Community Design

SWE 632
Fall 2015

Administrivia

- HW 7 due today
- Period for online discussion participation ends on 12/13
- Project presentations & final review next week

Project presentations

- Briefly summarize (in a minute or less) the **purpose** of your app and the key use cases it supports

- Briefly summarize 2 of the most "interesting" (e.g., far-reaching, unexpected, surprising) **revisions** you made to your app over the course of the semester.

- Reflecting on the project as a whole over the course of the semester, briefly describe 2 **lessons** your group learned about user interface design over the course of working on your project.

- **5 minutes** (6 min max)

Community design

Adapted from Kraut & Resnick (2012), Building Successful Online Communities: Evidence-Based Social Design

Online communities

- Online communities are virtual spaces where people come together to converse, exchange information or resources, learn, play [Kraut & Resnick]

- Supported by technology platforms, such as email, wikis, comments, social networks, automated feedback

- May be **public**, open community or an **internal** community inside a company

- Break barriers of time, space, **scale** that limit offline interactions

A few examples of online communities

USENET

Usenet Help
UIC - [Part 1 | Intro | FAQ | History | Menu/Help | Part 2 | Home]

facebook

NETFLIX

amazon

stackoverflow

Cisco Support Community
Community Directory Expert Corner

KICKSTARTER

WIKIPEDIA
The Free Encyclopedia

change.org

CARCINOID@LISTSERV.ACOR.ORG

The Carcinoid Cancer Online Support Group

Linux

piazza SWE 632

Top Web Sites in US (Alexa)

1 Google.com

Enables users to search the world's information, including webpages, images, and videos. Offers...More

2 Facebook.com

A social utility that connects people, to keep up with friends, upload photos, share links and ...More

3 Amazon.com

Amazon.com seeks to be Earth's most customer-centric company, where customers can find and disc...More

4 Youtube.com

YouTube is a way to get your videos to the people who matter to you. Upload, tag and share your...More

5 Yahoo.com

A major internet portal and service provider offering search results, customizable content, cha...More

6 Ebay.com

International person to person auction site, with products sorted into categories.

7 Wikipedia.org

A free encyclopedia built collaboratively using wiki software. (Creative Commons Attribution-Sh...More

8 Twitter.com

Social networking and microblogging service utilising instant messaging, SMS or a web interface.

9 Reddit.com

User-generated news links. Votes promote stories to the front page.

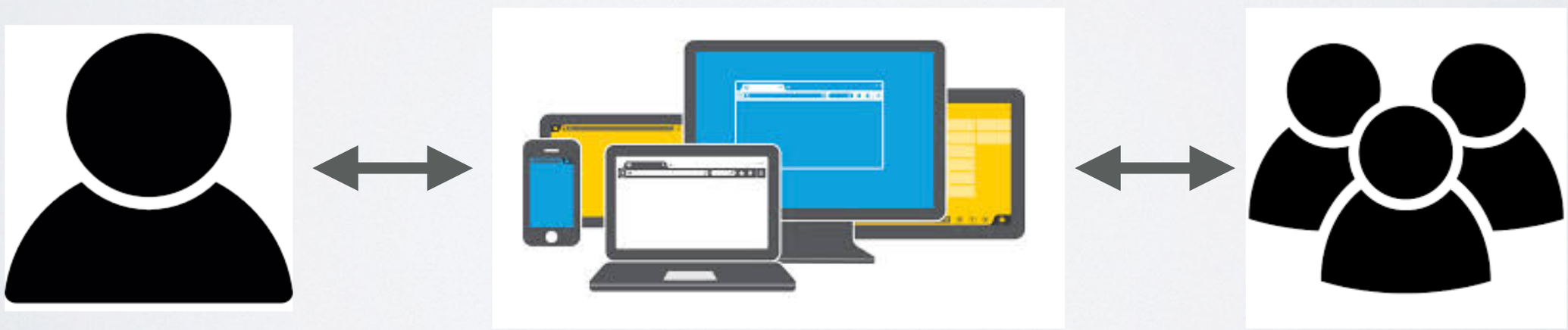
10 Go.com

A searchable directory, news, stocks, sports and free e-mail.

Designing online communities

- Interactions with other users are shaped and enabled by the ways in which **user interfaces** let users interact

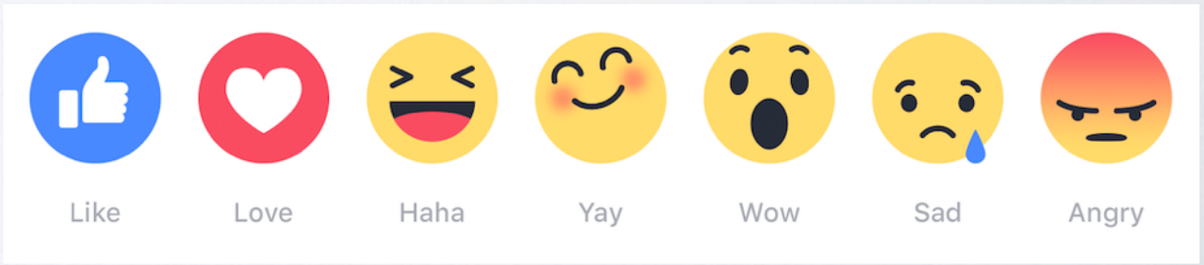
- These interactions can be **designed**



Example: Facebook reactions

- Want to incentivize positive, supportive interactions rather than negative, judgmental interactions
  - Solution: like button that expresses approval

- What about expressions about bad event?
  - Dislike button might turn likes into voting
  - Solution: FB reactions



Community design

- Most of course: designing for **task** performance
  - methods & principles derived from underlying **cognitive** psychology of user interactions with interfaces
- Community design: designing for successful **community behavior**
  - methods & principles derived from **social** psychology of how humans interact with other humans

Levers of socio-technical system design

- Community structure
  - Size of community
  - Homogeneity of member interests
  - Presence of subgroup structures
  - Relationship of membership to existing social ties

Levers of socio-technical system design

- Content, tasks, activities, external communication
    - Presence of self disclosure (e.g., user profiles) vs anonymity; visibility internally or externally
    - Presence of professional generated content, imported / exported from other communities
- Welcoming activities & safe spaces for exploration
- Tasks that are independent or interdepend, embedded in social experiences
- Ability to invite friends & share content

Levers of socio-technical system design

- Feedback, rewards, sanctions
    - Feedback telling members how to behave may be informal or structured (e.g., ratings)
- Give or take away something valuable such as intangible (approval, status) or tangible (community privileges, prizes)

Levers of socio-technical system design

- Roles, rules, access control, & visibility
    - Members may have specialized roles as welcomers for newcomers or dispute handlers
    - May be rules & guidelines for behaviors
    - May be procedures for decision-making & conflict resolution
    - May be access controls which limit who can join & actions that can be taken; might require money to perform certain actions
    - May be moderators regulating behavior
    - Communication choices on visibility of bad behavior & punishment

Challenges in community design

- Starting a new community
- Dealing with newcomers
- Encouraging commitment
- Encouraging contribution
- Regulating behavior

Starting a new community

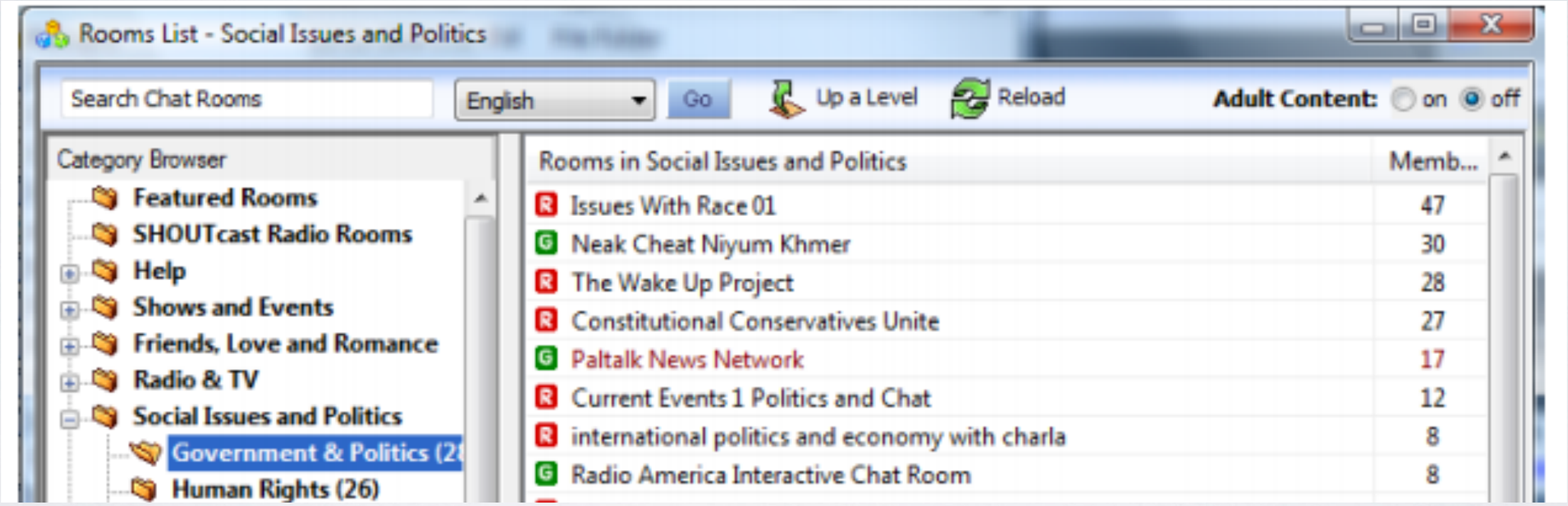
Difficulties starting a community

- Communicating value to users
  - Does the community offer services or experiences users want?
- Visibility
  - Do users know it exists?
- Competition
  - Why spend time in this community, rather than another community (that might have more users and activity)?

Carving out a useful niche

- Picking a scope
  - Topic and activities (e.g., Minnesota twins fan community)
  - Pre-existing group (e.g., GMU alumni group)
- Mixed-topic scopes can reduce value of community
  - If most content isn't relevant, why pay attention?
- Can subdivide spaces into multiple spaces that are more relevant
  - But don't want inactive spaces that are dead
  - Better to subdivide spaces after become active than create too many empty spaces

Design techniques for subdivided spaces



- Navigation aids that highlight active spaces
- Recommender systems for spaces
- Schedule of "expected active times" for spaces with synchronous activity

Competing for a niche

- Communities may compete with existing community
  - Eg., introducing enterprise social networking, compete with FB and LinkedIn
- Switching costs creating profile, learning system finding content
- Awareness costs of following multiple communities

Techniques for competition

- Reduce startup costs (e.g., shared IDs and profiles)
- Content sharing
- Advertising & celebrity endorsements
  - "The aura of inevitability is a powerful weapon"

Critical mass and effects of scale

- Communities may fail if
  - Not enough members to provide content & interaction opportunities
  - Lack of a shared purpose about the scope of activity and membership
- Why do users use FB?
  - **Everyone else** uses FB
  - The more users join, the greater value space provides of reach individual
  - Costs of joining per user fixed, but value to user increases as more join
- Critical mass - the point at which the benefits of increasing network size dwarf costs

Bootstrapping communities

- Series of community states in which activity of early users is sufficient to attract more users

- Techniques

  - **Incentives** (e.g., epinions paid early users for reviews, but then demotivating when stopped)

  - **Discounts** & free services (less problematic)

  - **Viral** membership spread (e.g., inviting friends)

Making membership visible to non-members

- Post membership to existing social network site
- Post activity to existing social network site (e.g., crossposting twitter feed to FB)
- Referral benefits for members

Early adopter benefits

- Permanent discounts to early adopters
- Promoting the status of being an early adopter to an "undiscovered" community
- Scarce, claimable resources (e.g., user names, URLs)

Encouraging contribution

Challenges of contribution

- Communities rely on **resources** created by community (e.g., YouTube videos, Wikipedia articles)

- Often a contribution **gap** between work to be done & work being done

  - Too much work, not enough workers

  - Users don't know how to help

  - Users don't find the task appealing

Visibility of requests for contributions

- Make lists of needed contributions easily visible
  - e.g., Wikipedia has 125,000 articles that need citations
- Let users track and follow work as it is done
  - e.g., FB posts profile changes to newsfeed
- Personal appeals to specific members to contribute (esp. simple requests)
  - Especially requests that are simple, stress benefits of contribution, by high status community member (e.g. Jimmy Wales requesting support for Wikipedia), by likable requestors

Requesting contributions

- Social proof makes user more likely to comply when others have already complied
  - e.g., ESP game announces that over a million labels have already been created
- Provide specific & highly challenging goals
  - e.g., rate 16 movies on Movielens in the next week

Group goals

- Goals for group coupled with specific deadline
  - e.g., apply for Feature Article status on Wikipedia
  - e.g., release cycle on software project
- Offer frequent feedback about performance with respect to goal
  - e.g., thermometer on fundraising site

Increasing motivation for contributions

- **Intrinsic motivation** - activity is an **end** by itself
- **Extrinsic motivation** - activity is a **means** to an end

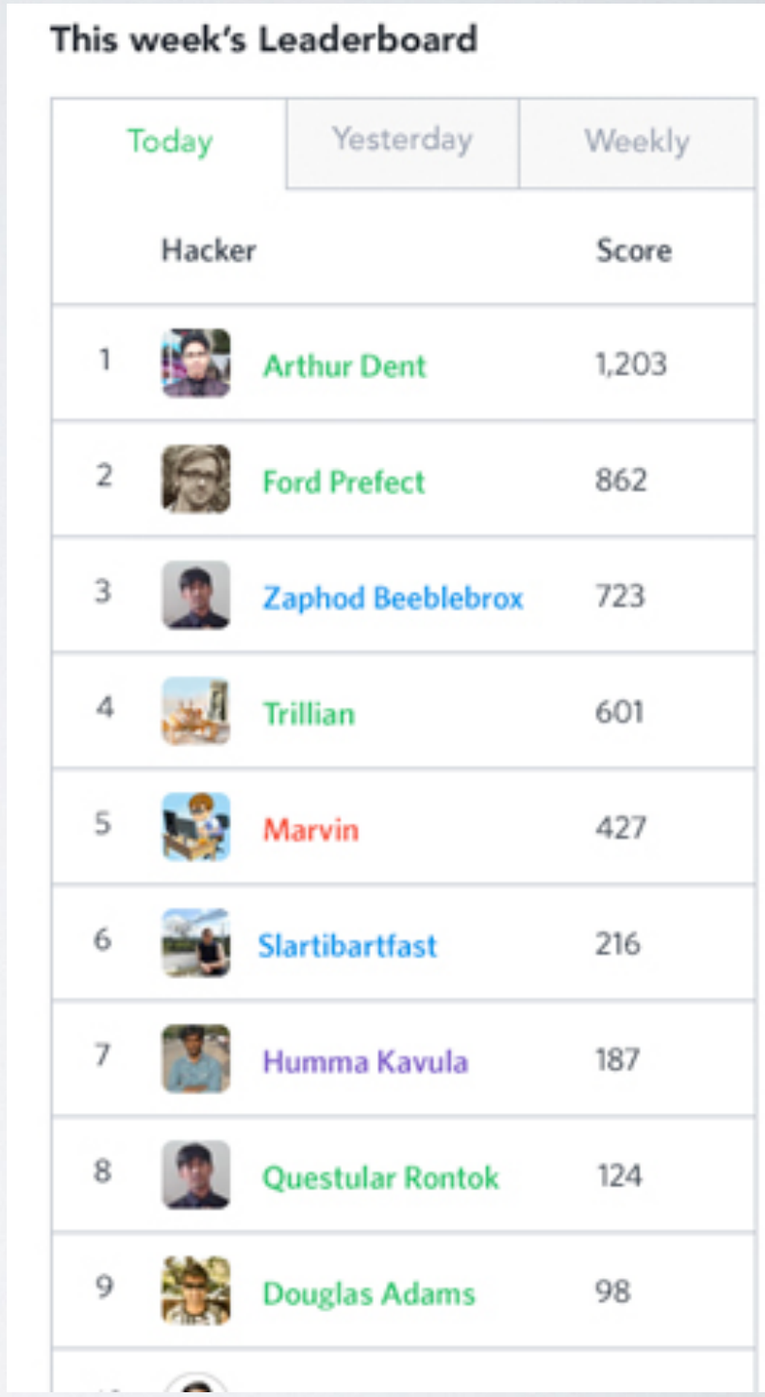
- Example - slaying monsters in World of Warcraft
  - Intrinsic - enjoy the task or camaraderie
  - Extrinsic - enjoy status that comes from achieving higher level character

Enhancing intrinsic motivations

- Social contact is important intrinsic motivator
  - e.g., Q&A site w/ interactions between requestor & responders
- Encourage flow: immersive experiences with clear goals, feedback, and challenge
- Performance feedback, particularly positive feedback, as comments or quantitive performance metrics (if viewed as **sincere**)
  - e.g., like button

Comparative feedback

- Can be especially motivating to beat competitors
  - e.g., leaderbords & lists of top contributors
- But can also be demotivating
  - Reminded how much time "wasted" on site
  - May feel they have done enough
  - Discouraging when success unattainably high (e.g., leaderboard of 10 in population of thousands)



Enhancing extrinsic motivation with rewards

- Rewards increase extrinsic motivation
- **Reputation & status** - change how others interact with them
- **Privileges** - opens new actions
  - e.g., commit privileges on OSS project
- **Tangible** rewards
  - e.g., money, prizes, charitable donations to causes

Perverse incentives: Gaming the system

- Rewards may create the wrong incentives, leading to counterfeit actions
    - e.g., rewards for inviting new members might lead to invitations to fictitious entities
- Gaming particular problem for rewards contingent solely on quantity rather than quality
    - e.g., on Amazon Mechanical Turk, automated quality checks
- Status & privileges lead to less gaming than tangible rewards, as value becomes meaningless with gaming
- Making reward criteria less transparent & more unpredictable reduces gaming

Trade-offs between intrinsic & extrinsic motivation

- Extrinsic rewards can **reduce** intrinsic motivation
  - e.g., people less likely to donate blood if offered compensation for contribution
- Extrinsic rewards must outweigh loss in intrinsic motivation to be valuable
- **Tangible** incentives diminish intrinsic motivation when they reduce feelings of autonomy & competence by being perceived as **controllers** of behavior

Collective outcomes

- Benefits may accrue to individuals based on success achieved by group
- Group benefits motivating when
  - More committed to group
  - Group is smaller
  - People feel they can make a unique contribution
  - Contributions by others are complimentary or contingent rather than substitute

Encouraging commitment

Committed users

- Committed users
  - Work harder, say more, do more
  - Provide content that others value
  - Stick with community
  - Care enough to sustain the group through problems
  - More likely to enforce norms & regulate behavior

Types of commitment

- **Affective** commitment - **wanting** to continue
  - closeness & attachment to members of community
- **Normative** commitment - **ought** to continue
  - feelings of rightness or obligation to group
- **Need-based** or continuance commitment - **must** continue
  - incentive structure in group & net costs of leaving group
- Can have more than one type of commitment

Types of affective commitment

- Identity-based commitment
  - feeling of being part of community and helping to fulfill its mission
  - attachment to community as a whole
- Bonds-based commitment
  - feeling close to individual members of the group
  - attachment to individual members

Encouraging identity-based commitment

- Recruiting or clustering those that are similar into homogenous spaces
  - e.g., FB group for Mason SWE masters students
- Explicitly providing a name and tagline that articulates shared interests
  - e.g., Wikipedia, "the free encyclopedia anyone can edit"
- Increasing subgroup identity increases commitment to larger community
  - e.g., being part of FB group increases commitment to FB

Encouraging identity-based commitment

- Making community fate, goals, or purpose explicit
  - e.g., want Wikipedia to succeed
- Joint, interdependent tasks to which multiple group members must contribute to succeed
  - e.g., guilds in World of Warcraft
- Highlighting an out-group
  - e.g., want Wikipedia to be of Britannica or better quality
- Making group members anonymous

Encouraging bonds-based commitment

- Recruiting members who have existing ties to the members of community
    - e..g, Piazza site for course
- Facilitating interactions with friends of friends
- Displaying photos and info about individual members and recent activities
- Opportunities to engage in personal conversation

Encouraging bonds-based commitment

- Mechanisms that increase likelihood that members will encounter again those they have previously encountered
    - Places, spaces, groups, friend feeds
- User profile pages that increase self-disclosure & interpersonal liking
    - e.g., profile that includes personal contact information
- Enabling self-disclosure under a pseudonym when sensitive information is shared
    - e.g., revealing daily information on weight in weight loss community

Normative commitment

- Feeling that one has obligations to community to be loyal and act on its behalf

Encouraging normative commitment

- Highlighting community's purpose & success in achieving that purpose
- Testimonials about other's normative commitment to the community
- Priming norms of reciprocity by highlighting normative obligations
    - e.g., cancer survivors that participate in forum after their own cancer is in remission
- Highlight opportunities to return favors to other users
    - e.g,. someone reviews your commit, review theirs

Needs-based commitment

- Commitment that depends on the net benefits experienced from community

- Benefits include information, social support, companionship & reputation

- Costs include time, effort, frustration

- Members remain due to needs-based commitment when benefits exceeds costs

Encouraging needs-based commitment

- Providing experiences that match motivations for participation
- Requires knowing needs
  - e.g., code fests for OSS projects that satisfy needs of friendship as well as support for planning

	Motivational Category			
Community Type	Info. Exchg	Companion-ship	Social Support	Fun
Professional	53%	11%	22%	10%
Health	38%	17%	38%	4%
Hobby	52%	29%	2%	9%
Sports	58%	18%	4%	11%
Pets	48%	36%	3%	9%
Other interests	53%	26%	0%	9%
Overall Percentage	50%	24%	11%	9%

Regulating behavior

Community norms

- Communities develop norms about what is or is not acceptable behavior
- Communities differ on what behaviors may or may not be normative
  - e.g., personal insults
  - e.g., neutral perspective on wikipedia vs. viewpoint on Huffington Post
- May be conflicts between members in community
  - e.g., flame war
  - e.g., edit war on Wikipedia

Individuals can damage community

- Trolls that derive satisfaction from disrupting community
- Manipulators that want the community to produce a particular outcome
  - e.g., Wikipedia members who want page to show a particular viewpoint
- Producing low quality content that wastes community's attention

Limiting effects of bad behavior

- Moderating content creation through pre-screening before posting
- Techniques to increase moderation system effectiveness
- Redirecting inappropriate posts to other places
- Consistently applied moderation criteria, a chance to argue a case, & appeal procedures
- Moderation by community members seen as impartial

Limiting effects of bad behavior

- **Reversion** tools
  - e.g., Wikipedia lets pages be reverted to past version
- Filters or influence limiters
- Activity quotas limiting spam-like activity
- Gags and bans on bad actors

Encouraging voluntary compliance

- Making norms **clear** and **salient** by publicly displaying examples of appropriate behavior

- Publicly contrasting inappropriate behavior in context of norm with appropriate behavior
    - e.g., examples of uncivil comments on Wikipedia

- Displaying examples of formal **feedback** provided to norm-violators

- Displaying statistic that highlight prevalence of normative behaviors
    - e.g., sign listing the number of days since last workplace injury

In Class Activity

Interaction design critique

- In groups of 2
  - Design an online community for students in a course
- Consider mechanisms for encouraging contributions, encouraging commitment, & regulating behavior