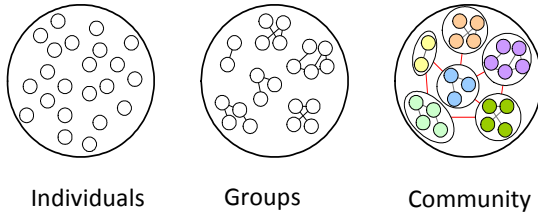


Multi-scale Characterization of Social Network Dynamics in the Blogosphere

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The Problem

A computational framework to characterize social network dynamics in the blogosphere at individual, group and community levels.



Why is it important?



Advertising, Network resource allocation, Prediction of event events, Emergent semantics of a population...

Background and Challenges

- A fine-grained, multi-scale, temporal analysis can help understand the evolutionary aspects of social networks as an emergent property of individual and group interaction.
- Identify salient characteristics of individuals; extract groups; characterize groups and determine 'types' of groups to represent a community.

What is Multi-scale Characterization?

Characterization that captures the substantive, the structural and the dynamic aspects of how people communicate in social networks.

Our Method

Individual Characterization

- Extract three kinds of features for individuals – activity characteristics e.g. response time to blog posts, influence on local neighborhood and spatial graph based measures.

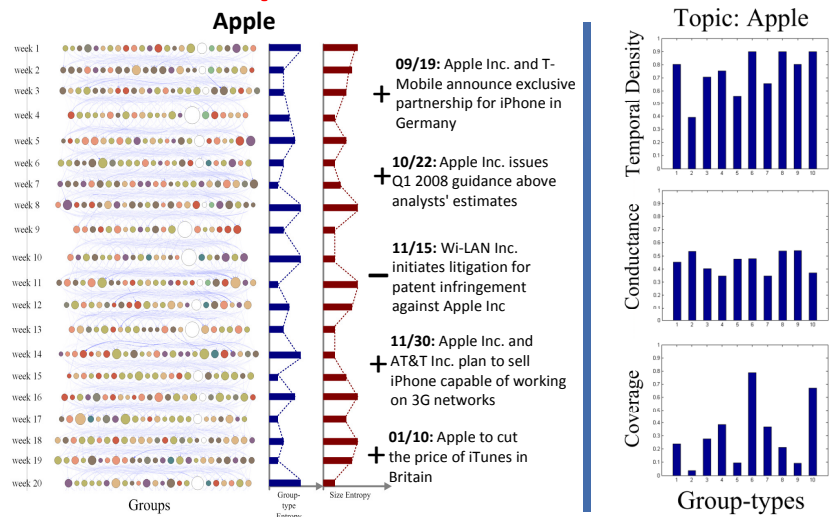
Group Characterization

- Extract groups and their evolution using a temporal clustering technique based on mutual awareness expansion.
- Group features are then used to cluster groups into different 'types'.

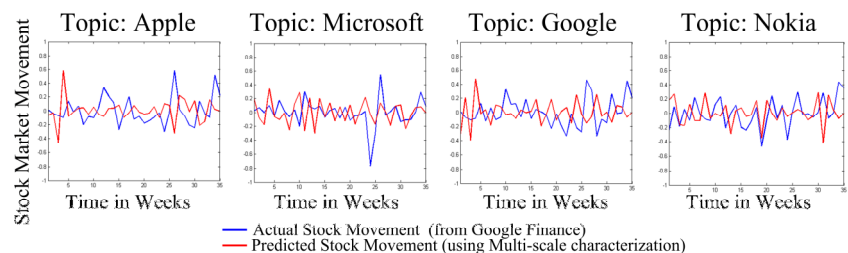
Community Characterization

- Communities are characterized based on temporal and spatial measures.

Experimental Results



Usefulness of the Characterization



Conclusions

- Community macro characteristics are indicators of different event types (positive / negative).
- Mined knowledge can be useful to predict external phenomenon (e.g. stocks).
- Future Work**
- Model sentiment states of communities and use it to determine "wisdom of the crowd" properties.