A Tale of Two Cities: What We've Learned About WFH

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Hi!

Nicole Forsgren
I drink Diet Coke and ask questions
@nicolefv

Charles Dickens' "A Tale of Two Cities" begins, "It was the best of times, it was the worst of times." Adapting Dickens' line to leading an engineering team during the global pandemic, I'd say "**We're doing very well, we're barely hanging in there**."
— Shane O'Flynn

Here's what we'll talk about today

- What the data shows about DOING work
- Is working from home better or worse?
- What we knew about WFH before COVID-19
- Resilience and burnout
- Making tech and work sustainable
- Preparing for the future

Shout outs and thanks for the research in this talk

Global: developer activity, timing of work, and collaboration
- GitHub Octoverse Spotlight team: Greg Ceccarelli, Anna Filippova, Taylor Holland, Derek Jedamski, Scot Kelly, Rowan Wing

One company: developer activity and productivity
- Microsoft 365 blog: Jared Spataro

One company: developer perception
- MSR SAINTes team: Denae Ford, Margaret-Anne Storey, Christian Bird, Sonia Jaffe, Chandra Maddila, Brian Houck, Nachiappan Nagappan

- Jenna Butler, MSR SAINTes

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So what?

1. Identify the what
2. Understand the what
3. Identify and understand the why(s)
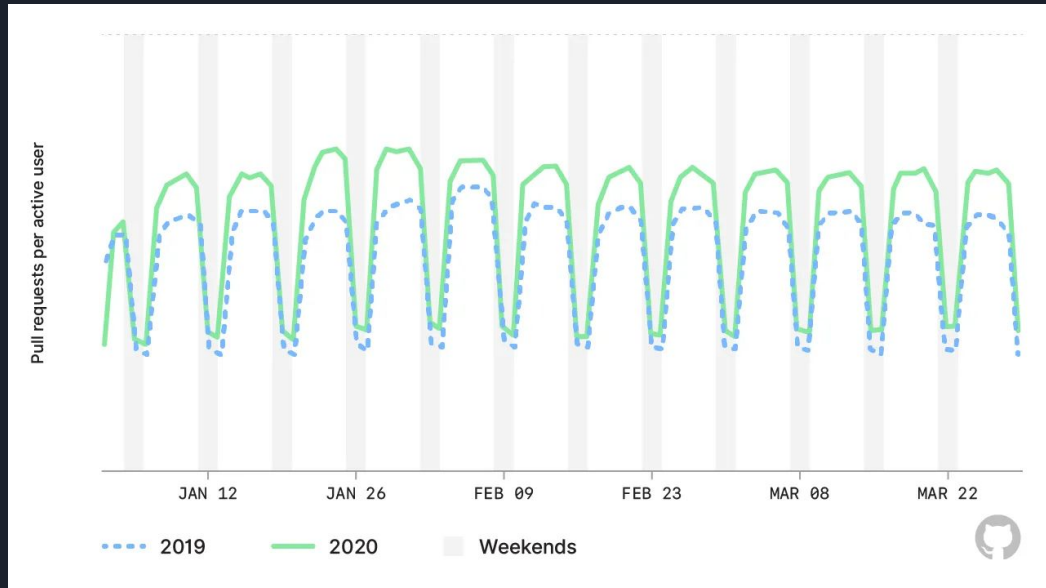4. Get more detail and nuance

What the data says: Getting work done
→ No *observed* COVID-19 effect

Consistent growth year over year

Pull requests per active user
GitHub

No observed effect
*is an observation, however,
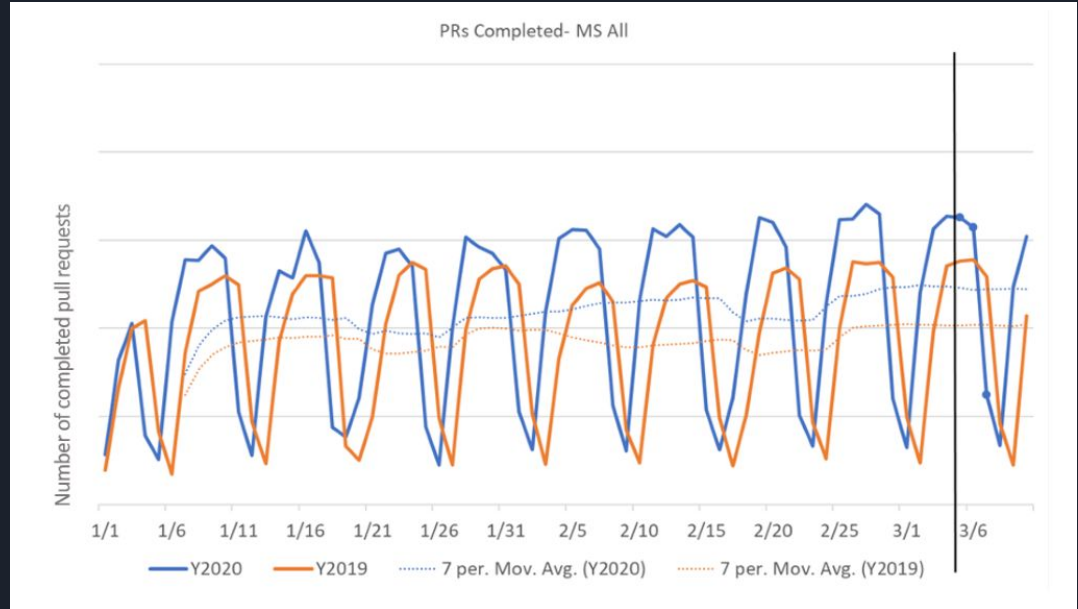given the circumstances*

What the data says: Getting work done
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Consistent growth year over year

Pull requests completed
Microsoft

Again, no observed effect
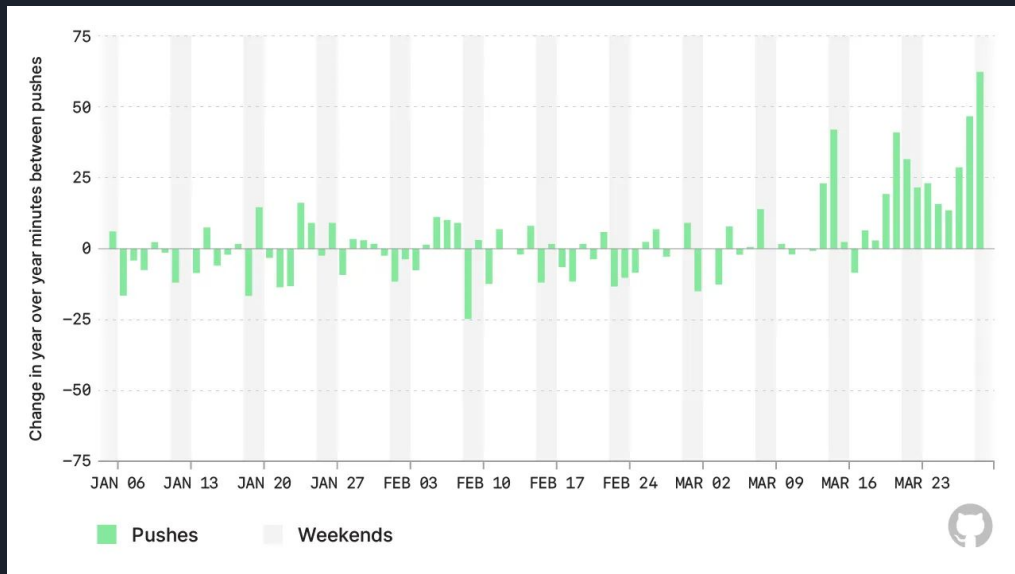*is an observation, however,
given the circumstances*

PRs Completed- MS All

What the data says: Timing of work
→ COVID-19 effect

Days get longer starting in March

Work day (first to last push)
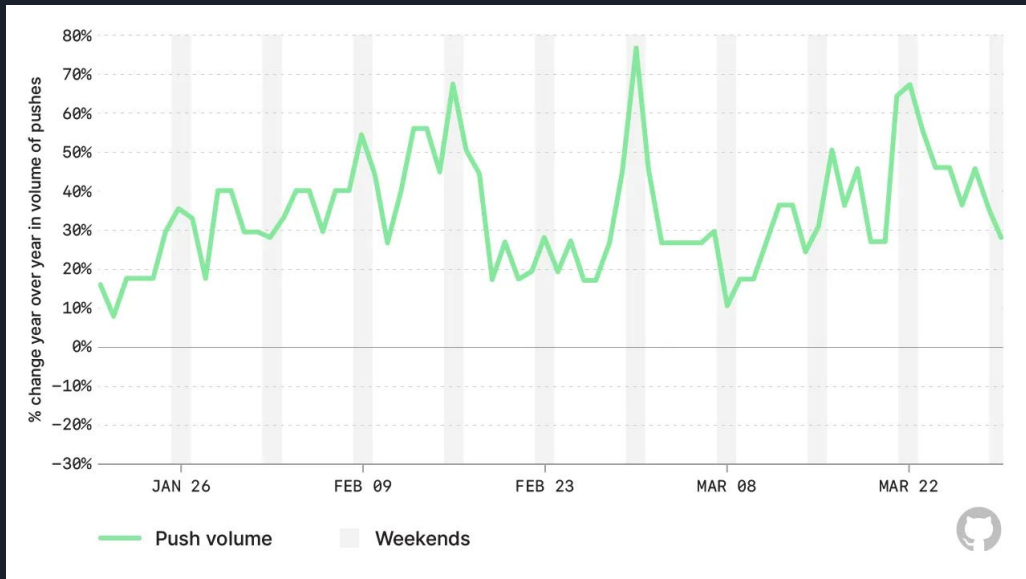GitHub
US Pacific time zone

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What the data says: Volume of work
   → COVID-19 effect

Longer days are accompanied by higher volume

Volume of pushes
GitHub
US Pacific time zone

This tells us: Longer days aren't just people spreading out their work; they're also working more.

What the data says: Timing of work
→ COVID-19 effect

Days are longer and "fuller"

Work day (first to last activity)
Builds per engineer per hour
Microsoft

Engineers are starting work earlier than usual

Engineers are working later into the evenings

Week of the Year ● 2/16 ● 2/23 ● 2/9 ● 3/1 ● 3/8

Build count

000

500

0

Mon   Tues   Wed   Thurs   Fri

Refreshed: 3/13/2020 8.00am

No typical lunchtime "dip"

Mid-afternoon peaks are slightly lower than usual

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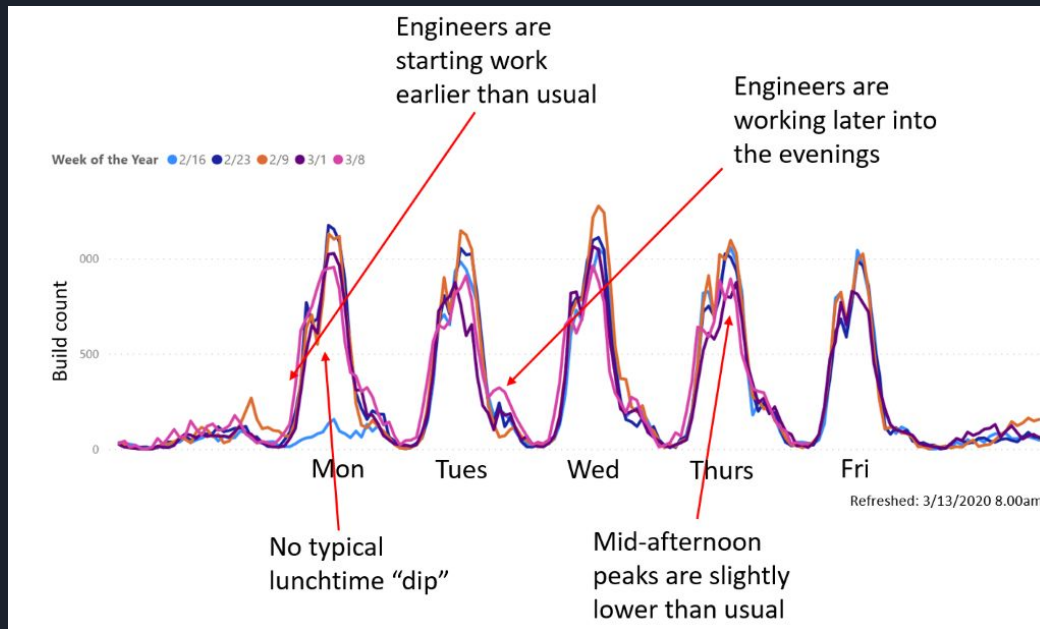
What the data says: Collaboration
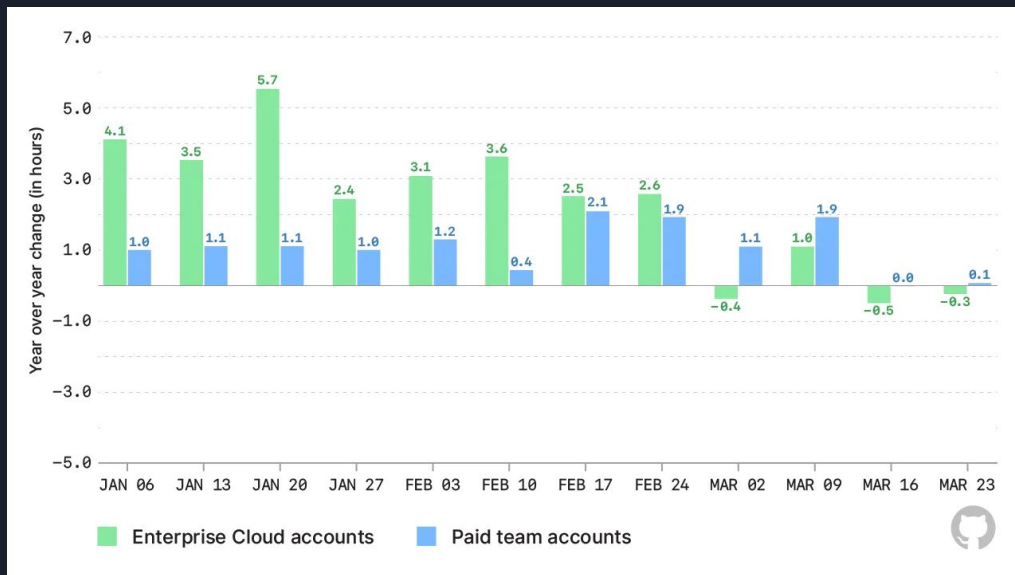## → COVID-19 effect

Time to merge pull requests decreased

Time to merge pull requests
GitHub

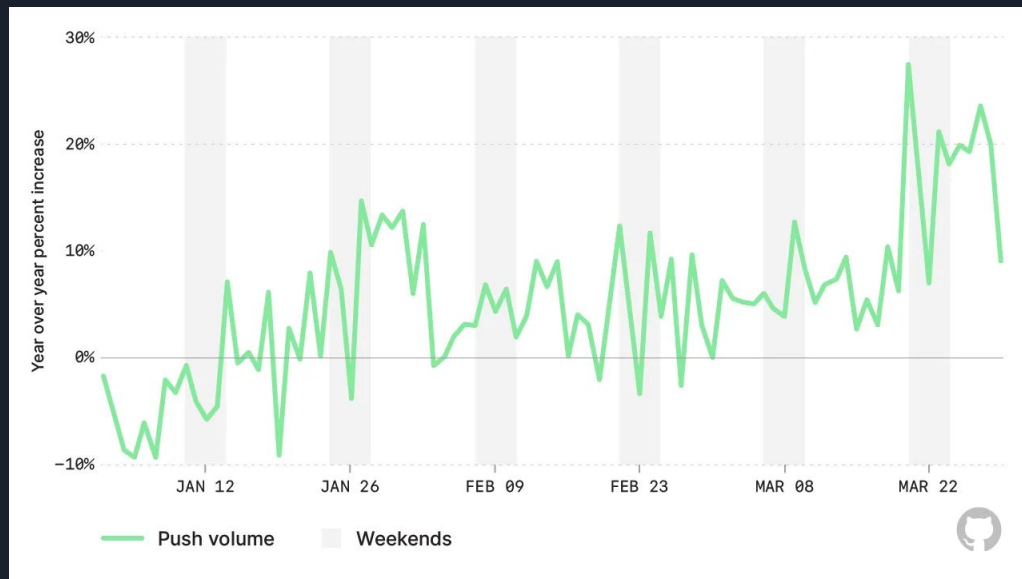People are at their screens and
more responsive to PRs.

What the data says: Open source
→ COVID-19 effect

Open source project creation *increases*

OSS project creation year over year
GitHub

We also see more engagement
on the weekends with open source,
education, and personal projects.

Is working from home better or worse?
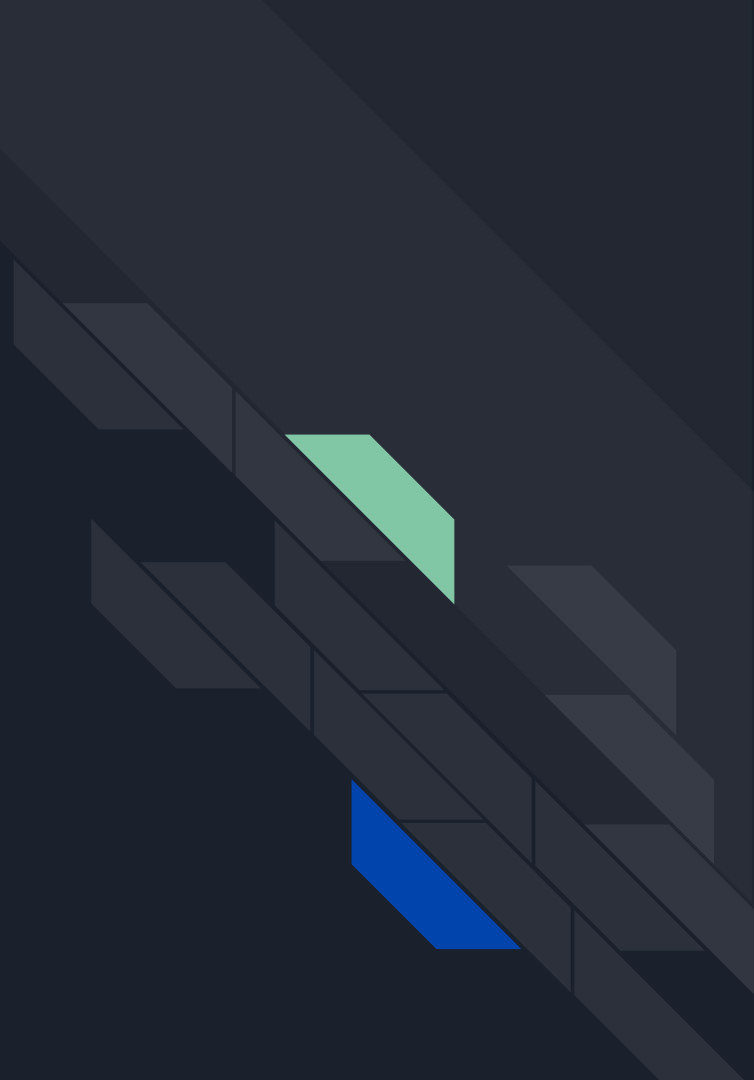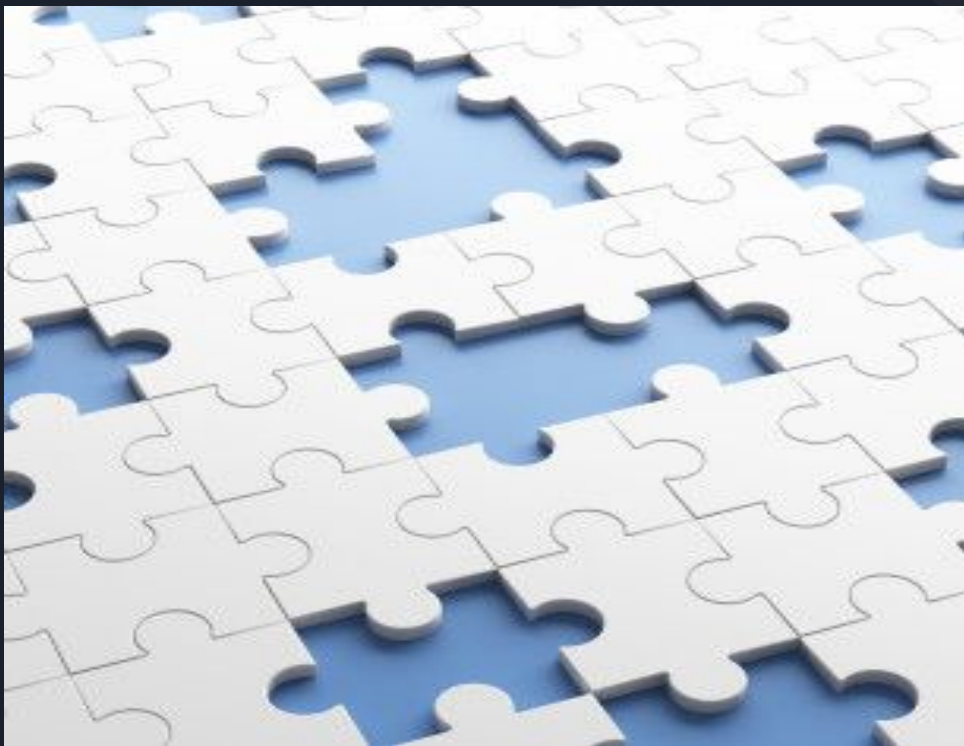
What developers say: Productivity

It depends

- For most, productivity had not changed or had improved (62% - 68%)
- However, many less productive (32% - 38%)
  - For those that were less productive, that lack of productivity decreased over time (38% to 30%), suggesting they found ways to accommodate

Productivity is individual.

People are affected differently, based on work styles, and the challenges and benefits they face

https://arxiv.org/pdf/2008.11147.pdf

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What developers say: The **good** about WFH

- Less time on commute
- Spending less money
- Flexible work hours
- Closer to family
- More comfortable clothing
- Reduced health risks
- Better focus time
- Less distractions or interruptions

- More time to complete work
- More breaks
- Better work life balance
- Better work environment
- More efficient meetings
- More control over work
- More physical activity

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Significant impact on productivity

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- **Less time on commute** *and* **More time to complete work**

Significant impact on productivity

Strongest impact on productivity

https://arxiv.org/pdf/2008.11147.pdf

What developers say: The **bad** about WFH

- Missing social interactions
- Lack of work-life boundary
- Poor ergonomics
- Less awareness of colleagues work
- Less physical activity
- Difficult to communicate with colleagues
- Insufficient hardware
- Connectivity problems
- Poor work life balance

- Too many meetings
- More distractions or interruptions
- Lack of a routine
- Fewer breaks
- Friction with collaboration tools
- Lack of motivation
- Blocked waiting on others
- Poor home work environment
- Lack of dining options
- Lack of childcare
- Less time to complete work

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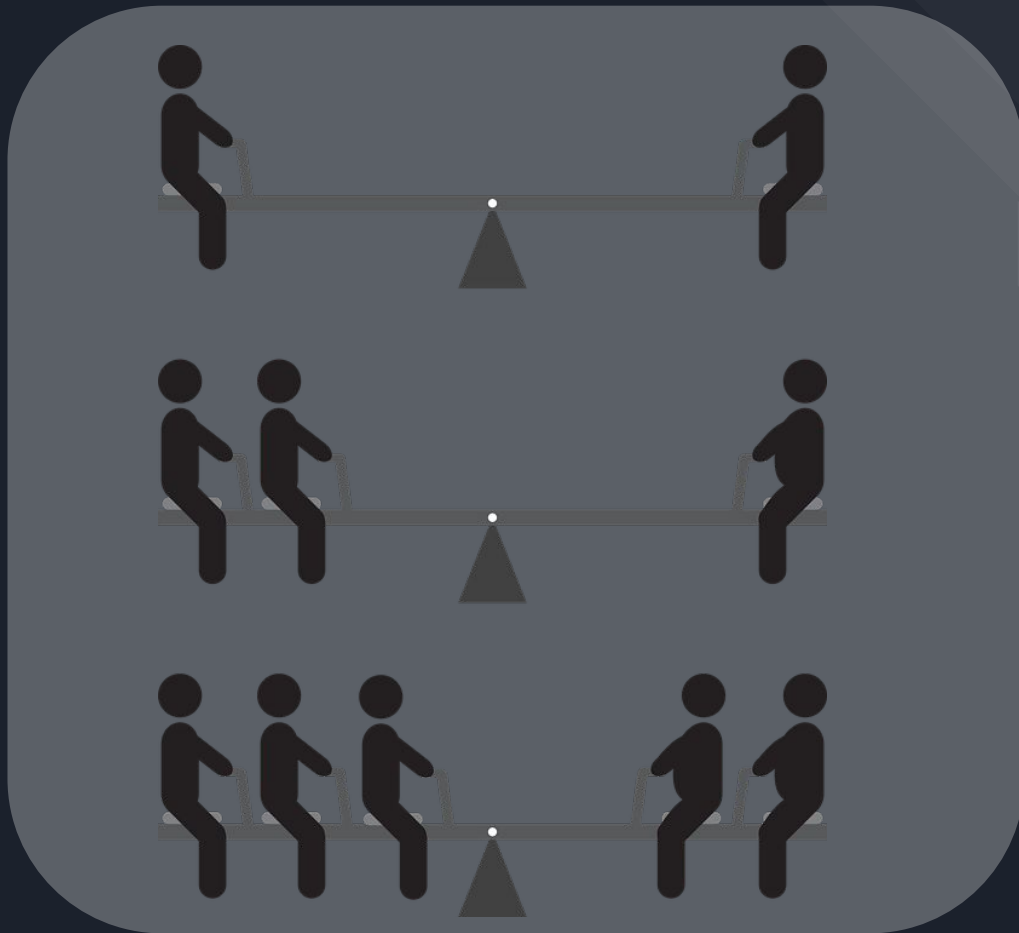https://arxiv.org/pdf/2008.11147.pdf

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- **Less time to complete work**
- **Lack of childcare *and* Less time to complete work**

Significant impact on productivity
Strongest impact on productivity

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WFH *before* COVID-19

The Good	The Bad	The Worrisome
- Improved productivity - Better punctuality - Less attrition	- Fewer promotions - Workplace stress can compound for those with young children	- Fewer breaks - Longer workdays

Key success factors:
- suitable working conditions at home
- efficient communication with coworkers
- supervisor trust and support

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See Appendix

Daily gratitudes

47%
daily gratitude reflection positively impacted well-being

Flexibility & time with family
are bright spots

Resources for mental health
are important

Butler, Forthcoming
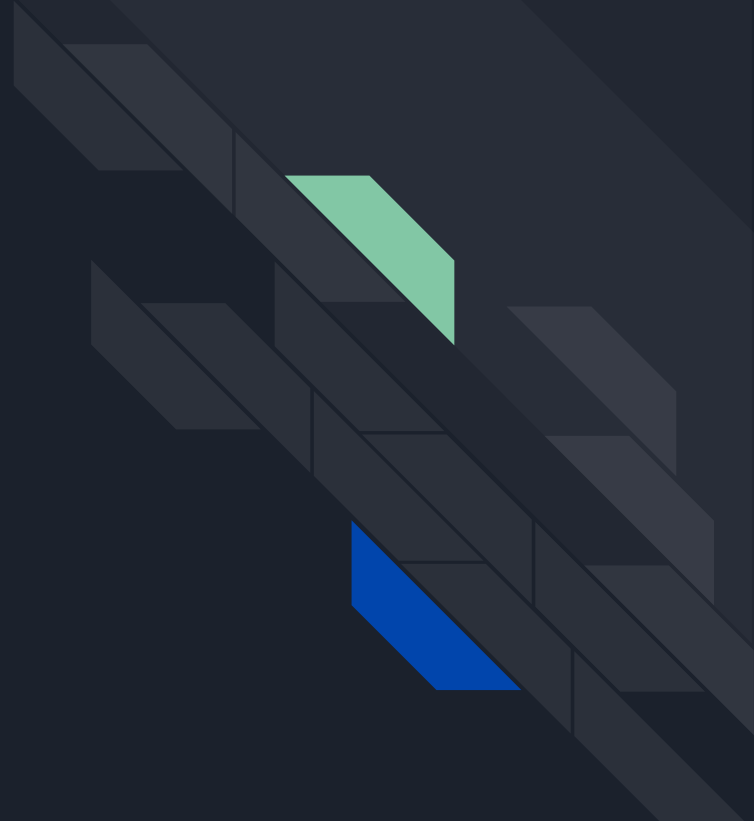
Daily challenges

Coping with WFH is elusive for some
41% report no improvement, 61% report improvements

Feeling overworked, and lacking motivation & focus
are continued themes

Physical & mental health
are a struggle, and getting worse

Butler, Forthcoming

Grinding is no longer an answer

Tech and startup culture have long celebrated "heros" and "grinding" where hustling and pushing thru are a badge of pride.

But…

- This is not sustainable
- It exacts costs on people, teams, families, communities
- We suffer from survivor, confirmation, availability biases and don't realize how often people grind and then burn out with *nothing* to show for it

The pandemic has now signed *everyone* up for a grand experiment in grinding.
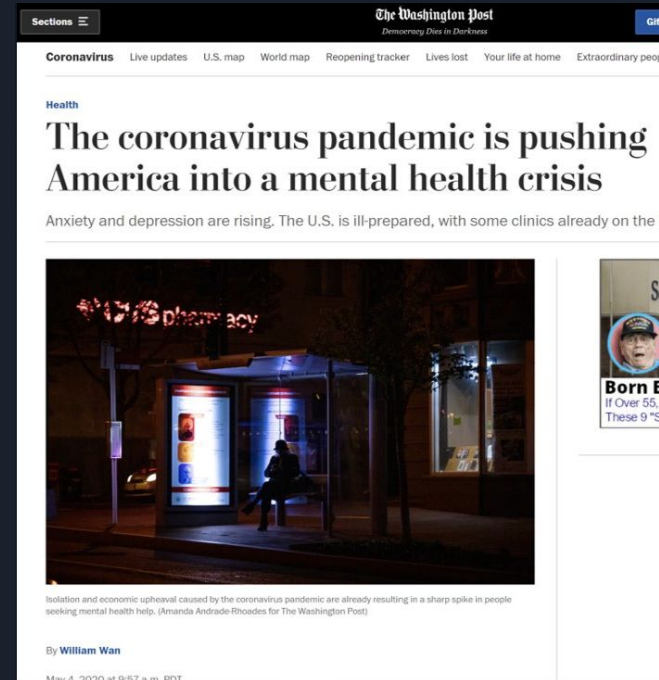
The world has changed

We are living through the worst:

Pandemic in
100 years

Economy in
80 years

Civil unrest in
50 years

Add stresses of isolation and child/ eldercare, and we're seeing a true mental health crisis

We need to plan for long-lasting impacts

The Washington Post
Democracy Dies in Darkness

Sections

Coronavirus | Live updates | U.S. map | World map | Reopening tracker | Lives lost | Your life at home | Extraordinary peop

Health

The coronavirus pandemic is pushing America into a mental health crisis

Anxiety and depression are rising. The U.S. is ill-prepared, with some clinics already on the

Isolation and economic upheaval caused by the coronavirus pandemic are already resulting in a sharp spike in people seeking mental health help. (Amanda Andrade-Rhoades for The Washington Post)

By **William Wan**

May 4, 2020 at 9:57 a.m. PDT

Making tech sustainable

Embrace DevOps principles

- Leverage automation
- Scale with the cloud
- Secure our work
- Innovate to meet our customers' changing needs
- Build and foster our culture

What's not possible becomes possible

- Organizations around the world pushed to remote services and embraced alternate models to deliver work
- What was once "not possible" or "too highly regulated" became possible overnight
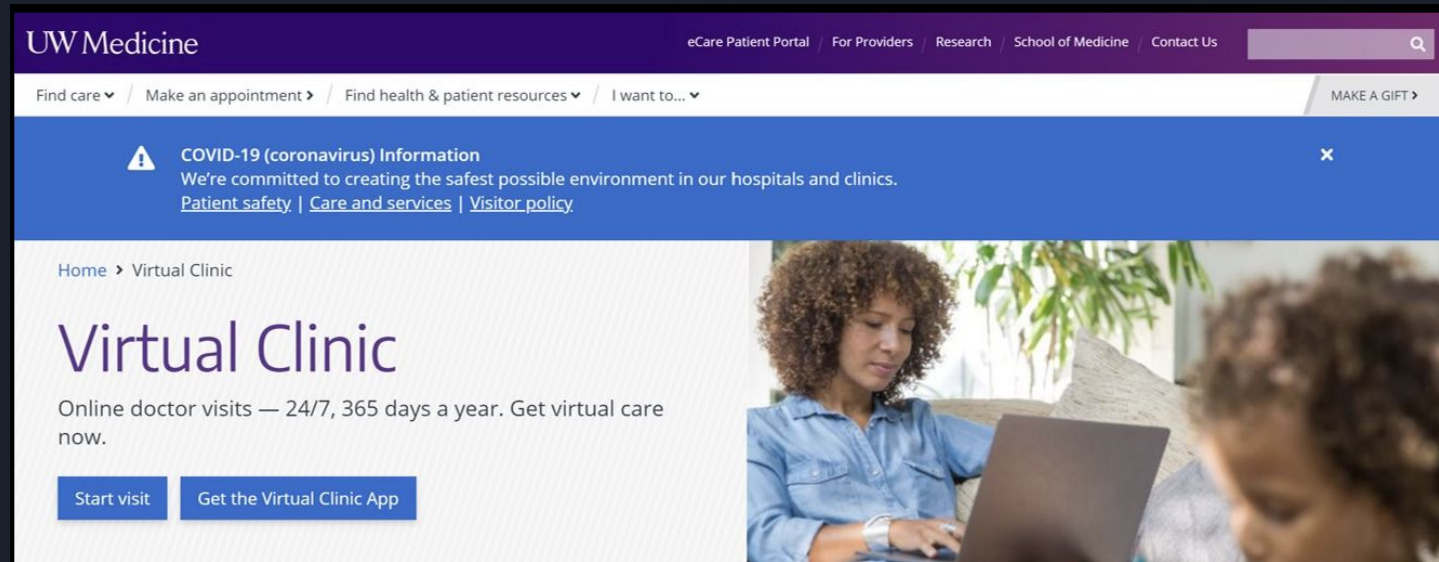
Making work sustainable

Change how we think about things

- We need to think about **resources for people hit hardest**
  - People who need childcare, and especially women
  - Isolated workers, especially those without networks (like juniors)
- We need to think about **mental health** like we do our tech
  - Plan for it, invest in it, think long-term
  - Have a multi-pronged approach
- We need more **resources for managers**
  - Many of our solutions have focused on the IC, and managers are bearing the brunt
- We need to think *personal first*, then scale to global solutions
  - Productivity is personal
  - Working from home is personal

Prepare for the future

Learning from those who have returned: a case study from Microsoft China

- **The new "night shift" is more common**
- **Workweeks continue to be longer (~90 min on average)**
  - Much of this is due to meetings, and managers take a hit
- **Managers shifted to more 1:1 time during WFH, and this trend continues**
  - This has positive effects on team well-being
- **There are strong networks even through disruptions**
- **IMs increased during WFH, and stayed up when workers shifted back to the office**
  - Workers spent up to 50% more time chatting to maintain connections
- **Video and voice calls have fluctuated since the return to work**

Preparing for the future

- **Things have changed and they won't go back**
  - Frames of reference have changed and priorities have changed
  - Who are you as a company?
- **What does work look like?**
  - Where will you work? When will it happen?
  - How will you build strong ties?
  - What does culture really mean? How do you foster new norms when the old ways are gone?
- **How do we support our employees and teams *now*?**
  - Support computing as making & creative work. If you don't allow moonlighting, consider it.
  - Acknowledge that mental health and wellness is a concern for *everyone*
  - Support people for whom childcare is a concern, and particularly women
  - Support managers who are shouldering two burdens

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TL;DR

- What the data shows: we're doing more, longer
- What people tell us: it's a mixed bag
- What we knew about WFH before COVID-19
- Resilience and burnout
- Making tech and work sustainable
- Preparing for the future

TL;DR

- What the data shows: we're doing more, faster
- What people tell us: it's a mixed bag
- What we knew about WFH before COVID-19
- Resilience and burnout
- Making tech sustainable
- Preparing for the future

Stay tuned!
Octoverse Report is coming soon, with updates on Developer Productivity and so much more

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My request:

What are your biggest
questions about productivity
and well-being?

How are you currently
approaching them in your
organization?

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Thank you!

Appendix

Citations and papers

- GitHub Octoverse Spotlight: https://bit.ly/gh-covid19
- Developer activity at Microsoft: https://www.microsoft.com/en-us/microsoft-365/blog/2020/03/20/helping-developers-stay-productive-working-remotely/
- SAINTes team: A Tale of Two Cities: Software Developers Working from Home During the COVID-19 Pandemic: https://arxiv.org/pdf/2008.11147.pdf
- Jenna Butler and Sonia Jaffe: Challenges and Gratitude: A Diary Study of Software Engineers Working From Home During Covid-19 Pandemic https://www.microsoft.com/en-us/research/publication/challenges-and-gratitude-a-diary-study-of-software-engineers-working-from-home-during-covid-19-pandemic/
- Shepherd-Banigan, M., Bell, J. F., Basu, A., Booth-LaForce, C., & Harris, J. R. (2016). Workplace stress and working from home influence depressive symptoms among employed women with young children. International journal of behavioral medicine, 23(1), 102-111.
- Nakrošienė, A., Bučiūnienė, I., & Goštautaitė, B. (2019). Working from home: characteristics and outcomes of telework. International Journal of Manpower.
- Bloom, N., Liang, J., Roberts, J., & Ying, Z. J. (2015). Does working from home work? Evidence from a Chinese experiment. The Quarterly Journal of Economics, 130(1), 165-218.
- Lessons from China: A return to the office, but not in the old way: https://insights.office.com/workplace-analytics/lessons-from-china-a-return-to-the-office-but-not-to-the-old-way-of-working/

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