



# Modelling Information Roles in the Blogosphere for Understanding Stock Market Dynamics

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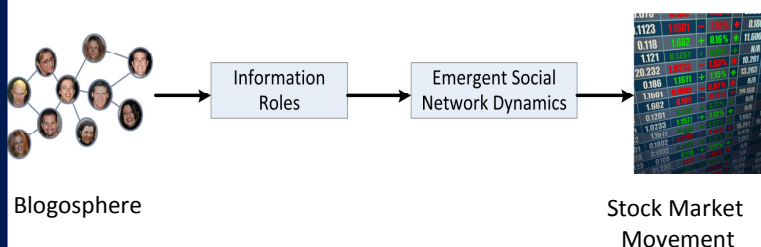
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## The Problem

Determine information roles of people in the blogosphere and how their communication is useful to understand external events like stock market dynamics.



### What are Information Roles?

Information roles are characteristics of individuals that define her communication activity at a certain point of time.

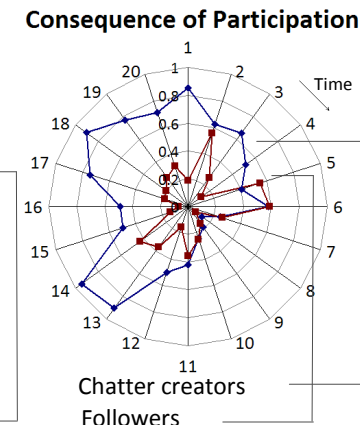
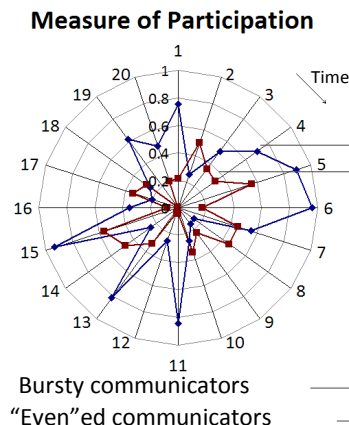
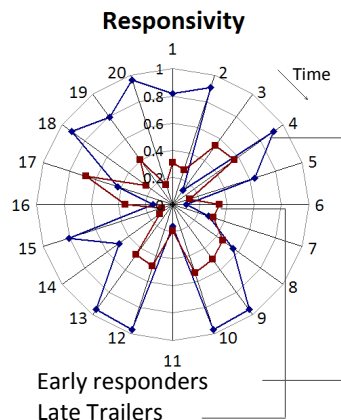
### Why is it important?

- Understand communication patterns of individuals and thereby predict communication resource allocation in organizations.
- Identify opinion leaders to facilitate targeted advertising.
- Analyze how communities form around topics and detect sentiments.

### Background and Challenges

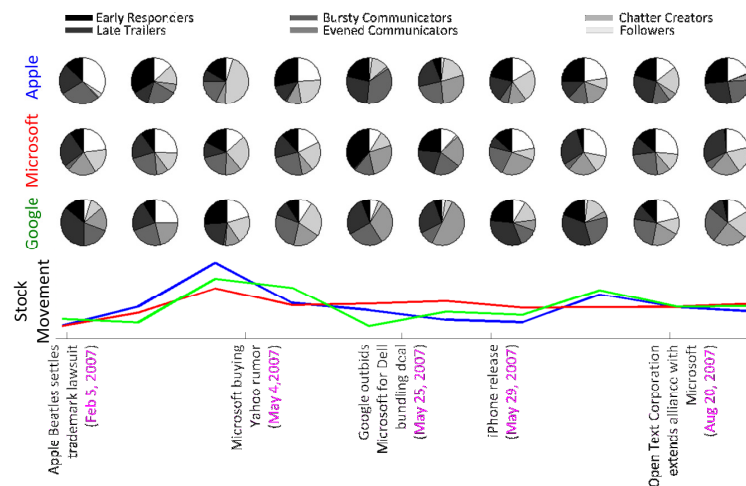
- Modeling information roles needs a comprehensive analysis of context – response behavior, participation in communication and consequences of communication activities of people.
- Communication properties of people are temporally dynamic – information roles are not static properties.

## Information Roles: Dimensions



## Experimental Results

- We focused on a popular technology blog (Engadget) and determined the information roles of its bloggers.
- Positive stock movements associated with events like product releases are correlated with large number of bursty communicators.
- Stock movements associated with business tie-ups are correlated with large number of early responders.



Dynamics of information roles (Engadget) with respect to stock movement and events related to three technology companies.

## Conclusions

- Information roles and their context in the blogosphere have considerable predictive power with respect to external phenomena.

### Future Work

- Capture temporal evolution of roles using probabilistic graphical models.