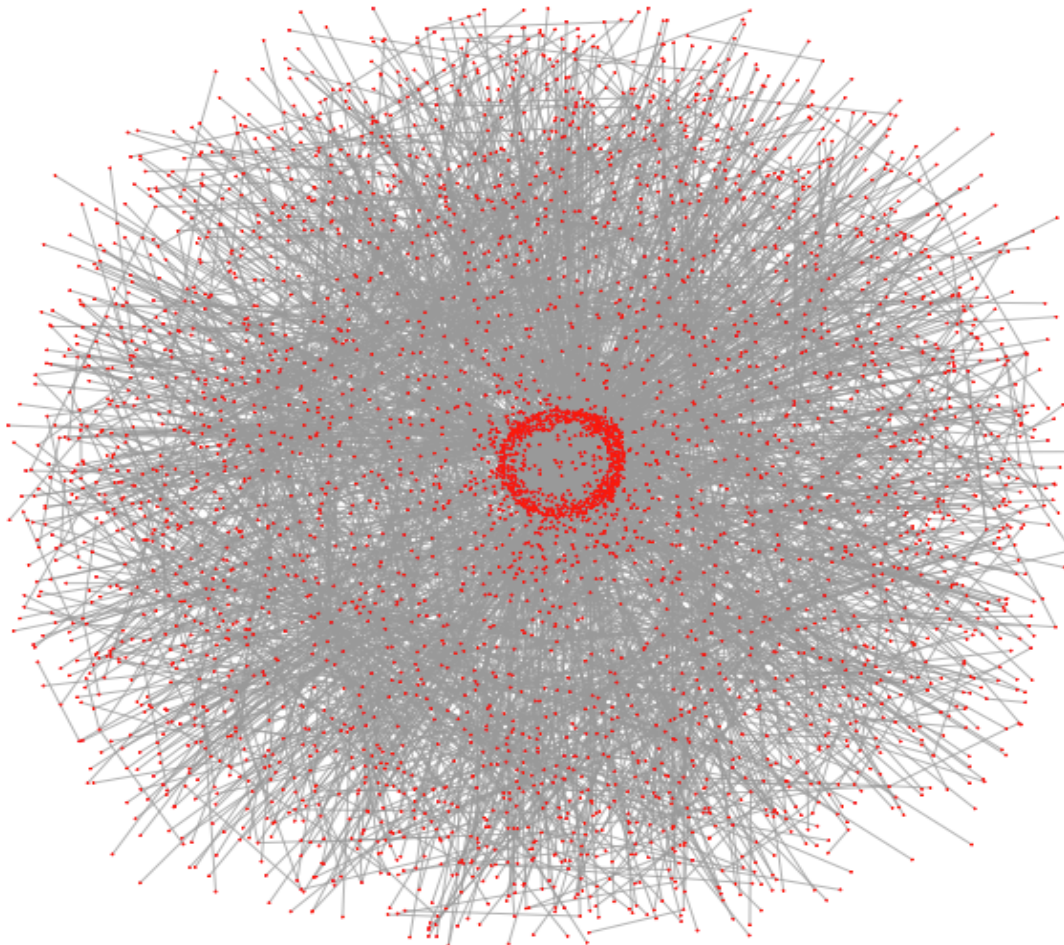
Pin propagation (Example 1)



	# of nodes
1st Hop	403
2nd Hop	102
3rd Hop	46
4th Hop	10
5th Hop	2

3 Propagation Analysis

Pin propagation (Example 2)



	# of nodes
1st Hop	663
2nd Hop	598
3rd Hop	314
4th Hop	0
5th Hop	0

3 Propagation Analysis

The hops of propagation:

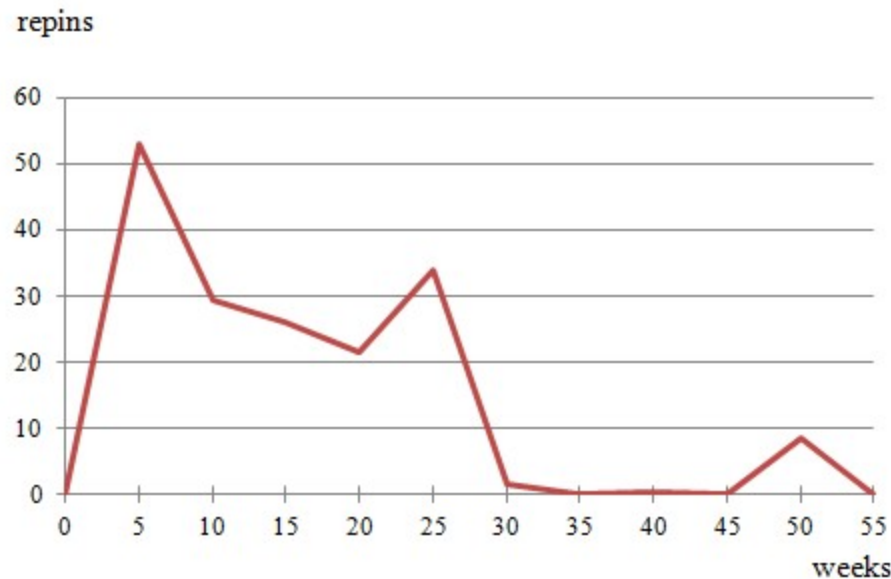
	Avg # of nodes	Median # of nodes
1st Hop	174.73	91
2nd Hop	79.92	33.5
3rd Hop	58.35	25.5
4th Hop	33.69	12.5
5th Hop	24.12	2

- The first hop of propagation decides the scale of the information diffusion.

	Avg # of nodes	Median # of nodes
1st Hop	201.80	92
2nd Hop	110.61	39
3rd Hop	58.02	28
4th Hop	23.45	10
5th Hop	23.08	2

3 Propagation Analysis

The time distribution of first hop:



- Most of the repins happened at the first 25 weeks.

Further Work

- More models to analyze user activities and information propagation:
 - "Small-world network" -- connectivity between users
 - User clusters
 - Social migration
 - Relationship between Peer Pressure and Authority Pressure during information propagation

Thanks!

Question?