

# Here or There: Whither Work From Home

A Review: What We Actually Know About Remote Work  
NANOG 58

Todd Underwood, Google <toddunder@gmail.com>

Beth A. Prairie, MD, MPH, FACOG <beth.prairie@gmail.com>

*(consulting Gynecologist and Public Health Researcher)*

# Overview

- Intro material:
  - Terminology
  - Why you care
  - Presenters' biases
- What we know about remote work: the good, the bad and the counterintuitive
- Brief survey of tech remote work policies and practices
- Summary strategies for remote work success

# Terminology

- **WFW**: Working From Work, in a traditional office with desks and coffee machines
- **WFH**: Working From Home, two cases:
  - Local: Same city, timezone, country as work team
  - Remote: Different city, timezone, country as work team
- **WFRemote**: Working from another office of the same company, but remote to primary work team
- **Distributed**: There is no office for primary work team. Everyone is WFH or WFRemote

**This presentation: *WFW vs just about everything else.***

The data do **not** properly distinguish WFH Local/Remote or WFRemote; Distributed is mostly treated as WFH for everyone.  
Distinction: physically in same place or not.

# Why You Care

- Contrived, recent media controversy

[...]

- People want freedom to work wherever
- People like being productive
- Clever companies want to employ awesome people
- This issue impacts technology workers (due to the nature of our work) more than any other industry
- Infrastructure for WFH has been changing networking requirements for years now, and you all provide that infrastructure

# Presenters' Background: All Sides of the Commute

- Todd worked remotely from NH for NM-based Oso Grande (3000km away)
  - Good for technical work but personnel management and executive planning was actively bad. **Verdict: mediocre.**
- Todd managed a distributed team at Renesys for several years.
  - This worked **very** well for systems/network/peering staff.
  - Executive management/planning worked **poorly**
  - **Verdict: Pretty Good.**
- Todd now works at Google: Massively distributed company but with an almost-universal "work at the office" practice.
  - High bandwidth communication in-office, high-bandwidth connection to other offices. Bad commutes for some people. **Verdict: Pretty Good.**
- Beth does all of her work on-site. Gynecology is currently not amenable to remote work. The research can be done anywhere but inexplicably involves lots of pieces of paper. **Verdict: Bad :-)**

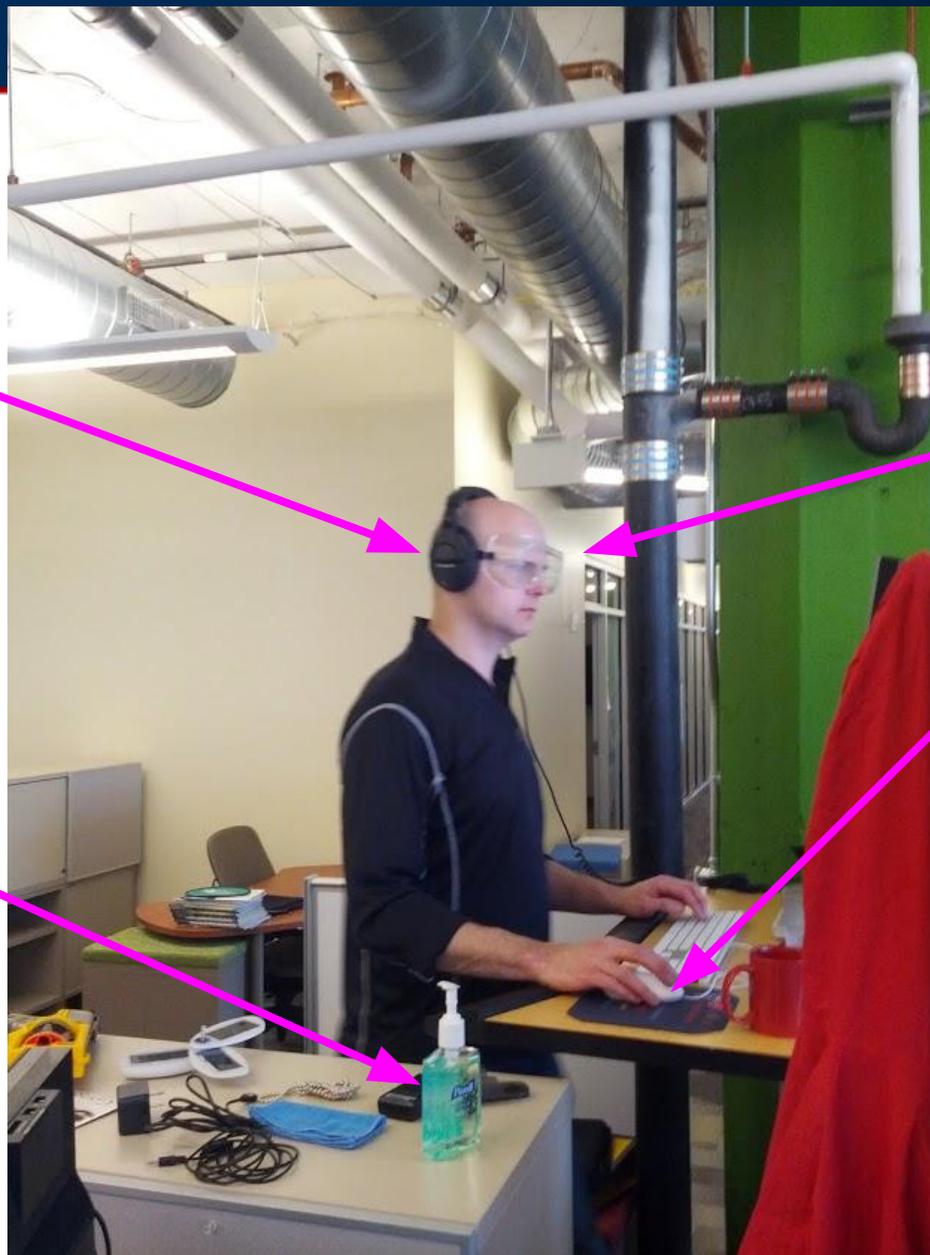
# Work from Home?



← Desk

↑  
Castle!

# Work from Work?



**Headphones**

**Eye protection  
(for nerf)**

**Sanitizer  
(Viruses)**

**Treadmill**

**Towel  
(because)**

# What do we Know (or think we know)?

- Everyone wants the holy grail of employees: fast, cheap, and happy
- Everyone wants the holy grail of employers: high-paying, low friction, work-life balance
- Business schools, companies (employers), and social science researchers attempt to determine methods for achieving the holy grail
- To date, the research is thin, methodologically flawed, and contradictory<sup>[1]</sup>

[1] Much research is, but this batch this is way worse than lots of data but similar to popular social science research quality in general.

# Who Works from Home?

Definitions of varying quality and recency:

- Bureau of Labor Statistics data from 2004 (most recent available)<sup>[1]</sup> :
  - 15% of all non-agricultural workers WFH at least one day/week (flat since 2001)
  - Of people who WFH, 66% were in business, management, or other professionals (you)
  - Only 25% had a formal arrangement to WFH
- US Census data 2010<sup>[2]</sup>: 10% WFH (based on cruder data)
- In the EU in 2005 (most recent available), 7.5% WFH at least 25% of the time <sup>[3]</sup>

[1] <http://www.bls.gov/news.release/homey.toc.htm>

[2] <http://www.census.gov/prod/2012pubs/p70-132.pdf>

[3] EIROnline, 2010

# Do They Work?

## *"Working"* from Home?

- While WFH, workers reported<sup>[1]</sup>:
  - 43% watch TV or movies
  - 20% play video games
    - (Parents were more likely to do both of these)*
  - 24% had a drink
  - 26% took a nap
  - 35% did household chores
  - 28% made dinner<sup>[2]</sup>
- Might still be a **more** efficient use of time
  - Interleaving/pipelining tasks hides latency </obvious>
  - Almost everyone is working while cooking dinner anyway

[1] [http://s3.amazonaws.com/legacy.icmp/additional/wakefield\\_research\\_citrix\\_survey\\_results\\_overview\\_final.pdf](http://s3.amazonaws.com/legacy.icmp/additional/wakefield_research_citrix_survey_results_overview_final.pdf)

[2] No word on how many made sweet lo.... nevermind.

# Does it work? WFH and WFW Both Work *For the Right Employee*

Famous Stanford Chinese call center workers study<sup>[1]</sup>:

- 10,000 Chinese call center employees
- In random assignment of volunteers, 13% higher productivity, higher happiness and satisfaction, nearly 50% lower rate of promotion in the WFH group
- When workers were allowed to choose WFH or at work, productivity for WFH went up by 22%
- And **half** of people changed their work location from their assigned experimental group
- WFH has interesting community effects -- lowers vehicle emissions but promotes suburban sprawl

[1] <http://www.stanford.edu/~nbloom/WFH.pdf>

# WFH==productive; WFW==creative ?

Widespread belief; is it true?

- Americans appear to be more creative working in groups
- Optimal (for creativity) is a group of people you know well
- Optimal group tolerates and promotes dissent
- Right now, this is more likely to occur in an office setting
- Unlikely to occur at home (YMMV, depends on family)
- Understanding these dynamics presents possibly solvable technological challenges

[1] [http://www.newyorker.com/reporting/2012/01/30/120130fa\\_fact\\_lehrer](http://www.newyorker.com/reporting/2012/01/30/120130fa_fact_lehrer)

# Dr. Prairie Gets a Coffee Machine!

Bizarro/cool research <sup>[1]</sup>:

- Set of papers by Biomedical researchers at a specific institution (*\*cough\**Harvard*\*cough\**)
- Locate the author's offices in space
- Collaborators in the same building produced more significant work (ranked by citation)
- Buildings with the highest numbers of intra-bldg collaborators produced the most significant research

*(This why Dr. Prairie got a coffee machine in the MWRI in Pittsburgh. Thanks, Harvard!)*<sup>[2]</sup>

[1] Lee K, Brownstein JS, Mills RG, Kohane IS (2010) Does Collocation Inform the Impact of Collaboration? PLoS ONE 5 (12): e14279. doi:10.1371/journal.pone.0014279 <http://www.plosone.org/article/info:doi/10.1371/journal.pone.0014279>

[2] There's no citation for the coffee machine, but we promise they got one. No one reads footnotes anyway.

# Contradictory Study is Contradictory

But people can be even more creative at home! <sup>[1]</sup>

- Often cited as demonstrating that WFH is more creative than WFW
- Actual methodology shows: less **structure** promotes creativity
- WFH **not** shown to promote creativity (in spite of what the confused business press might tell you)<sup>[2]</sup>

[1] The effects of telecommuting on productivity: An experimental examination. The role of dull and creative tasks *Edwin Glenn Dutcher.* *Journal of Economic Behavior & Organization*, 2012, vol. 84, issue 1, pages 355-363

[2] Shocking, we know.

# No, really: Does it Work? Kiss Your Career Goodbye?

## People who WFH:

- Do not get promoted as often
- Get smaller raises
- Are referred to as "dependable", "responsible" and "committed" less often <sup>[1]</sup>

## Management Challenges:

- WFH necessitates more specific, objective, results-oriented measures of performance
- May not be enough to counter face-time bias
- Face-time bias not merely a product of bad bosses

[1] "why showing your face at work matters", KIMBERLY ELSBACH AND DANIEL CABLE JUNE 19, 2012 MIT Sloan Management Review <http://sloanreview.mit.edu/article/why-showing-your-face-at-work-matters/>

# Meta Analysis: It's a Wash

Meta Analysis<sup>[1]</sup> of studies like these **and more!** finds:

- WFH had small but beneficial effects on proximal outcomes (work-family conflict reduced, "autonomy" increased)
- WFH increased job satisfaction, performance, turnover intent and decreased role stress
- WFH > 2.5 days/ week harmed coworker relationships
- The data are pretty mediocre for all of these conclusions

**TL;DR: It's a wash**

[1] The good, the bad, and the unknown about telecommuting: Meta-analysis of psychological mediators and individual consequences. Gajendran, Ravi S.; Harrison, David A. Journal of Applied Psychology, Vol 92(6), Nov 2007, 1524-1541. doi: [10.1037/0021-9010.92.6.1524](https://doi.org/10.1037/0021-9010.92.6.1524)

# What Improves WFH Success

All good things outside of your field can be learned at a dinner party <sup>[1]</sup>. WFH success requires<sup>[2]</sup>:

- A policy
- Initial in-person contact<sup>[3]</sup>
- Good communication (Frequent; Different modes)
- Objective performance metrics
- Shared interests, different skills<sup>[4]</sup>
- Perception (even false) of balanced effort
- The right people :-)

[1] h/t to David Anderson, Erica Fuchs and Justine Cassell who introduced us to some of these data

[2] <http://www.cs.cmu.edu/~spdow/files/creativeFormation-chi13.pdf>

[3] <http://www.cs.cmu.edu/~kiesler/publications/2011/research-team-integration-what-is-why-matters.pdf>

[4] On team diversity: Mannix, E. and Neale, M. A. (2005) "What differences make a difference" Psychological Science in the Public Interest 6: 31-55 <http://psi.sagepub.com/content/6/2/31.abstract>

Phillipds KW et al. Is the pain worth the Gain? Pers Soc Psychol Bull **March 2009** vol. 35 no. 3 **336-350**

# WFH policies and practices

Overview of various WFH policies/practices<sup>[1]</sup>

- One large company famously recently modified/clarified its WFH practices
- Google: telecommuting is rare, but considered on a case by case basis.  
Patrick Pichette, Google CFO: "The surprising question we get is: 'How many people telecommute at Google? And our answer is: 'As few as possible'."
- Cisco: 2-days per week WFH average<sup>[2]</sup> and they claim great things (this is marketing for Cisco products, obviously)
- Notable: IBM claims 40% WFH or "on the road" but includes sales.
- Most of Tech: Part-time WFH is common without policy

**Summary: Most companies have no policy and offer WFH for some employees. See previous comments about the importance of a policy to WFH Success.**

[1]<http://allthingsd.com/20130225/survey-says-despite-yahoo-ban-most-tech-companies-support-work-from-home-for-employees/>

[2] [http://newsroom.cisco.com/dlls/2009/prod\\_062609.html](http://newsroom.cisco.com/dlls/2009/prod_062609.html)

# Conclusions

People who primarily work from home seem to be:

1. Less likely to get promoted
2. More productive
3. Less creative
4. Happier with family
5. Not necessarily happier in general

But we don't really know.

Sorry.

# Real Conclusions

Meeting people in person is really important but we don't know why <sup>[1]</sup>.

Your boss needs to see you in person for you to get promoted.

You need excellent communications infrastructure.

Diverse teams<sup>[2]</sup> **still** do way better.

Explicit policies seem to be a good idea, but almost no one has one.

[1] Perhaps we need to smell each other. Perhaps our video conferencing is just not good enough... yet.

[2] Look to the left. Look to the right. If it's another white male geek, you might be performing suboptimally.

# Questions, Kvetches, Irrational Exuberance, Uncomfortable Excitement?

Todd Underwood, <[toddunder@gmail.com](mailto:toddunder@gmail.com)>

Dr. Beth A. Prairie, <[bethprairie@gmail.com](mailto:bethprairie@gmail.com)>