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# The Social Web

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August 1st, 2011
UC Berkeley

## brand nations at the world's best companies

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# agenda

- social media at a glance
- the social anthropology perspective
- what is relationship
- network perspective of the giants
- Q&A



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## what is social media

- The usual suspects

| | | | |
|---|---|---|---|
| founded: 1998 Sep<br>25+ M members<br>~26K employees | founded: 2003 May<br>100+ M members<br>~1300 employees | founded: 2004 Feb<br>750+ M members<br>~2000 employees | founded: 2006 Mar<br>175+ M members<br>~400 employees |

**Just launched**
**June 28, 2011**



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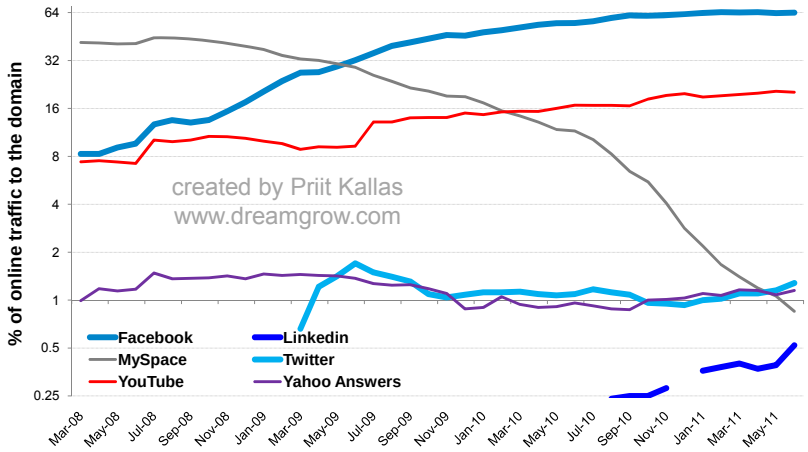
## market share of social networks



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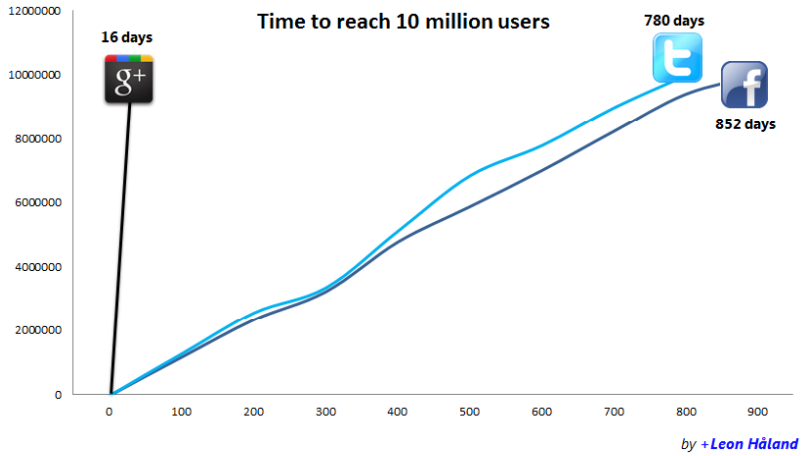
## growth rate of Google+

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## what is social media

- The usual suspects

- The less usual suspects
  - The blog blogosphere: ~150-200 M blogs (via BlogPulse)
  - Online communities
  - Media sharing: flickr, youtube, etc.

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## the world is more complex: functional perspective

- It's a huge ecosystem of tools & services
- The social media revolution

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## but social is not new…

- Humans have been social since they were caveman
- Cyber-anthropology of social media: shift the focus from technology → relationship
- From the relational perspective, there are only 2 major types of social media
  - social network
  - community
- Social in the pre-digital era

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# the social anthropology perspective



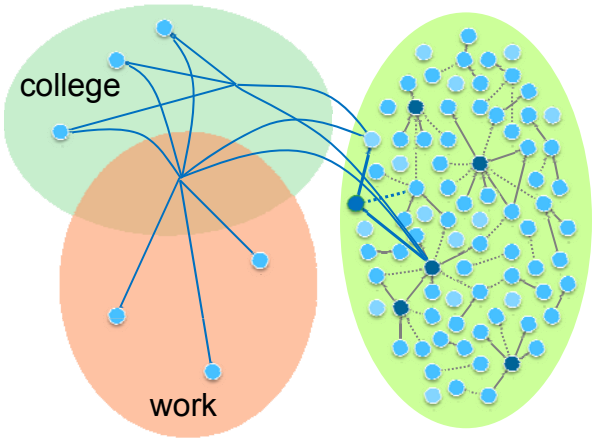


## how do social networks form?

A story of how Bob's social network was built

Bob

## how do social networks form?




Springfield = community

Social networks form naturally within communities as people establishes relationships

Social network maintains relationships as people move between communities



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## what do real social network data look like?




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## communities vs. social networks (on/offline)

- **Social Network**
  - Held together by ***pre-existing*** interpersonal relationships between individuals
  - You know everyone in your network (ego-network), people who are connected to you directly
  - Each person has only one social network, despite there are many social network platforms
  - Structure: Network
- **Community**
  - Held together by some **common interests** of a large group of people
  - Most people, especially new members, do not know majority of the members in the community
  - Any one person may be part of many communities at any given time
  - Structure: Hierarchical, overlapping & nested



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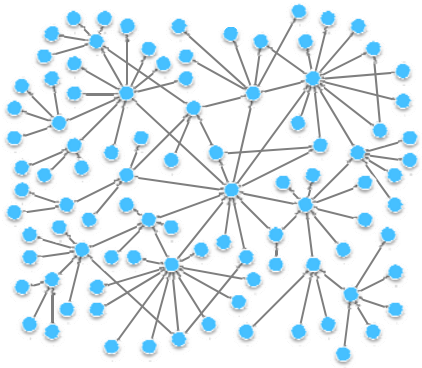
## communities vs. social networks (on/offline)

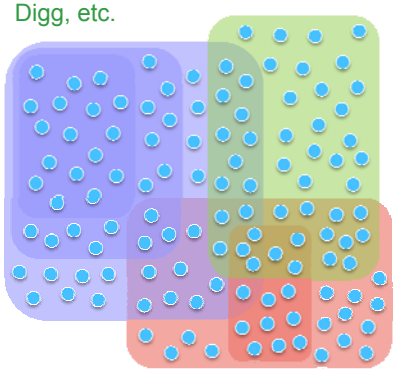
### Social Network

Facebook, Linkedin, etc.



### Community

Flickr, Yelp, Wikipedia, Youtube, Digg, etc.





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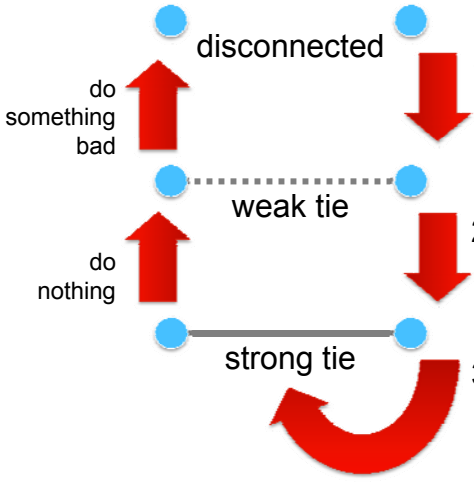
## lifecycle of relationships




Easy!
All it takes is an "hello"



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## what is relationship

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## the components of a relationship

- Relationship from the sociology perspective
  - A tie or a connection between two entities (e.g. people, companies, cities, or even nations)
  - Tie strength = strength of the relationship
- Prof. Mark Granovetter identified 4 components of tie strength
  - **Time**: amount of time spent together
  - **Intensity**: emotional intensity and the sense of closeness
  - **Trust**: intimacy or mutual confiding (transparency)
  - **Reciprocity**: amount of reciprocal services
- Strong relationships requires more ***time*** & ***attention***



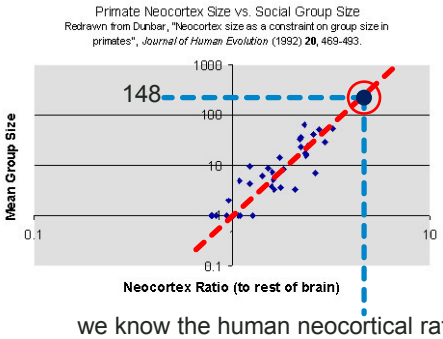
## the attention economy

- We only have 24 hours a day
- We only have fixed amount of attention
- How many meaningful relationship can we have?


via nielsen

## ~150: the Dunbar number (or Dunbar limit)

- Prof. Robin Dunbar found a relationship between brain size of primate species and group size of those species
- Extrapolate data from 38 primate species to human neocortex ratio → Dunbar number = 148 (~150)
- Verified by surveying pre-industrial villages/tribes




we know the human neocortical ratio



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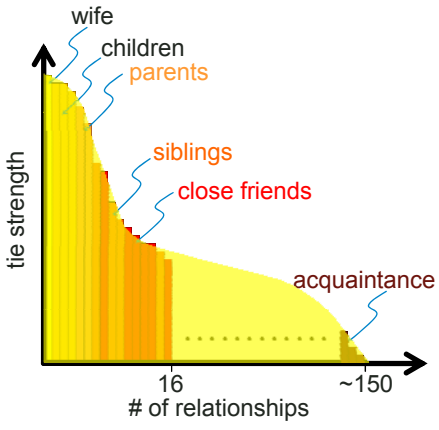
## does Dunbar limit still applies in modern society?

- Order our relationship from the strongest (immediate family) to the weakest (acquaintance)
- This creates a relationship profiles for each person
- In pre-industrial villages & tribes, people only know ~150 people



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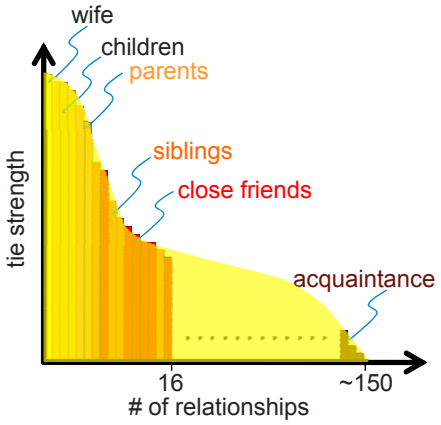
## does Dunbar limit still applies in modern society?

- Dunbar's limit may not apply in modern society b/c
  - incentive and necessity for social cohesion is substantially lower
  - communication (an important part of socializing) is much more efficient
- But our brain hasn't changed for millennia…



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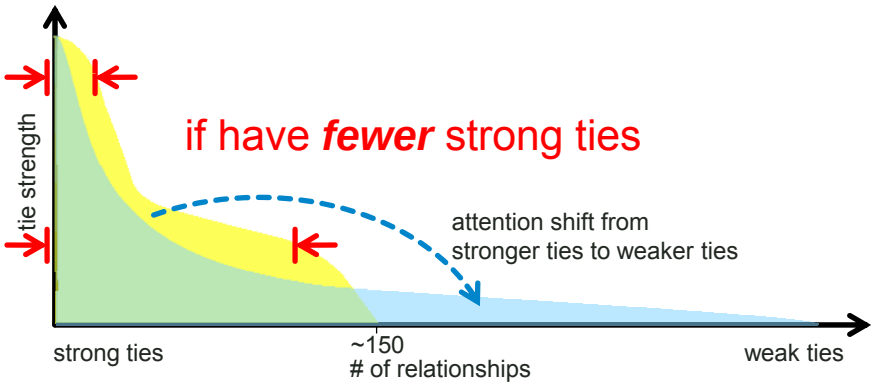
## we can have more than 150 friends



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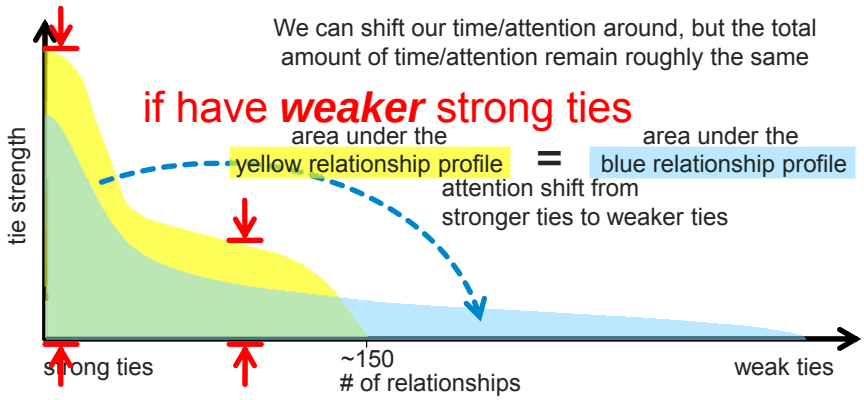


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## network perspective of the giants

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## Facebook's irony

- Facebook contains a lot of our strong ties:
  - Immediate families, close relatives, childhood friends, high school buddies, etc.
  - By definition, these stronger ties will demand more attention, and will win more of your limited time/attention. So you won't have any left for the weaker ties
- Irony: because Facebook is too good at maintaining our strong ties, it created problems for Facebook:
  - The conflict of social sphere:
    - people from different communities may not mix
    - information for one group of friend may not be appropriate for another
  - In the presence of strong ties, weaker ties are harder to develop into strong ones

This will limit Facebook's usage and growth rate



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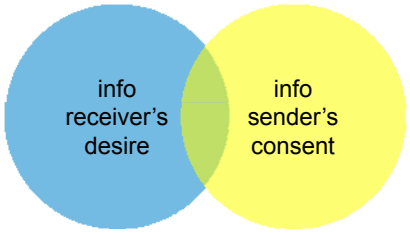
## the network effect on Facebook

- The utility for getting on Facebook ~ n*log(n), where n = # of users
  - Once enough people are on it, the benefit is so great that you must get on it
- Stickiness:
  - The more connected a user is, the more utility he derives from the network → the less likely he is to leave the network

- Not everyone on Facebook can talk to everyone else
- Facebook connections are ***bidirectional***



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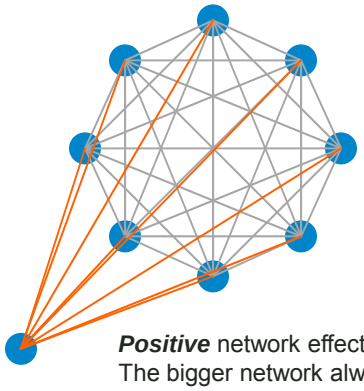

***Positive*** network effect: The bigger network always wins, because the rich gets richer at a faster rate!



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## the Facebook-killer social network

- What kind of user would you attract first?
  - **Answer**: you want to get users who have lots of friends, since they are the ones who can bring the most friends to your network
- But Facebook is very cohesive, or sticky
  - Users with lots of friends are least likely to leave, they are the hardest to get
  - Users you can get are users with few friends, but they don't bring many users to your new network
- To break a cohesive network you need to move a huge chunk of their users to the new network in a short time
  - So user only experience a short period of communication outage (lost utility)



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## what can we learn from Twitter?

average degrees of separation = 4.12

utility ~ $n^2$ > n*log(n)

average degrees of separation = 5.73

- Uni-directionally connected
  - Faster growth rate
    - smaller world
    - information spreads faster
    - more viral
  - Less relevant relationship
    - weaker ties
    - fragile & less sticky network
    - easier to switch

- Bi-directionally connected
  - Highly relevant relationship
    - stronger ties
    - cohesive & sticky network
    - network effect cost-to-switch
  - Slower growth rate



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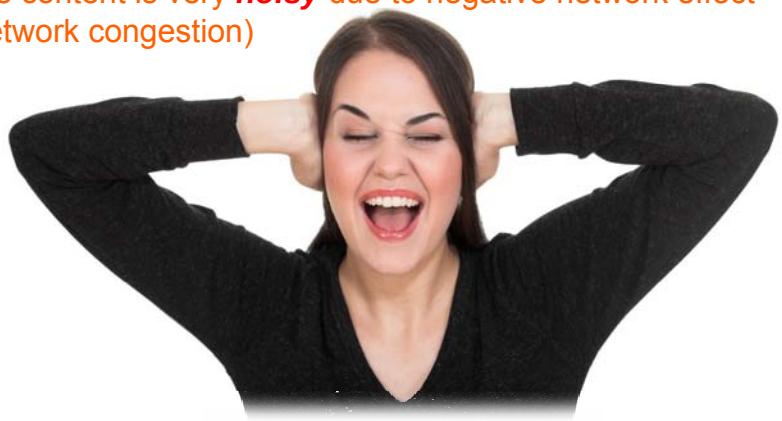
## the main problem with uni-directionality

- The content is very ***noisy*** due to negative network effect (network congestion)





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## curation mechanism for dealing with noise

average degrees of separation = 4.12

utility ~ $n^2 > n*\log(n)$

average degrees of separation = 5.73

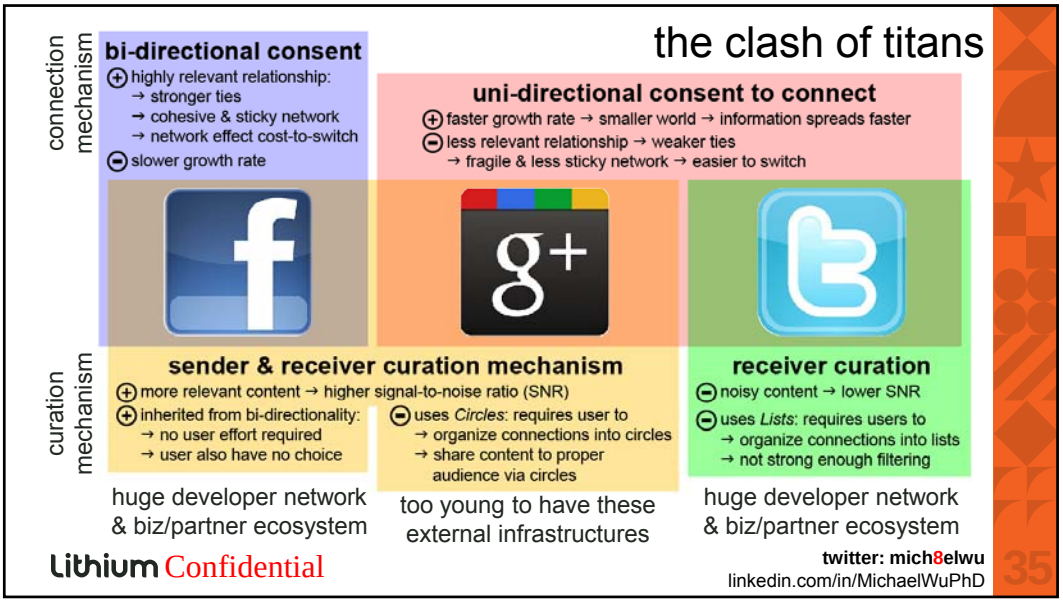
- Receiver curation
  - Use ***lists***
    - require user (content receiver) to organize their following into lists
    - not very effective
    - people basically search for content

- Automatically inherits both sender ***and*** receiver curation
  - no user effort required
  - but user also have no choice
  - this is the reason why content on these platforms have such high signal-to-noise ratio (SNR) at the first place



## then comes Google+

- Uni-directional consent to connect
  - To grow fast and break a cohesive network
- Circles: it's a very important advance in social web
  - Fixes the conflict of social sphere
  - A receiver curation mechanism
    - If users spend the time/effort to organize their connections into circles
  - A sender curation mechanism
    - If users make use of circles when sharing
- Also have a lot of community/relationship building tools
  - Spark & Hangout
- Biggest problem now = ***noise***
  - Users don't organize connections into circles
  - By default user share content to public


the clash of titans
connection mechanism
bi-directional consent
⊕ highly relevant relationship:
→ stronger ties
→ cohesive & sticky network
→ network effect cost-to-switch
⊖ slower growth rate
uni-directional consent to connect
⊕ faster growth rate → smaller world → information spreads faster
⊖ less relevant relationship → weaker ties
→ fragile & less sticky network → easier to switch
curation mechanism
sender & receiver curation mechanism
⊕ more relevant content → higher signal-to-noise ratio (SNR)
⊕ inherited from bi-directionality:
→ no user effort required
→ user also have no choice
⊖ uses Circles: requires user to
→ organize connections into circles
→ share content to proper audience via circles
receiver curation
⊖ noisy content → lower SNR
⊖ uses Lists: requires users to
→ organize connections into lists
→ not strong enough filtering
huge developer network & biz/partner ecosystem
too young to have these external infrastructures
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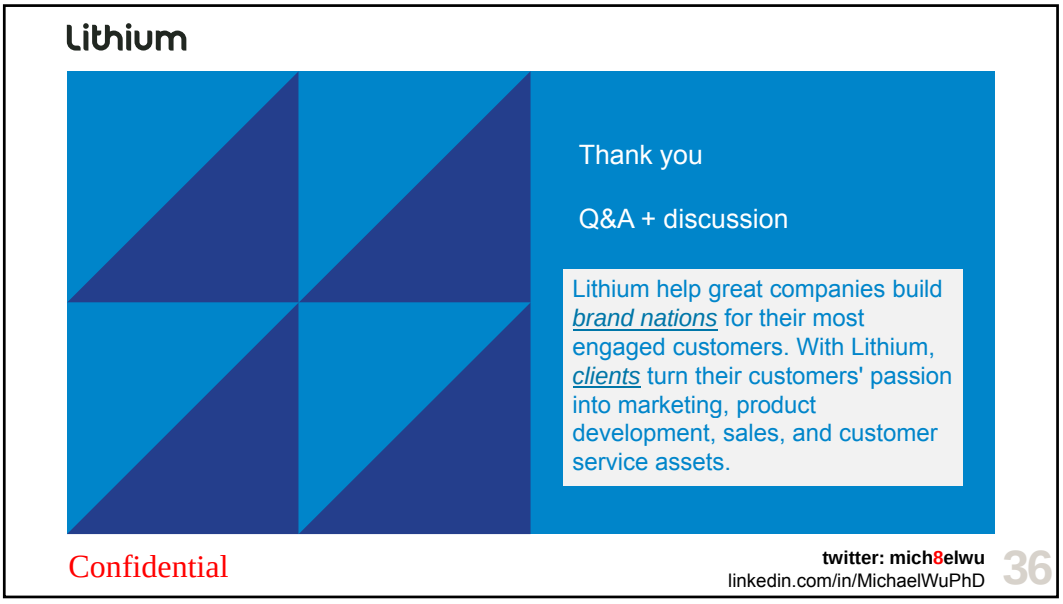
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