




# DEVELOPING EFFECTIVE VIRTUAL TEAMS

Lessons from  
research

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# Developing effective virtual teams

## Lessons from research

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### Acknowledgements

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# 1 Introduction

Working from home has been steadily on the rise over the last 20 years and, with it, virtual teams have become more and more common. The global crisis caused by the COVID-19 pandemic has seen remote collaboration spike dramatically, reaching perhaps the highest level yet to be seen, and all in a matter of weeks. This sharp increase in virtual teams prompted a search for solutions to help manage them – ones that will help maintain both productivity and employee well-being – thus offering some stability in very unstable times. With such widespread impact, it is essential that the practices employed are evidence-based, drawing on the body of research carried out with those using virtual teams since the early days.

This report outlines the key practice considerations revealed by our review of the scientific research into what makes for effective virtual teams. Alongside these we set out the recommended actions for HR teams and managers to take in response to those insights.

## What is a virtual team?

Virtual teams take many forms, have different objectives, and solve various types of tasks. However, they all have in common two necessary elements:<sup>1</sup>

- two or more people work together to achieve common goals
- at least one of the team members works in a different location or at a different time.

Because of these two defining characteristics, virtual teams communicate and co-ordinate at least partially by means of electronic media.

Normally, most teams fall somewhere along the continuum between fully face-to-face (all members always meet in presence and all communication takes place face-to-face) and fully virtual (all members work from different locations with none meeting or communicating in presence). However, in the COVID-19 context, many teams have found their degree of virtuality increasing, as offices close and more employees work from home.

Virtual teams and remote workers are not one and the same: although most people working remotely are part of virtual teams (they collaborate with others to get things done), there is a small subset of employees who work remotely and individually and are not in the scope of this report, for example private language tutors.

# 2 Challenges faced by virtual teams

To those who have worked as part of a virtual team, it may come as no surprise that research shows virtual teams face more challenges to stay effective than face-to-face teams.<sup>2</sup> And not all virtual teams are equal: challenges grow as team members spend more time working apart, as more of them work virtually, and as the degree of separation (in both working hours and physical distance) increases.

Communicating through electronic media is where many of the challenges stem from for virtual teams: the more it is used, the less effective virtual teams are.<sup>3</sup> This is because when communicating through electronic media, team members share less information with each other, have a harder time interpreting and understanding the information they receive, and

give delayed feedback. Further, electronic media makes it harder to spot non-verbal cues, such as tone of voice, warmth, attentiveness, all of which add to the difficulties of sending a clear message.

The challenges in virtual communication are compensated for by using rich media to communicate: the closer the medium is to face-to-face conversations, the better.<sup>4</sup> Teams using video-conferencing fare better than teams using only audio or written communication, coming close to face-to-face teams in terms of effectiveness.

Technological advances have brought us tools for electronic communication that are profoundly different from what was available twenty or even ten years ago, making rich media communication more accessible and easing some of the challenges. Yet when the need for effective communication suddenly increases, it seems technology may still not fully deliver to the user's expectations.<sup>5</sup>

### **Recommendations for practice**

What can HR practitioners and managers do to mitigate these challenges faced by virtual teams? We recommend three areas of practical action.

#### **Encourage use of rich media for communication**

- Instead of solely using audio-conferencing or phone calls, managers can encourage or even require team members to use video-conferencing, as it allows immediate feedback, personalisation, and enables members to share their viewpoints and resolve differences quickly.
- At the same time, managers must be mindful that logistical or technological issues might impact the use of video-conferencing. If, for example, there was a sudden surge in people working from home, this may overload internet services and reduce the quality of the connection.<sup>6</sup> Also, people's living conditions may limit their openness to using video during work calls. Ensuring people have at least the minimal conditions for video-conferencing to work well is the first step towards more effective communication in virtual teams.

#### **Synchronise work schedules as far as practical**

- Virtual teams should have a common working timeframe that is as long as possible – that is, with as large an overlap of working hours as possible. The less time team members spend working simultaneously, the more difficult it is to have meetings. This ends up requiring team members' effort to co-ordinate and may delay communication of important information.<sup>7</sup> On the other hand, good flexible working practices mean some people might be adopting non-standard hours. Synchronisation of virtual teams will need to take this into account.
- Working across time zones in globally dispersed organisations will make synchronisation more difficult, so managers and HR practitioners should focus on building deliberate awareness of the optimal time intervals for meetings. In the COVID-19 context, this may not be the most common challenge, as many are local teams that would usually work face-to-face, but in other cases, managers and HR practitioners can step in and make temporary adjustments, for example by allowing people flexi-time that increases the time alignment between different time zones.

#### **Mitigate the effects of physical distance**

- When team members are far away from each other, it is more difficult for them to understand each other's contexts and how these affect their work.<sup>8</sup> Managers and HR practitioners should ensure that teams proactively share information about the operational contexts, policies, and actions specific to each member's location.

- An encouraging consideration is that teams that became virtual in response to the COVID-19 pandemic are less likely to face the problem of great geographical distance, and so will have one less challenge to overcome. Still, if teams extend their virtual mode of operation in the future and greater flexibility is allowed, this may become a point requiring further attention and action.
- The soaring increase in video-conferencing during the COVID-19 pandemic may be problematic for some. Anecdotal accounts suggest some workers have reached saturation level, finding an overload of video-conferences draining and a source of pressure. Some research has shown that working remotely is associated with an increase in stress levels due to increased conflict between work and domestic requirements.<sup>9</sup> While this was not conclusive scientific research, it would seem sensible to consider the potential stress of video-conferencing overload as a factor within the current climate.

### 3 Building team cohesion and trust

Teams are not automatically more effective than individual employees. In general, two essential and related factors for them to reach their potential are that teams develop trust<sup>10</sup> and cohesion.<sup>11</sup> Social cohesion emerges in teams when team members like to work together, are close and care about each other, generally get along well and are friendly. Although it might not initially appear that social cohesion is directly relevant to a team's results, it is one of the most important conditions for a team to be effective.

Research shows that social cohesion plays an even greater role in virtual teams than in face-to-face teams.<sup>12</sup> However, social cohesion and relationship-building can be harder to develop in virtual teams, because communication through electronic media reduces the social cues required to build relationships.<sup>13</sup> For people who have never met face-to-face and are working together for the first time virtually, it will be especially hard to develop social cohesion. While this may apply less to teams that had at some point been working face-to-face, it is worth bearing in mind for new joiners who won't have the benefit of those pre-existing relationships.

Related to cohesion, trust in fellow team members is another important social process that makes teams effective. Trust has two elements to it: people can both know and feel they can trust the other team members. Virtual teams high in trust outperform teams where trust is low.<sup>14</sup> Further, virtual teams with high levels of trust also share more information, are more committed to the organisation, and collectively learn more.<sup>15</sup>

As with cohesion, members of virtual teams need to rely more on trust to work together effectively than in face-to-face teams. Trusting each other means team members can suspend their judgement about others and prevent potential misunderstandings and conflicts that are more likely to occur in virtual teams, where electronic media makes communication poorer and more difficult. At the same time, when team members trust each other, they more readily share information, which mitigates the tendency to refrain from so doing when communicating through electronic media.

## Recommendations for practice

To build cohesion and trust in virtual teams, HR practitioners and managers should focus on the following.

### Invest in team-building

- If possible, virtual teams should kick off their work with a face-to-face session. Teams who have never met face-to-face and have no common past have a harder time developing social cohesion.<sup>16</sup> To see the positive effects, the session has to be more than just a 'meet and greet'.
- Team-building means many things in practice, but the common focus is on improving social relations and clarifying roles. Investing time and effort in activities such as sharing expectations from the team, getting to know each other, anticipating how to handle conflict, or scheduling periodic calls has positive effects on both social cohesion and trust.<sup>17</sup>

### Protect the team from negative behaviour

- A key factor for trust is believing the others have good intentions. In virtual teams, it is enough for one team member to engage in negative behaviour, such as dishonest communication, for team trust to decrease.<sup>18</sup> There is truth in the adage that 'trust arrives on foot but leaves on horseback': when one team member intentionally tries to deceive others, their good intentions can no longer be assumed. Managers and HR practitioners should detect early and correct intentionally dishonest communication, differentiating it from unintentional misinformation and highlighting/explaining if this was indeed the case.

### Be mindful about sharing negative feedback

- Another key element at the basis of trust is believing the team members have the abilities needed to perform well. When the team is not performing as expected, team members see the belief in their own competence challenged, and trust might decline.<sup>19</sup> So, although sharing negative feedback is important, managers and HR practitioners should be mindful about whether this is truly necessary, and if yes, they should make it specific and not linked to the team's inherent ability to perform the task.

## 4 Effective information-sharing

If teams are to be more than the sum of their parts, they must use individuals' knowledge and expertise for the team's benefit. To do so, team members must share information effectively with one another. Evidence shows that the more this happens, the better a team performs.<sup>20</sup> Sharing information helps teams develop a common understanding of their goals and tasks. It also helps build trust and social cohesion, which further helps teams perform better.

Despite its importance, research evidence shows that virtual teams are less effective at sharing information.<sup>21</sup> While members of virtual teams share more uniquely held information, in general they share less information overall than people in face-to-face teams. In particular, they refrain from sharing information about how to work together and about social issues, focusing instead on sharing what is strictly related to solving the problem or task at hand. Ironically, it is information about working together and connecting with team members on a social level that is more important to the performance of virtual teams, so making an effort to share this more will benefit virtual teams' performance.

One way to support information-sharing is building what's called a transactive memory system (TMS). A TMS within a team refers to knowledge that is embedded in a team's collective memory. This collective memory works like an indexing system that tells the team which members know what. Building a TMS within a team generally improves team performance,<sup>22</sup> but virtual teams are less likely to develop one.<sup>23</sup> The indirect interactions between team members, the physical and temporal distance, the lack of past collaboration and the impact of communication through electronic media on the team's interaction all result in individuals having less exposure to, and thus information about, other members' knowledge and expertise.

### **Recommendations for practice**

HR practitioners and managers can focus on three key areas for ensuring effective information-sharing.

#### **Proactively diversify the information shared within the team**

- To counteract the tendency of virtual teams to focus only on task-related information, managers and HR professionals can set aside time and explicitly ask virtual teams to also share their feedback or expectations about how the team should collaborate during their work.
- Having standalone sessions dedicated to non-work-related information will help people build connection. By preparing these sessions in advance and guiding them, HR practitioners and managers can ensure people are comfortable joining them and the topics are appropriate.

#### **Build up the team's transactive memory system**

- HR practitioners and managers can help to clarify team members' expertise by sharing their past relevant experiences and identifying how they can contribute to the team's tasks and collaboration. This helps team members know who possesses what information, and to ask the right people when they need it.
- Set rules about who needs to know what in a virtual team, based on members' expertise. If one team member serves as the technical expert, when other people find out information related to technical aspects, they will share it with the 'expert'. Specialisation also helps team members free up resources, because they don't need to hold on and use all the information they come across, since they know who does it instead.
- Virtual teams can benefit from tools to support their TMS, such as databases of knowledge or a wiki. HR practitioners and managers can transfer good practices that other teams in the organisation are using and help teams accelerate the process of finding a suitable tool to support their shared knowledge.

#### **Hold debriefing sessions**

- The effects of information-sharing and a TMS are supported by moments when the team reflects upon their goals, collaboration, decision-making processes, and internal communication. Making such moments deliberate and grouping them in dedicated sessions accelerates their positive impact on the team's effectiveness.<sup>24</sup> HR practitioners and managers should not just encourage, but also facilitate such sessions, since having a facilitator makes them more effective than self-guided sessions.<sup>25</sup>
- The focus of the debriefing sessions should be on learning and improvement, rather than evaluation or judgement.<sup>26</sup> In such a setting, managers and HR professionals should also share feedback with the team to allow it to discover lessons learned. A developmental, non-punitive focus not only yields more honest and accurate feedback, but also enhances experiential learning.



- Managers and HR professionals should schedule a debriefing session after a specific deliverable was completed, or a significant milestone has been achieved by the team.<sup>27</sup> The session should focus on specific activities, episodes or events, rather than performance or results in general.
- The session should be informed by a variety of perspectives and evidence sources.<sup>28</sup> For example, the review should include input from multiple participants and at least one additional source of evidence (for example, organisational data).

## 5 Teamwork and co-ordination

Besides solving the task at hand, teams also need to know how to work together – or how to engage in teamwork – in order to be effective. Fortunately, research shows that training is an effective way to enhance teamwork, teaching team members about the importance of social support within the team or promoting ways to manage interpersonal conflict among teammates. The evidence collected shows that teams, including virtual ones, who go through teamwork training perform better than those who don't.<sup>29</sup> They are also better at avoiding miscommunication and dysfunctional conflicts.

Teams can be trained or developed in different ways, including classroom teaching, interactive workshops, simulations with try-outs and practice, and developing action plans based on in-situ reviews (that is, monitoring and reviewing the team's work as tasks are performed). While all four methods help teams perform better, the interactive and experiential formats work better than a lecture on teamwork.<sup>30</sup>

In terms of content, one possible focus of teamwork training is co-ordination, which consists of two elements:

- how much effort team members make to manage shared resources
- how coherent and logically consistent team members' work activities are.

Research confirms that co-ordination is important for virtual teams' performance: teams that track progress and tasks, account for outcomes and meld the team together perform better than those who don't.<sup>31</sup> What's more, virtual teams benefit from co-ordinating their communications too – for instance, how often people communicate, how quickly they are expected to answer, and how explicit the message and the feedback are.<sup>32</sup>

In face-to-face teams, ensuring co-ordination is normally the team leader's task, but members of virtual teams often have a high degree of autonomy, so co-ordination might be less efficient. Given how important co-ordination is for virtual teams' performance, compensating for the role of the leader through teamwork training is vital.

### Recommendations for practice

To teach teams how to work together and to improve co-ordination, consider the following.

#### Set up teamwork training sessions

- HR practitioners and managers should provide virtual teams with teamwork training, because it will help them improve their activity and results. When setting up teamwork training sessions, the method of choice should be interactive and focus on the team members actually experimenting what effective teamwork looks like. In the context of virtual teams, this might be done at occasional face-to-face meetings or through video-conferencing.

**Clarify roles, including that of co-ordinator**

- Co-ordination is best achieved when roles within the team are very clear to everyone involved. In virtual teams, it is harder to achieve the same level of clarity, so managers and HR professionals have to help teams clarify who does what, even if it means assigning roles in a more directive manner than they would do for a face-to-face team.
- Even in the absence of a team leader, managers and HR professionals can formally assign or identify a team member who takes on co-ordination responsibilities. This means that person is responsible for tracking the team's tasks and progress towards achieving them, as well as the results achieved.

**Provide tools for co-ordination**

- HR practitioners and managers must empower virtual teams to co-ordinate by giving them the right tools to do so. When teams go virtual, they may need new or more tools to ensure effective co-ordination is achieved. Project management software could do the trick, and ensuring everyone has access to such tools across the organisation is a task best solved collaboratively by managers and HR together.

**Co-ordinate the team's communication**

- Managers and HR professionals should help teams who go virtual to set rules for communication right from the beginning. In a team session, team members can decide to have weekly update meetings, to ask everyone to answer team messages within a set timeframe, or to be as transparent as possible in their messages and feedback, without fear of hurting the expectations of other teammates.

## 6 Team leadership

According to research, leadership is a relevant factor to weigh in the performance of virtual teams.<sup>33</sup> However, the evidence is less decisive on *how* virtual teams are best led. The evidence indicates that in virtual teams that communicate only through lean media such as emails or chat, the leadership style adopted by the team leader might make a difference in how the team works and performs.

On one hand, a transactional leader who is focused on the task and gives direction might keep the team concentrated on the task, making them co-ordinate better to solve it and produce more outputs. On the other hand, a transformational leader who focuses on the vision, asks team members for input and takes risks might enhance social cohesion and improve the team's creativity and quality of results.<sup>34</sup>

One important characteristic for leaders of virtual teams would appear to be humility: being self-aware, willing to learn, having appreciation for others and being focused on them, instead of themselves. All these qualities allow a humble leader to make team members feel more psychologically safe.<sup>35</sup> In teams with high psychological safety, people believe that their teammates will give them the benefit of the doubt when they take a risk. As a consequence, they're more likely to take constructive risks such as sharing ideas with the team, discussing mistakes, or asking for and receiving feedback.<sup>36</sup>

**Recommendations for practice**

In selecting virtual team leaders, managers and HR practitioners can base their decisions on two main considerations.

### **Find the leader best suited for the challenge**

- Managers and HR professionals should find the right leader to fit the challenge faced by a virtual team. For example, if a team's targets focus on output quantity over service quality, it might benefit more from a directive, task-focused team leader. On the other hand, if the team works on achieving high-quality and creative results, it might be better off with a leader who focuses on vision, challenges the team members and asks for their ideas, takes risks, and attends to each team member's needs and concerns.

### **Identify humble team leaders**

- Humble leaders might not be the obvious choice for leading virtual teams, but they might actually help teams work better. If managers and HR practitioners deliberately identify people high on humility, besides the other characteristics which make a team leader effective, they may provide their virtual teams with an extra chance of success.

## **7 Conclusion**

Our research set out to assess the evidence on what makes virtual teams effective. We conducted a rapid evidence assessment of the scientific literature, uncovering a consistent base of high-quality evidence, including 10 meta-analyses and 35 high-quality single studies. Details on both the process and the results are presented in our technical report, [Attributes of effective virtual teams: Rapid evidence assessment of scientific literature](#). In this report, we have sought to summarise the results and their implications to equip managers and HR professionals to develop efficient virtual teams.

Seen through the lens of a global pandemic, it becomes even more obvious that virtual teams are a necessity in today's work environment. As can be seen, however, virtual teams deal with more challenges than face-to-face teams, as team members must rely on electronic communications, have fewer things in common, and potentially have less overlap of working hours.

To mitigate these challenges, virtual teams can make more use of rich media such as video-conferencing to communicate, but also focus on building social cohesion and trust within the team. Being deliberate in sharing information also helps virtual teams function and perform better, especially if they can build a transactive memory system to store team knowledge.

Besides directing all their attention to tasks, virtual teams can also gain from learning how to work better together and to co-ordinate team efforts. While evidence is less concrete on whether a certain leadership style is more effective in leading virtual teams, those leaders who are humble help members of virtual teams to feel psychologically safe and take constructive risks.

For managers and HR professionals looking to develop efficient virtual teams, they should focus their actions and interventions around the practice areas outlined in this report and recapped below.

### **Respond to the specific challenges of virtual teams**

- Encourage the use of video-conferencing over only audio or written communication, while also providing the tools to make it feasible.
- Synchronise work schedules of team members to maximise the overlapping of working hours.
- Compensate for physical distance between team members by sharing information about contexts, policies and actions specific to each location.

### **Build cohesion and trust**

- Invest in team-building sessions where teams can improve social relations and clarify roles.
- Detect and act early to correct dishonest communication within virtual teams.
- Refrain from sharing negative feedback with the team unless necessary.
- Explicitly ask virtual teams to share their feedback or expectations about how the team should collaborate during their work together.

### **Ensure effective information-sharing**

- Support teams with tools and facilitate the creation of a transactive memory system.
- Facilitate debriefing sessions where the team reflects upon how they performed and focus on how to learn and improve.

### **Teach teams how to work together and co-ordinate**

- Invest in interactive teamwork training sessions.
- Ensure the role of co-ordinator is covered and clear to everyone in the team.
- Provide appropriate tools to help co-ordination and project management.
- Define rules on how often, how quickly and how transparently the team communicates.

### **Focus on team leaders**

- Take into account humility when considering team leaders, and try to match their leadership style to the challenge faced by the virtual team.

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