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Unveiling the Patterns of Video Tweeting: A Sina Weibo-based Measurement Study

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Outline

- ▶ **Introduction**
- ▶ Methodology
- ▶ Measurement Results
- ▶ Conclusion

Introduction

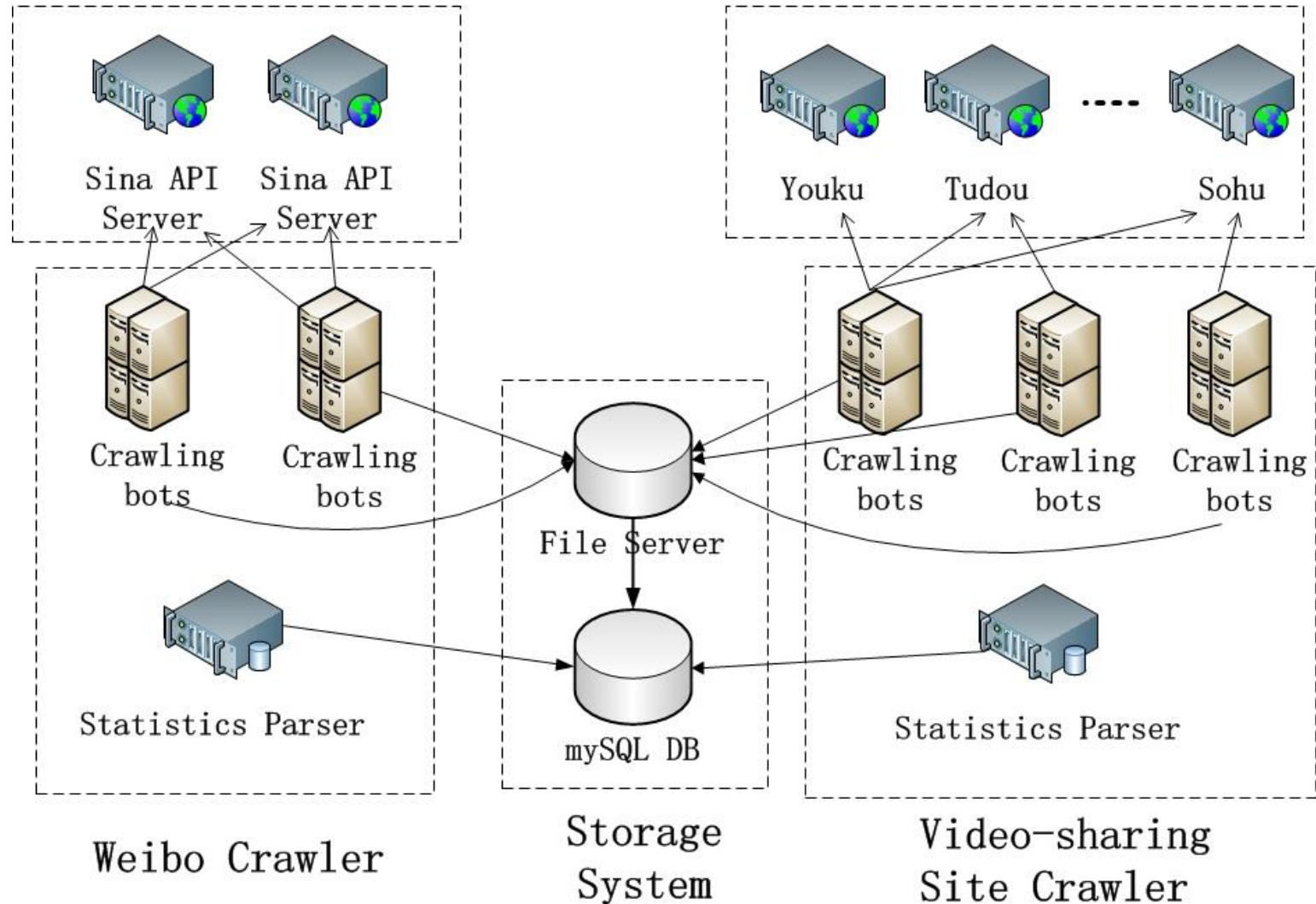


- ▶ Sina Weibo
 - ▶ More than 300 million users
 - ▶ Most popular Twitter-like microblog service in China
- ▶ Contributions of our paper:
 - ▶ Investigate the patterns of video tweeting
 - ▶ Guide the design of future microblog-oriented video distribution platforms
- ▶ *Video Tweet*, A tweet that contains a video link

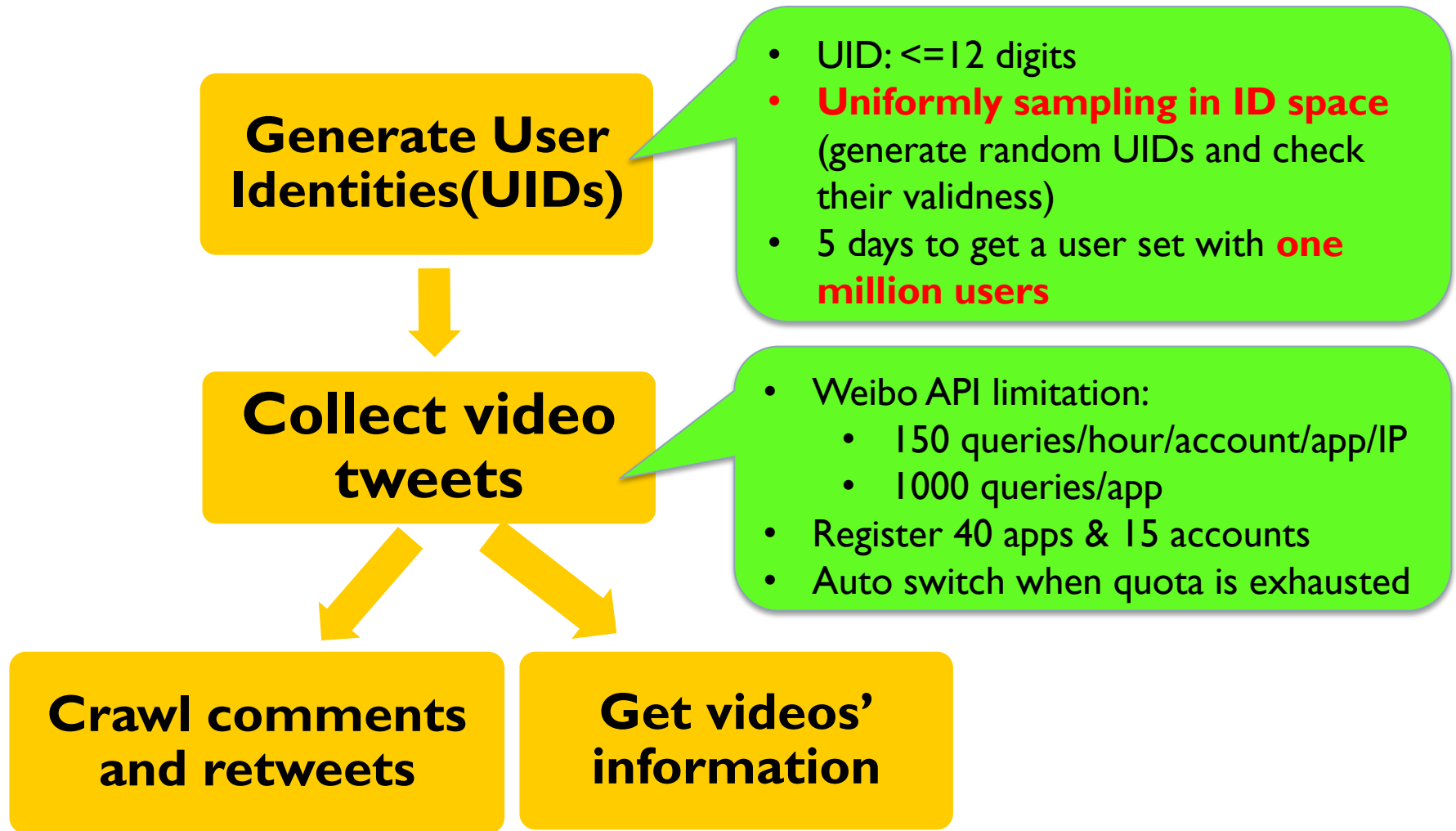
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Measurement Infrastructure



Tasks



Data Set

245,135 video tweets
(original and retweeted)
(from 2012-06-01 to 2012-06-30)

Root video tweet: directly posted by a user himself

Remove duplicated, 0-retweeted and unavailable ones

87,699 root video tweets (Data Set 1)

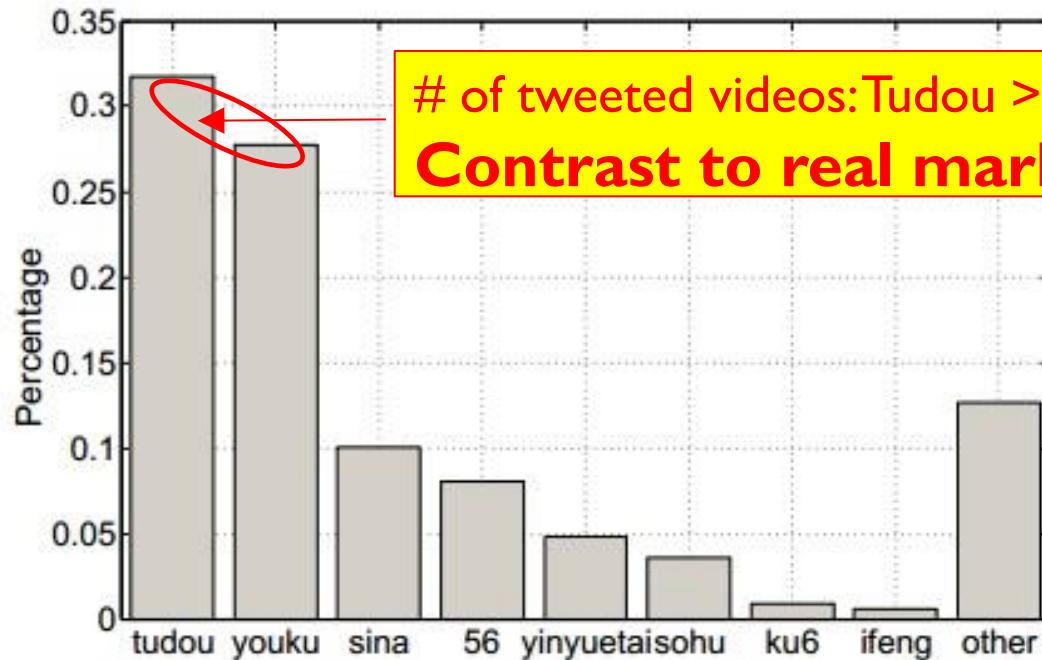
Randomly select from Data Set 1

6,500 root video tweets (Data Set 2)

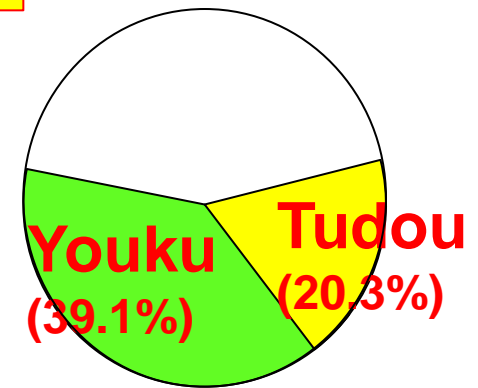
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- ▶ **Measurement Results**
 - ▶ Statistics of Tweeted Videos
 - ▶ Viewer Behavior Characteristics
 - ▶ Effects of Social Links
- ▶ Conclusion

Statistics of tweeted Videos



of tweeted videos: Tudou > Youku
Contrast to real market



Market Share

Fig.1. Video source distribution

Remarks:

Collaboration between Tudou and Sina: users can upload videos to Tudou via Weibo Interface directly

Statistics of tweeted videos (cont.)

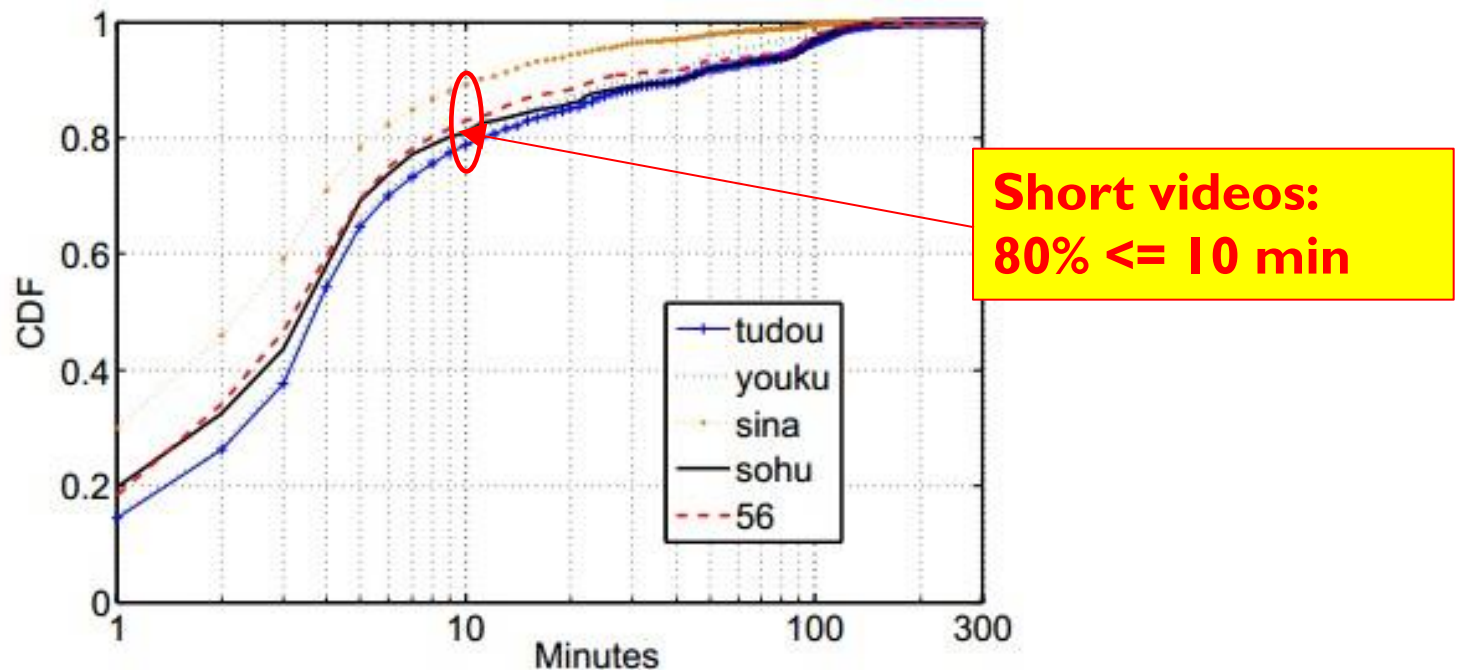


Fig.2. Video length distribution

Observation:

Short video clips are common

Statistics of tweeted videos (cont.)

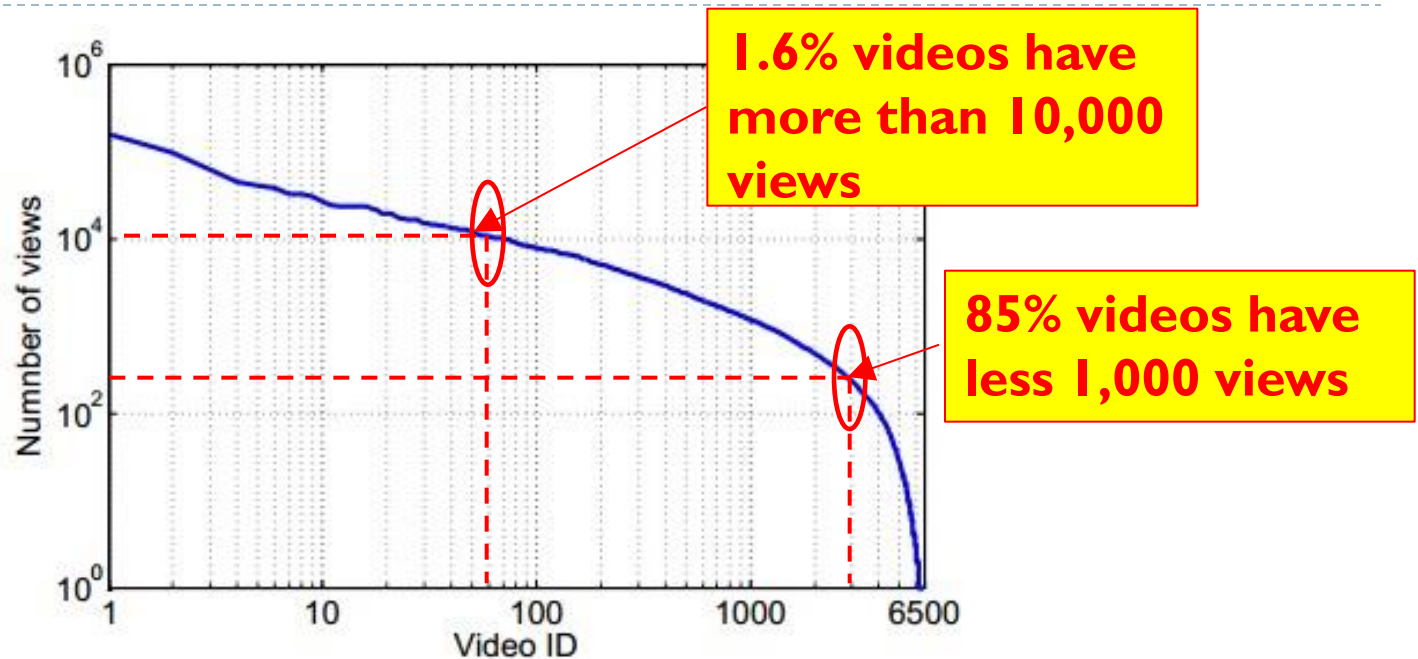


Fig.3. Popularity distribution of videos

- ▶ Estimate the popularity : sum of retweets and comments
- ▶ 6,500 video tweets: 5.5 million views
- ▶ **Observation:** Long tail distribution

Viewer Behavior Characteristics

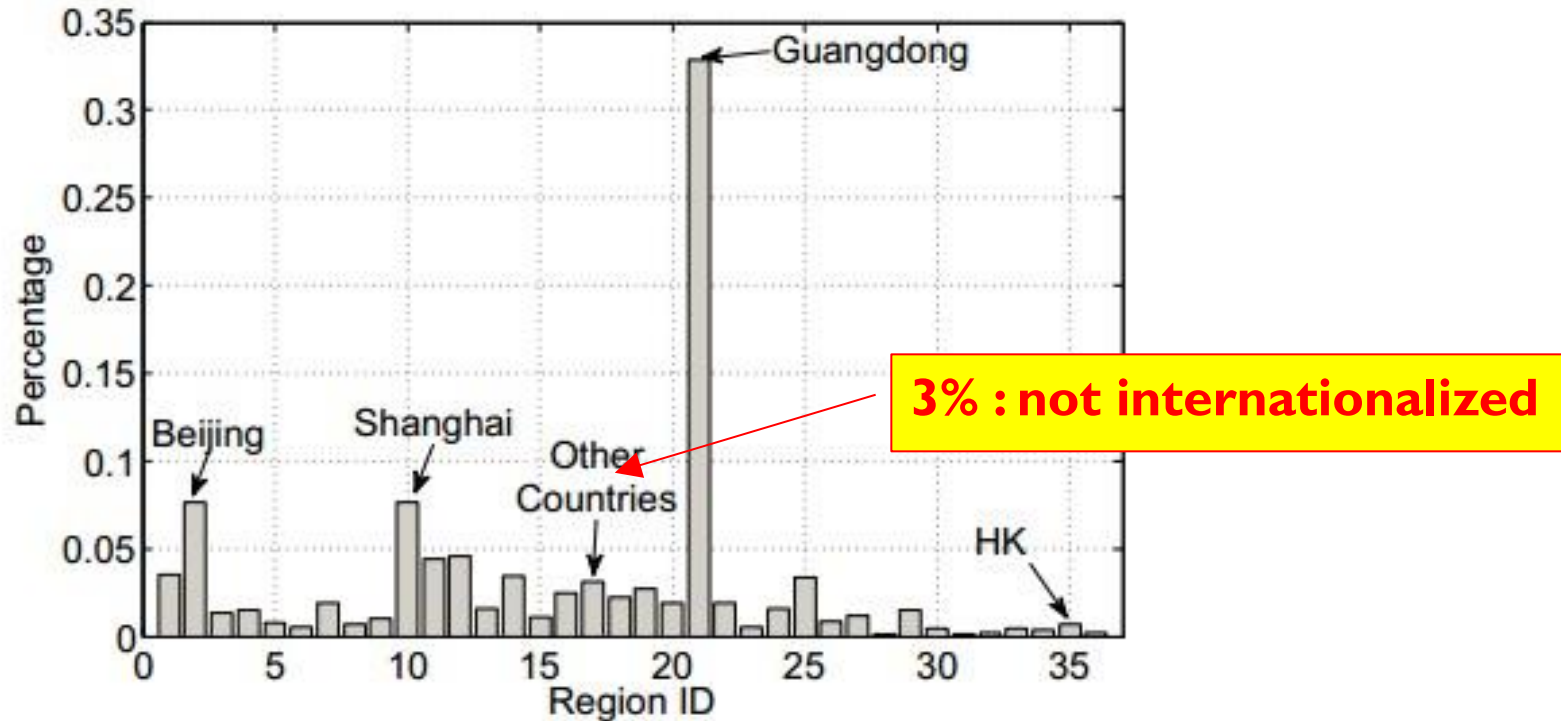


Fig.4. Geographical distribution of viewers

- ▶ Top 3 region: Guangdong(35%),Beijing(7.6%),Shanghai(7.6%)

Viewer Behavior Characteristics (cont.)

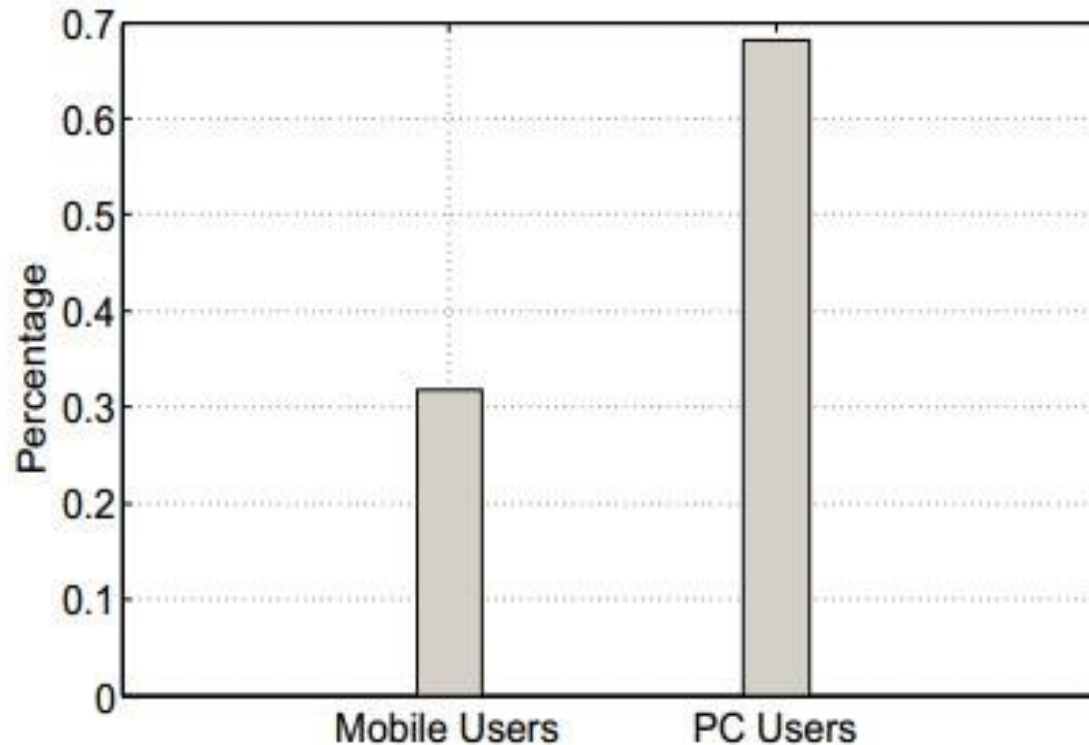


Fig.5. Distribution of user devices

- ▶ **Mobile device views 32% v.s. PC views 68%**

Viewer Behavior Characteristics (cont.)

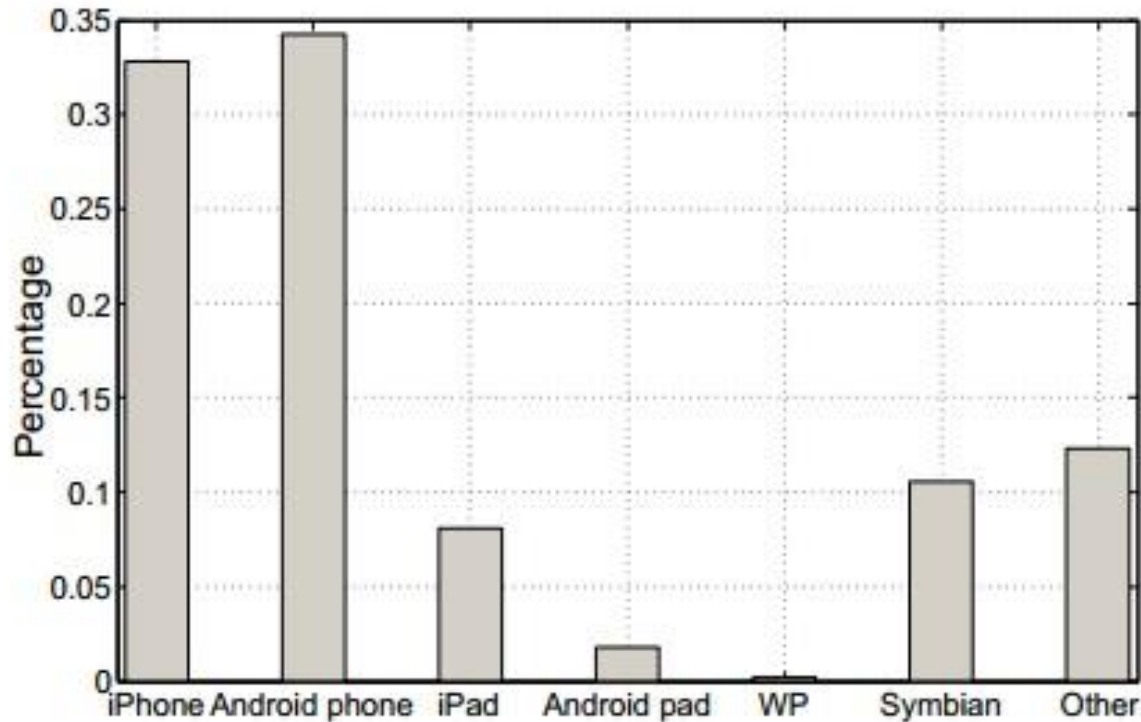


Fig.6. Distribution of mobile clients

- ▶ **Android phone**(34.2%), **iPhone**(32.7%), iPad(8%)

Viewer Behavior Characteristics (cont.)

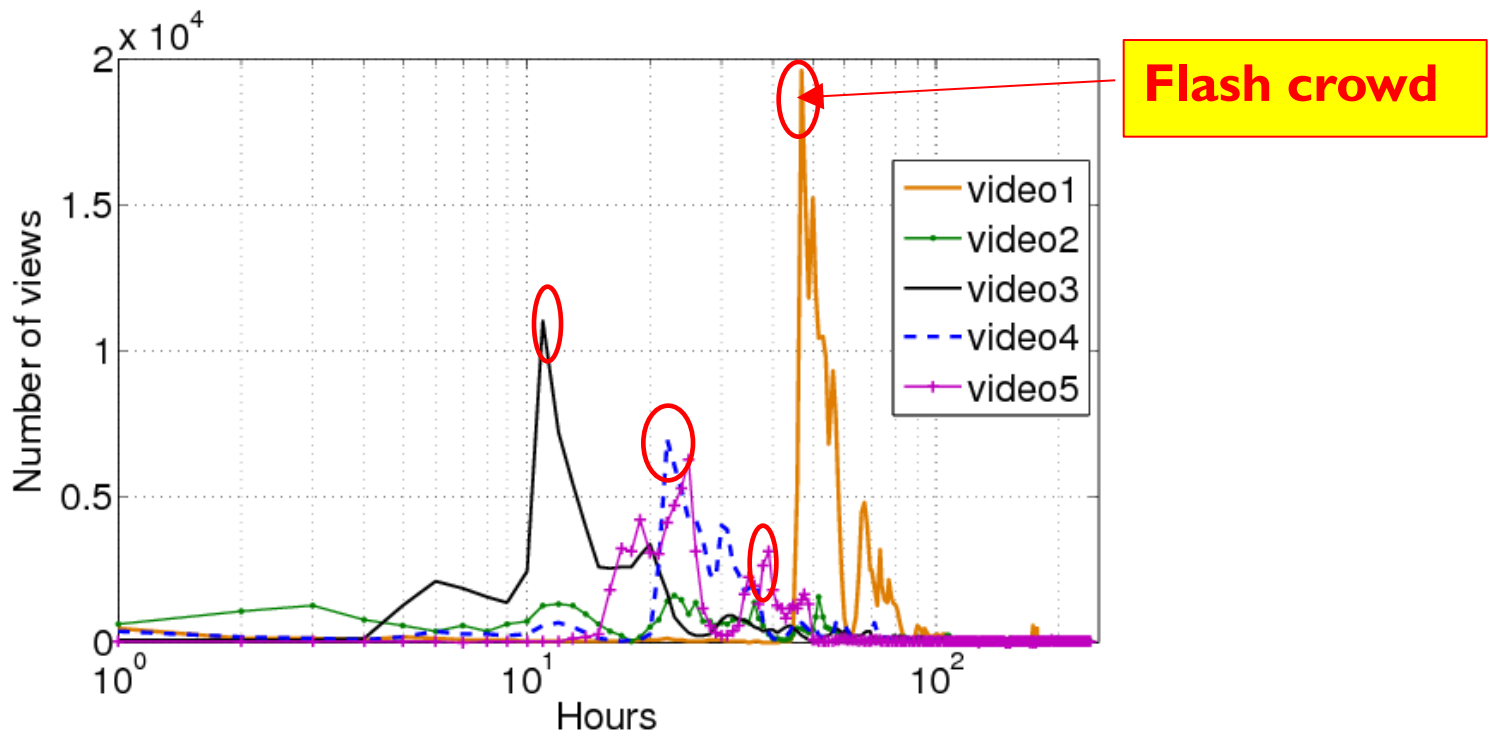


Fig.7. Popularity dynamics of Top 5 popular videos

- ▶ **Frequent flash crowd**, probably caused by social star's retweet/comment or system's recommendation

Viewer Behavior Characteristics (cont.)

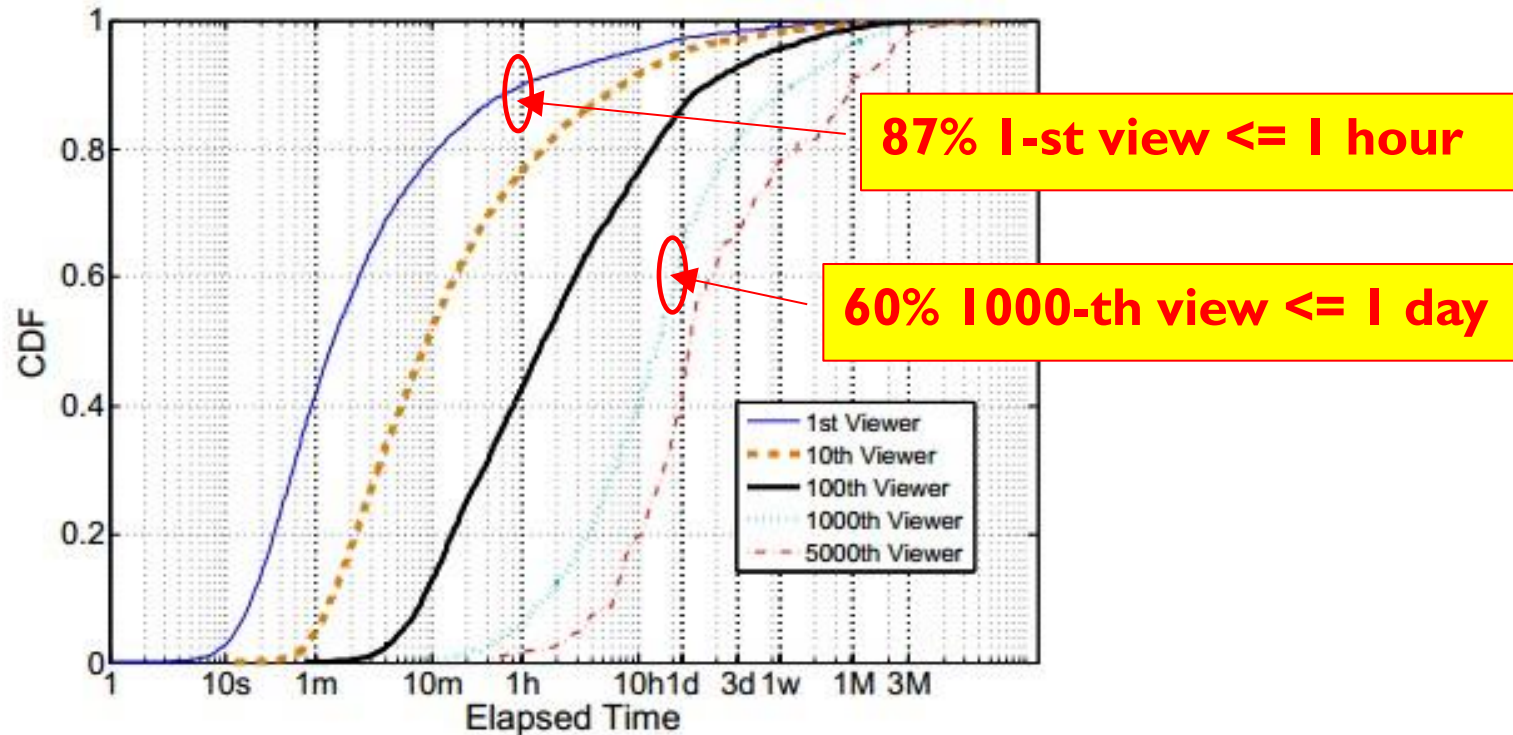


Fig.8. Time lag between the original video tweet and its n-th view

Observation:

Fast spreading nature of microblog service

Viewer Behavior Characteristics (cont.)

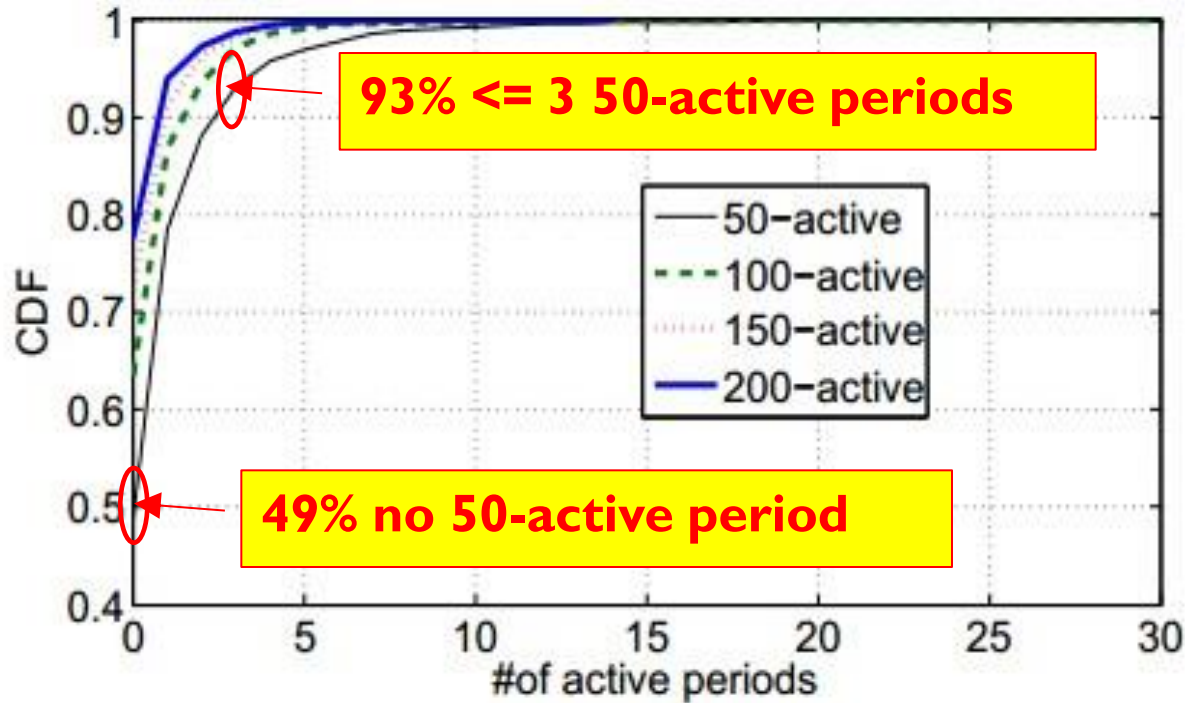


Fig.9. Number of active periods

- ▶ ***k-active period***: consecutive time slots(1 hour) each of which contains at least k views

Viewer Behavior Characteristics (cont.)

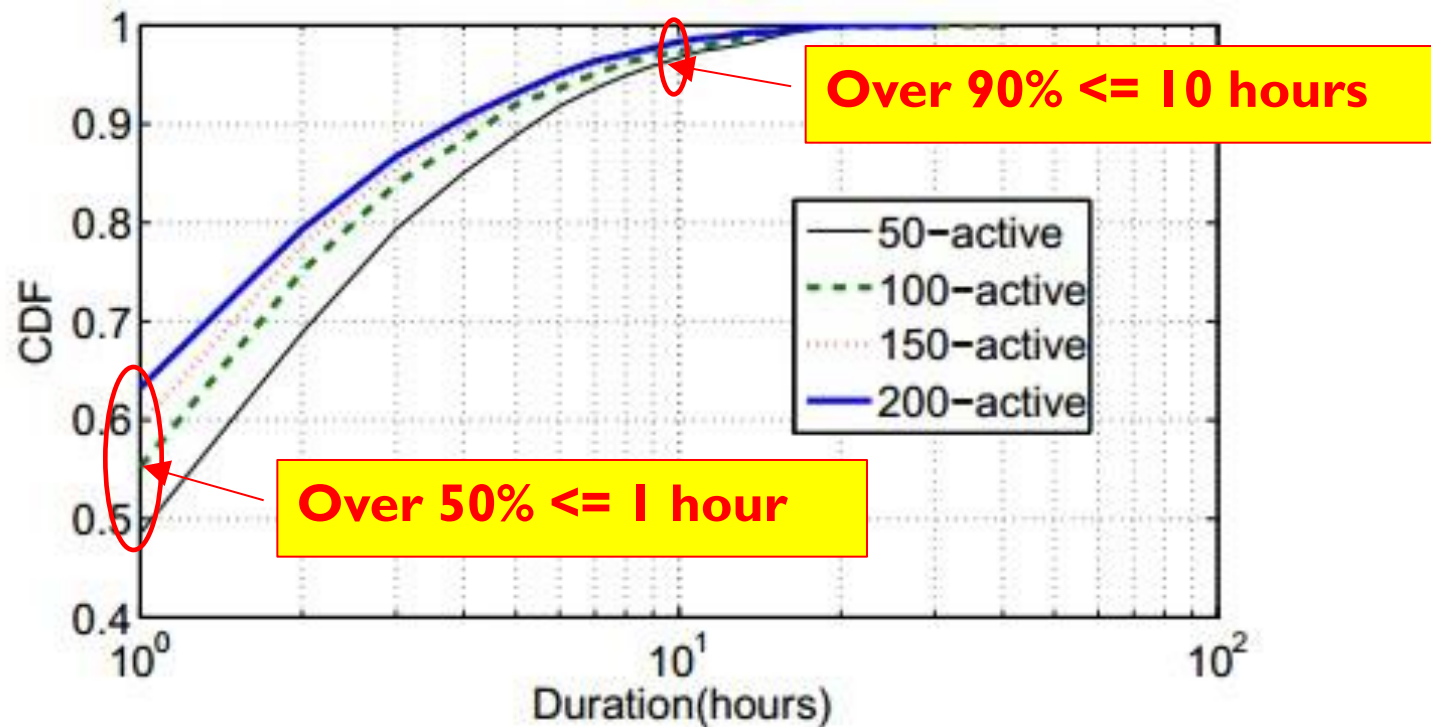
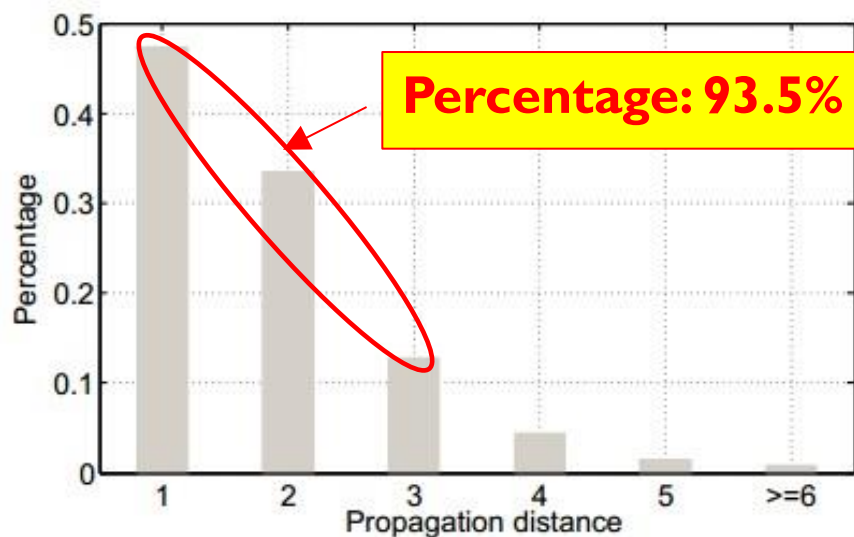


Fig.10. Duration of active periods

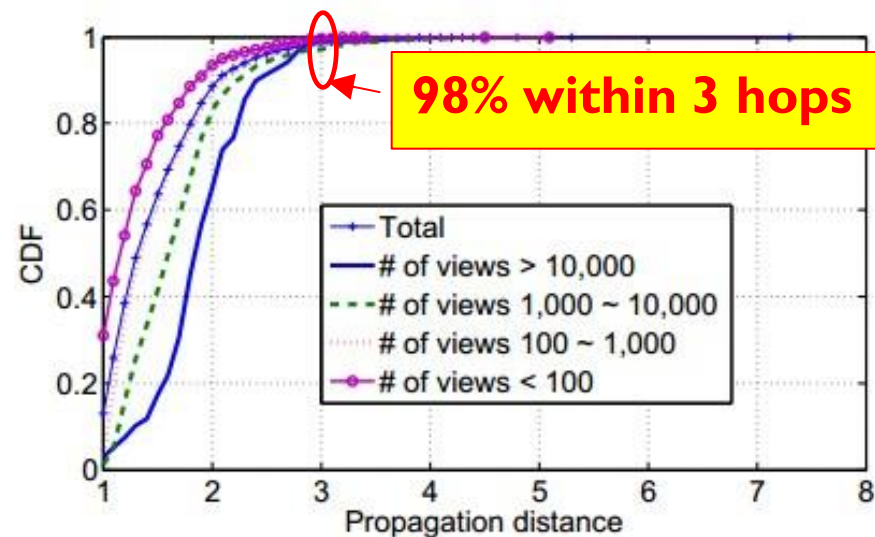
Observation:

The popularity of tweeted videos can not last for a long period

Effects of Social Links



(a) Propagation distance of all viewers



(b) Propagation distance for videos with different popularities

Fig. 11. . Distribution of propagation distance

- ▶ **Propagation Distance:** # of social hops between original tweet publisher and the tweet viewer

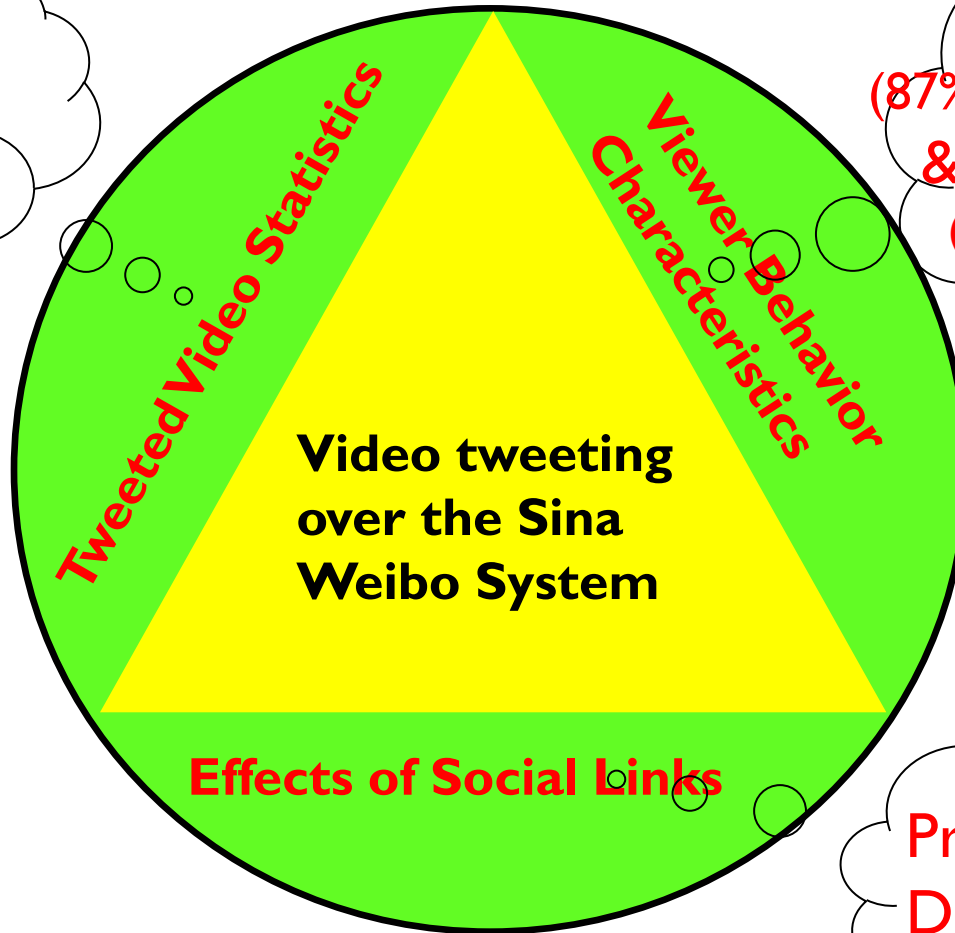
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Conclusion

Short Videos
(80% \leq 10 min)

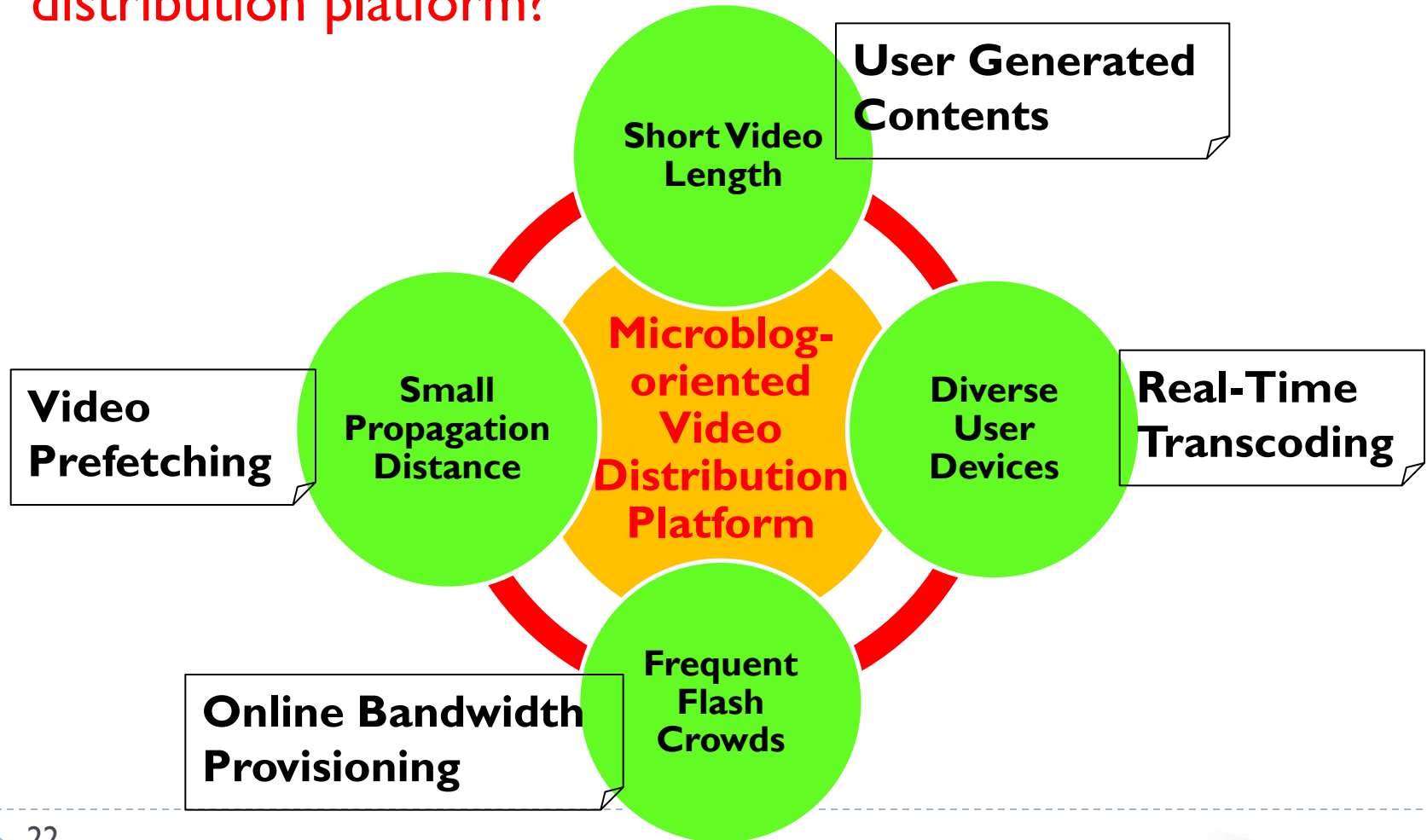
Flash Crowds
(87% 1-st view \leq one hour)
& **Short Popular Time**
(Over 90% \leq 10 hours)



Propagation Distance \leq 3

Discussion and Future Work

- How to design future microblog-oriented video distribution platform?



▶ Thanks !

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