

# **Social computing**

# Index

○ social computing?

○ Rationale-definition

○ Examples

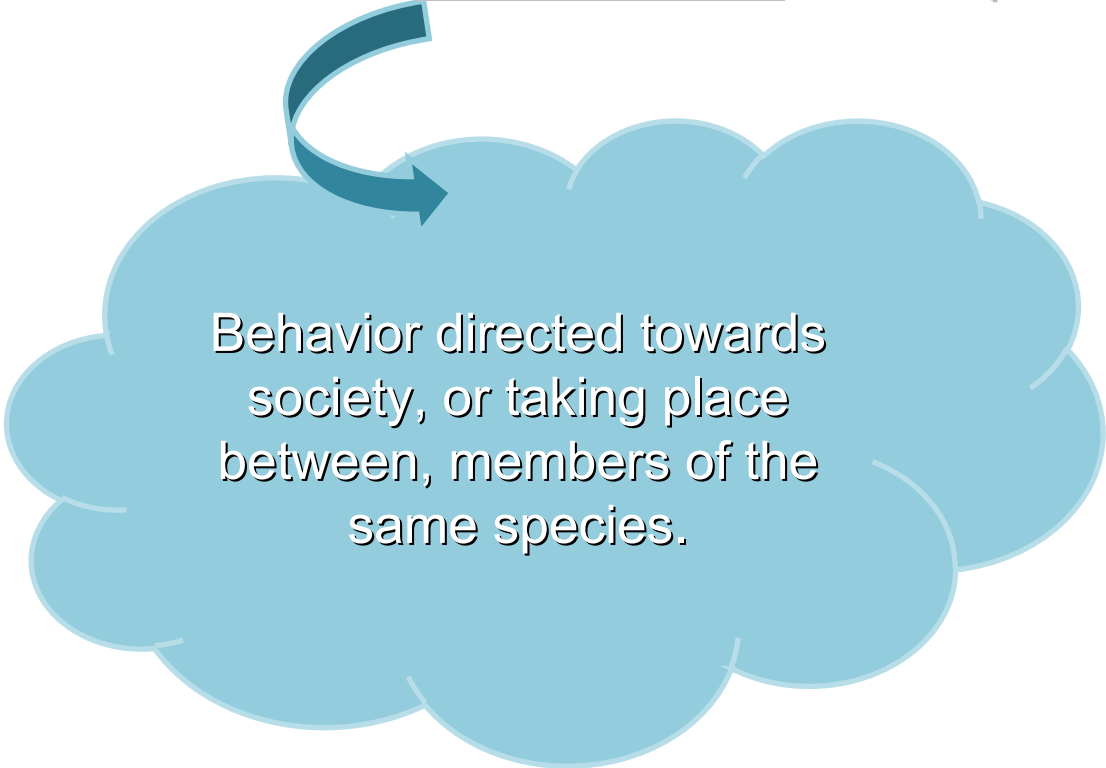
- web2.0
- Enterprise social software
- Electronic negotiation and electronic markets
- collaborative filtering

Social computing>>

# Social computing

## Social computing?

“An area of computer science that is concerned with the intersection of social behavior and computational systems.”



Behavior directed towards society, or taking place between, members of the same species.

# Social computing

Social computing has become an important concept for **use in business**.  
It 's used in **two ways** as detailed below.

i ) Social computing has to do with supporting  
any sort of social behavior in or through computational systems.

(= Creating or recreating social conventions and social contexts  
through the use of software and technologies.)

Blogs, email, instant messaging,  
social network services,  
wikis, social bookmarking

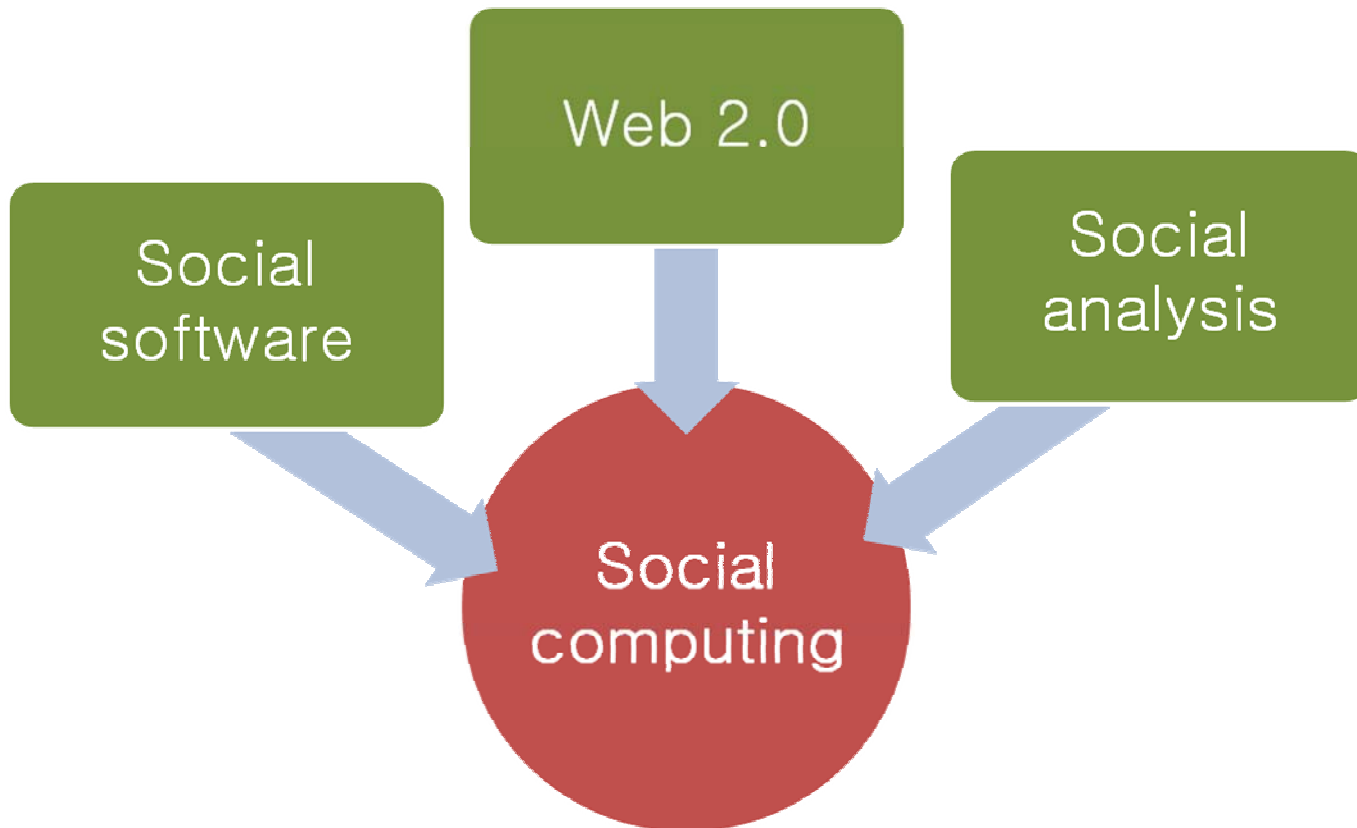
# Social computing

- i i) Social computing has to do with supporting  
“computations” that are carried out by group of people .  
( from James Surowiecki’s book ‘*the wisdom of crowds*’ )

Collaborative filtering, online auctions,  
prediction markets, reputation systems,  
computational social choice,  
tagging, verification games,

# Social computing

Social computing has become more widely known because of its relationship to a number of recent trends.



# Social computing

“Easy connections brought about by cheap devices, modular content, and shared computing resources are having a profound impact on our global economy and social structure. Individuals increasingly take cues from one another rather than from institutional sources like corporations, media outlets, religions, and political bodies. To thrive in an era of Social Computing, companies must abandon top-down management and communication tactics, **weave communities into their products and services**, **use employees and partners as marketers**, and **become part of a living fabric of brand loyalists**”

A February 13, 2006 paper by market research company **Forrester Research**



Rationale -definition>>

# Rationale

- Social computing begins with the observation that humans(and human behavior) are profoundly social.

Social information provides **a basis** for inferences, planning, and coordinating activity

- Information in social computing:

Provided directly (review, comments)  
Provided after being filtered (recommended)  
Provided indirectly (Google's page rank algorithms)

Information that is produced by a group of people is used to provide or enhance **the functioning of a system**

# Rationale-definition

## **Social computing**

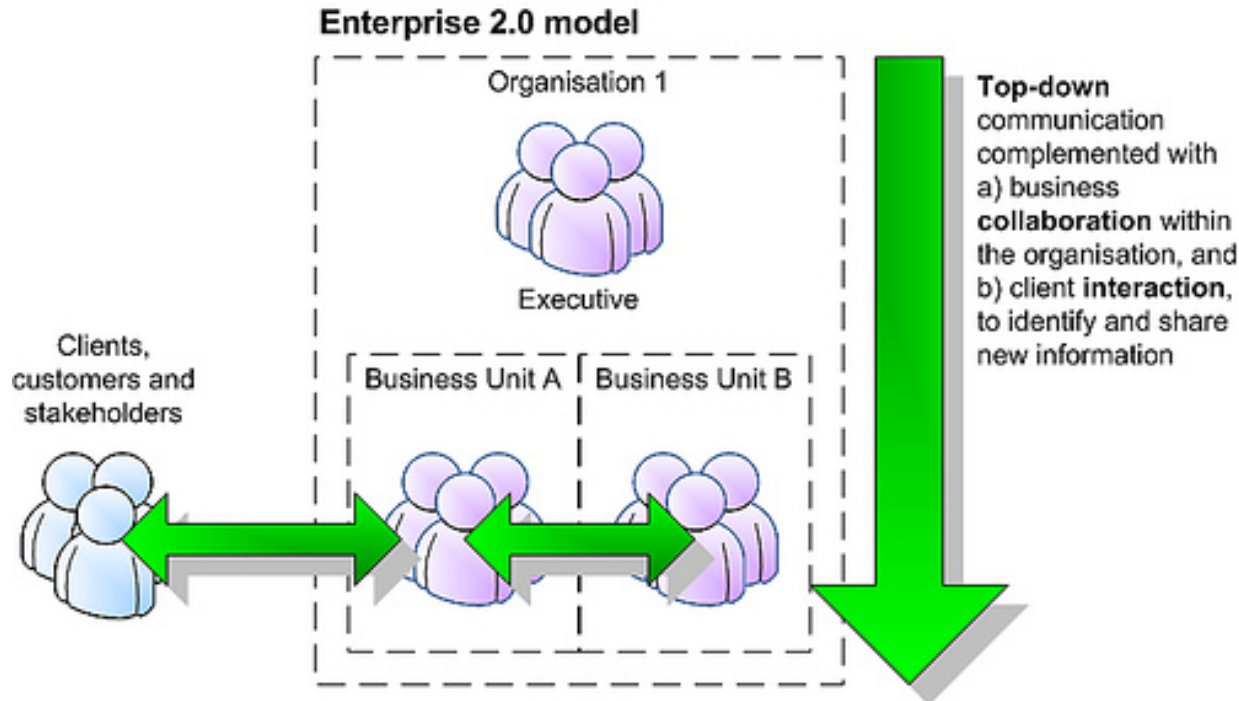
refers to system that support the gathering, representation, processing, use, and dissemination of information that is distributed across social collectivities such as teams, communities, organization, and markets. Moreover, the information is not “anonymous” but is significant precisely because it is linked to people, who are in turn linked to other people.

Examples>>



# Enterprise social software

"a system of web-based technologies that provide rapid and agile collaboration, information sharing, emergence and integration capabilities in the extended enterprise".



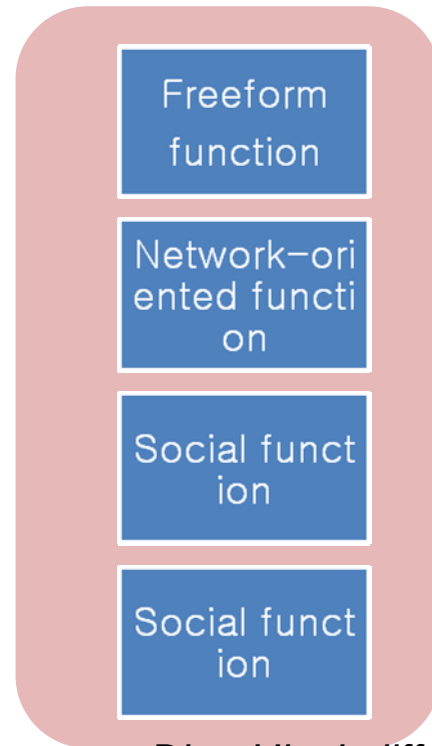
# Enterprise social software

"a system of web-based technologies that provide rapid and agile collaboration, information sharing, emergence and integration capabilities in the extended enterprise".<sup>1</sup>

## Functionality



*Andrew McAfee*



*Dion Hinchcliffe*

# Electronic negotiation & electronic markets

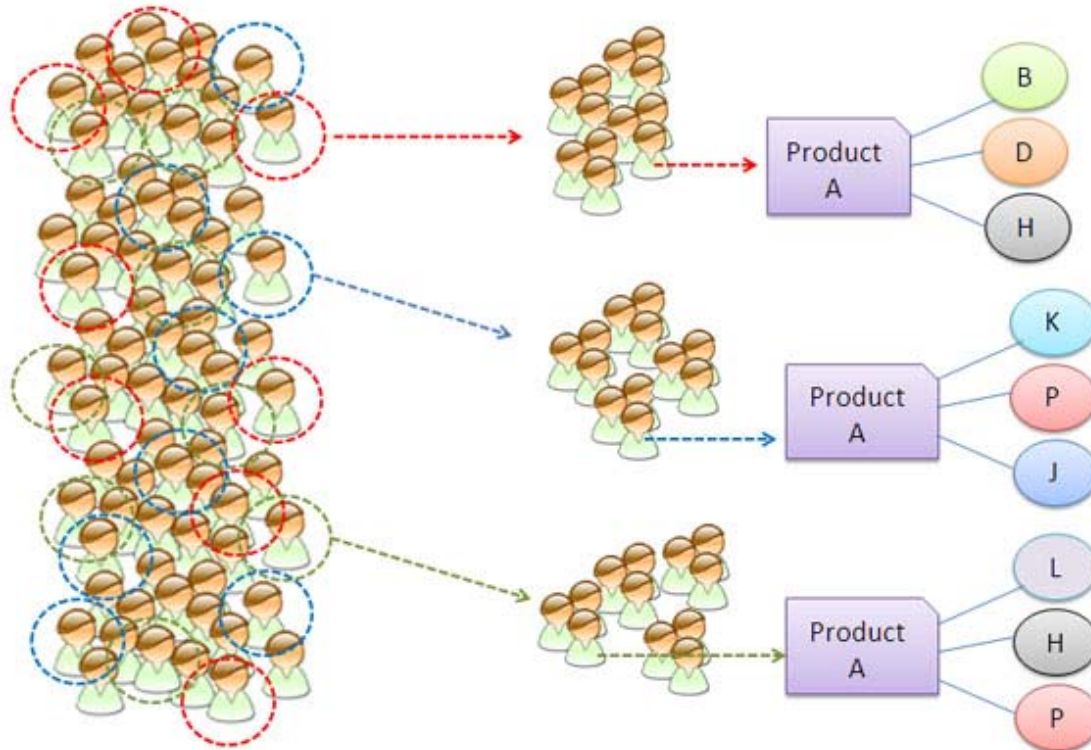
Electronic negotiation represents an important and desirable coordination mechanism for electronic markets. Negotiation between agents allows cooperative and competitive sharing of information to determine a proper price.



# Collaborative filtering

## Collaborative filtering (CF):

- automatic predictions (filtering) about the interests of a user by collecting taste information from many users.
- The underlying assumption of CF approach is that those who agreed in the past tend to agree again in the future.



# Collaborative filtering

## ○ Types

### Active filtering

- a peer-to-peer approach
- sharing this information over the web for other people
- extremely important and effective in a situation where a non-guided web search produces thousands of results that are not useful

### Advantages

- an actual rating given to something of interest by a person who has viewed the topic or product of interest
- a reliable source

### Disadvantages

- the opinion may be biased
- as providing feedback requires action by the user, less data may be available
- Averaging effects
- the First-Rater Problem
- Cold-Start Problem

# Collaborative filtering

## Passive filtering

- collects information implicitly
  - Purchasing an item
  - Repeatedly using, saving, printing an item
  - Referring or linking to a site
  - Number of times queried
- anyone accessing the site has automatically given data.

## Item based filtering

- items are rated and used as parameters instead of users

- Collaborative Filtering
  - Recommender System
  - Information Explosion
    - Data Fusion