UPLEVEL 2020 ANALYSIS OF REMOTE ENGINEERING EFFECTIVENESS

Developers at high risk for burnout

Uplevel analyzed data trends across thousands of developers working from home in 2020 to see how working habits had changed over the course of this unique year. We focused on four productivity metrics: Deep Work, meeting time, burnout, and velocity of pull requests. To track notable trends, we investigated pre-pandemic (January), shelter-in-place (March), and six-month (September) milestones.

Overall, we saw that developers are working longer hours and that the risk for developer burnout is high. This is likely caused by three significant trends. First, time spent in Deep Work (long stretches of truly focused working time) dropped significantly. In a related trend, we observed an increase in overall time spent in meetings. Lastly, the number of pull requests per developer remained high—showing that, despite all of the distractions that developers are dealing with in their new WFH life, they are maintaining strong throughput.

We conclude that the current risk for developers is not productivity, but burnout.
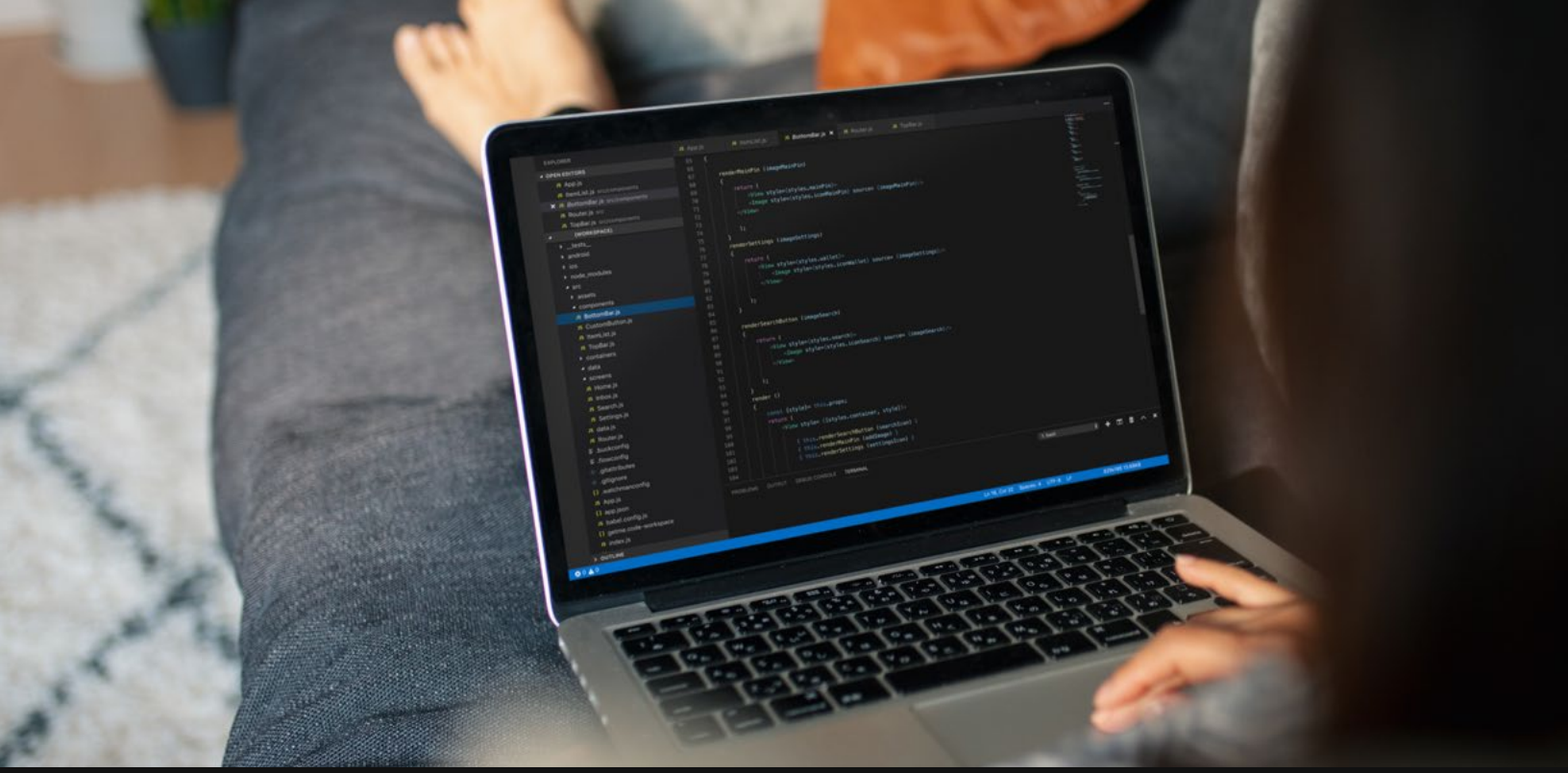
UPLEVEL DATA TREND REPORT:

Key highlights of the analysis

Deep Work

In the beginning of the pandemic, available time for Deep Work dropped 9%, from 4.8 hours per day to 4.4 hours per day. The biggest drop in available Deep Work time was in September, with a 25% decrease, bringing the average down to 3.6 hours per day.

This highlights the potential effects of working parents now balancing at-home education with work interruptions. Six months into the new normal of WFH life, we're still seeing the challenging effects on available time to get focused work done.

Meetings

Pre-pandemic, we saw an average of 1.4 hours of meetings per day, per developer. In August and September, meetings increased to 2 daily hours, representing a 44% increase from January.

This aligns with what we're seeing in the Deep Work analysis: as meetings creep up in the late summer, Deep Work trends downward.

Sample size: Analysis includes data from 2k developers over the course of January through September, representing a small sample size of the Uplevel database.

Always On (Burnout Risk)

In March, the risk of "always on" behaviors (such as communicating after-hours or working weekends) increased 52% over pre-pandemic numbers in January. In September, we saw the most dramatic shift, with an 84% increase from January.

While Deep Work has decreased and meetings have increased over the last six months, the risk of burnout has risen. Developers are having to play catch-up outside of their normal working hours to stay on track.

Pull Requests

Pre-pandemic, we saw an average of 13 merged PRs per month, per developer. In March, we saw this increase to 18 PRs—a 38% increase. In September, numbers stayed fairly consistent with March (16 PRs—a 23% increase over January). Despite less Deep Work, the time lapsed between opening a PR request and merging the PR request stayed consistent at 1.2 hours, suggesting that devs are maintaining strong throughput.

When analyzing the monthly number of pull requests for each developer—despite a lack of time for Deep Work—we find that the number is staying at a steady high over pre-pandemic numbers. This shows that, despite all of the distractions that developers are dealing with in their new WFH life, they are able to keep throughput up. This is likely contributing to an increasing risk of burnout.

Sample size: Analysis includes data from 2k developers over the course of January through September, representing a small sample size of the Uplevel database.

Deep Work

We track Deep Work as two or more hours of meeting-free time during a normal workday. We deduct time when we've detected that a developer has been interrupted in Slack (with small penalties for short responses and larger penalties for active conversations).

Why we measure it: To help developers and their managers have data-backed conversations about potential obstacles to focused development time.

	Median Hours Deep Work	Hours Different from Jan/Feb	% Different from Jan/Feb
Jan/Feb	**4.8**		
March	**4.4**	**-0.4**	**-9%**
April	**4.0**	**-0.8**	**-17%**
May	**4.0**	**-0.8**	**-17%**
June	**4.1**	**-0.8**	**-16%**
July	**4.0**	**-0.8**	**-16%**
August	**3.9**	**-0.9**	**-20%**
September	**3.6**	**-1.2**	**-25%**

- Pre-pandemic, we saw an average of close to 5 hours (4.8h) of Deep Work time per developer (at the Individual Contributor level).

- In March, we saw this drop 9% to an average of 4.4 hours per day.

- In September, we saw the most drastic shift, with a 25% decrease in available Deep Work time to 3.6 hours per day.

Meetings

	Median Hours Meetings	Hours Different from Jan/Feb	% Different from Jan/Feb
Jan/Feb	**1.4**		
March	**1.5**	**0.1**	**10%**
April	**1.8**	**0.4**	**28%**
May	**1.8**	**0.4**	**26%**
June	**1.8**	**0.4**	**32%**
July	**1.8**	**0.4**	**28%**
August	**2.0**	**0.6**	**44%**
September	**2.0**	**0.6**	**42%**

- Pre-pandemic, we saw an average of 1.4 hours of meetings per day, per developer.

- In March, we saw this increase 10% to 1.5 hours per day, per developer.

- In August and September, meetings increased to 2 hours, representing a 44% increase from January.

Always On
(Burnout Risk)

To analyze a developer's "always on" classification, we look at timestamps of activity in Slack, Jira, code repos, and calendars. We define any eight hours of work as a "normal" day, regardless of start and end time or time zone. (This does not have to be eight consecutive hours.) Any activity outside of an employee's "normal" workday gets categorized as "always on."

- Normal: <30 minutes/day weekly average

- Above Normal: 30-60 minutes/day weekly average

- High: >60 minutes/day weekly average

Because we don't currently pull data from work-related sources like email, Google Docs, or responding to a pager duty request, we are likely underestimating true burnout risk.

Why we measure it: To help managers spot trends that are outside of the norm for their employees and spark conversations about how best to support the employees.
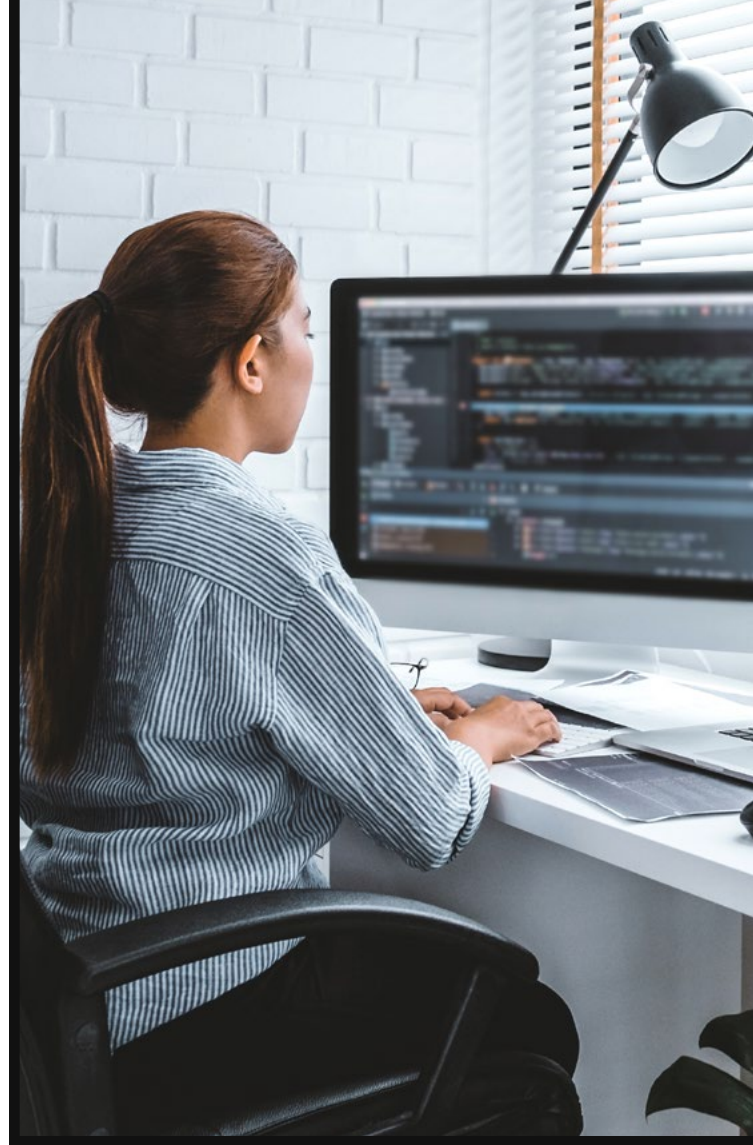
	Daily Avg. Number of Devs with Minutes > 30	% of Devs with Minutes > 30	% Different from Jan/Feb
Jan/Feb	164	8%	
March	237	12%	16%
April	273	13%	19%
May	226	11%	16%
June	243	12%	17%
July	214	11%	15%
August	232	11%	16%
September	290	14%	20%

- Pre-pandemic, we saw 8% of developers showing "always on" behaviors at the Individual Contributor level.

- In March, we saw this increase to 12%—a 52% rise.

- In September, we saw the most dramatic shift, with an increase to 15% of developers being "always on," representing a 84% increase from January.

Pull Requests

	PRs Merged Per Dev	# of PRs Different from Jan/Feb	% Different from Jan/Feb	Hours from Open to Merge	# of PRs Different from Jan/Feb	% Different from Jan/Feb
Jan/Feb	13			1.2		
March	18	5	38%	1.0	-0.3	-21%
April	17	4	29%	0.8	-0.4	-32%
May	16	3	22%	1.0	-0.2	-17%
June	17	4	30%	1.2	0.0	-3%
July	15	2	18%	1.1	-0.1	-7%
August	14	1	11%	1.3	0.1	5%
September	16	3	24%	1.2	0.0	-4%

- Pre-pandemic, we saw an average of 13 merged PRs per month, per developer
- In March, we saw this increase to 18 PRs, a 38% increase over pre-pandemic numbers in January.
- In September, numbers stayed fairly consistent with the March increase at 16 PRs, a 24% increase since January.
- The time lapsed from opening the PR request to merging the PR request stayed consistent at 1.2 hours.

ABOUT UPLEVEL

Uplevel is an engineering effectiveness platform that leverages machine learning and organizational science to enable behavior change. Software engineers and managers get insights and alerts integrated into their daily workflow based on best practices and a superset of data from tools such as calendar, code repository, project management, and messaging. Named as a Startup to Watch in 2020 by Built In Seattle and a Best Company to Work for by Seattle Business Magazine, we believe that data-driven work cultures foster the most innovative teams. With Uplevel, engineers and managers are empowered with individual and team data so they can detect execution risks, protect time for what matters, and elevate their team – so everyone can focus on their best work. Uplevel is headquartered in Seattle, WA. Learn more at www.uplevelteam.com.

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