

## 08 – Web 2.0 (part 1)

- The “buzzword lesson”:
  - Web 2.0
  - The long tail
  - The Wisdom of the Crowds
  - Collective intelligence
  - ...
  
- But also something new (I hope!):
  - Taxonomy of participation
  - User incentives
  - Best practices for participative systems (a beginning)

# What is Web 2.0?

- Ok, ok, you have all heard this lots of times, but let me at least recap the main Web 2.0 patterns:
  - The long tail
  - Data is the next Intel inside
  - Users add value
  - Network effects by default
  - Some rights reserved
  - The perpetual beta
  - Cooperate, don't control
  - Software above the level of a single device

# From Web1 to Web2

- An exercise: add 5 more!

Web 1.0		Web 2.0
DoubleClick	-->	Google AdSense
Ofoto	-->	Flickr
Akamai	-->	BitTorrent
mp3.com	-->	Napster
Britannica Online	-->	Wikipedia
personal websites	-->	blogging
evite	-->	upcoming.org and EVDB
domain name speculation	-->	search engine optimization
page views	-->	cost per click
screen scraping	-->	web services
publishing	-->	participation
content management systems	-->	wikis
directories (taxonomy)	-->	tagging ("folksonomy")
stickiness	-->	syndication

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  - ... No kidding, let's do it now! :-)

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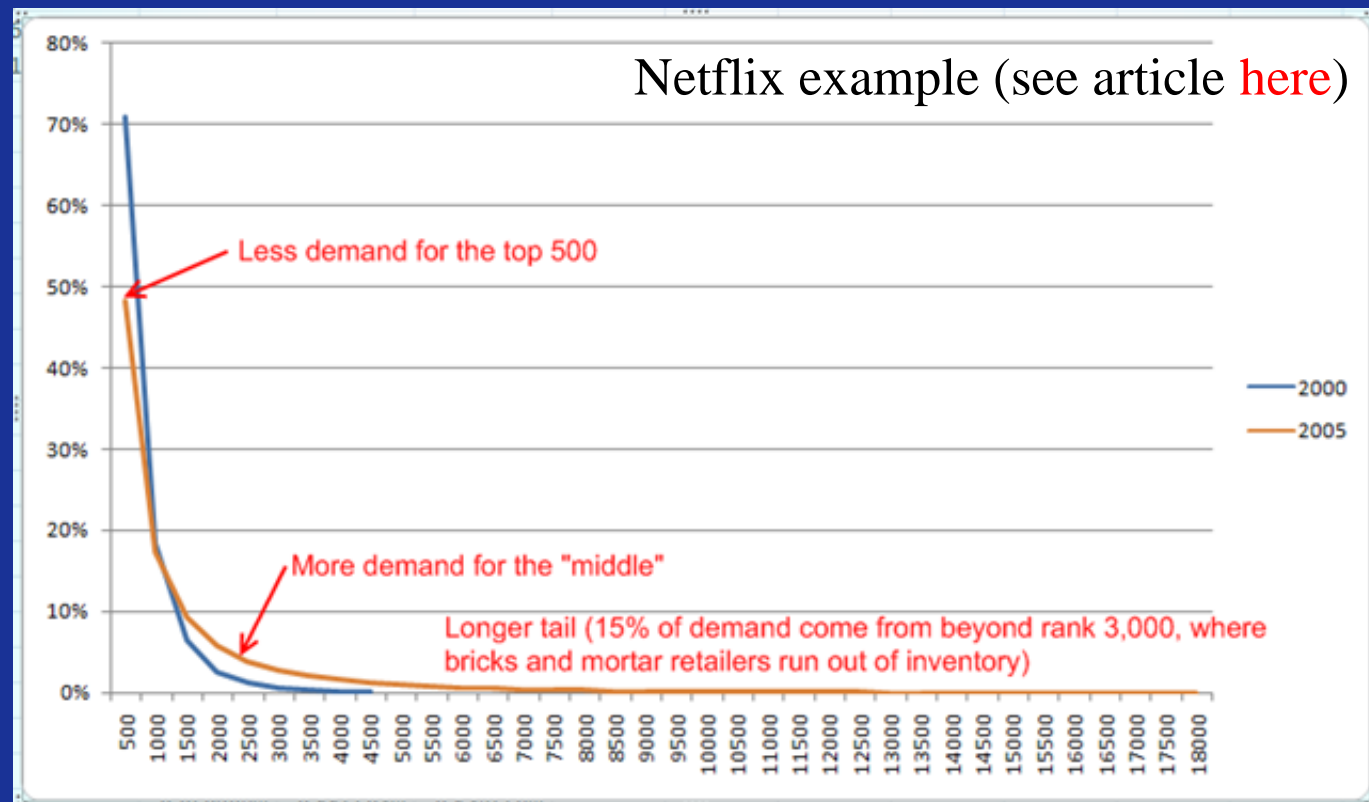
- e.g.:
 

MS Office	-->	Google Docs
Network sharing	-->	Dropbox
LAN gaming	-->	Internet gaming
Shoutcast	-->	Last.FM
E/N	-->	Facebook

... now add yours!

# The Long Tail

- Popularized by **Chris Anderson** in an article, "The Long Tail", published on Wired in October 2004
- Pareto distribution, also called "Power Law"
- The tendency is to have a bigger and longer tail in new markets



Interesting from different point of views:

- Psychology
  - Incentives, bootstrap problem
- HCI
  - New interfaces and interaction paradigms
- Social Sciences
  - Collective intelligence, trust
- KM
  - Use meaningful formats for interoperability
- New technologies
  - Scalability, reliability



# Wisdom of the crowds

- Named after the book written by journalist James Surowiecki
- Quoting an experiment made by the scientist Francis Galton in 1906, when a heterogeneous group of 787 people was able to guess (on average) the weight of an ox, he concludes that



*"under the right circumstances, groups are remarkably intelligent and often smarter than the smartest people in them, especially if individual guesses are aggregated and averaged"*

# Wisdom of the crowds

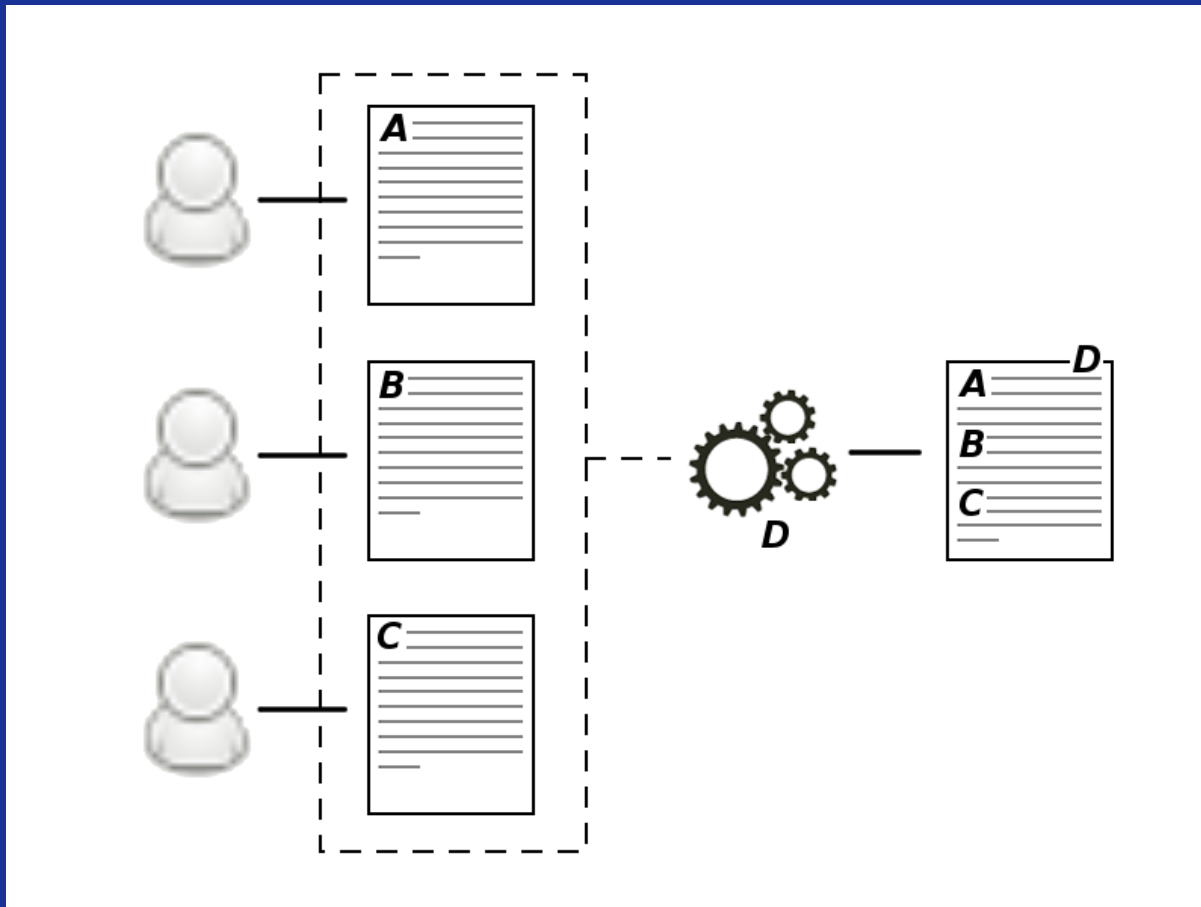
- For Surowiecki's conclusion to be valid some requirements have to be met:
  - ***diversity of ideas***, as it adds perspectives that would otherwise be absent. The presence of differences makes a group more versatile and better at solving problems (rather than the *cognitive convergence* typical of a homogeneous group);
  - ***independent thought***, meant not as isolation but rather as relative freedom from the influence of others. When this does not happen the crowd does not behave as wise anymore (i.e. The “Digg effect”);
  - ***decentralization***: the power of the group does not fully reside in one central location, and important decisions are made by individuals based on their own knowledge.

# Collective Intelligence

- User contributions are usually considered as the main value inside participative systems, as they are unique and hard to recreate
- Collecting (i.e. joining, merging, elaborating) these contributions can even provide more value, as it allows us to create new information from what we previously had
- Thus, in systems which rely on collective intelligence the tool that aggregates information can be very important. The tool's own "intelligence" can be spotted, for instance:
  - in the model and algorithm used to provide related info;
  - in the ability to aggregate information coming from different sources;
  - in the possibility to infer new knowledge from the one which has been collected (i.e. using a *reasoner*)

# Collective Intelligence

- The tool itself contributes to final information (on the right) by aggregating sources and adding its “personal touch” (which reflects the way it has been built)



# Taxonomy of participation



# Taxonomy of participation

- **Social systems** are all those multi-user systems in which people can interact, share information, or both. They exploit not just the presence of users inside the system, but also the interactions and the relations that occur (explicitly or implicitly) between them
- In **Participative systems** users are not just present, but actually *take part* into some general activity. Users are active in the system, no matter if they actually contribute to it (i.e. Last.FM). These systems are also called **collective**
- Within participative systems there are some that we define as **contributive** (from Latin *cum*: “together” and *tribuere*: “to give”). Contributes can be roughly divided in **creative actions**, **suggestions** or **resources**
- These contributes can be provided by users who are working alone or together with others. Systems which allow for this last kind of activities, where users work together with a common goal, are called **collaborative** (from Latin *cum+laborare*, “work together”)

# Taxonomy of participation

- Almost every existing system (or system family) is characterized by different levels of participation, so the same one could be classified in different ways according to how it is used
  - A wiki is typically considered as a collaborative system, however it could also be used as a contributive one if users work on their own (think about this course's wiki)
  - A social bookmarking system like Delicious is considered as just contributive (as most of the users use the system only for themselves), however people can coordinate to use the same tags (i.e. to tag material for a research or a class) or collaborate with others exchanging resources with the *for:username* tag

# Levels of participation: the county fair



- many people *participate* (take part) to the event
- some *contributed* with suggestions, actions or resources
- some *collaborated* to organize it
- some are just there to have fun, or for their business
- ... but the fair success depends on all of them!
- see Engeström's *Activity Theory*



# Power law of participation

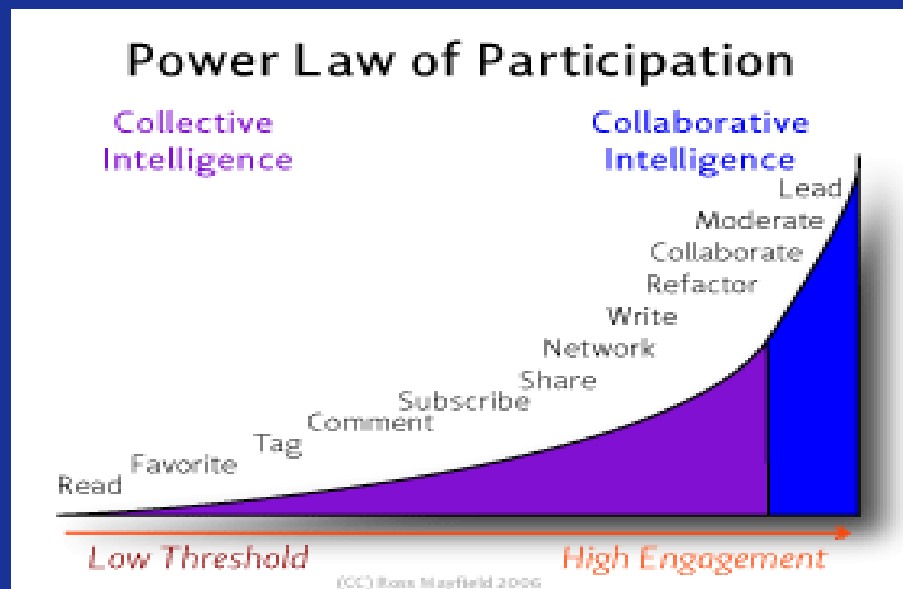


Image taken from Ross Mayfield's Weblog, click [here](#) to read article.

- Even for the same users, participation changes in time following the increasing user expertise and engagement
- See Bryant, Forte, Bruckman: "[Becoming Wikipedian](#)"
- See Lave, Wenger: "[Situated Learning: Legitimate Peripheral Participation](#)"

## ■ Motivation

- the reason or reasons for engaging in a particular behavior
- anticipated reciprocity, reputation, sense of efficacy, need, and attachment or commitment to a community
- spawns and grows only within an individual and cannot be created or given by someone else

## ■ Incentive

- any factor that provides a motive for a particular course of action, or counts as a reason for preferring one choice to the alternatives
- ongoing interactions, identity persistence, knowledge of previous interactions, visible contributions and recognitions, and the presence of well defined group boundaries
- in a social system, it is necessary to give users the incentives which could provide the right motivations to participate or contribute

## ■ Bibliography:

- Bryant, Forte, Bruckman: "*Becoming Wikipedian*"
- Lave, Wenger: "*Situated Learning: Legitimate Peripheral Participation*"

## ■ Some Web references:

- Tim O'Reilly: "*What is Web 2.0*"
- Davide Eynard: "*A Virtuous Cycle of Semantics and Participation*"