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# Applied research to orchestrate hybrid software development teams as a result of the covid-19 pandemic



# Team

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# Context

With the coronavirus pandemic, technology companies have had to **adapt their software development processes** to forced remote working.

The **permanent remote working** model, or a **hybrid model**, needs to be studied and researched taking into account the specific scenarios of each company.



# Challenge

How to make the hybrid model work?

# Scope

Project objective:

To support the management of GLOBO's hybrid teams through a process of applied research.

# About this preliminary report: MVP Diagnosis 1

- Analysis of non-academic and academic literature: from Oct. 2019 to May 2022
- Field Study 1 at Globo - Digital Platform: Jan. to Mar. 2022
- Analysis of semi-structured interviews: from Mar. 2022 to April 2022
- Initial diagnosis - mvp 1: from Apr. 2022 to May 2022



# Participants - demographic profile

Time	Function	Professional experience (years)	Previous experience with distributed development	Joined the company during the pandemic
GlobolD	Agile Manager	14	Yes	Yes
GlobolD	UX design	14	Yes	Yes
GlobolD	Development	15	Yes	Yes
Publishing platform	Manager	30	No	No
Video and audio platforms	Coordinator	12	Yes	No
Player	Product Owner	20	Yes	Yes
Backstage	Developer	8	Yes	Yes
Ingest	Specialist	8	No	No
Backstage	Developer	6	No	Yes
HR	HR Manager	22	Yes	No
Digital platforms	Director	20	Yes	No



# Preliminary results

## 1. IMPACT ON PEOPLE

1.1 Full remote onboarding

1.2 Psychological security

## 2. IMPACT ON PROCESSES

2.1 Working model

2.2 User experience - UX, agility and creative activities

## 3. IMPACT ON ORGANIZATIONS

3.1 Communication with the HR team, the development team and labor policies

3.2 Infrastructure for remote working

# 1. IMPACT ON PEOPLE

## Note 1.1 Full remote onboarding

### Evidence from interviews

"It was really bad because, from the little things like the welcome kit that we're used to having, we didn't have it, to the more traditional things [...] going after the machine"

"I think that people who are joining remotely won't have those feelings of understanding the size of where they are, because they're working from home and end up only having contact with those people who are part of the team, who they work with on a day-to-day basis. So it kind of gives you a bubble feeling, you stay in that little bubble there, you end up thinking that's what the company is, but actually it's not, it's much more than that".

"I think the work model actually creates micro-cultures. Before, you had the creation of a culture. Now, what you actually have is a microculture of the area in which you work. Because you end up interacting only with those people"

# 1. IMPACT ON PEOPLE

## Observation 1.2 Psychological safety

### Evidence from interviews

"I think it works very well remotely, but the work of Interaction, Discovery, Contact of the human relationship, Exchange and Conflict of ideas to converge I don't see... I miss a lot, you know? I don't see it working in such a positive way remotely. I'll tell you the truth, psychological security, you know?"

"I think that when we work remotely, our relationships end up becoming very impersonal. I think that as human beings, we need these relationships, not least because we spend a good part of our lives working. In the workplace, then, I think it's nice to be able to not only improve the personal side, but it also ends up affecting the personal when we end up developing empathy for other people, for your colleague. We can have a better relationship with them and deal with situations in a much better way."

# 1. IMPACT ON PEOPLE - RECOMMENDATIONS

## Recommendation 1

Recurring individual meetings for new hires, complementing onboarding with monthly follow ups.

### Further studies

Microsoft's 2022 report[1] along with academic articles from 2021[2] indicate that the Covid-19 pandemic affects the integration of new employees in the full remote model.

## Recommendation 2

We recommend that employees are encouraged to open their cameras during agile ceremonies like Daily, for example.

### Further studies

Microsoft's 2022 report[1] highlights that "interpersonal trust is the key to successful virtual and hybrid teams. Remote and hybrid teams need to develop methods for establishing and maintaining trust. Rapid trust in short-term teams depends heavily on team composition and an open conversational environment."

[1] <https://www.microsoft.com/en-us/worklab/strategies-for-onboarding-in-a-hybrid-world>

[2] <https://dl.acm.org/doi/abs/10.1109/ICSE-SEIP52600.2021.00013>



# Please turn your cameras on: remote onboarding of software developers during a pandemic

**Authors:**  [Paige Rodeghero](#),  [Thomas Zimmermann](#),  [Brian Houck](#),  [Denae Ford](#) [Authors Info & Claims](#)

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## Processes

# Strategies for Onboarding in a Hybrid World

One takeaway: New hires are 3.5 times more likely to report satisfaction if their managers play an active role



<https://www.microsoft.com/en-us/research/uploads/prod/2022/04/Microsoft-New-Future-of-Work-Report-2022.pdf>

## 2. IMPACT ON PROCESSES

### Observation 2.1 Working model

#### Evidence from interviews

"I really like the idea of continuing to work remotely, 100% for the teams, but it was something I had already talked about [...] that we should create an office environment that invites people to go there for whatever reason. Whether it's to interact freely or to carry out a specific routine. But what I would do is instead of investing in a hybrid model, where people would have to go to the office to do the same thing they would be doing at home, which is listening to meetings on the phone, I would create events in the company to invite people to the office in a totally optional way. You could hold an event, create an office day, where we promote a few things."

"As a professional, without thinking, 100% remote is here to stay. It's very good and I think it works very well for me, I don't have any difficulties. I sometimes miss interacting with my colleagues, but I could schedule it, since everyone is spread out, maybe schedule it once every three months, every six months... maybe we could all get together and have a happy hour, something."

## 2. IMPACT ON PROCESSES

Note 2.2 User experience - UX, agility and creative activities

Evidence from interviews

"[...]But there are UX people who work closely with us. I think maybe they're a bit more committed to this model. Because UX likes to be very close."

"I believe that pairing is something that needs to be encouraged a lot. So that people stop, and who knows, maybe we'll stop when we need to? But sometimes identifying these opportunities is difficult."

"It's just that we were in a room there, I'm with four people here in Rio de Janeiro, in a room in the Rio de Janeiro office and one person in Porto Alegre. The four people in the room dominate the meeting, they start talking. And then I expect Everton, who's in Porto Alegre, to say: "Everton, speak up, interrupt me". But in practice, the person doesn't interrupt so much, because sometimes they don't listen, sometimes they end up being quieter, like they end up feeling a bit guilty that they don't understand. She's quieter, more neutral, in a conversation. And here, the solutions, the ways out are predominant.[...]It's 1 remote, all remote. How do you put that into practice? The phrase is easy, but in practice... that's where it gets tricky."



## 2. IMPACT ON PROCESSES - RECOMMENDATIONS

### Recommendation 3

We recommend piloting the optional hybrid model of a maximum of 2 face-to-face days.

#### Further studies

A Harvard Business Review study from 2022[1] states that the optional hybrid with a maximum of 2 days is the ideal model, confirming interviews.

### Recommendation 4

We recommend that face-to-face hybrid moments be used for UX, agile ceremonies and creative activities such as Brainstorms.

#### Further studies

The Microsoft 2022 report[2] indicates that activities related to user experience, agile methods and creative activities have been severely affected by Covid-19.

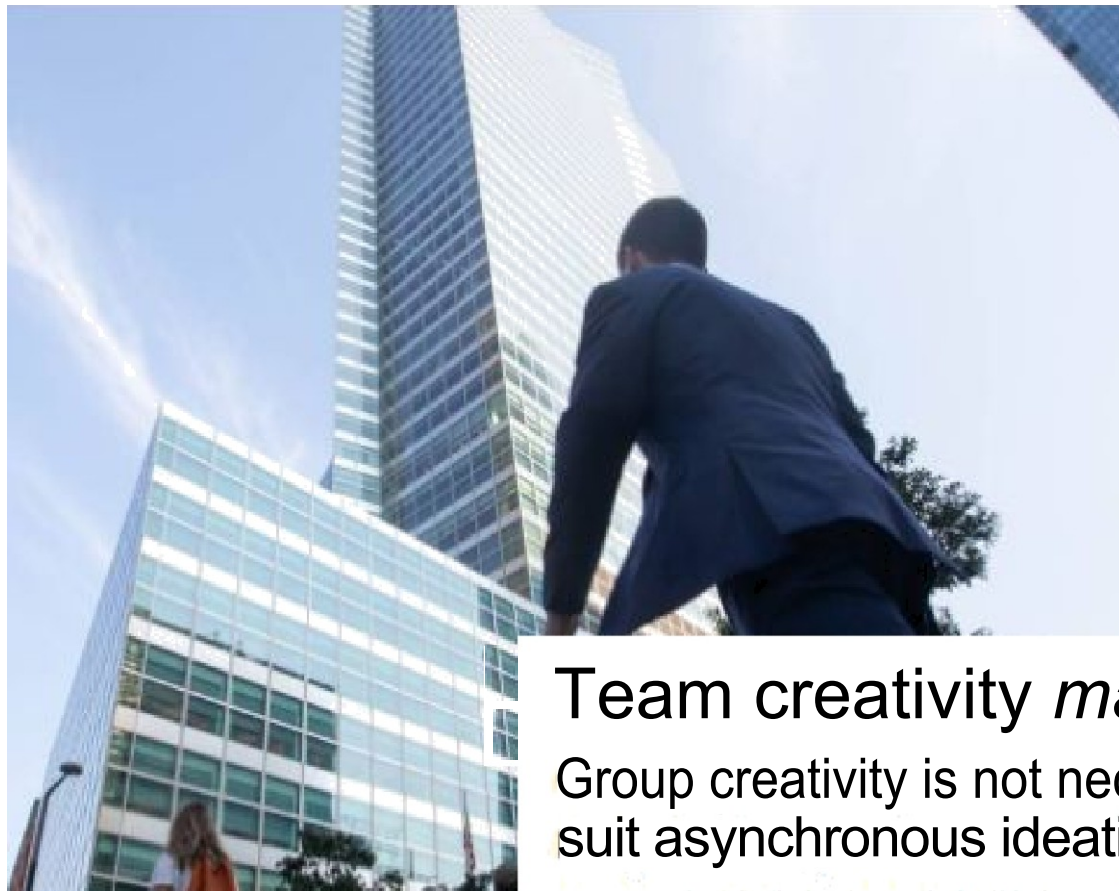
[1] [https://www.hbs.edu/ris/Publication%20Files/22-063\\_639195cc-e7b5-47d3-9281-62d192c5b916.pdf](https://www.hbs.edu/ris/Publication%20Files/22-063_639195cc-e7b5-47d3-9281-62d192c5b916.pdf)

[2] <https://www.microsoft.com/en-us/research/uploads/prod/2022/04/Microsoft-New-Future-of-Work-Report-2022.pdf>



# Hourly work: 1 or 2 days in the office is ideal, says Harvard study

- The results of the Harvard Business School article were based on an experiment in the summer of 2020



## Team creativity *may* benefit from low-fidelity asynchronous methods

Group creativity is not necessarily always at its best when people are together. Technological constraints may suit asynchronous ideation methods such as *brainwriting*, and may improve decision quality.

The lack of shared collaboration tools has been a reported pain point for team creativity in remote and hybrid work, but reviews show that individual ideation can be richer than group ideation, because the processes of sharing ideas live can block ideation (PauJusB Kenworthy 2022; Thompson 2020). Further, while in-person-to-person ideation may lead to the generation of more ideas than video meetings, the decision quality of ideas in video meetings can be higher than in-person (Brucks & Levav 2022).

Toumi et al. (2021) reviewed a range of technologies for group design ideation and found that even low fidelity systems for brainwriting (where participants write independently then pass their contribution to the next participants) or digital sticky notes can work well for the actual process, but social loafing remains a problem (some members may do less work in a group). Social loafing may be less noticeable when remote/hybrid than in-person - but may also be difficult to disentangle from difficulty of remote participation in general.

Brainwriting (Rituzzi & De Napoli 2020) and related asynchronous concepts such as the idea tree (Stokols, et al. 2019) are especially well suited to asynchronous creativity, as there are general findings that task alternation seems to reduce fixation effects on early ideas (Sio et al. 2017; Diehl & Stroebe 1987).

Creativity does not 'just happen': training in effective group processes is crucial and the process needs to be managed. Task-appropriate diversity of participants (e.g., people from the set of roles for whom a solution is being developed), is also helpful for creativity, and may be enabled more in remote and hybrid situations (PauJusB Kenworthy 2022; Michinov & Jeanson 2021).



# 3. IMPACT ON ORGANIZATIONS

Observation 3.1 Communication with the HR team, the development team and labor policies

Evidence from interviews

"I don't think there's a clear alignment between what people expect and want and what the company is communicating, you know? So, I'll give you an example, from day one the flex model starts (2 days a week or 3 days a week in the office). So, there's this announcement. But in practice it's not happening. Understand? People aren't going to the office".

"There are some gaps there that I'm not sure about in the hybrid model.[...] It's something that's been going on and it's going to need to be more defined as a rule. Some policies. For example: You're in Porto Alegre. You're full remote. Then you move to another city and I don't know! On some border with Argentina! A very small town! How does that work with the company?"

So we had some rework. We'd have one developer do something and the other do the same thing, and they'd end up not talking to each other. They'd only talk to each other when it came to delivery. Then there was rework or they ended up using both of their time to do something redundant. So we had to carry out tests and start creating some rituals to improve this communication.

# 3. IMPACT ON ORGANIZATIONS

## Note 3.2 Infrastructure for remote working

### Evidence from interviews

"This is a point of encouraging people to be well, and to be in an environment that is conducive, and also for the company to open up space for people to express themselves. Like, look, I can't afford it, I live in a very shared house, I can't have a private moment and how can we do it? And I don't want to go to the **office**, what are my options? Let's invest here in a headset that has anti-noise, you know? And also study people's particularities, not everyone has the same conditions. For example, the question of the internet."

"I don't know, sometimes we think that everyone is going to have a very good internet connection, right, we're already in 2022 and really everyone should have a good connection, but it's not a reality. We still need more economical resources, so to speak. There's also another point that happens [...] which is the issue of heat, air conditioning. Then there's an increase in energy [...] how would the company, legally, work issues, how would it position itself with regard to these issues. I know that some companies give aid, electricity, some things. [How does Globo think about this? This has never been discussed either. But I think it's something that's also missing.



# 3. IMPACT ON ORGANIZATIONS - RECOMMENDATIONS

## Recommendation 5

We recommend the creation of documents, protocols or booklets aimed at objectifying actions to work on *soft skills*.

### Further studies

The Dell study [1] states that "In terms of soft skills, effective communication was identified by respondents as critical, especially with increasingly remote and distributed workforces." ( 2021, pg. 26).

## Recommendation 6

We recommend that employees have their infrastructure needs periodically mapped.

### Further studies

The Google 2022 report[2] indicates that "unequal access to technology and adequate home office facilities is directly linked to disparities in education and income levels" and for this reason the conditions of access to infrastructure at home office times need to be taken into account.

[1] <https://www.delltechnologies.com/asset/pt-br/solutions/business-solutions/industry-market/the-new-remote-work-era-trends-in-the-distributed-workforce.pdf>

[2] <https://impact.economist.com/projects/make-hybrid-human/>





## A nova era do trabalho remoto: Tendências da força de trabalho distribuída

Um relatório global que analisa as mudanças organizacionais em resposta às demandas aceleradas.

<https://www.delltechnologies.com/asset/pt-br/solutions/business-solutions/industry-market/the-new-remote-work-era-trends-in-the-distributed-workforce.pdf>

## Humanizando o trabalho híbrido

O trabalho híbrido veio para ficar. Para colher seus benefícios, é importante que as organizações adotem uma abordagem centrada no ser humano, colocando os funcionários no centro da formulação e implementação de políticas.

# RECOMMENDATIONS

## Recommendation 1

Recurring individual meetings for new hires, complementing onboarding with monthly *follow ups*.

## Recommendation 2

We recommend that employees are encouraged to open their cameras during agile ceremonies like Daily, for example.

## Recommendation 3

We recommend piloting the optional hybrid model of a maximum of 2 face-to-face days.

## Recommendation 4

We recommend that face-to-face hybrid moments be used for UX, agile ceremonies and creative activities such as Brainstorms.

## Recommendation 5

We recommend the creation of documents, protocols or booklets aimed at objectifying actions to work on essential skills (*soft skills*).

## Recommendation 6

We recommend that employees have their infrastructure needs periodically mapped.

"People will realize, 'OK, let's **be more intentional** about **when people get together**. And let's get together for a **week or two at a time**,'" Chesky concluded."



"O escritório como o conhecemos acabou", diz o CEO do Airbnb

Função do escritório é "anacrônica", de uma época "pré-  
[br.financas.yahoo.com](https://br.financas.yahoo.com)

<https://br.financas.yahoo.com/noticias/o-escritorio-como-o-conhecemos-acabou-diz-o-ceo-do-airbnb-202638409.html>

# This week... ICSE 2022

## A Grounded Theory of Coordination in Remote-First and Hybrid Software Teams

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### Nominations for Distinguished Papers

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- Static Inference Meets Deep Learning: A Hybrid Type Inference Approach for Python  
Yun Peng, Cuiyun Gao, Zongjie Li, Bowei Gao, David Lo, Qirun Zhang, Michael Lyu  
[Pre-print](#)
- PUS: A Fast and Highly Efficient Solver for Inclusion-based Pointer Analysis  
Peiming Liu, Yanze Li, Bradley Swain, Jeff Huang  
[Pre-print](#)
- What Makes Effective Leadership in Agile Software Development Teams?  
Lucas Gren, Paul Ralph  
[Pre-print](#)
- A Grounded Theory of Coordination in Remote-First and Hybrid Software Teams  
Ronnie E. de Souza Santos, Paul Ralph  
[Pre-print](#)

<https://arxiv.org/pdf/2202.10445.pdf>



# This week... ICSE 2022

"Finally, we worry that the trend towards working from home and hybrid teams may lead the software industry to **backslide towards pre-agile processes**. As we observed in this study, teams **compromised many agile practices** as they acclimatized to working from home.

Working-from-home seems to encourage professionals to **focus more on processes, tools, documentation and** planning-the opposite of the Agile Manifesto's recommendations. It is therefore incumbent upon us as researchers to make sense of how the emerging trend towards **more flexible work arrangements intersects with the cumulative body of knowledge surrounding software processes and team dynamics**".

<https://arxiv.org/pdf/2202.10445.pdf>

# TOP5 Academic literature

- [1] Ronnie E. de Souza Santos, Paul Ralph. A Grounded Theory of Coordination in Remote-First and Hybrid Software Teams. Retrieved from: <https://doi.org/10.48550/arXiv.2202.10445>. May 2022.
- [2] Ralph, P.; Baltes, S.; Adisaputri, G.; Torkar, R.; Kovalenko, V.; Kalinowski, M.; Novielli, N.; Yoo, S.; Devroey, X.; Tan, X.; Turhan, B.; Hoda, R.; Hata, H.; Robles, G.; Milani Fard, A.; Alkadhi, R. "Pandemic programming: How covid-19 affects software developers and how their organizations can help", *Empirical software engineering*, vol. 25, 11 2020, pp. 1-35.
- [3] Paige Rodeghero, Thomas Zimmermann, Brian Houck, and Denae Ford. 2021. Please turn your cameras on: remote onboarding of software developers during a pandemic. Proceedings of the 43rd International Conference on Software Engineering: Software Engineering in Practice. IEEE Press, 41-50. <https://doi.org/10.1109/ICSE-SEIP52600.2021.00013>
- [4] Courtney Miller, Paige Rodeghero, Margaret-Anne Storey, Denae Ford, and Thomas Zimmermann. 2021. How Was Your Weekend? Software Development Teams Working From Home During COVID-19. Proceedings of the 43rd International Conference on Software Engineering. IEEE Press, 624-636. <https://doi.org/10.1109/ICSE43902.2021.00064>
- [5] Choudhury, Prithwiraj and Khanna, Tarun and Makridis, Christos and Schirmann, Kyle, Is Hybrid Work the Best of Both Worlds? Evidence from a Field Experiment (March 24, 2022). Harvard Business School Technology & Operations Mgt. Unit Working Paper No. 22-063, Harvard Business School Strategy Unit Working Paper No. 22-063, Available at SSRN: <https://ssrn.com/abstract=4068741> or <http://dx.doi.org/10.2139/ssrn.4068741>

# TOP5 Corporate literature


- [1] Microsoft. "The new future of work:research from microsoft into the pandemic's impact on work practices". Retrieved from: <https://www.microsoft.com/en-us/research/uploads/prod/2021/01/NewFutureOfWorkReport.pdf>. Feb 2022.
- [2] Microsoft. "Microsoft New Future of Work Report 2022. Retrieved from: <https://www.microsoft.com/en-us/research/publication/microsoft-new-future-of-work-report-2022/>.Mai 2022.
- [3] Google Workspace & Economist Impact: Making hybrid work human. Retrieved from: <https://impact.economist.com/projects/make-hybrid-human/executive-summary/>. May 2022.
- [4] Airbnb's design for employees to live and work anywhere. Captured at: <https://news.airbnb.com/airbnbs-design-to-live-and-work-anywhere/>. May 2022.
- [5] Dell Technologies - The new era of remote work: Distributed workforce trends. Captured in: <https://www.delltechnologies.com/asset/pt-br/solutions/business-solutions/industry-market/the-new-remote-work-era-trends-in-the-distributed-workforce.pdf>. May 2022.

# Next steps

- Review o report report report report (theoretical theoretical/conceptual study) including 05 refs. from Academic Literature and 05 from Corporate Literature
- Select 2 participants for the Member checking stage
- Present to the board
- Define a set of recommendations to put into practice
- Supporting pilot projects and expanding to other teams
- Draw up an open source guide of best practices on the hybrid work model and incorporate it into day-to-day work
- Office to be a space for co-creation - meet the team that did the project
- Comments from Igor and Luciane
  - Regular meetings with the whole team - quarter?
  - Coffee with the leadership
  - Seniority of speeches
  - Differentiating between hybrid and full







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software development teams as a result of  
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