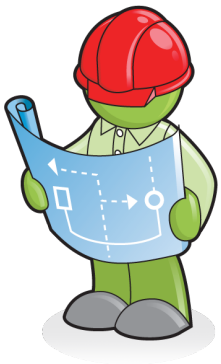


THE IMPACT OF SOCIAL MODELS

LUKE WROBLEWSKI
IDEA2009 TORONTO, CANADA

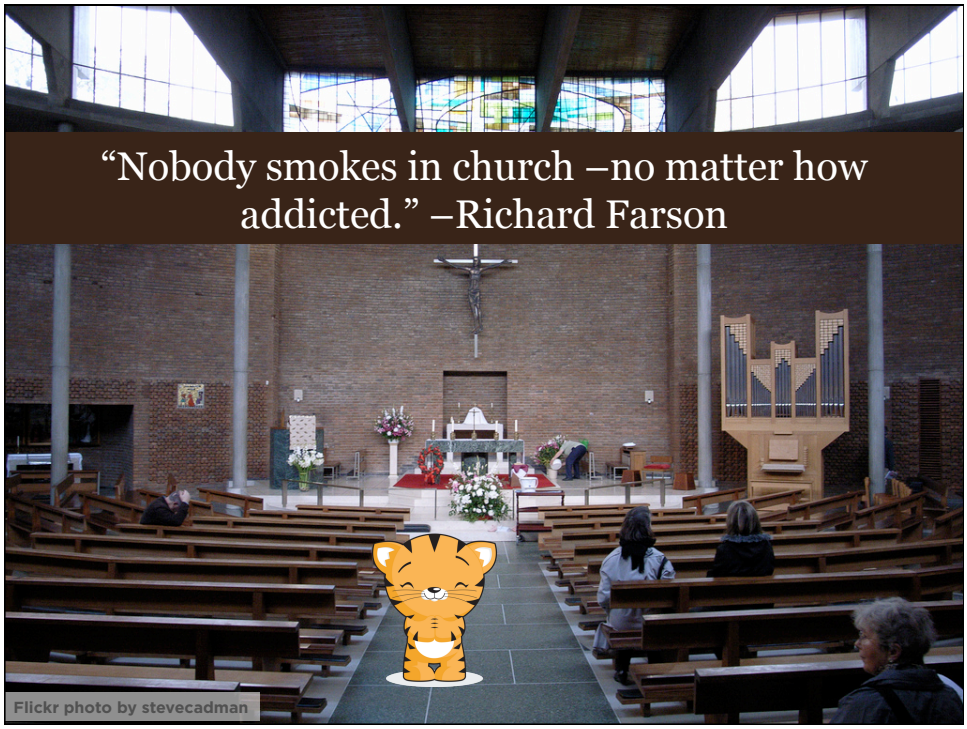
YAHOO! | LUKEW INTERFACE DESIGNS

1

Flickr photo by threecee


Flickr photo by by laurat

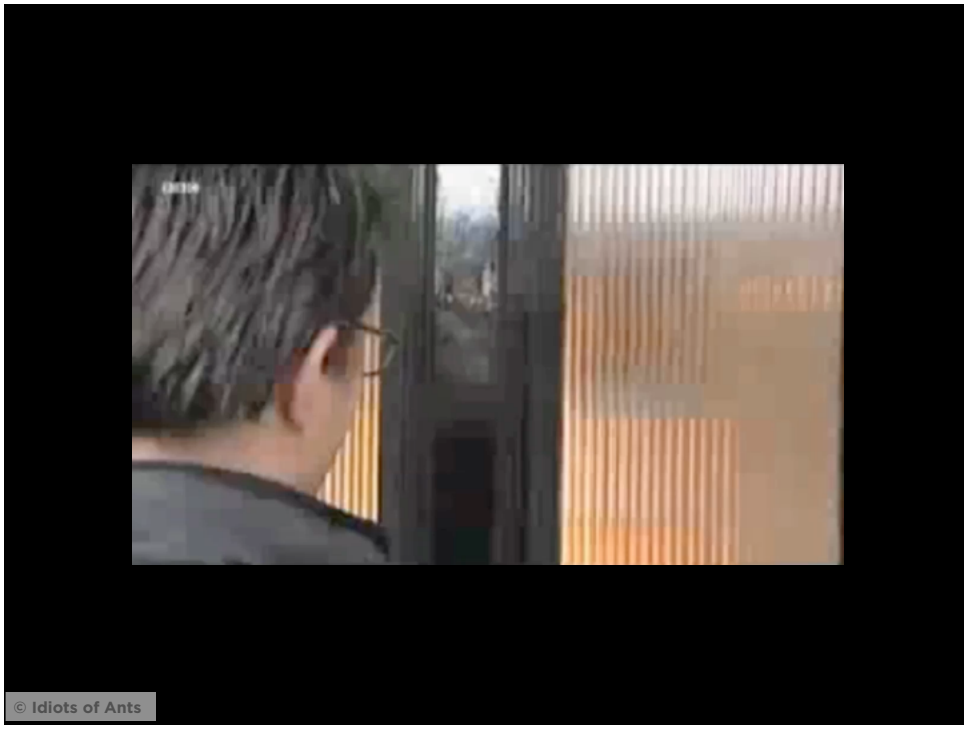

“Behavior is a function of social context.”
Flickr photo by Renata Deim



The Power of Context

Small features of context can produce huge differences in behavior.

So what is the impact of specific social models on people's online behavior?



Social Relationships (modeled) Online

No Relationship

Community

Groups
- Public, Semi-public, Private

Symmetrical/2-way

Asymmetrical/1-way
- Permissioned, Blocked

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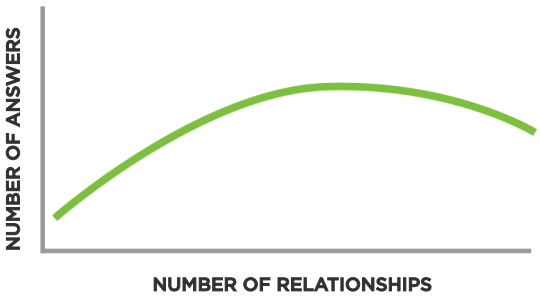
Do Social Models Affect Contribution?



- 480% increase in contribution when number of relationships increased by 20

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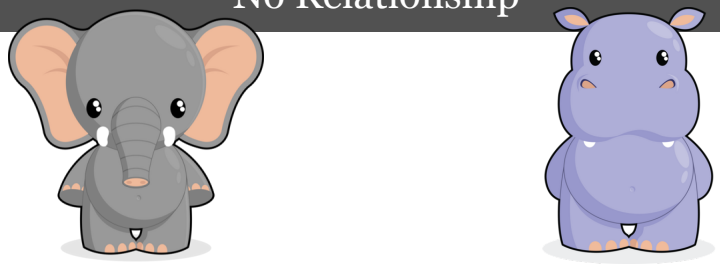
No Relationship



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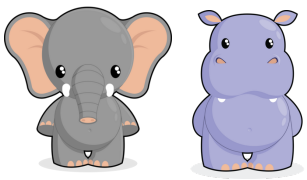
THE WEB

No Relationship (but both on the Web)



Location

- GPS: 10m (outdoors only)
- WiFi: 50m (now with geolocation api)
- Cell tower: 100-400m (triangulated)

Technology

- Device: palm, lap, desk, wall
- Operating System
- Browser: capabilities available
- Settings

Browser History

THE WEB

A COMMUNITY

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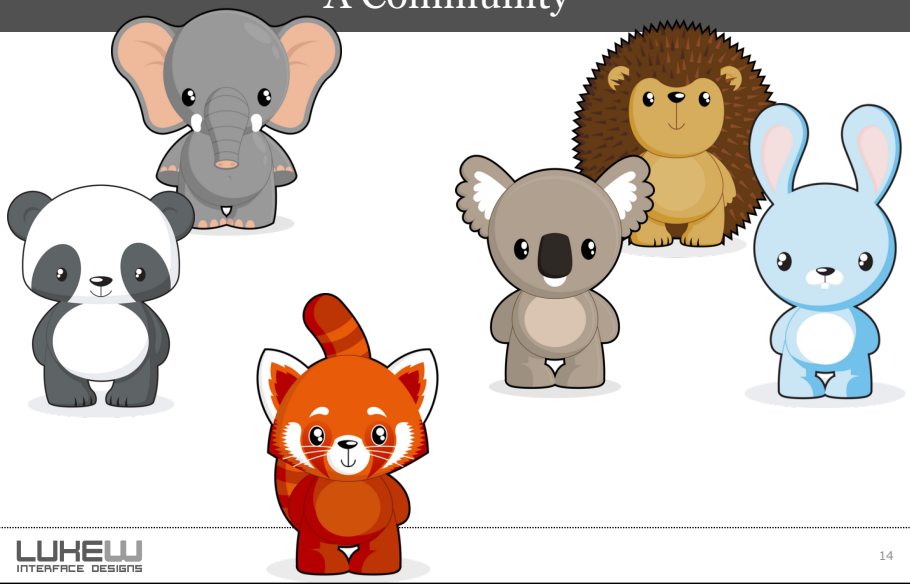
A Community



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A Community (1 to many relationship)

- Are users on the same site
- Can interact with each other
- Messaging and/or collaboration
- Leave visible traces of behavior
- Can manage identity (profile)

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A Community (1 to many relationship)

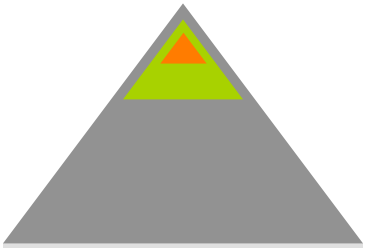
YAHOO! ANSWERS

- Yahoo! Answers user base interacts with each other as one large community
- In a graph of 700k askers and 550K answerers…
- Found **one connected component** of 1.2M nodes
- And 1.6K small components of 2-3 nodes
- This indicates most users are connected through some questions & answers
- Holds even for geographic categories (Local business)

LUKEW INTERFACE DESIGNS

Source: Questioning Yahoo! Answers, 2007 ACM

A Community (1 to many relationship)



- 1% Creators
- 10% Curators
- 100% Consumers

- 1.8% of all users write more than 70% of all Wikipedia articles
- .003% of digg's users are responsible for 56% of the stories on the site's home page
- .064% creator to consumer ration on YouTube
- 90% of eBay's users are not being monetized according to estimates

LUKEW INTERFACE DESIGNS

Source: http://www.lukew.com/ff/entry.asp?448

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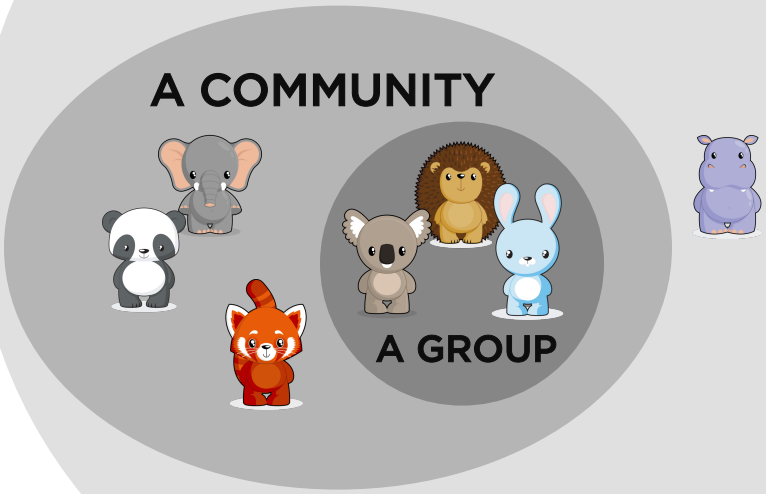
THE WEB



LUKEW INTERFACE DESIGNS

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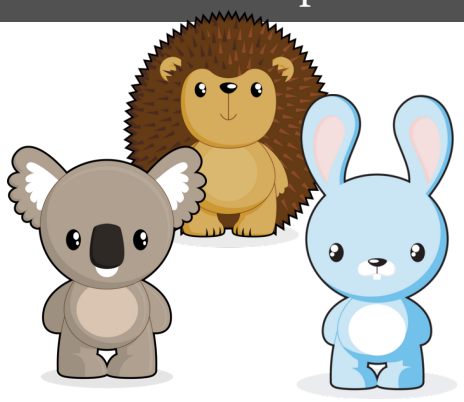
A Group



LUKEW INTERFACE DESIGNS

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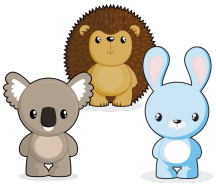
A Group (1 to many relationship)



- A set of people within a community
- Clearly defined relationship
- Topic, relationship, or collaboration based
- Can be long-lived or temporary
- Convenient communication: one to many

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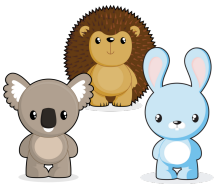
A Group (1 to many relationship)



Relationship-based

- Support existing offline & personal relationships
- Communication is more personal in nature
- Coordinating events, meetings, etc.
- Lighter posting volume but more interest

Topical

- Provides information about specific topics
- Allows members to stay aware/up to date
- Archives information
- Higher posting volume, but high noise to signal ratio

A Group (1 to many relationship)

YAHOO! GROUPS

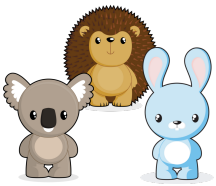
Listed & Unlisted

- Listed: can be found through search or browse
- Unlisted: discovered through an invitation or posted URL

Open, Restricted, or Closed

- Open: non- members may read and post messages
- Restricted: only members can view/post, but membership is automatically granted
- Closed: only members can view/post, moderator must approve membership

A Group (1 to many relationship)

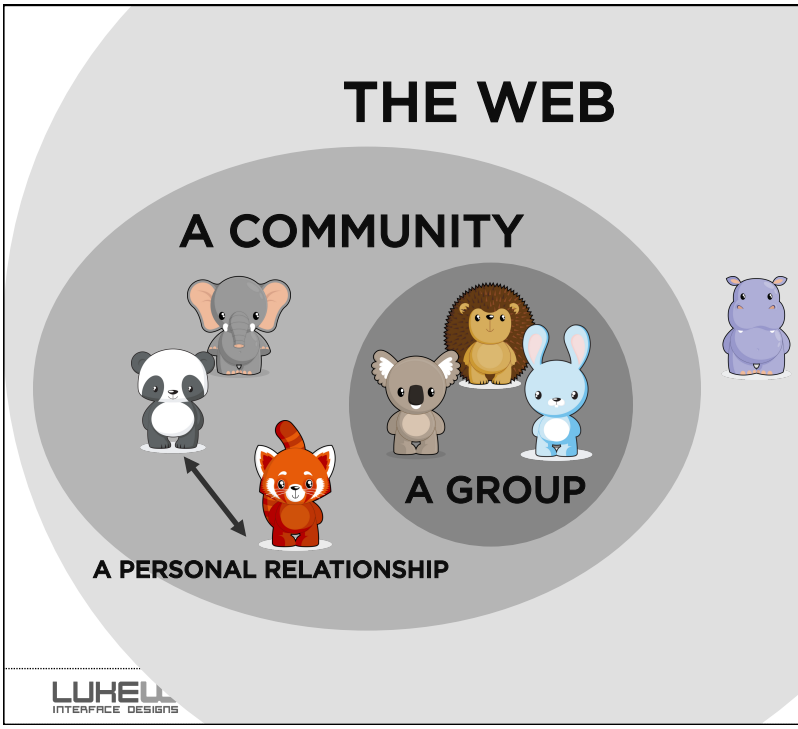


Public
- Anyone can view & post

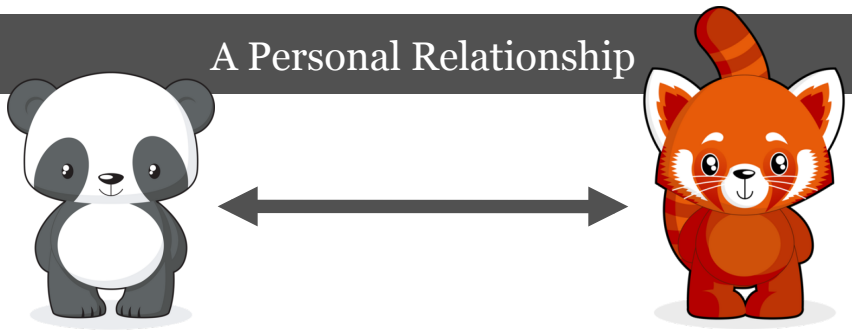
Semi-public
- Anyone can join, only members can view & post

Private
- Only members can join & post

Source: Preferential Behavior in Online Groups, 2007 ACM

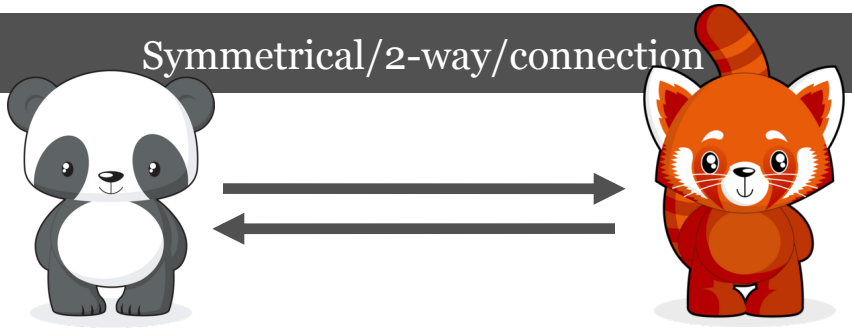


A Personal Relationship



LUKEW INTERFACE DESIGNS

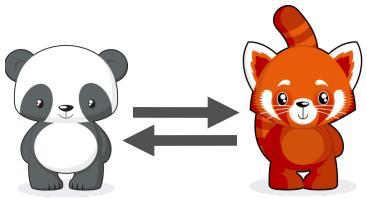
Symmetrical/2-way/connection



- Confirmed & controlled by both sides
- Sharing enabled as part of handshake
- When either side severs, relationship is gone
- Often no notification when severed
- Can be used to mirror real world relationships

LUKEW INTERFACE DESIGNS

Symmetrical/2-way/connection



- 10% of users account for 30% of production
- 12% of Facebook users update their status daily
- 40% of Facebook users have updated status in past 7 days
- 1.89% of page views are contribution (photos, content, videos, events)

LUKEW INTERFACE DESIGNS

Source: Facebook statistics: http://www.facebook.com/press/info.php?statistics
Comscore Page View data July, 2009
Facebook app data for friend updates (300+ users)

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Asymetrical/1-way/fan/follow

- Declared by one-side
- Easy to establish (no reciprocal action required)
- Can maintain privacy control through permissions
- Supports multiple relationship structures
- Often more public than 2-way relationships

LUKEW INTERFACE DESIGNS

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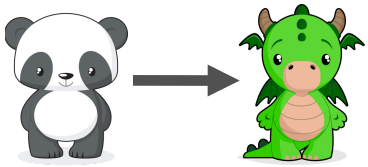
Asymetrical/1-way/fan/follow



1-way follow

- A follows B (one direction)
- B follows A (other direction)
- A follows B, B follows A (mutual)
- A nor B follow each other

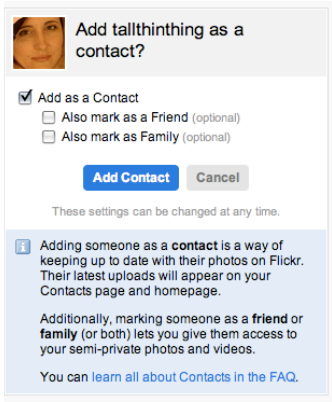
Blocking

- A blocks B (can't follow)

Private accounts

- A has private account, allows B (permissioned follow)

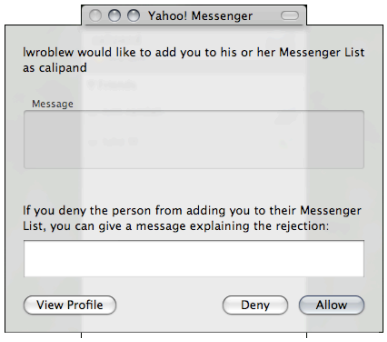
Asymetrical/1-way/fan/follow



Categorized 1-way

- Flickr example
- A can follow B
- A can optionally mark B as friend, family, or both
- Friend and family categories enable permissions (restricted photo sharing)
- B does not have to reciprocate relationship to see permissioned content (unlike a 2-way)

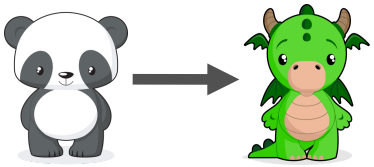
Asymetrical/1-way/fan/follow



Permissioned 1-way

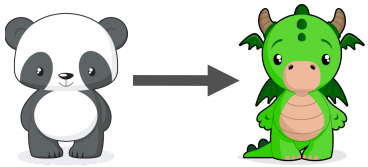
- Y! Messenger example
- A sends B a request
- B accepts, then A has to accept
- Once permission is given, there is no way to revoke it (unlike 2-way)
- Can only appear offline or ignore/ block them
- The two 1-way relationships are independent
- But may be perceived by users as 2-way

Asymetrical/1-way/fan/follow



	Is Following	Has a Private Account	Has Blocked	Marked as Family	Marked as Friend
User A	Yes	Yes		Yes	Yes
User B	Yes				Yes
User C			Yes		
User D		Yes			

Asymetrical/1-way/fan/follow



Twitter Users

- 10% of users account for 90% of production
- 50% have not updated status in past 7 days
- 55% are not following anyone
- 52% have no followers

LUKEW INTERFACE DESIGNS

Source: Inside Twitter study, Sysomos June 2009
State of the Twittersphere, Hubspot, June 2009

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Social Relationships (modeled) Online

No Relationship

Community

Groups
• Public, Semi-public, Private

Symmetrical/2-way

Asymmetrical/1-way
• Permissioned, Blocked

LUKEW INTERFACE DESIGNS

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Do Social Models Affect Contribution?

2-way vs. 1-way

- 12% of all Facebook users update their status at least once a day (2-way model)
- 40.5% of Facebook users have updated status in past 7 days (2-way model)

- 14.7% of all Twitter users post an update at least once a day (1-way model)
- 49.6% of all Twitter users posted an update in past 7 days (1-way model)

LUKEW INTERFACE DESIGNS

Source: Facebook statistics: http://www.facebook.com/press/info.php?statistics
Inside Twitter study, Sysomos June 2009
Facebook app data for friend updates (300+ users)

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Do Social Models Affect Contribution?

2-way vs. 1-way

- 30% of production comes from 10% of users on a typical (2-way model) social network

- 90% of production comes from 10% of users on Twitter (1-way model)

LUKEW INTERFACE DESIGNS

Source: Harvard Business Review research by Bill Heil and Mikolaj Piskorski, June 2009

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Do Social Models Affect Contribution?

Community vs. 2-way

- .0032% page views vs. video uploads on YouTube worldwide
- 1.89% page views vs. content contribution (not counting status updates & comments) on Facebook worldwide
- 58,000% more contribution?

LUKEW INTERFACE DESIGNS

Source: Facebook & YouTube site statics and ComScore PVs August 2009

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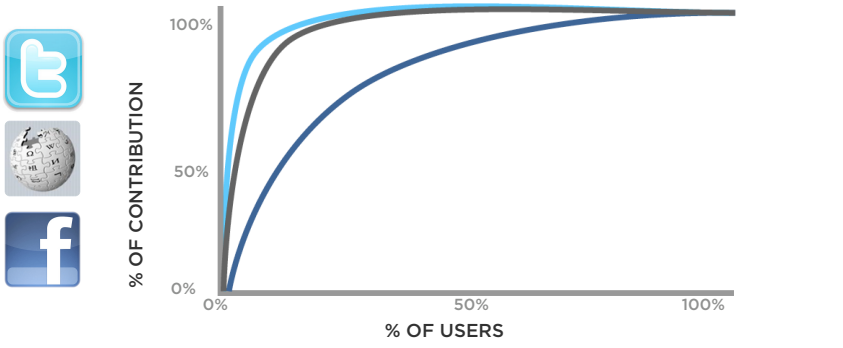
Do Social Models Affect Contribution?



- Top 10% of Twitter users account for 90% of content
- Top 15% or Wikipedia users account for 90% of content
- Top 30% of typical social network users users account for 90% of content

LUKEW INTERFACE DESIGNS

Source: Harvard Business Review research by Bill Heil and Mikolaj Piskorski, June 2009

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Do Social Models Affect Contribution?

Yes, but there's more to it…

1. Relationship limits exist in all models
2. Tight knit circles flourish in all models
3. Communication activity can reveal tight knit circles that matter
4. The more attention you get, the more you contribute –to a point
5. 1-way relationships are optimized for broad reach
6. But real relationships drive more production
7. Creation can be encouraged in other ways

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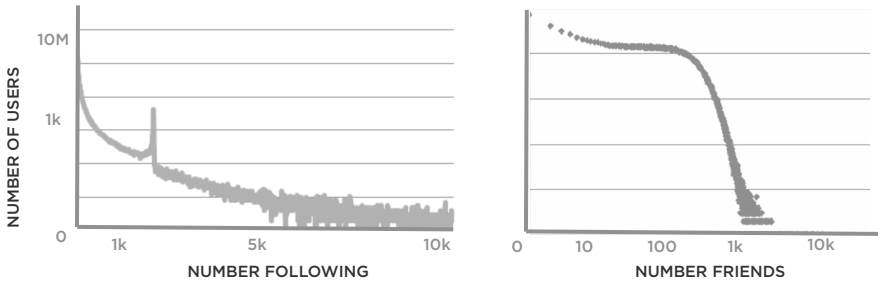
Relationship limits exist

- 120 average number of friends per user on Facebook in Feb 2009
- 144 average on Facebook 2004- March 2006
- 92.4% of people on Twitter follow less than 100 people
- 148 size of stable social networks the human brain can manage at its current size (Robin Dunbar)

LUKEW INTERFACE DESIGNS

Source: Inside Twitter study, Sysomos June 2009
Primates on Facebook, Economist, Feb 2009
Source: Rhythms of social interaction, HP Labs

Relationship limits exist



100 people or less followed by 92.4% of users

120 avg. number of friends per user

LUKEW INTERFACE DESIGNS

Source: Rhythms of social interaction, HP Labs
State of the Twittersphere, Hubspot, June 2009

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Tight knit circles flourish

- **2-3** average "clique" size on Y! Answers before social relationships were added
- **4** average people a man messages on Facebook
- **6** average people a woman messages on Facebook
- **7** average friends's walls a man on Facebook posts to
- **10** average friends's walls a woman on Facebook posts to
- **13** average "friends" for 92% of Twitter users

LUKEW INTERFACE DESIGNS

Source: Questioning Yahoo! Answers, 2007 ACM
Source: Social Networks that Matter: Twitter under the Microscope, January 2009
Primates on Facebook, Economist, Feb 2009

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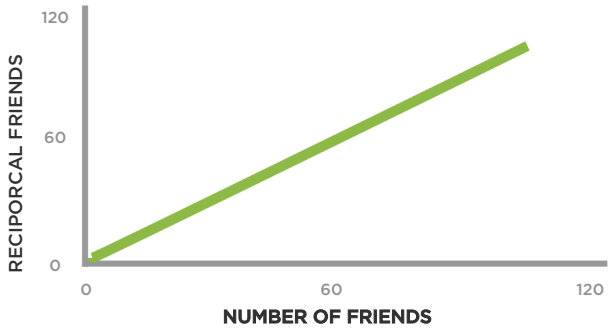
Tight knit circles flourish



- 90% of a user's "friends" reciprocate attention by being friends as well.

LUKEW INTERFACE DESIGNS

Source: Social Networks that Matter: Twitter under the Microscope, January 2009

Communication reveals relationships

- 90% reciprocal relationships on Twitter when two sides exchanged at least two "@" messages
- 15.1% of Facebook friends exchange direct messages
- 95% accuracy for detecting real friends using mobile call logs & location

LUKEW INTERFACE DESIGNS

Source: Social Networks that Matter: Twitter under the Microscope, January 2009
BBC News: Mobile data show friend networks
Rhythms of social interaction, HP Labs

Communication reveals relationships

Communication reveals relationships

- 65 million active Facebook mobile users
- 12 mobile platforms with Facebook applications
- 23 minutes of use per day spent by Facebook mobile users

LUKEW INTERFACE DESIGNS

Source: Facebook blog, Sept 2009
ComScore Mobile Metrix, July 2009

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More attention, more contribution

- 3 to 6 change in average daily Twitter updates when get 1,000 followers
- 10 average daily Twitter updates with 1,750 followers
- 480% increase in questions answered on Y! Answers when relationships increased by 20

LUKEW INTERFACE DESIGNS

Source: Inside Twitter study, Sysomos June 2009

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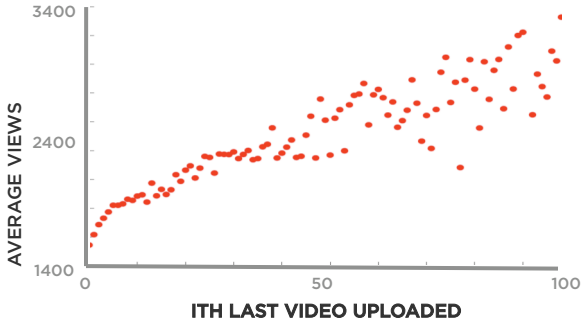
Less attention, less contribution



- As contributors approach their last video upload, the average previous views exhibited a marked linear decrease

LUKEW INTERFACE DESIGNS

Source: Crowdsourcing, Attention, and Productivity September 2008

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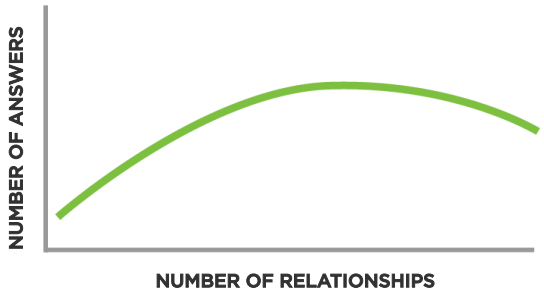
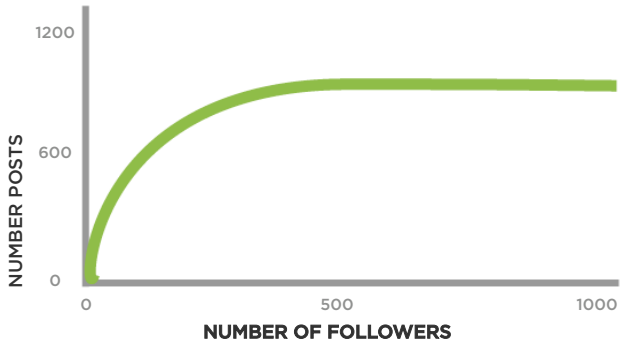
More contribution to a point…



- When relationships increased by 20, contribution increased by 480%
- When relationships increased by 20 again, contribution dropped by 35%

LUKEW INTERFACE DESIGNS

More contribution to a point…



- Though number of posts increases as followers increase, it eventually saturates

LUKEW INTERFACE DESIGNS

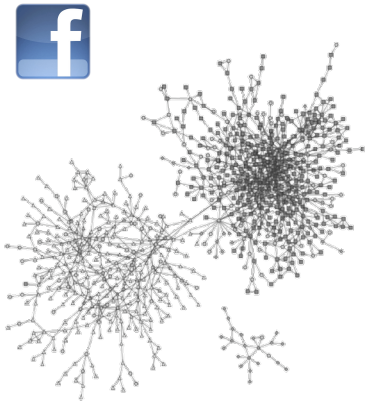
Source: Social Networks that Matter: Twitter under the Microscope, January 2009

1-way relationships optimize for reach

- Like topic-based groups, 1-way allows people to stay connected with interests
- Only a lightweight "subscribe" action is required
- Having followers encourages contribution (see who likes you!) & builds audience
- Though a broadcast format, still enables conversation
- Allows for asymmetrical relationships (5,000 followers, 150 following)
- Public updates allow information & messages to "amplify"
- Better aligned with celebrities, brands, companies: quantity indicates popularity, or authority

LUKEW INTERFACE DESIGNS

1-way relationships optimize for reach

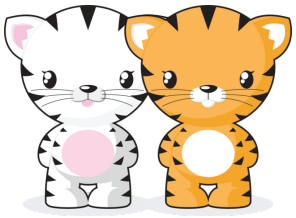


- 90% of a Facebook page's fans can be a part of a single connected group
- 15% of all fans arrived independently and started their own chain
- These patterns hold for pages with few thousand fans and those with more than 50,000

LUKEW INTERFACE DESIGNS

Source: Gesundheit! Modeling Contagion through Facebook News Feed, May 2009

Real relationships drive production



- 0-1-2 effect: probability of joining an activity when two friends have done it is significantly more than twice the probability of doing it when only one has done so

LUKEW INTERFACE DESIGNS

Source: Convergence of Social & Technical networks, Communications of the ACM Nov 2008

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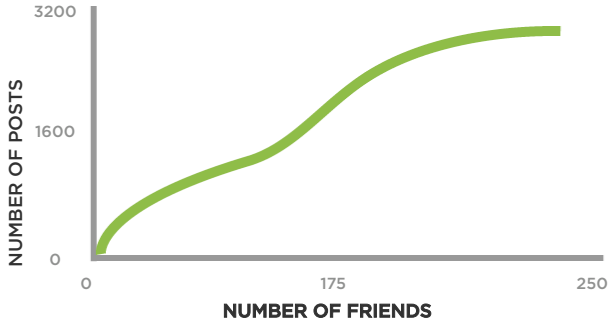
Real relationships drive production



- Total number of posts increases with friends without saturating up to 3,200 posts

LUKEW INTERFACE DESIGNS

Source: Social Networks that Matter: Twitter under the Microscope, January 2009

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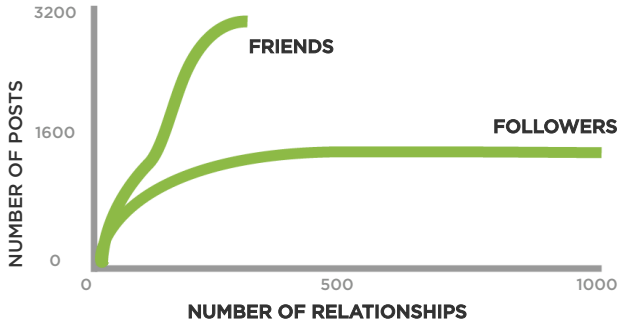
Tight knit circles flourish



- Contribution as friends increase does not saturate like it does for followers

LUKEW INTERFACE DESIGNS

Source: Social Networks that Matter: Twitter under the Microscope, January 2009

It's not just relationships...


```
table table table table td, table table table table tbody
td {
background-color: transparent !important;
padding: 15px !important;
}

table table table table td font, table table table table
tbody td font {
color: aaaaaa !important;
line-height: 150% !important;
}
```

LUKEW INTERFACE DESIGNS

It's not just relationships…

"Most user-created content is crappy. As we create better tools, we'll increase the value of the output of those tools." -Will Wright

LUKEW INTERFACE DESIGNS

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The Impact of Social Models

1. Context shapes behavior
2. How we model social relationships in software creates context
    1. No relationship, Communities, Groups, 2-way & 1-way personal relationships
3. Social models do affect contribution
4. But core behaviors exist across all models
    1. Attention limits
    2. Tight knit circles
    3. Activity signals
    4. Contribution drivers
5. Social relationships alone do not drive contribution

LUKEW INTERFACE DESIGNS

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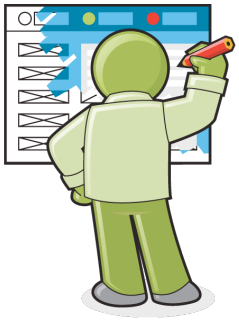
Thank You!



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