

Cold Start example by Yixin W:

Doordash started out narrowly, serving just the Stanford campus. Only later did it broaden.



DoorDash

Oct 4, 2013 · 3 min read · Listen

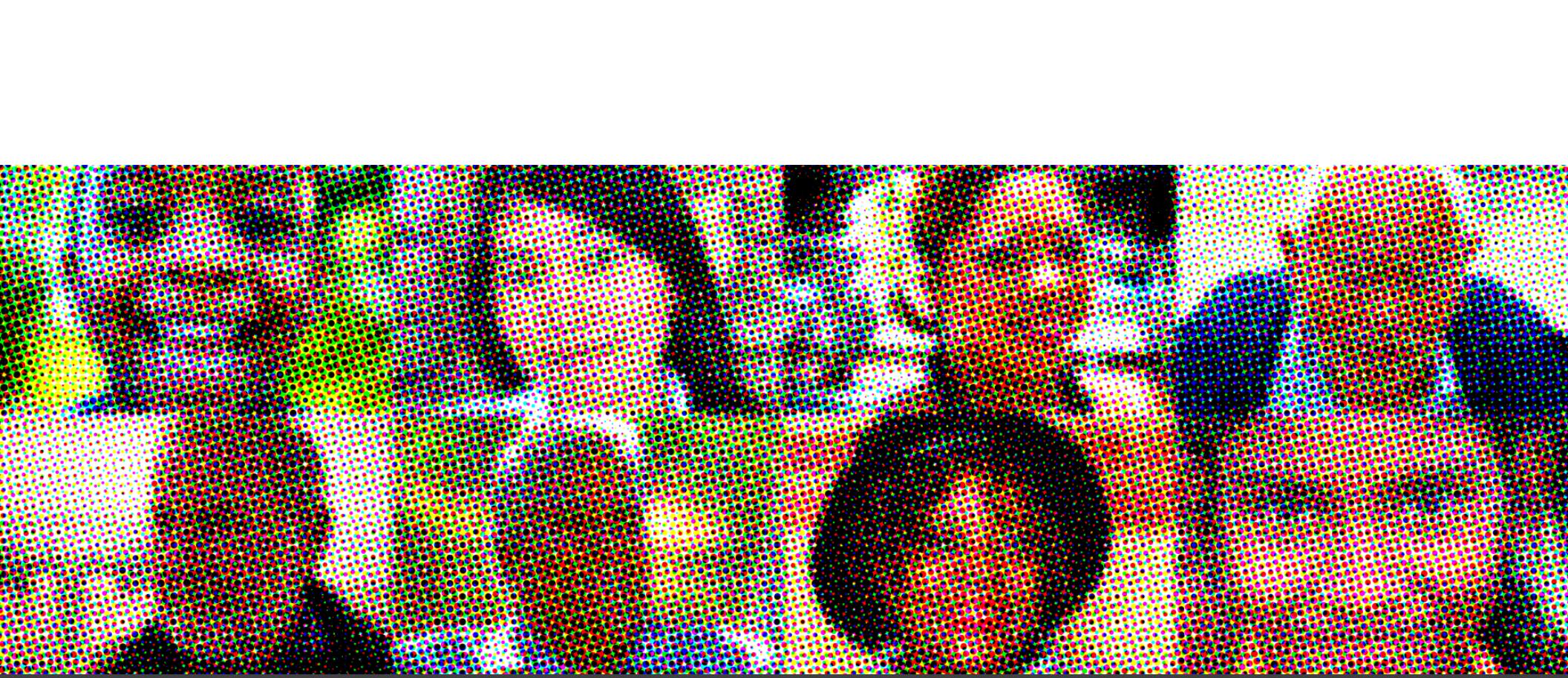
...

The DoorDash Story

January 12th 2013, Palo Alto Delivery was born.

Half an hour later, we got a phone call — it was our first order! Next thing we knew, we were delivering food every single day all over the Stanford campus. We were students by day, delivery drivers by night. We learned so much as drivers that we now have every team member start as a driver in their first week at our company. We later changed our name to DoorDash in June.

Since then, the team at DoorDash has been working insanely hard to do everything we can to provide the best delivery experience: from hiring drivers, working with restaurants, delighting customers to building out our complex, dispatch system.



Growing Pains

CS 278 | Stanford University | Michael Bernstein

Announcements

Project proposal + prototype due next Monday

Assignment 2 will be released after the project proposal is turned in, and will be due after one week

No lecture next Monday — Michael @ CHI 2023

Last time: prototyping and cold start

Prototyping social computing systems requires a different approach than usual. Use piggyback prototyping to tie together existing social systems in order to understand the social dynamics you're creating.

The cold start problem occurs when a system is too empty to attract initial usage, so it remains empty. Two solutions:

- Focus on a narrow group initially, and broaden out later

- Be prepared to bootstrap activity

Something From Nothing

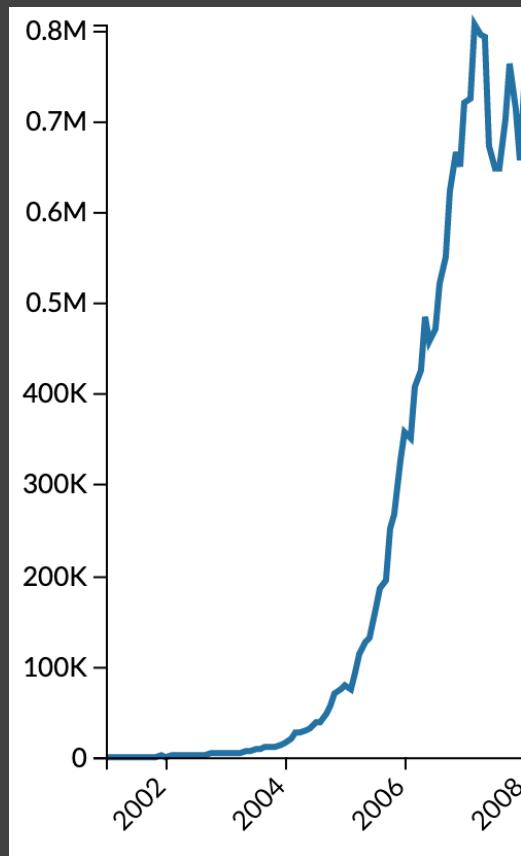


Unit I

Oh #@&%, It Got Popular

Unit 2

Wikipedia's growth

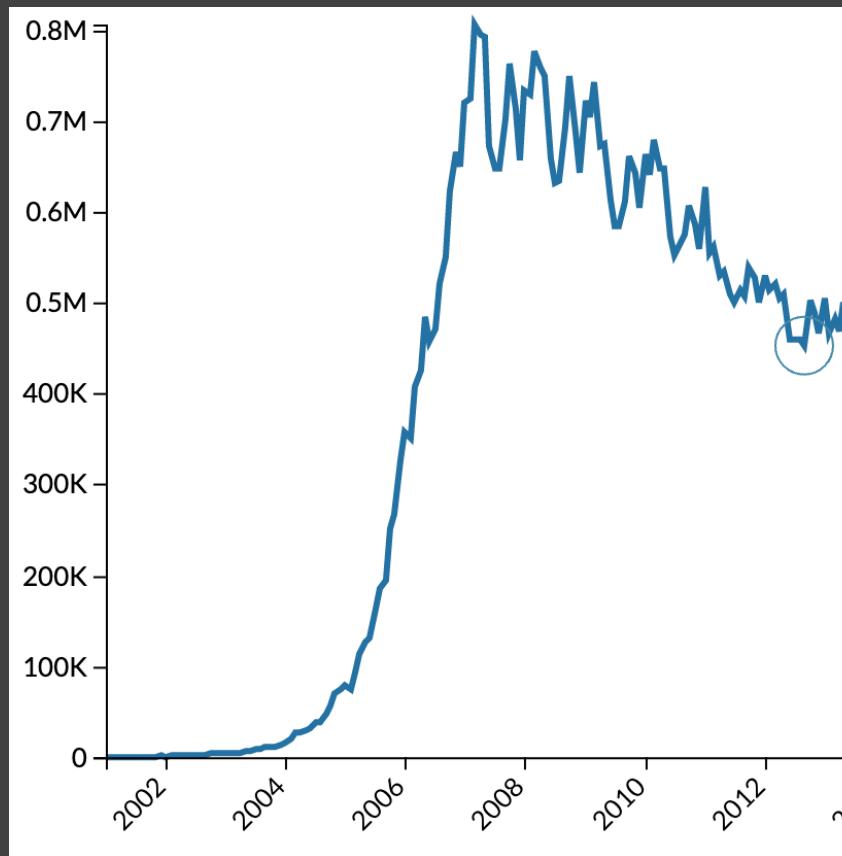


Wikipedia emerged as the leading collaboratively edited encyclopedia and experienced rapid growth

From just a few editors to about 800k active editors each month in just five years

<https://stats.wikimedia.org/#/en.wikipedia.org/contributing/editors/normal|line|all|~total|monthly>

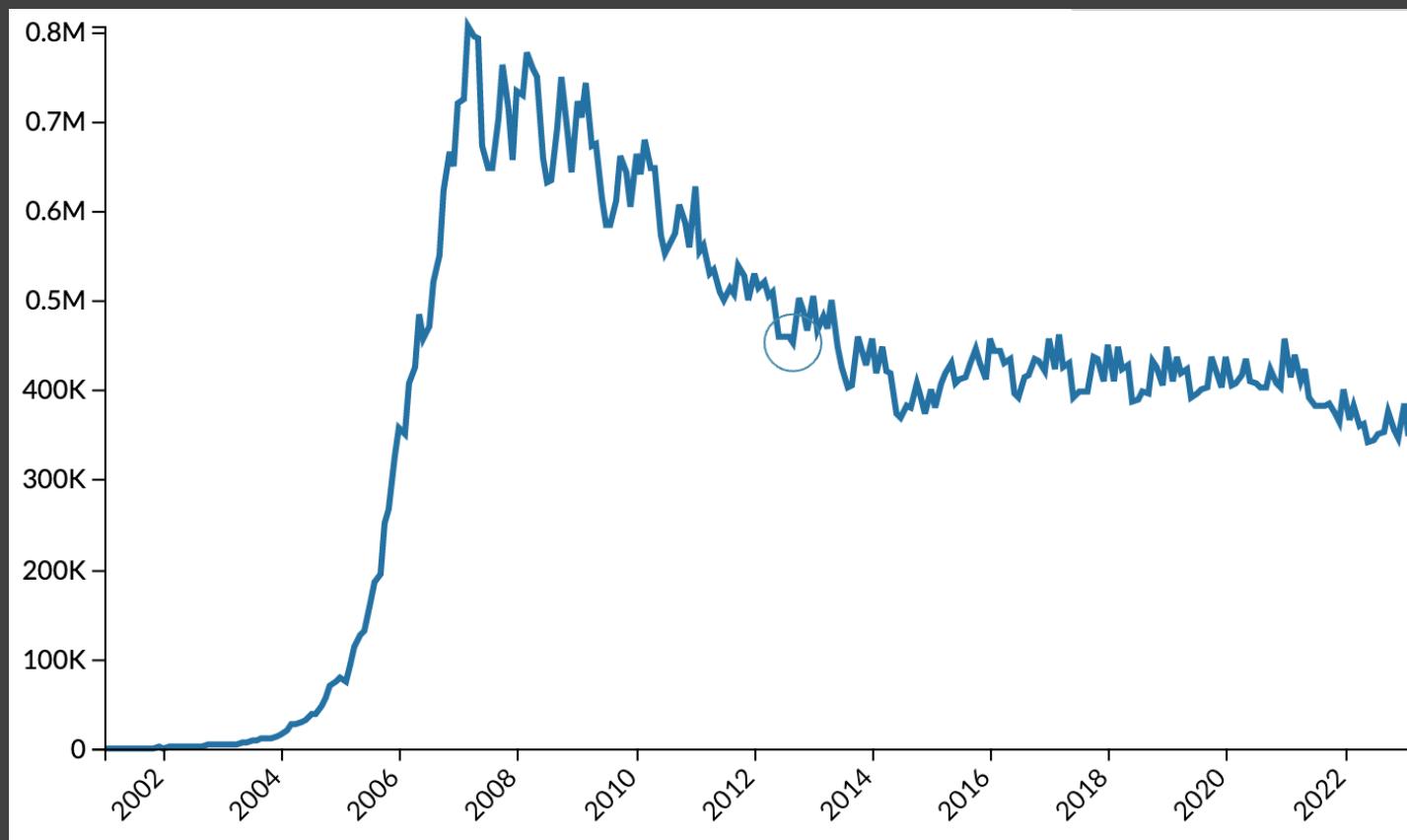
Wikipedia's growth and decline



...but then something changed.

<https://stats.wikimedia.org/#/en.wikipedia.org/contributing/editors/normal|line|all|~total|monthly>

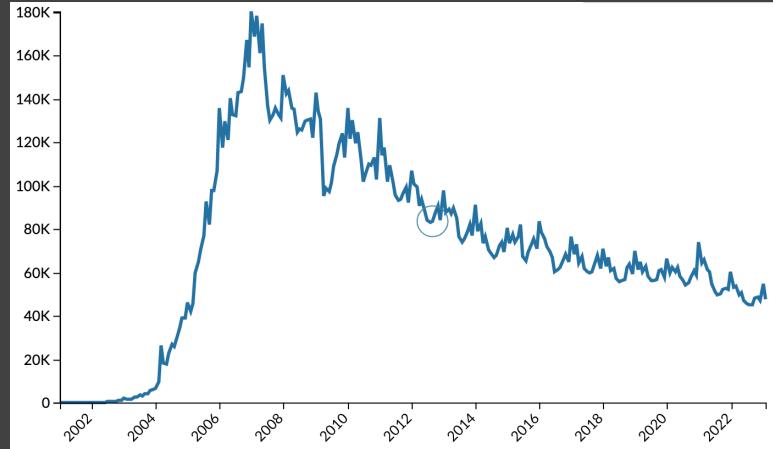
Wikipedia's growth and decline



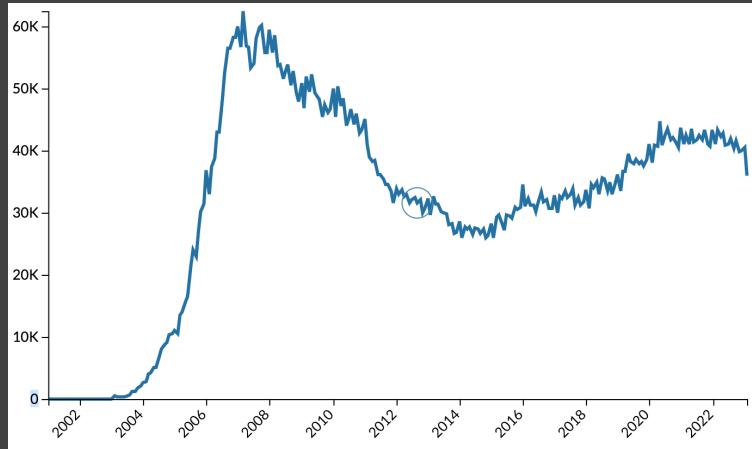
<https://stats.wikimedia.org/#/en.wikipedia.org/contributing/editors/normal|line|all|~total|monthly>

...and has continued to change.

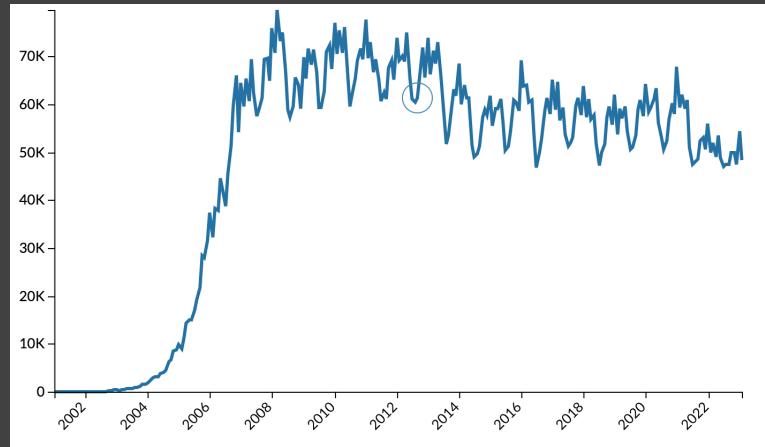
What happened?
[2min]



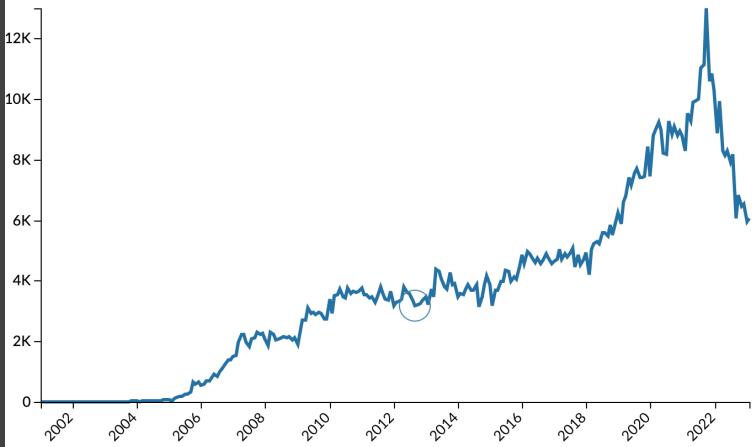
German



Japanese



French

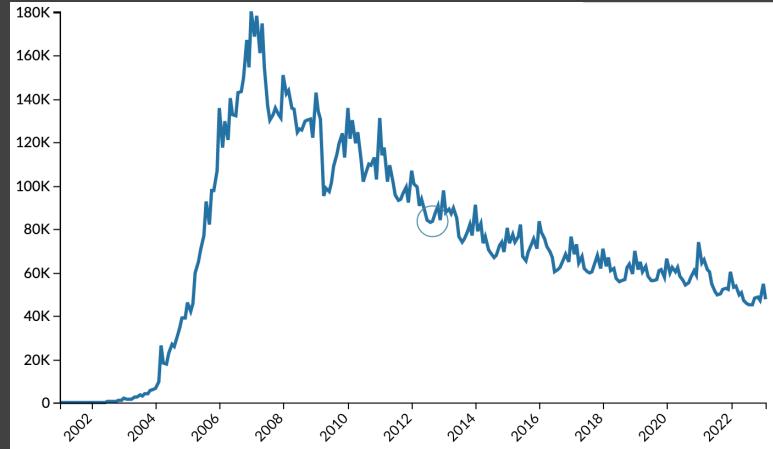


Vietnamese

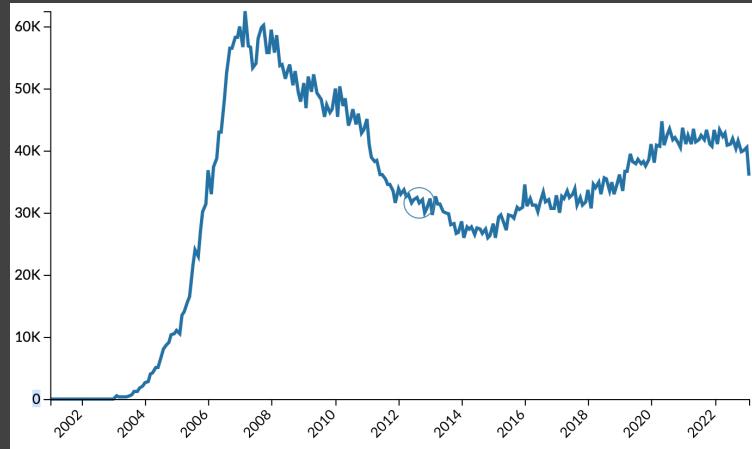
Non-English
Wikipedias:
same pattern.

They're all
different sizes,
so it's not that
they ran out of
articles.

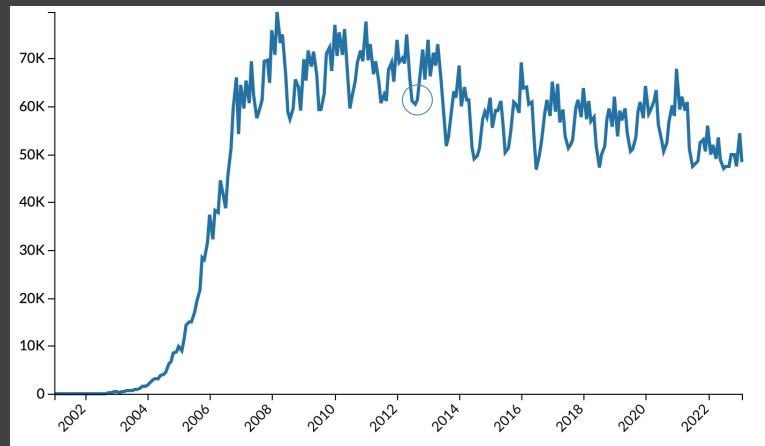
The peak hit at
different dates,
so it's not
exogenous.



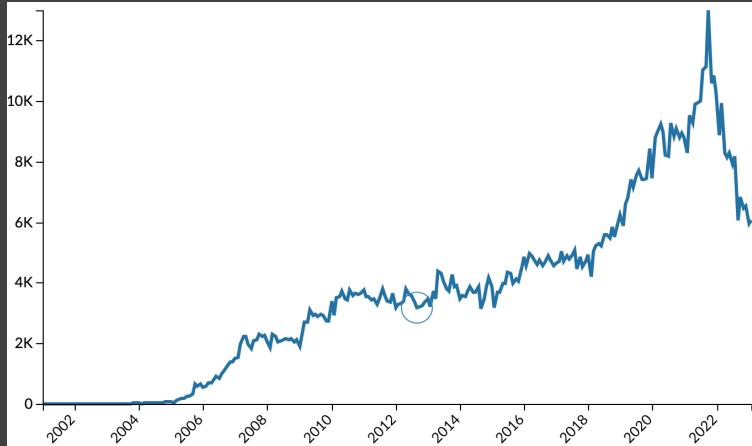
German



Japanese



French



Vietnamese

So if it's not because they ran out of content, and it's not because they ran out of people...

What happened?

++

Posted by u/webstackbuilder 2 months ago      



2.5k

Saying Goodbye To Stack Overflow.

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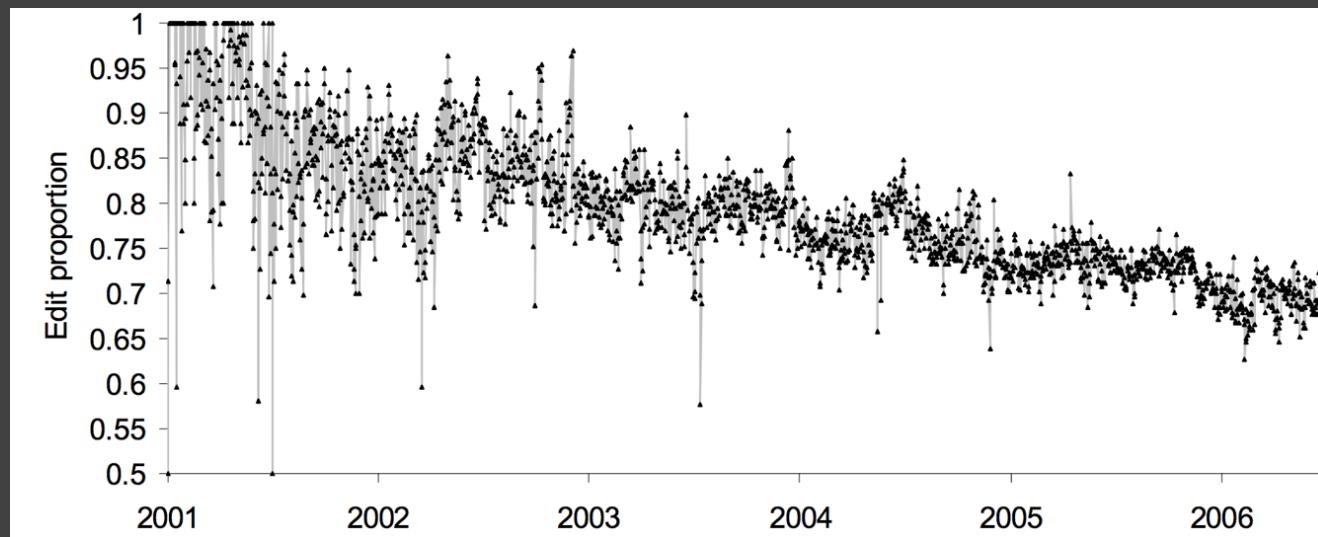
I've had a registered account on Stack Overflow for six years. I have about ten years total experience in IT. I have followed a few tags on SO to answer questions in some very narrow areas I have particular knowledge which might be helpful to others. I have also asked a question on average every three months, for a total of twenty-five questions over the time I've been registered at SO.

:
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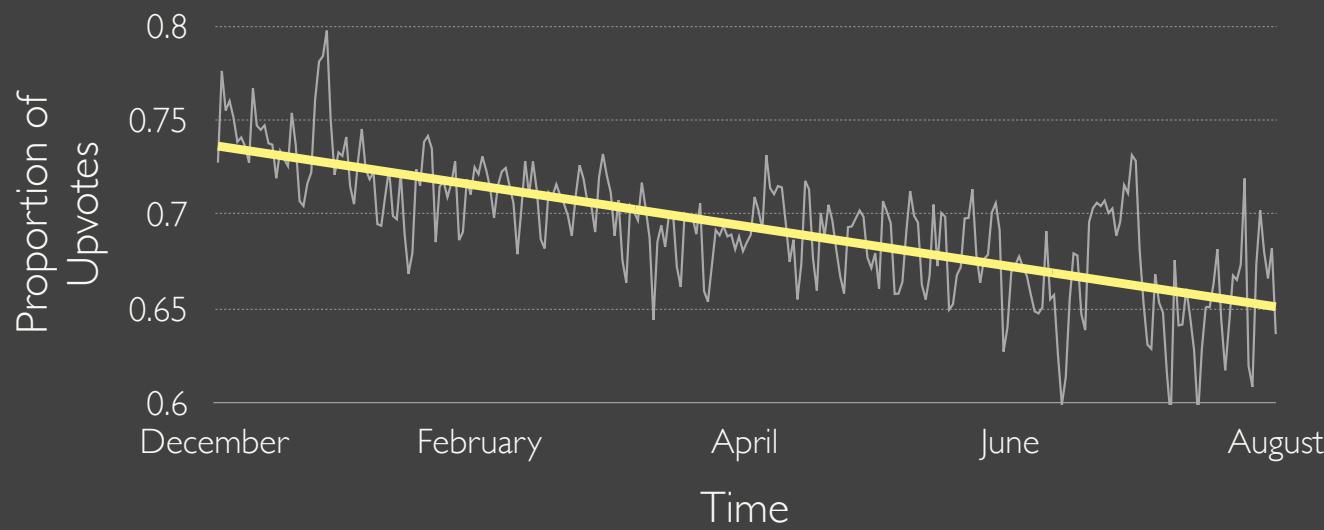
I get that moderators are barraged with low quality questions on SO, but if it's been years since someone's been able to ask a relevant question in spite of being very careful about it, the site is probably useless for most people (and slowly losing utility in a flaming dumpster fire).

I've shown questions to other developers that I've had closed and asked if they thought my question was wrong. At the time, I thought it was me and wanted to fix *my* problem. In every case the feedback was "*That's really stupid they closed your question, it's a good one. I'd like to know the answer too. F#ck SO!*"

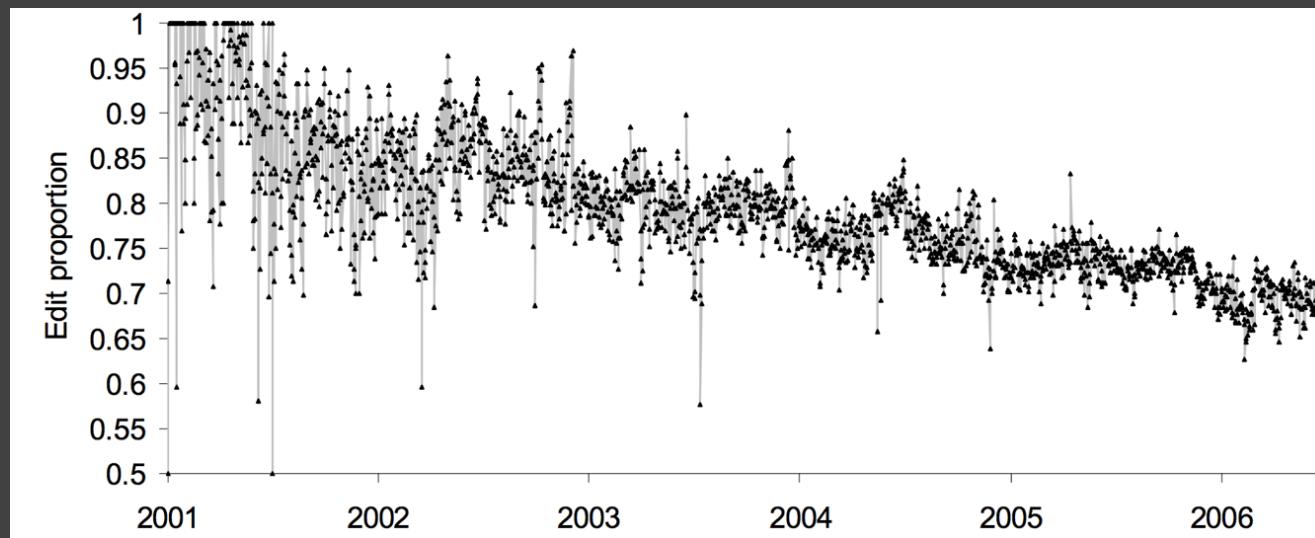
Indeed. Stack Overflow is a toxic cesspool that is utterly useless outside of historical answers. That



Less and less of the editing is on the pages themselves; more and more in the discussion pages. [Kittur et al. 2007]

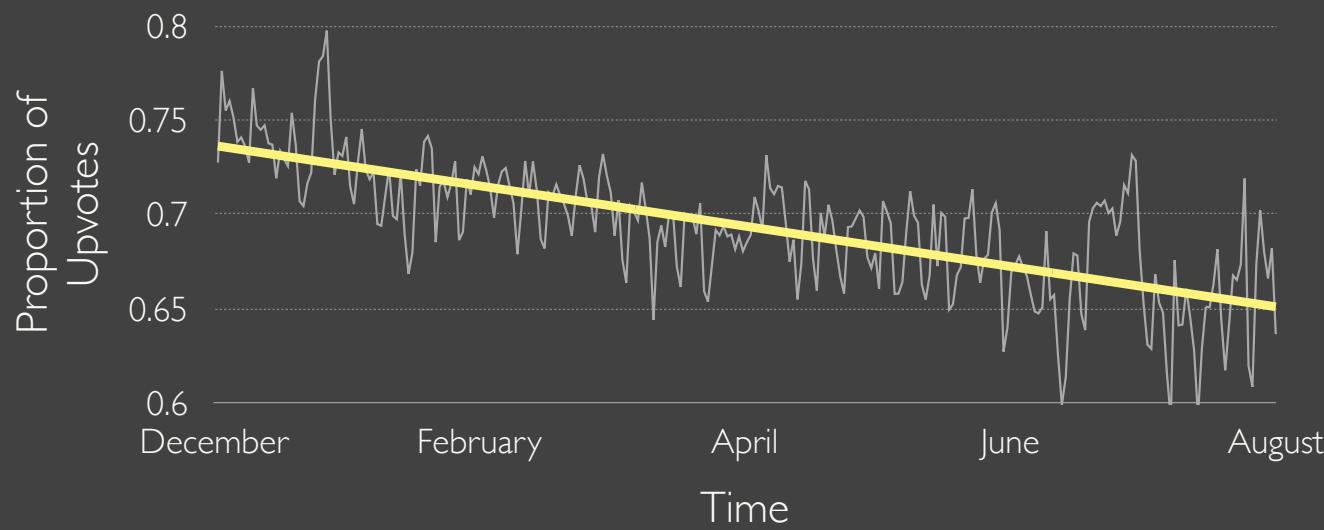


On CNN.com, the community is becoming more and more downvote-oriented over time [Cheng et al. 2017]



Do communities get
worse as they grow?

Is this decline
inevitable?



Today: the challenge of growth

What changes about the dynamics of social computing systems as they grow?

What do you need to change, as a designer or community organizer, to keep a social computing system vibrant as it grows?

Topics today:

What changes make maintaining a positive platform more challenging as it grows?

What design techniques help manage those changes?

What changes about a
socio-technical system
as it grows?

Tempting POV: designs that scale

Use moderators, upvoting, report links, and algorithms to build a design that scales from 1,000 people to 1B people

In other words, your design should not need changes as your system becomes more popular

Why that POV fails

It's not just the design that needs to scale, it's also the norms

Recall that these are socio-technical systems, so the design itself is not enough to guarantee the same experience at IK, IM, and IB

The community leaders that established and enforced norms will no longer be visible to the vast majority of users

What happened?



Harvard
undergraduates

What happened?



Anyone with a
college email address

What happened?



International

What happened?



What started out narrow,
necessarily broadened. New members
mean new norms, culture and contestation.

Myanmar military

Broader participation exposes cultural rifts

VICE Watch Politics LGBTQ Drugs Opinion Photos Magazine [Twitter](#) [Facebook](#) Vice Channels

Why Are Trans People Being Banned from Tinder?

The dating app won't really explain why it keeps happening.

SHARE [Facebook](#) [Tweet](#)



Asset sources: Wikipedia Commons and provided photos

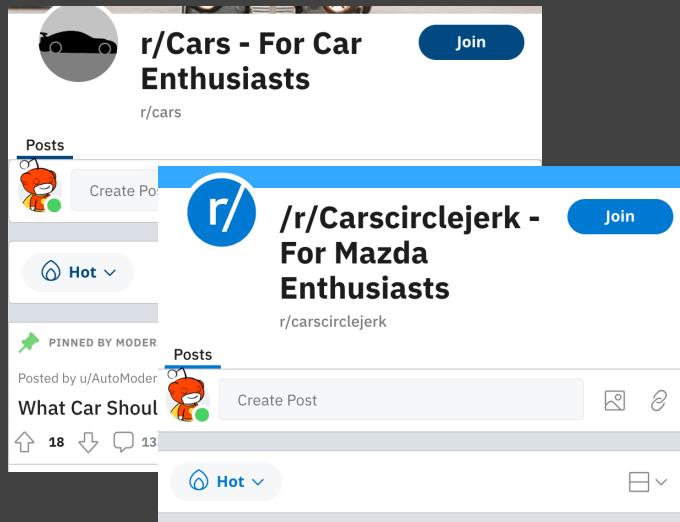
 **Tall-yuh** 
@Tahlia_Rene [Twitter](#)

Still waiting on [@Tinder](#) to unban me since i got banned after being reported for being trans. So much for "trans friendly." Yalls 30 gender options don't mean shit when trans people still get banned automatically because of how often cis straight men report us

30 5:54 PM - Dec 2, 2017 [Reply](#) [Retweet](#) [Like](#)

Cis straight men reporting female-identifying trans women: trans members get auto-banned

Broader participation exposes cultural rifts



Example by Rui W.

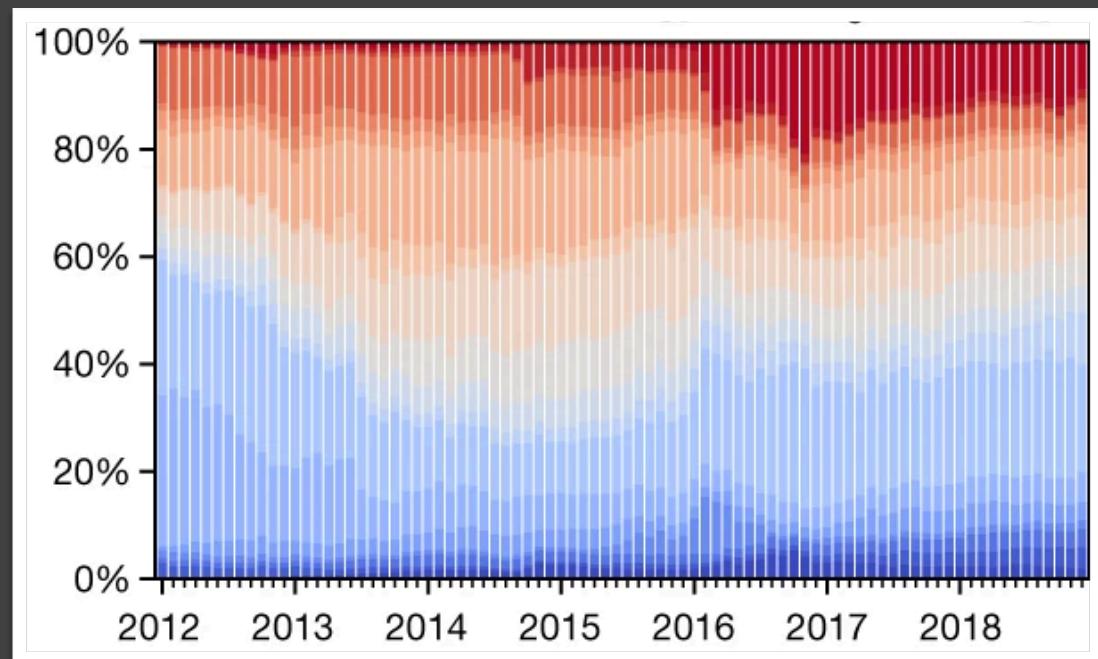
Broader participation exposes cultural rifts



Reddit heavily polarized
around the 2016 election

However, this was not due
to individuals polarizing: it
was due to a large influx of
far-right participants

[Waller and Anderson
2021]



Popularity challenges authenticity

[Verhaal and Dobrev 2022]

Authenticity is attached to intrinsic rather than extrinsic motivation

So, as popularity increases, it becomes harder for the platform and members to profess intrinsic motivation and disinteredness in economic performance

“Oh, how unique.”



They're Over Being Real

BeReal was pitched as Gen Z's safe haven from the artifice of social media. For some, authenticity only proved interesting for so long.

 Give this article  



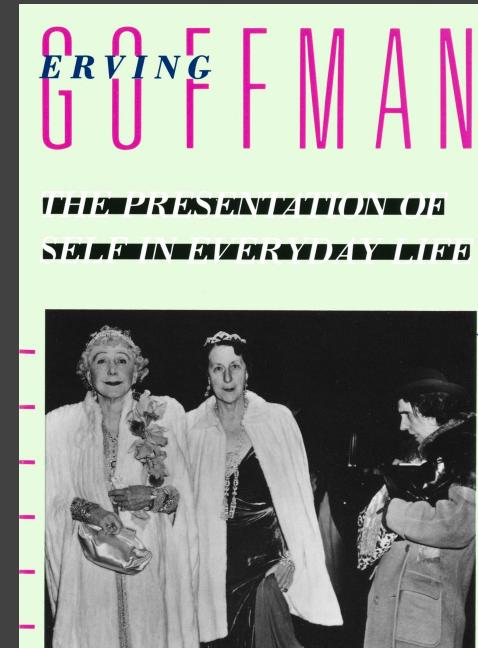
Growth leads to context collapse

Recall: we perform different versions of ourselves to different audiences

So what happens when these audiences all start populating the same space?

Context collapse: when separate audiences coalesce into one, making it difficult to navigate the space

“i wouldn’t tweet anything i didn’t want my mother/employer/professor to see” [Marwick and boyd 2010]



“One of the most trenchant contributions to social psychology in this generation.” —American Journal of Sociology

Growth leads to rare events

Suppose that just 0.1% of the population were highly aggressive online trolls

When your community is 100 people, you'd be unlucky to get one

When your community is 1000 people, you can block the bad guy

When your community is 100000 people, they can organize and dominate

Newcomers challenge norms

New members of the system are typically more energetic than existing members and also interested in a broader range of discussion than the community's current focus [Jeffries et al. 2005]

Newcomers have not been enculturated: they don't know the norms of the system, so they are more likely to breach them [Kraut, Burke, and Riedl 2012]

...and, there are a lot of newcomers, with more constantly joining, exhausting the resources of the existing members.

Result: Eternal September

Eternal September: the permanent destruction of a community's norms due to an influx of newcomers

Usenet, the internet's original discussion forum, would see an influx of norm-breaking newcomers each September as college freshmen arrived on campus and got their first access to the internet.

In September 1993, America Online gave its users access to Usenet, flooding it with so many newcomers that it never recovered. It was the September that never ended: the Eternal September.

Have you ever read: "This was so much better when it was smaller"?

Surviving massive growth



TECH / APPS / TWITTER

Bluesky is my favorite Twitter clone yet /

Right now, the small community is delightful to be a part of. And thanks to the AT Protocol, the service has a promising future.

By [JAY PETERS](#)

Apr 15, 2023, 6:30 AM PDT

71 Comments / 71 New

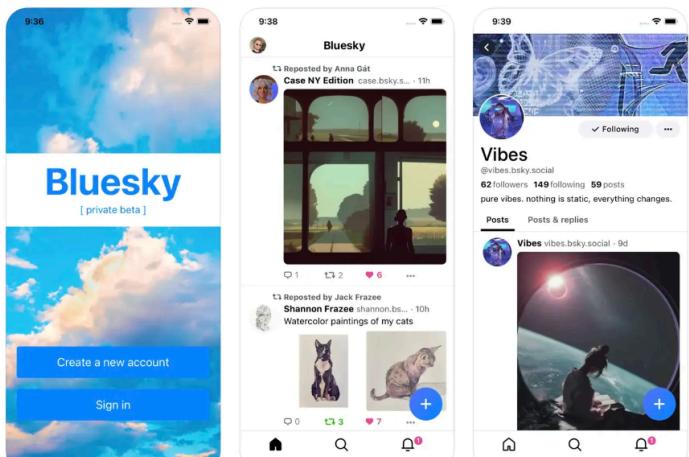


Image: Bluesky

Menu +

The challenge for Bluesky will be maintaining its positive environment, and that's just what things its federated system — the [AT Protocol](#) — is designed to do. The protocol is still in development, but Bluesky's stated focuses for it are decentralized social networking, algorithmic choice, and portable accounts. That means that, maybe someday, I'll theoretically be able to hang out in a domain that isn't also used by everybody else in the Bluesky app, choose an algorithm that serves mellower posts, and if I want to leave, easily bring my account and followers with me to another app. (It's worth noting that Twitter owner Elon Musk has expressed an interest in letting you [choose your own Twitter algorithm](#), but we'll see if that actually happens.)

To me, Bluesky currently feels like a simpler time on the internet. It's a feeds-based social network with a community of at least 20,000 people, meaning there's a lot of activity and conversation, but so far, I haven't seen much toxicity or people racing to slam dunk people in quote tweets. It feels like a platform where people are just hanging out and chatting with each other.

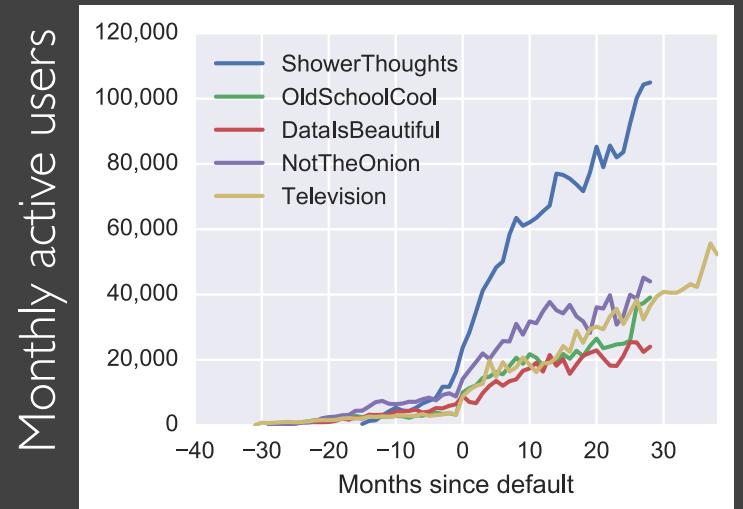
What would Bluesky need to do to maintain this set of norms?

Surviving an Eternal September

What allows a community to stay vibrant following a massive surge in user growth?

Classic case: small subreddits getting defaulted — added to the default set for new Reddit users

Successful cases tend to have strong moderation [Kiene, Monroy-Hernandez, and Hill 2016; Lin et al. 2017]



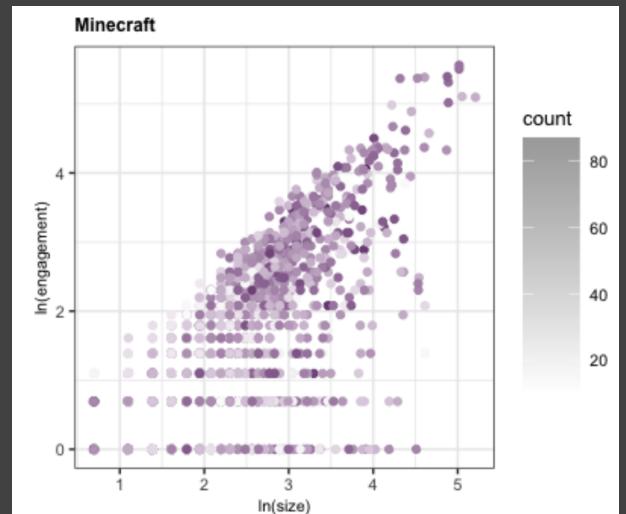
Governance arises [Frey et al. 2022]

Across platforms such as Minecraft, World of Warcraft, and Reddit, the size and complexity of a community's governance is positively associated with the community's size

(Darker dots are generally in the upper right corner)

Implicit rules when there are no rules:

1. No formal positions exist
2. Anyone can enter
3. Everyone can take every possible action
4. Members act independently



Rules rule [Fiesler et al. 2018]

Adding rules may not be the most exciting design decision, but they become increasingly necessary as you grow

As an online community becomes more popular, the more statistically likely it is to have publicly posted rules

The vast majority of these rules are restrictive (e.g., don't harass people, don't spam, don't use hate speech) and focused on content

r/science Rules

1. Must be peer-reviewed research ▾
2. No summaries of summaries, rehosts, or reposts ▾
3. No editorialized, sensationalized, or biased titles ▾
4. Research must be less than 6 months old ▾
5. No off-topic comments, memes, low-effort comments or jokes ▾
6. No abusive or offensive comments ▾
7. Non-professional personal anecdotes will be removed ▾
8. Criticism of published work should assume basic competence of the researchers and reviewers ▾

How do you build empathy?

How can you build empathy with a huge number of communities?
How do you prevent yourself from designing for your own
prototypical user?

One approach successfully used in product teams: show user videos to
engineers

Bring in stakeholder groups for participatory design

Don't assume you can. Instead, create local governance (e.g., subreddits)
and be responsive to it.

How do you test new ideas?

How do you A/B test new ideas, when there's no easy way to bucket people into group A or B? Everyone's connected...

The most common answer is **country comparisons**, where versions are launched to different countries that have similar properties.

e.g., launch one version in New Zealand and another in Australia

Want an advanced answer? Go chat with Johan Ugander in MS&E:

Graph Cluster Randomization: Network Exposure to Multiple Universes

Johan Ugander

Brian Karrer

Lars Backstrom

Jon Kleinberg

What we know so far

Challenge	Strategies [3min]
Cultural rifts	?
Challenges to authenticity	?
Context collapse	?
Rare events	?
Newcomers challenge norms	?

What we know so far

Challenge	Strategies
Cultural rifts	Governance and rules; moderation
Challenges to authenticity	?
Context collapse	?
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What we know so far

Challenge

Cultural rifts

Challenges to authenticity

Context collapse

Rare events

Newcomers challenge norms

Strategies

Governance and rules; moderation

Unsolvable?

?

?

?

What we know so far

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Unsolvable?

Create subcommunities

?

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Strategies

Governance and rules; moderation

Unsolvable?

Create subcommunities

Governance and rules; moderation

Governance and rules; moderation

But more than those...

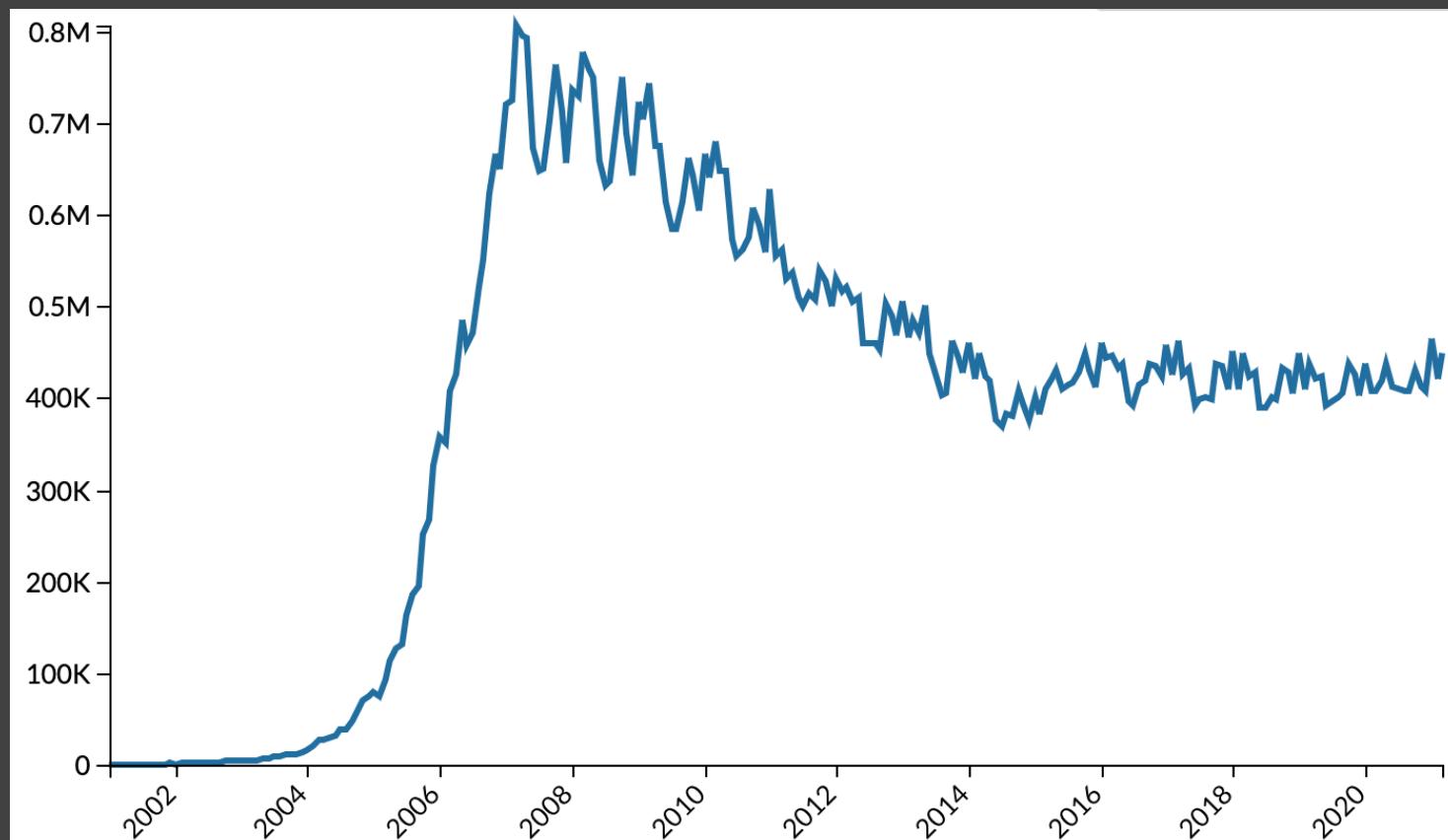
Michael suggests that first, rather than building new features, focus on tools that support the community and its ability to stay upright.

This means tools for managing counter-norm behavior and enculturing newcomers.

We will discuss more about moderation and governance in the second half of the course.

Back to the beginning

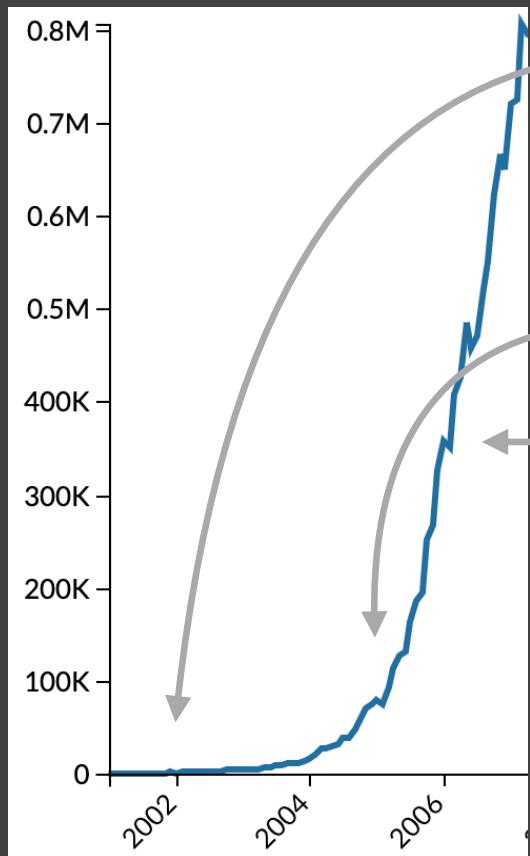
Wikipedia's growth and decline



<https://stats.wikimedia.org/v2/#/en.wikipedia.org/contributing/active-editors/normal|line>All|~total>

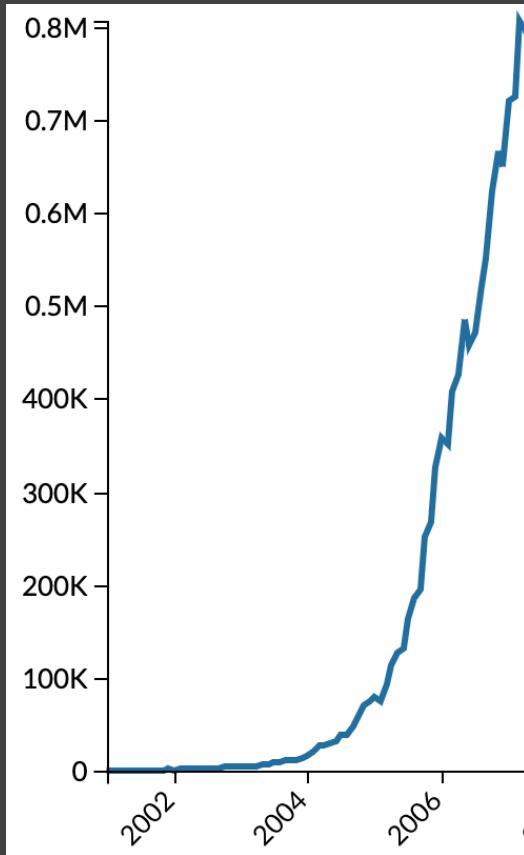
Returning to the
original question:
What
happened?

Growing pains [Halfaker et al. 2012]

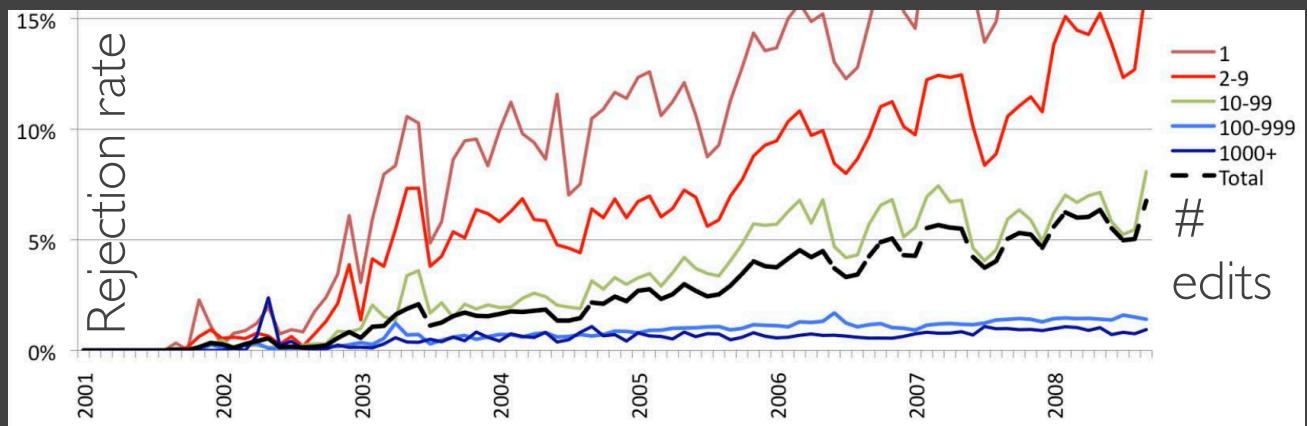


- I. Wikipedia starts small, with little moderation needed and strongly motivated contributors
2. The formula works — Wikipedia grows
3. As Wikipedia grows, the percentage and volume of low-quality contributions rises, creating strain on the reputation of Wikipedia and the Wikipedia editors

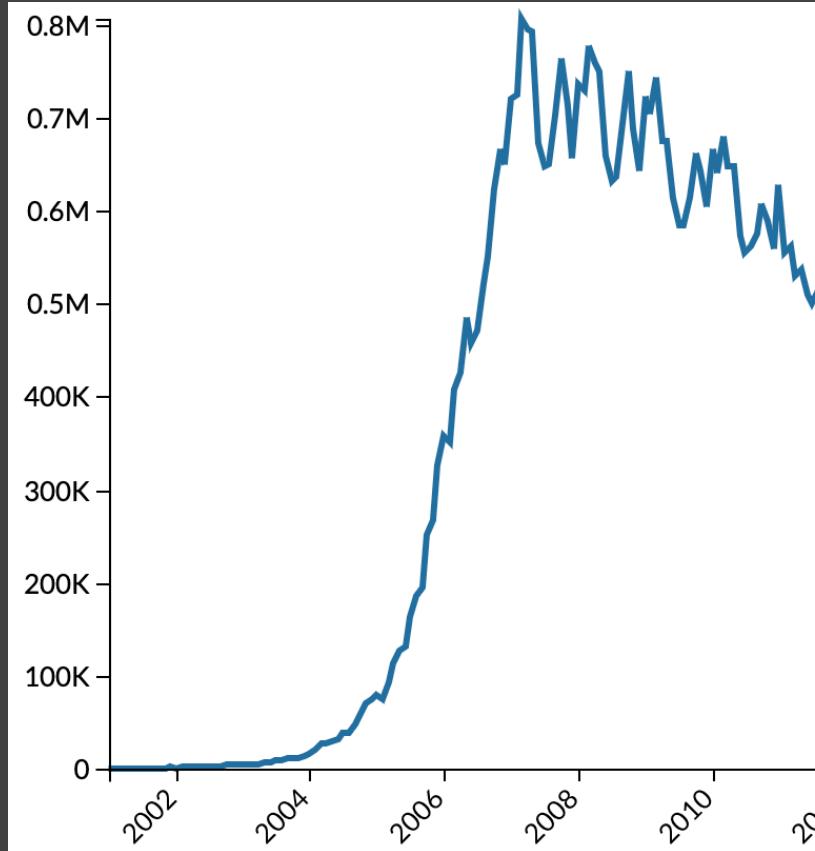
Growing pains [Halfaker et al. 2012]



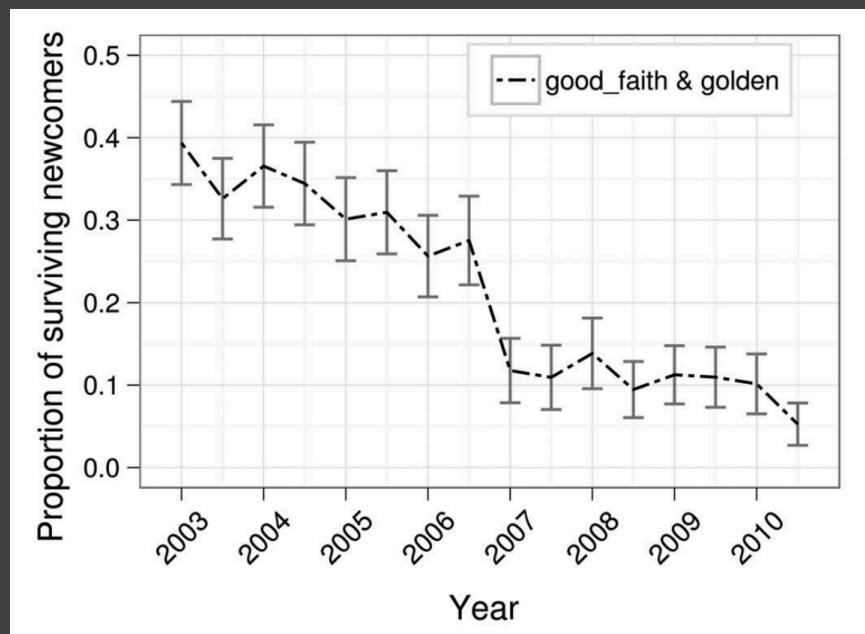
4. To manage the strain, Wikipedia admins stem the tide: they reject more contributions and create bots and tools to help them quickly revert bad work
[Suh et al. 2009]



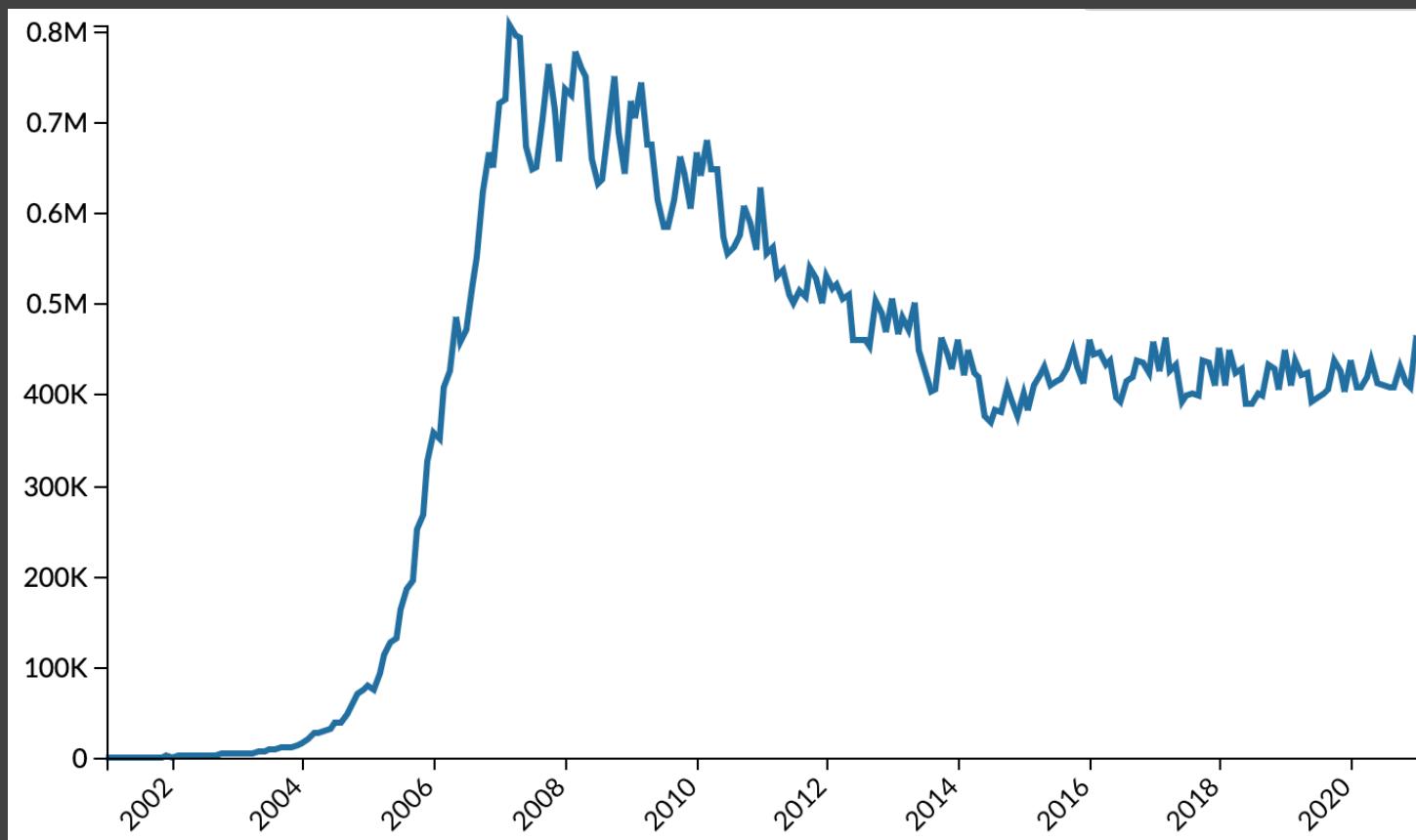
Growing pains [Halfaker et al. 2012]



5. The increased rejections leads newcomers to be less likely to stay



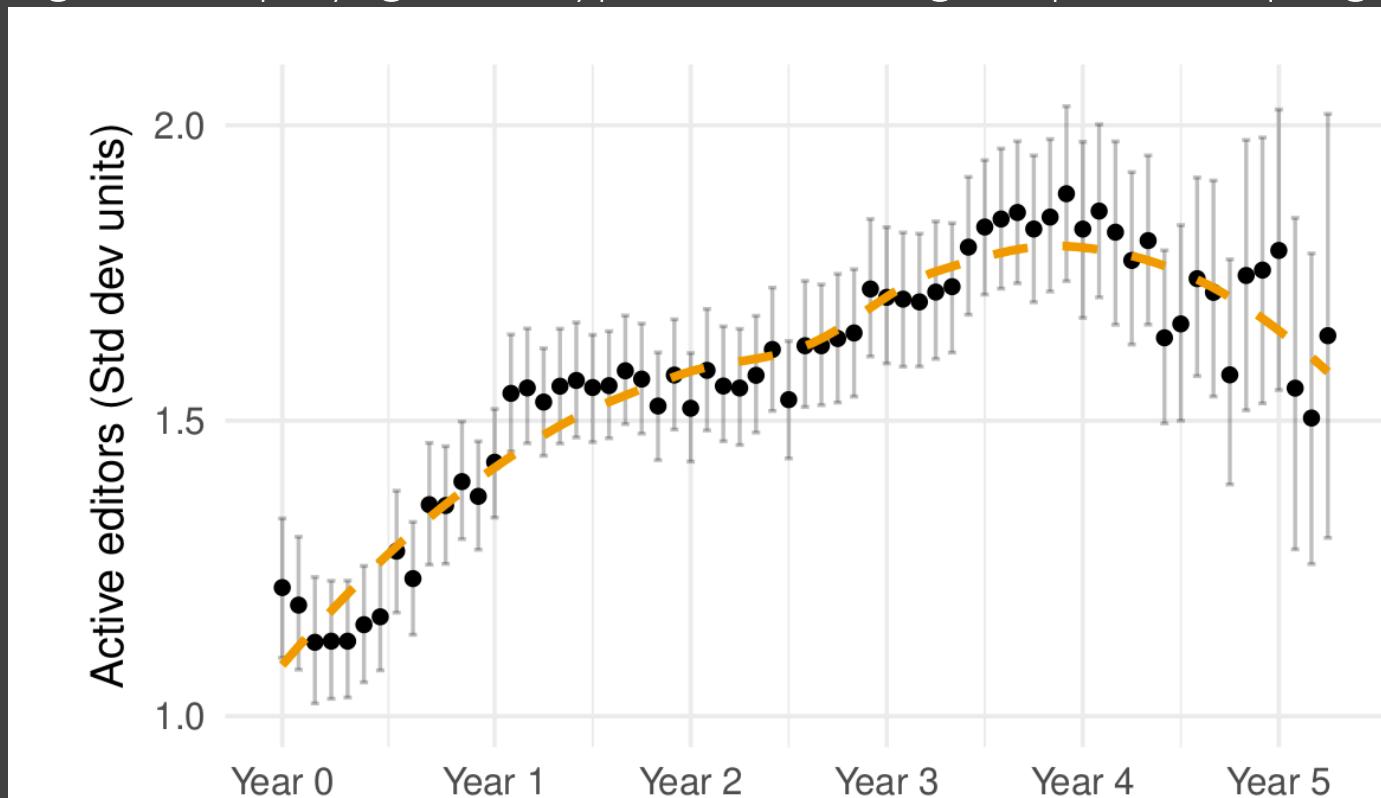
Growing pains [Halfaker et al. 2012]



1. Start small, little moderation
2. Get popular and grow
3. Strain under newcomer contributions
4. Institute policies to reduce junk
5. Lose newcomers w/ new policies

Not just Wikipedia [TeBlunthuis et al. 2018]

Replicated across hundreds of Wikia wikis
e.g., runescape, yugioh, harrypotter, ewrestling, onepiece, clubpenguin



1. Start small, little moderation
2. Get popular and grow
3. Strain under newcomer contributions
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Summary, **Subscribe**

Growth is a double-edged sword. It's great lots of people want to play in the same playground, but the rules of the playground weren't set up for so many people.

Proportionally less content gets attention.

Feed ranking

Smash that Like button!

and content that

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Social Computing

CS 278 | Stanford University | Michael Bernstein

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