07 – Web 2.0 (part 2)

Social Systems

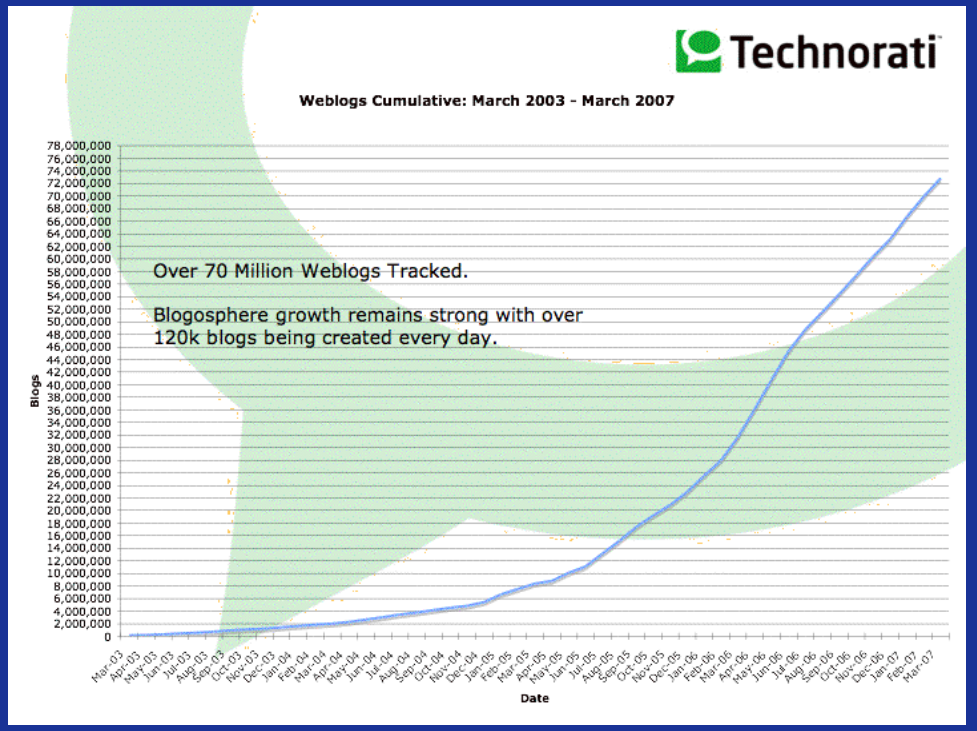
- Results of an attempt to classify existing social systems:
  - not trivial!
  - many technologies are used for purposes which are different than the ones they had been built for
- Some possible reasons:
  - ***availability***: a particular system is the only one available for a community;
  - ***locality***: systems are *places* where people gather, and people might choose to use the "wrong" system because they do not want to move to another one;
  - ***imitation***: as other similar communities had success using a particular system, new similar groups might tend to use the same one;
  - ***practice***: a community —not necessarily an online one—might already share some practices that are independent from the newly adopted system and try to shape it according to them.

(Categories of) Social Systems

- Creating and publishing
- Communicating
- Sharing
- Recommending
- Coordinating
- Networking
- Playing

Creating and Publishing

- Blogs
  - Some subcategories: photo/sketchblogs, vlogs, mp3 blogs
  - Might have one or more writers, plus comments by users
  - Data format standardized with RSS
  - Browseable archive organized by time (months) + categories (tags)



Creating and Publishing

- Wikis
  - Main characteristics: editing via browser, simplified Wiki syntax, strong linking with CamelCase, unrestricted access, versioning (to balance their openness)
  - Used for different purposes such as encyclopedias, software documentation, collaborative publishing
- Collaborative editors
  - Asynchronous (revision control systems, i.e. SVN, CVS)
    - Checkout, edit, commit changes
    - (semi) automatic management of concurrent edits (works well with many independent files)
  - Synchronous (aka “collaborative real-time editors”)
    - Shared view of the same document
    - Changes are seen by all the participants in realtime
    - Examples: Abiword, Gobby, Google Docs

Communicating

- Email
  - Individual messages, text messages through SMS gateways, Web browsing, file sharing, many-to-many and one-to-many communication via mailing lists and newsletters
  - Sometimes used as a “push” medium
- Web Forums
  - Main feature: exchanged messages remain available online for others to read
  - Mostly centralized, even if projects for p2p forums exist
  - Closed ones become part of the “deep Web”
  - Often used as a high-quality, community-driven backbone for many p2p systems

Communicating

- Chat
  - IRC, Web based, IM
  - IM born for one-to-one communication (you see when your friends are online), then allowed group chat too
  - IRC as a file sharing medium thanks to the presence of bots (see lesson 2)
- Microblogging (i.e. Twitter, Jaiku, "status updates")
  - Is it "just" a publishing system or one mostly used for communication?
  - Limits on text size (typically 140 chars)
  - Strongly relies on links for sharing multimedia resources (i.e. images or videos) => related with *short url* services
  - Posts can contain *hashtags*, which are used for many different purposes (what happens when they also become *machine tags*?)

About URL shortening

- URL shorteners have become ubiquitous... but is that a good thing?
- Some issues:
  - Stability (if the service goes down, traffic could be blocked)
  - Obfuscation (you don't really know where you are connecting to)
  - Performance (you connect to one more URL)
  - Privacy (some services hand out cookies to their users)

Sharing

- To keep the definition as general as possible, sharing systems allow to share *resources*:
  - def.: “anything that can have a URI”
    - Files of any kind (***file sharing***)
    - URLs themselves (***social bookmarking***)

- Sharing systems roughly follow one of the following models:
  - The “good (?) old” client-server model
  - Peer-to-peer model
  - The “modern” client-server model

Sharing

- The “good old” client-server model
  - Relatively few Internet users who have a chance to upload their data on a server can make their files available to others via HTTP or FTP (and also choose who can access them)
  - Information is scattered among many different servers: need to use *search engines* or *directories* to find what is needed

Sharing

- Peer-to-peer model
  - Users are, at the same time, resource providers and downloaders
  - Two different architectures:
    - Unstructured
      - Distributed (i.e. Freenet)
      - Hybrid (i.e. Gnutella, eDonkey)
    - Structured
      - i.e. Kademlia, BitTorrent
      - Typically relying on the concept of *distributed hash table*
  - How to deal with incentives?
    - Sharing by default
    - UL/DL Ratio systems (constraining ones usually developed by external communities)

Sharing

- The “modern” client-server model
  - Differently from most of p2p networks, these systems mainly deal with user-generated material (which does not mean “original” or “non-copyrighted”...)
  - Often specialize in one or few file types, allowing one to open them in the browser
  - Do not strictly require users to share their files with anyone (but most of the times they want to do it anyway)
  - Fewer servers become central places for the activity of sharing specific file types
    - Advantages: servers can aggregate contributions in many different ways and provide value from this process (i.e. recommendations, related, etc.)
    - Disadvantages: what happens when the server disappears?
  - Examples: YouTube (videos), Flickr (images), Bibsonomy (bibliographies), Scribd (docs), Slideshare (slides)

Sharing

- Social Bookmarking Systems
  - They allow users to save URLs together with related *metadata.* Bookmarks can be made available to others (default) or kept private
  - File-specific bookmarking systems:
    - News (Digg, Twine)
    - Mp3 files (Webjay)
- Bookmarks are categorized with *tags*
  - From p*ersonomy* to f*olksonomy* (broad and narrow)
  - Like *desire lines* on a landscape
  - Pros: *current*, *inclusive*, *democratic*
  - Cons: *synonyms*, *homonyms*, *basic level variations*, *lack of precision+recall*, *lack of hierarchy*, *system dependent*

Recommending

- Recommendations are one of the easiest examples of information *inferred* within a social system
- This is done starting from data that has been provided by the user *explicitly* (i.e. Digg) or *implicitly* (i.e. Last.FM)
- Recommendations can be applied to any system, but can also become systems on their own, such as in *social libraries*
- Item-specific review websites:
  - Places (Yelp)
  - Products (Epinions)
  - Any URI (Revyu)

Coordinating

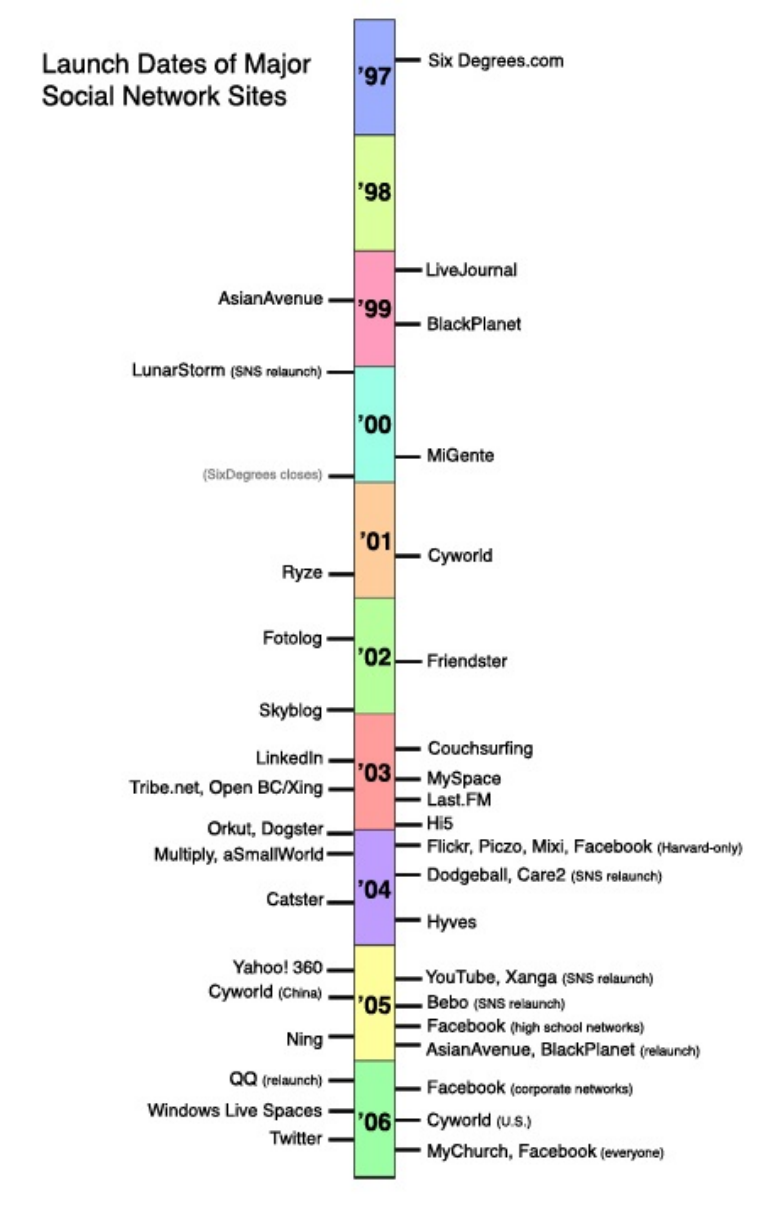
- Different social systems which allow group of users to share information about their common activities
  - Data about the group itself
  - The object of their activity (i.e. a program or a document)
  - Communication inside the group
  - Time management
- Main families:
  - Electronic calendars (i.e. Outlook, Google calendar)
  - Project management systems (i.e. SourceForge, Savane)
  - Online spreadsheets (i.e. Google Spreadsheet)
  - Workflow management systems
  - Knowledge management systems

Networking

- Def. Social Network (Boyd, Ellison): Web-based services that allow individuals to
  - construct a public or semipublic profile within a bounded system
  - articulate a list of other users with whom they share a connection
  - view and traverse their list of connections and those made by others within the system
- Different networks with different purposes
  - i.e. MySpace for music, LinkedIn for work, Facebook for real-life friends
- More modern approach: *object-centered* sociality, according to Jyri Engeström, where social networks consist of people who are connected by a shared object
  - Find the shared object in Flickr, delicious, and Upcoming... and think about Facebook applications!
  - Naymz provides a network similar to LinkedIn, but centers on reputation and references

Networking

- A social network timeline



Playing

- From MUD (Multi-User-Dungeon) to MMORPG (Massively Multiplayer Online Role-Playing Game)
  - chance to interact and communicate with others
  - *persistent* virtual worlds (that evolve even when players are not connected)
- Second Life as a special case, as it introduced *money* into a virtual world

References

- Bibliography:
  - Satnam Alag: “Collective Intelligence in Action”, Manning, 2009
  - Toby Segaran: “Programming Collective Intelligence”, O'Reilly, 2007
- Some Web references:
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