Best Practices For Remote (Distributed) Teams at Work Handbook

Team Aqua

Kirk Hachigian, Amaya Murguia, Caitlin Sugita

2020-07-02

Table of Contents

List of Tables

List of Figures

Preface

Remote work has become an increasingly common practice in the last decade, especially following the COVID-19 pandemic in 2020. As college students who had summer jobs and internships lined up before the outbreak, we were directly affected by the sudden shift to remote work. We witnessed and experienced as companies struggled or succeeded to adopt the changes and technologies that are necessary to cultivating a remote workspace. In fact, several companies that succeeded in this shift have announced their plans to make it permanent.

While some companies were able to successfully convert jobs into a virtual format and uphold their internship offers, many companies failed to execute this shift and decided to rescind their offers altogether. Many companies have attributed this decision to the strain of making the move from a traditional, in-person format to a virtual, remote format.

The goal of our handbook is to mitigate this strain by outlining best practices for transitioning and committing to an online working environment. In creating this set of guidelines, we have organized our handbook into three sections.

The first section will address best practices for transitioning work teams to an online environment. It will help companies make informed decisions on whether the transition to a virtual platform is feasible. Furthermore, it will recommend the various platforms that companies could adopt if it chooses to transition. Finally, it will address some common initial issues associated with moving to a virtual platform.

The second section will discuss best practice protocols for digital communication after the company has made the move to an online working environment. It will address the confusion of when it is appropriate to use the different virtual platforms for different purposes. Finally, it will outline protocols on supporting virtual interaction and collaboration among colleagues.

The third section will explore the common issues that teams face in a virtual workplace and provide recommendations on how to overcome these issues. These challenges will be collected from team members' own experiences with this relevant topic as well as findings from conducted research on virtual teams.

This handbook is for managers who are looking to convert any of their employees' jobs from a traditional working format to an online working format; specifically for managers navigating the transition to working remotely with their teams. We hope that our handbook can guide anyone who is considering remote work in making the best decisions that they can for their company, for their team, and for themselves.

Introduction: Remote Work

I. What is Remote Work?

This handbook defines *remote work* as synchronous and asynchronous collaboration of a team in a digital workplace, in which team members are not located in one physical space; rather, they are distributed in several geographical locations and communicate electronically. The words *remote*, *virtual*, and *distributed* will be used interchangeably throughout the handbook. The terms *digital* and *virtual* are also used interchangeably.

II. How is Remote Work Different from Traditional Work?

Unlike remote work, traditional work systems mean that teams are located in one physical location, collaborating face-to-face and synchronously. Technology is not required for communicating between members; however, often instant messaging, phone, and email are used since team members' desks could be located at various parts of a building or even various buildings in large companies.

III. Why Remote Work?

In the last few years, even before the COVID-19 outbreak, studies across different industries have revealed that there has been a steady upward trend in remote work. According to research conducted by FlexJobs™ and Global Workplace Analytics, the amount of people working remotely has grown by 44% over the last five years and by 91% over the last ten years (Reynolds, 2019).

Brewer's book *International Virtual Teams: Engineering Global Communication* also cites some statistics gathering from data from about the last 15 years about remote work. Some findings

include that 80% of the global workforce conduct meetings involving workers not currently on-site, and 46% of company executives in Europe surveyed for this statistic use virtual teams to improve communication among members of their distributed companies. The book also specifically mentions some benefits to a company for hosting international virtual teams. Global teams increase a company's ability to globalize operations in many countries, increases the number of talented employees, and increases a company's ability to formulate effective and efficient teams from employees of various backgrounds and maintain these employees even if they move to a different location. They can operate all hours of the day and all days of the week (Brewer, 2015).

Case Study: Working from Home to Maximize Time (large, nonprofit engineering company)

An early career professional recently mentioned that once employers are allowed to return to the company, he hopes to still work remotely twice a week. His work in data science does not require the use of any lab equipment, and he has a long commute.

As a result of the COVID-19 outbreak in 2020, government-imposed lockdowns and social distancing measures have forced companies to allow their employees to work from home, prompting a widespread movement from traditional work to remote work. Time has referred to the consequences of the pandemic as "the world's largest work-from-home experiment" (Banjo et al., 2020). According to a survey conducted by Gartner, a global research and advisory firm, on March 30, 2020, 74% of the 317 CFOs and business finance leaders surveyed expect that at least five percent of their employees will permanently work remotely after the pandemic subsides (Gartner, 2020). Of those surveyed, two percent expect that over 50% of their workforce will work remotely, four percent expect that 50% will work remotely, 17% expect that 20% will work remotes, and 25% expect that ten percent will work remotely (Gartner, 2020). Evidently, remote working will become a more common practice as a result of the pandemic.

Section 1: Converting Jobs from a Traditional Setting to a Remote Setting

1.1 The Move to Remote Work

The move from traditional work to remote work is not a one-to-one translation of activities. The reality is that some in-person tasks simply cannot be translated into a virtual format. The paragraphs below discuss a few of the many considerations that a company may want to think about when deciding whether it is feasible or a good idea to translate a job to a remote environment.

1.1.1 Identifying if the Move to Remote Work is Feasible for Your Job

The 2020 COVID-19 pandemic forced many companies to switch to remote work. However, some companies were able to stay open; for example, essential businesses and small businesses that were able to maintain social distancing measures. Many companies had to make quick decisions as to whether employees would be able to begin working remotely. Whether you need to make a quick decision or if you have time to decide, there are some important considerations for whether it is feasible for the move to occur. It is important to think about whether the available technology will enable a successful transition or if the available technology is not sufficient to sustain a remote working format. The exact technology necessary for a specific job can vary, and many of the current options are discussed later in this section. If no combination of the available technologies can support the tasks necessary to perform your job, then remote work is not feasible.

Furthermore, your employees will need high-speed and secure Internet connections, laptops with speakers and cameras, and perhaps administrative privileges to install new software (Huggett, 2018). If a job heavily involves working in a hands-on laboratory environment, companies must consider whether employees will have access to the appropriate hardware to carry out their tasks. Additionally, many employees may need to be trained to use the new technologies important to remote work. Ultimately, you need to determine whether your company can financially provide the necessary hardware or software. Otherwise, the move to remote work will not be feasible.

1.1.2 Is the Move to Remote Work Right for Your Job?

In addition to considering whether the transition to remote work is feasible for a job, it is also important to consider whether the transition is the best option for a job. Many of the jobs that were forcibly switched to a virtual format due to the pandemic could probably be kept in their virtual format with few repercussions, but many others may be best returned to a traditional in-person format. An important consideration is whether employees will have appropriate working environments at home (Huggett, 2018). You also need to consider the importance of in-person interaction for the specific job, meaning whether employees spend most of their time working individually without interacting much with one another throughout the day, or whether in-person collaboration is a large and vital part of the job. If you cannot perform all of the tasks necessary to your job optimally in a virtual environment, then remote work is not right for your job.

1.2 Digital Communication Options

Unlike in a traditional workplace, your colleagues are not merely a few desks away from you when working remotely. Often, they are a few states or even continents away from where you are. Fortunately, technology can connect dispersed employees on a single platform and facilitate the creation of a fully functioning virtual workplace. A variety of digital software and applications allow teams to accomplish the same tasks while working remotely.

In this section, a variety of viable software options that your company could adopt for project management — including instant messaging, conducting virtual meetings, scheduling meetings, and file sharing platforms — will be recommended. Each software's features, shortfalls, and cost to your company will be included so that you can make an informed decision when assessing these options. You should always assume that your needs will not be fulfilled by a single platform, and that your team will need to decide on an optimal mix of software to support remote work (Chastain et al., 2020). Best practices for utilizing this technology in a virtual workspace will be addressed in Section 2 of this handbook.

When considering these options, you should be aware of the software that your company already owns the rights to. If your company already owns the rights to one of these platforms, that will often be the most economical choice; you may consider expanding the use of and taking advantage of all of its features for remote work purposes. Furthermore, you should be aware of the fact that there are strengthened security and data protection features with purchased packages rather than free versions of the software.

Team Messaging

In remote work, you can no longer walk over to a colleague's desk when you want to ask them a quick question. Sometimes, the colleague you wish to contact is in a different state, or even a different country and the costs for making frequent local or international calls can escalate quickly. Often, companies will provide their employees with a work phone, through which they should use to communicate about work-related matters. Additionally, instant messaging platforms, such as texting with a work phone, Slack™, and Google Chat™, provide your company with a way to consolidate every employee's contact information into a single place. They allow teams to contact each other quickly and easily.

Virtual Meetings

Gathering your colleagues and your managers into a single physical meeting room is no longer feasible when you are working remotely. Instead, you have to utilize audio and video

conferencing platforms, such as Zoom™, Google Meet™, and Cisco WebEx™ to conduct live virtual meetings. Virtual meeting platforms allow teams to virtually gather to communicate and collaborate. Furthermore, screen sharing features allow teams to present their slides without the need for a physical room and a projector. Additionally, these platforms enhance the meeting experience by providing a live closed-captioning feature, which benefits people who are hard-of-hearing and usually struggle to follow traditional meetings.

Scheduling Meetings

When working remotely, maintaining a structured schedule is difficult, and losing track of time is easy. Virtual calendar platforms, such as Google Calendar™ and Microsoft Outlook™, ensure that you keep track of your schedule and do not miss your meetings. These platforms allow teams to schedule meetings with one another directly into each others' calendars. As asking each team member when they are free to meet is inefficient and inconvenient when team members are geographically dispersed, virtual scheduling platforms allow you to directly see availability and determine the best meeting time. Furthermore, these virtual calendars can be directly integrated into other applications, such as Zoom, so that you can automatically keep your schedule synced and updated.

File Sharing

As collaborating on a task together in-person is often not an option when working remotely, file sharing platforms are essential to aiding team collaboration. File sharing platforms, such as Google Drive™ and OneDrive™, allow your team to work on the same documents and files. Web applications such as Google Docs™ and Microsoft 365™ allow teams to collaborate live and in real time, mimicking the experience of working together in-person.

Project Management Software

Project Management software, such as Microsoft Teams™, Trello™, Asana™, and monday.com™, allow your team to stay organized, track the progress of your projects, and keep every member updated and on the same page. These software consolidate all important team

information, including project timelines, task statuses and allocations, shared files for collaboration, and more. They serve as a collaboration hub for teams.

All of the information about the following platforms was acquired from personal experience or their respective official websites, which will be cited at the beginning of each section.

1.2.1 Slack

Slack is a platform that aids team communication and collaboration. Slack consolidates companies and teams into a single platform, making it easier for team members to contact each other and share files. It allows companies to group people into multiple teams by shared projects, tasks, and other common interests; this organizes relevant information in such a way that it is easy to be found (Slack, 2020).

Messaging

In addition to private direct messages, instead of crowding an inbox, communication in Slack is organized into ‘channels,’ which are specified spaces for conversations, files, tools, and people. Channels group colleagues into teams under a common goal or interest. A channel can be public and made available to anyone to search or join, or made private. An unlimited amount of channels can operate simultaneously within a company’s Slack page.

Audio and Video Meetings

Slack also supports audio and video calls, as well as audio and video conferences. Video conferences have a screen sharing feature that supports virtual presentations or other purposes.

File Sharing

Files are stored and shared in channels and private chat rooms.

App Integration

You can connect external work tools to Slack, such as Google Drive, Google Calendar, Zoom, Asana, Trello, Microsoft OneDrive, DropBox, and many more to create a consolidated virtual workspace. In doing so, you can access all of these features without having to switch tabs.

Guest Support

Slack has a feature known as ‘shared channels,’ in which teams within your company can collaborate with teams from another company that also uses Slack. These messages are archived and searchable. You can directly reply to specific instant messages and react to messages with emoticons.

Available Platforms

Slack is available as desktop, tablet, and mobile applications.

Common Usage

Slack is most commonly used by small to medium sized companies. It is a popular choice for startups. It is a less popular choice for big companies in comparison to its competitors.

Shortfalls

- Does not provide end-to-end encryption; messages are encrypted in transit, at rest, and on backup media
- Supports relatively low audio and video conferencing quality
- Does not enable the recording of meetings
- Limits the amount of audio and video conferencing participants to 15 people

Pricing Plans

Slack offers four different pricing options for their users: Free, Standard, Plus, and Enterprise Gold. Their respective prices and features are summarized in **Table 1.1**.

Table 1.1				
	Free	**Standard**	**Plus**	**Enterprise Grid**
Price	$0	$6.67 per active user per month, billed annually	$12.50 per active user per month, billed annually	Contact the sales team to get a price estimate
Messaging history	10,000 most recent messages	Unlimited	Unlimited	Unlimited
External app integrations	10 maximum	Unlimited	Unlimited	Unlimited
Maximum file storage	6 GB total	10 GB per team member	20 GB per team member	1 TB per team member

1.2.2 Microsoft Teams

Microsoft Teams is a project management tool that integrates remote team collaboration needs into a single platform by consolidating team communication, project content, and virtual tools that facilitate real time cooperation and team productivity. Teams is a part of Microsoft 365, which is a package of Microsoft Office products, from Microsoft Word to Microsoft OneDrive (Microsoft Corporation, 2020).

Messaging

In addition to sending private direct messages, conversations in Microsoft Teams are organized into channels, like Slack, and chat rooms. Channels can be made public and available to the entire team, or private and limited to certain members. An unlimited number of channels can operate simultaneously. Furthermore, your chat history is archived and searchable.

Audio and Video Meetings

Microsoft Teams also supports audio and video calls, as well as video conferencing. This application supports virtual meetings for up to 250 people, with the highest tier supporting up to 10,000 people. You can record your meetings and calls directly on the platform for future reference, and video conferences have a screen sharing feature that supports virtual presentations. Furthermore, you can directly schedule meetings with your colleagues to their Microsoft Outlook calendars.

File Sharing

Files are stored in personal Microsoft OneDrive folders and shared in a team's SharePoint folder.

App Integration

Furthermore, Microsoft Teams provide access to online versions of Office 365 applications (Microsoft Word, Microsoft Excel™, Microsoft PowerPoint™, Microsoft Outlook™, Microsoft OneNote™, Microsoft OneDrive, Skype™, Microsoft SharePoint™, and many more) in one consolidated workspace. These applications support live collaboration, allowing teams to work on one task remotely in real time. Teams also supports the integration of several third-party applications, including Asana, Zoom, and more.

Guest Support

Microsoft Teams has a feature that allows clients, stakeholders, and anyone with a business or consumer email account to collaborate on Teams as a guest user.

Available Platforms

Teams is available as desktop, tablet, and mobile applications. It is a less popular choice for big companies.

Common Usage

Microsoft Teams is commonly used in small, medium and big companies. It is the more popular choice at big companies as it is a relatively powerful platform.

Shortfalls

- Does not support audio conferencing, unless you pay for the highest tier
- Provides too many tools with overlapping purposes, which can get confusing and be overwhelming
- Limits the number of channels a team can create to 200 public and 30 private channels per team, which can be an issue for larger organizations

Pricing Plans

Microsoft Teams offers four different pricing options for their users: Free, Microsoft 365 Business Basic, Microsoft 365 Business Standard, and Office 365 E3. Their respective prices and features are summarized in **Table 1.2**.

Table 1.2

	Free	**Microsoft 365 Business Basic**	**Microsoft 365 Business Standard**	**Office 365 E3**
Price	$0	$5.00 per active user per month, billed annually	$12.50 per active user per month, billed annually	$20.00 per active user per month, billed annually
Message history	Unlimited	Unlimited	Unlimited	Unlimited
External app integrations	Unlimited	Unlimited	Unlimited	Unlimited
File storage	10 GB total	1 TB per user	1 TB per user	Unlimited

1.2.3 G Suite™

G Suite is a package of Google products that includes Gmail, Google Calendar, Google Chat, Google Meet, Google Docs, Google Sheets™, Google Forms™, Google Slides™, Google Drive, and more. All of these products are seamlessly integrated with one another to provide an array of tools that aid remote work and collaboration (Google, 2020).

Messaging

Instant messaging is supported by Google Chat. You can upload and share items directly from your Google Drive into the chat room; schedule meetings directly with Google Calendar; collaborate in real time through Google Docs, Google Sheets, or Google Slides with the chat room integrated in the same tab; join online meetings with Google Meet; and search your messaging history.

Audio and Video Meetings

Audio and video calls, as well as audio and video conferencing is supported by Google Meet. Google Meet conferences support screen sharing. Meeting recordings are only supported by the highest tier. Meetings also have a live captioning feature. Furthermore, you can directly schedule meetings with your teams by sending a Google Calendar event or email invite, from which you can directly join the meeting using a link. Conferences support up to 100 participants on the free plan, and up to 250 participants on paid plans. Google Meet also supports integration with Microsoft Office apps, and Microsoft Office users can be invited to a Google Meet and have meetings scheduled directly to their Outlook calendar.

File Sharing

File sharing is supported by Google Drive, which allows up to 15 GB of storage if you are a free user, and unlimited storage for the Business plan and higher.

App Integration

G Suite supports third-party application integrations in the form of G Suite Add-ons.

Guest Support

G Suite allows any user with a Google account to use G Suite products. You can use any email address to sign up for a free Google account.

Available Platforms

G Suite is available as desktop, tablet, and mobile applications.

Common Usage

G Suite products are most commonly used by small to medium-sized companies. It is commonly used in school teams and startups.

Shortfalls

- Does not provide end-to-end encryption for Google Chat; messages are encrypted in transit, at rest, and on backup media
- Is completely web-based and does not provide options for software; this makes it less powerful than some of its competitors

Pricing Plans

G Suite offers four different pricing options for their users: Free, G Suite Basic, G Suite Business, and G Suite Enterprise. Their respective prices and features are summarized in **Table 1.3**.

Table 1.3				
	Free	**G Suite Basic**	**G Suite Business**	**G Suite Enterprise**
Price	$0	$6.00 per active user per month, billed annually	$12.00 per active user per month, billed annually	$25 per active user per month, billed annually
Maximum Participants	100	100	150	250
Maximum meeting length	1 hour	300 hours	300 hours	300 hours
External app integrations	Unlimited	Unlimited	Unlimited	Unlimited
Custom business email	Unavailable	Available	Available	Available
File storage	15 GB	30 GB	Unlimited	Unlimited

1.2.4 Zoom

Zoom is a cloud-based audio and video conferencing platform that allows teams to virtually meet in real time and communicate remotely. Its screen sharing feature allows teams to conduct virtual presentations as well (Zoom Video Communications, 2020).

Messaging

Zoom provides an instant messaging feature, however this platform is typically and primarily used for audio and video virtual meetings. In addition to private direct messaging, Zoom, like

Slack, organizes conversations into public and private channels. Teams can share files in channels and chat rooms. Furthermore, your chat history is archived and searchable.

Audio and Video Meetings

Zoom supports both audio and video conferencing. You can record your calls and share your screen during meetings. You can also schedule meetings directly in the Zoom application, add it to your calendar, and send meeting invitations through any platform by copying the provided meeting ID and password, or its unique invitation link. Zoom gives you the option to set up recurring meetings, with its own consistent meeting ID for the convenience of its host and participants. Furthermore, you can split meetings into breakout sessions for more intimate conversations.

App Integration

Zoom supports external app integrations with third-party applications such as Workplace, Skype, Microsoft Outlook, Microsoft OneDrive, Google Calendar, Google Drive, Panopto, and more.

Guest Support

Anyone without a Zoom account can still join Zoom meetings if they have access to the Meeting ID and password, or the meeting link.

Available Platforms

Zoom is available as desktop, tablet, and mobile applications.

Common Usage

Zoom is commonly used in small, medium, and big companies. However, due to its maximum participant limit of up to 1,000 people, larger companies will opt to use other platforms that can support larger meetings.

Shortfalls

- Does not provide a live captioning feature
- Does not provide end-to-end encryption for free users

Pricing Plans

Zoom offers four different pricing options for their users: Free, Pro, Business, and Enterprise. Their respective prices and features are summarized in **Table 1.4**.

Table 1.4				
	Free	**Pro**	**Business**	**Enterprise**
Price	$0	$14.99 per host per month, billed annually	$19.99 per host per month, billed annually (starting at 10 hosts for $199.90 per month)	$19.99 per host per month, billed annually (starting at 100 hosts for $1,999 per month)
Maximum participants	100	100	300	1000
Maximum meeting length	40 minutes	24 hours	Unlimited	Unlimited
External app integrations	Unlimited	Unlimited	Unlimited	Unlimited

1.2.5 Cisco WebEx

Cisco WebEx is a cloud-based audio and video conferencing platform that allows teams to virtually meet in real time and communicate remotely. Its screen sharing feature allows teams to conduct virtual presentations as well (Cisco Webex, 2020).

Messaging

WebEx supports instant messaging through WebEx Messenger and Cisco Jabber clients. WebEx messenger also supports file sharing and desktop sharing.

Audio and Video Meetings

WebEx supports audio and video calling through WebEx Teams between WebEx users inside and outside your company. It also supports video conferencing for up to 10,000 participants. Participants do not need to have a WebEx account to be invited to and join meetings. You can record your calls and share your screen during meetings. You can also schedule meetings directly through WebEx, add it to your calendar, and send meeting invitations through email or other platforms with the meeting number and password. Additionally, you can gain information about the participants that you are meeting with, as WebEx provides you with access to their background and company information.

App Integration

Zoom supports external app integrations with third-party applications such as Google Calendar, Slack, Microsoft Teams, Trello, and more.

Guest Support

Anyone with an invitation or meeting number and password can join a WebEx meeting.

Available Platforms

WebEx is available as desktop, tablet, and mobile applications.

Common Usage

WebEx is more commonly used in medium to big sized companies. It is less popular for small companies due to its relatively high price point.

Shortfalls

- Requires a more complicated process for guests to join meetings when compared to its competitors
- Has frequent issues with glitches and lagging when screen sharing

Pricing Plans

Cisco WebEx offers four different pricing options for their users: Starter, Plus, Business, and Enterprise. Their respective prices and features are summarized in **Table 1.5**.

Table 1.5				
	Starter	**Plus**	**Business**	**Enterprise**
Price	$13.50 per host per month, billed annually	$17.95 per host per month, billed annually	$26.95 per host per month, billed annually	Contact the sales team to get a price estimate
Maximum participants	50	100	200	1000
Maximum meeting length	24 hours	24 hours	24 hours	24 hours
Cloud storage	5 GB	5 GB	10 GB	Unlimited

1.2.6 Trello

Trello is a project management tool that helps teams to visually organize and track the statuses of their projects and tasks from start to finish. It allows your team to efficiently manage multiple projects simultaneously by keeping track of each team member's responsibilities as well as the progress made (Trello, 2020).

Boards

Trello organizes projects into visual boards, which include both lists and cards. Lists group common tasks, and each task is represented by a card. You can add more detailed information to cards, such as task descriptions, due dates, checklists, file attachments, and comments. Trello boards have a feature called a Power-Up; Power-Ups transforms boards into "living applications" through the addition of unlimited third-party integrations, including Google Drive, OneDrive, InVision, Slack, and many more. You can add an unlimited number of members to

your team board so that they can be assigned to tasks and stay up to date on the project's progress. A Trello board can be made private, team visible, or even public to anyone.

App Integration

Trello supports the integration of 100+ third-party applications. These third party applications allow Trello to support additional features such as messaging, audio and video conferencing, larger file sharing, and more.

Available Platforms

Trello is available as desktop, tablet, and mobile applications.

Common Use

Trello is most commonly used in small to medium-sized companies.

Shortfalls

- Has a method of organizing workflow that is not ideal for everyone
- Is not robust enough for projects with more complex workflows and larger teams; is better suited for general project management
- Does not display task dependencies the way that Gantt charts would
- Does not support the sharing of larger files

Pricing Plans

Trello offers three different pricing options for their users: Free, Business Class, and Enterprise. Their respective prices and features are summarized in **Table 1.6**.

Table 1.6			
	Free	**Business Class**	**Enterprise**
Price	$0	$9.99 per user per month, billed annually	Starting at $20.83 per user per month for 20 users to $5.92 per user per month for 5,000 users, billed annually
Maximum team boards	10	Unlimited	Unlimited
Maximum app integrations	0	Unlimited	Unlimited
Maximum file attachment size	10 MB per file attachment	250 MB per file attachment	250 MB per file attachment

1.2.7 Asana

Asana is a project management tool that helps teams to visually organize and track the statuses of their projects and tasks from start to finish (Asana, 2020).

Boards

Asana organizes projects into visual boards, in which items are organized into columns. These items include ideas, tasks, goals, and more; they are versatile and can be moved around the board like sticky notes. Thus, your team progress can be visualized as tasks are moved through different stages represented by columns. Tasks can be split up into subtasks on your project board. You can also directly assign due dates, team members, and more information to each task. Boards can also be filtered or sorted by different features, such as the assignee or the due date.

Furthermore, Asana boards can be made private to certain people, or public to the entire organization.

Timeline

Project tasks can be mapped out with Asana's Timeline feature. Goals and deadlines for each task can be added to the timeline, creating a visual schedule that illustrates the order of tasks to be completed, the start dates and deadlines for each task, and the progress to be made on the project at every point in time from start to finish. The project Timeline is versatile and can be easily modified throughout the project to reflect changes in tasks and their deadlines. Furthermore, these Timelines can be directly imported from spreadsheets or CSV files.

Forms

Asana Forms streamlines the process of sending and receiving work requests between team members and clients.

Calendar

Project Calendars and Team Calendars provide a way to keep track of your team project's deadlines in one joint calendar. This allows every team member to be kept up to date on project milestones and possible changes.

App Integration

Asana supports the integration of 100+ third-party applications. These third party applications allow it to support additional features such as messaging, audio and video conferencing, larger file sharing, and more

Available Platforms

Asana is available as desktop, tablet, and mobile applications.

Common Usage

Asana is most commonly used in small and medium-sized companies, but is also used by multiple big companies.

Shortfalls

- Has a method of organizing workflow that is not ideal for everyone
- Offers too many features, which can be overwhelming for teams working on simpler projects; is better suited to larger teams with more complex workflows
- Does not allow you to assign a task to more than one assignee

Pricing Plans

Asana offers four different pricing options for their users: Basic, Premium, Business, and Enterprise. Their respective prices and features are summarized in **Table 1.7**.

Table 1.7

	Basic	**Premium**	**Business**	**Enterprise**
Price	$0	$10.99 per user per month, billed annually	$24.99 per user per month, billed annually	Contact the sales team to get a price estimate
Maximum team members	15	Unlimited	Unlimited	Unlimited
Maximum team boards	Unlimited	Unlimited	Unlimited	Unlimited
Maximum app integrations	Unlimited	Unlimited	Unlimited	Unlimited
Maximum file storage	Unlimited	Unlimited	Unlimited	Unlimited

1.2.8 monday.com

monday.com is a project management platform that streamlines team collaboration and communication. It helps teams to organize their tasks, track the statuses of their projects from start to finish, and increase overall team productivity by syncing all of their relevant project information in one platform (monday.com, 2020).

Boards

monday.com organizes projects into visual boards, in which tasks are organized into groups. In the Main Table view, each row corresponds to a task and its features are organized into columns. These columns can correspond to task assignees, task statuses, task urgency, timelines, locations, and more. Thus, your team progress can be visualized as tasks are moved through different stages of the project represented by groups. In addition to the Main Table format, you can choose to visualize your board as a chart, a map, a workload tracker, and a timeline. The timeline view allows you to track the progress of your tasks; the workload view allows you to make sure that no member is over capacity; the map view allows you to keep track of the different geographical locations of your members; and the chart view allows you to make customizable visualizations and reports. Boards can also be filtered and sorted by different features. Furthermore, monday.com boards can be made private to certain people, shareable to people outside your team or company, or public to all team members.

Dashboard

Larger-scale and more complex projects can be represented as a Dashboard, with boards representing different milestones of that project.

Forms

monday.com forms streamlines the process of sending and receiving work requests between team members and clients by easily creating them from team boards.

Calendar

monday.com has a Calendar view which provides a way to keep track of your team project's deadlines in one joint calendar. This allows every team member to be kept up to date on project milestones and possible changes.

App Integration

monday.com supports the integration of multiple third-party applications, including Zoom, Slack, Zendesk, Microsoft Teams, and more. These applications allow your team to consolidate data from multiple platforms into the monday.com workspace.

Available Platforms

monday.com is available as desktop, tablet, and mobile applications.

Common Usage

monday.com is commonly used in small and medium-sized companies, but is also used by multiple big companies.

Shortfalls

- Has a method of organizing workflow that is not ideal for everyone
- Requires you to pay more to access many of its key functions
- Is not robust enough for projects with more complex workflows and larger teams; is better suited for general project management

Pricing Plans

monday.com offers four different pricing options for their users: Basic, Standard, Pro, and Enterprise. Their respective prices and features are summarized in **Table 1.8**.

Table 1.8				
	Basic	**Standard**	**Pro**	**Enterprise**
Price	$39.00 per month, billed annually	$49.00 per month, billed annually	$79.00 per month, billed annually	Contact the sales team to get a price estimate
Maximum team members	Unlimited	Unlimited	Unlimited	Unlimited
Maximum team boards	Unlimited	Unlimited	Unlimited	Unlimited
Maximum boards per dashboard	1	3	10	25
Maximum app integrations	Unavailable	250 actions per month	25,000 actions per month	250,000 actions per month
Activity log lifetime	1 week	6 months	1 year	5 years
File storage	5 GB	20 GB	100 GB	1000 GB

1.3 Common Issues and Considerations when Shifting to Remote Work

1.3.1 Managing Your Time

Without the daily commute to a physical workspace and back, it can become difficult to mentally establish your work day. Although you no longer have to clock-in and clock-out of the office when working remotely, it is a healthy practice to establish a schedule and a routine for yourself that you can adhere to with built-in work hours. The beauty of remote work is that you are not confined to a strict 9-5 schedule; you have the freedom to choose the hours that work best for you. Nonetheless, it is good practice to coordinate and share this information with your teammates and managers so that they are aware of the hours during which they can reach you.

Another common issue faced when working remotely is losing track of time. Fortunately, technology can help keep you accountable. There are several different measures that you can take to overcome this problem. For macOS users, you can change your clock settings so that your computer announces the time every hour. For Windows users, you can use the Task Scheduler so that your computer announces the time every hour as well. You can also use web-based time management applications, such as Toggl™, which track your hours and monitor your productivity.

1.3.2 Separating Your Work Life from Your Personal Life and Other Distractions

Without a distinction between your work space and personal space, it can become difficult to separate your work life from your personal life. One major consequence is that you may find yourself working too much. One way to tackle this issue is by establishing a physical boundary;

you can achieve this by having a designated work room in your home, or by not working in your home altogether and finding a library or coffee shop with free WiFi.

Another way to tackle this issue is by establishing a virtual boundary. If it is within your company's means, you may want to consider providing your employees with company hardware, such as a work phone or a work laptop. That way, your employees can establish a more distinct boundary between their work space and their personal space, even if it is only virtual. If this is not an option for you, then you can create two separate user accounts on your laptop, dedicating one account to work purposes and the other to personal uses.

Furthermore, without your colleagues and managers constantly looking over your shoulder and keeping you accountable, it is easy to get distracted by social media and private matters. To prevent yourself from getting distracted, a good practice would be to turn off your personal notifications, log out of your social media accounts, or even leave your personal devices in a separate room during your established work hours. To prevent others from distracting you within your own home, you can establish physical boundaries, such as a closed door between your work room and the rest of the house, or visual cues, such as having your earphones in while you are working (Chastain et al., 2020).

1.3.3 Managing Your Work Priorities

Remote work often requires more responsibility and proactivity from employees; you are responsible for managing your own priorities and keeping yourself accountable for making progress on your tasks. This may result in your overworking or underworking yourself. In either case, you need to adopt a system for managing your work priorities, staying on top of your work, and maximizing your productivity.

You can adopt a simple rule, such as the 1-3-5 rule, in which you should commit to completing one major task, three medium tasks, and five small tasks daily. You can also use the Eisenhower

Matrix, which is a simple decision-making strategy that helps you organize your tasks by two dimensions: urgency and importance. This matrix helps you decide which tasks you should do, plan, delegate, or eliminate. There are several other rules and strategies that you can adopt to enhance your productivity.

1.3.4 Dealing with Connectivity Issues

Your internet connection at home or at a coffee shop may not be as powerful or reliable as the internet connection that you would have access to at an office. Experiencing connectivity issues that significantly reduce your productivity or inhibit it altogether is a major issue when working remotely. It is thus important to have a backup plan ready for when these problems occur. No matter how reliable you believe your connection is, you should always be prepared with a backup plan. You could purchase a phone plan that activates the personal hotspot feature on your smartphone or purchase a mobile hotspot device such as the Skyroam Solis. It would furthermore be unfair of a company to completely pass on the responsibility of providing a reliable internet connection to their employees. Companies should support their employees by covering the added cost of activating the personal hotspot feature or providing them with a mobile hotspot device.

1.3.5 Dealing with Technology Issues

When working remotely, you rely on technology to communicate with your colleagues and perform most of your work tasks. Unfortunately, if one of your devices gets damaged, you do not have easy access to your company's IT department. It is thus important to frequently back up your work to a secure and company-approved cloud storage or a hard drive. Furthermore, you should have immediate access to a reserve computer or tablet that would enable you to continue working while your device is being repaired. Companies should support their employees by providing them with secure cloud and hard drive storage, as well as formulate a plan for providing backup devices when necessary.

1.3.6 Reducing Security Risks

As remote employees are scattered and rely on the internet to share confidential company information, you will be exposing your company to increased cybersecurity risks. Your company should prioritize security when selecting the different software plans to be used by employees; usually, paid plans provide strengthened security and data protection features in comparison to the free versions of the software. Additionally, your company should establish a virtual private network (VPN) that would allow remote workers to connect to your company's network securely. VPNs provide your internet traffic with protection against interception from cyber attackers.

As an employee, you should adopt good password management practices by avoiding re-using the same password for multiple accounts. There are several free password managers, such as Keeper, that you can use to generate strong passwords for you and keep track of all of your passwords securely. Additionally, a strong password is sometimes not enough to protect you from hackers; you should add another layer of protection to your accounts by setting up multi-factor authentication.

You should also install strong anti-virus software on your devices. These software automatically and regularly monitor your devices for suspicious activity, protecting you from malware and cybercriminals. Additionally, you should consider enabling full-disk encryption on your devices. Full-disk encryption encrypts your entire hard drive data so that your data is protected even if your device is lost or stolen.

Furthermore, your company should warn employees about phishing campaigns. Cybercriminals have taken advantage of the recent shift to remote work following the COVID-19 outbreak. Within 24 hours, Microsoft Office 365 Advanced Threat Protection uncovered a big massive phishing campaign, in which approximately 2,300 different webpages disguised themselves as

COVID-19 financial compensation information and led to a fake Office 265 sign-in page to steal credential information (Lefferts, 2020). Your company should take the initiative to educate employees about phishing scams so that they can identify them.

Section 2: Best Practices for Remote Teams

2.1 Digital Communication Guidelines

There are many different methods of digital communication used in the workplace, both in a remote environment and an in-person environment. The previous section discusses many types of digital communication and platforms your company can adopt to aid virtual communication. With many options available for use at one company, it can become confusing to determine when it is appropriate to use which type of communication to reach out to a fellow employee. The following pages list protocols for when it is appropriate for employees to use these tools.

2.1.1 Email

Sending an email is a safe default for sending a message to a colleague. It is professional and documented. Email is also a convenient way to send attachments and documents such as PowerPoint presentations, to reach out to a new contact, and to send important and detailed messages. A downside is that many people receive so many emails that it can be easy for emails to get lost in an inbox. If the message is important and the sender wants to ensure that the recipient received the message, the sender could ask for a follow-up email upon receipt (Brewer, 2015). An accepted response time would be about 24 hours, so other forms of digital communication may be better if a quicker response is necessary.

2.1.2 Texting with a Work Phone

Texting with a work phone should only be used for informal messages, and it is best if used on-the-go. This form of instant messaging is not a professional manner of communication, so it should be used sparingly in the workplace. Additionally, it is important to contact coworkers with a work phone during the day rather than with a personal cell phone. This is important to both the employer and the employee to make a distinction between work and non-work related communication.

Often correspondence with coworkers includes company proprietary information and this information should be only on a work phone. Personal information should be kept private to the individual and work-related and company-owned items should not generally be used by employees for other purposes.

2.1.3 Team Messaging

Team messaging involves using an instant messaging service on a computer to quickly communicate with a fellow employee. It is similar to texting with a work phone, especially since with certain setups it is possible to text with a computer or send team messages with a phone. However, the distinction is that texting with a work phone is primarily done with a phone

Case Study: Choosing Between Slack and Microsoft Teams (large, nonprofit engineering company)

At a particular large, nonprofit engineering company, Slack and Microsoft Teams are both used for messaging colleagues throughout the work day. Both are persistent and documented, and it is possible to send a direct message to one person and to send a message to a group of people with both platforms. However, at the company, Slack is generally used as a social platform, and important information should not be sent via Slack. Since it enables multiple channels, individuals can join the channels that interest them the most. The other platform, Microsoft Teams, is primarily used by the company as a way to store information such as group assignment planning, meeting notes, documents, spreadsheets, and slide decks for reference. It also includes different channels for communication, but is primarily used for work-related conversations.

rather than with a computer and is primarily directed to one other colleague, but team messaging is primarily done with a computer and is primarily directed to another employee or to a group of people. It is a more professional method of communication than texting with a work phone. A difference between team messaging and email is that conversations are stored together in team messaging rather than all in one inbox. Employees can speak with one another without forgetting to "reply all," which may occur when sending an email (Hubbard & Bailey, 2018).

A company can also offer multiple platforms of instant messaging, such as both Slack and Microsoft Teams. It can be difficult to know the best way to reach out to a coworker because some may prefer to use one over the others. However, in some companies some platforms have different connotations of the types of messages that are sent with each one.

2.1.4 Meeting Scheduling

Another aspect of digital communication available in the workplace is meeting scheduling through calendar invites. It is important to develop a policy or procedure for respecting the time of employees to enable them to get their work done.

Case Study: Scheduling Meetings (large, research university)

Case Study: A professor told a story that all the faculty had to make their calendars available for one another to facilitate the scheduling of meetings. This made it difficult for her to get her own work done since other faculty members would continuously schedule meetings with her throughout the day. Her compromise was to schedule out blocks of time for herself to get her work done while still allowing her coworkers to see her calendar.

2.2 Best Practices for Conference Calls

Conference calls are important for organizations even when the employees are working in an office but need to speak with employees at a different office or at a different company. However, they are especially essential to the success of remote and distributed teams at work.

The frequency of the conference calls depends on the specific needs of the team, but hosting conference calls more often allows for employees to interact more often during the work day as they would if they were working in an office. The following sections will detail best practices for both audio and video conferencing.

2.2.1 Audio Conference Calls

Audio conference calls with services such as Cisco Webex or Microsoft Teams are used widely by members of distributed teams in order to speak directly with one another. Some good practices are to think carefully before speaking, to try to wait to be sure that others are finished speaking before taking a turn to avoid multiple conversations at the same time, and to make sure to apologize for interrupting someone, which can often occur during a teleconference call (Brewer, 2015).

Brewer suggests that strictly audio conferences be avoided and mentions that adding video and chat features will enable more participants' voices to be heard. This can be especially helpful for distributed teams involving participants speaking in a non-native language (Brewer, 2015).

2.2.2 Video Conference Calls

Video conferencing is the digital communication tool that is the closest to face-to-face interaction for remote teams. It is useful because it allows participants to see the speaker's body language and gestures, which are important aspects of communication that are missing from audio conferencing and instant messaging.

Video conferencing also enables meeting participants to know who is speaking. However, eye contact is difficult as looking at a participant on the screen will not appear to the participant that the speaker is making eye contact. The authors of *Virtual Collaboration for a Distributed*

Enterprise state that video conferencing "creates a somewhat disconcerting effect in which the illusion of visual presence is not matched by the illusion of visual interest: When one participant is speaking, the other participants appear to be paying attention to something slightly offscreen" (Cordova et al., 2013, p. 17).

It can be difficult to know how much eye contact to make with the camera, since during an in-person conversation participants do not stare at each other the entire time. Some ideas include to look at another screen or to take notes during a meeting. The requirement of a certain amount of eye contact may be difficult for some due to disability and eye contact norms can vary across cultures, so doing what is comfortable for will cause others to feel the same way.

Cordova et al. also mention that research has shown that video conferencing is not as effective in negotiation, conversation regulation, or building trust as face-to-face interaction. However, along with audio conferencing, it is better in these departments than other forms of digital communication (Cordova et al., 2013).

2.2.3 Turning the Camera On

A common question that employees face during a video call is whether or not to turn their cameras on or off. Often employees defer to what the other members of the meeting choose to do. However, this could pose an issue because both employees may want face-to-face interaction but neither turn on the video feature first. An option is to make it standard company practice to write in an electronic meeting invitation whether it is expected that colleagues turn their cameras on or off. For less format meetings such as informational interviews or lunch with a coworker, it could be made standard company practice to ask whether each participant would like to turn on the cameras. Please see **Table 2.1** for tips on knowing when it is appropriate to turn your camera on or keep it off.

Table 2.1	
Video On	**Video Off**
Never Met: When you are networking with a new coworker and have never met the person before, you may want to turn your videos on to see what each other looks like and to reduce any anonymity.	**Large Meetings**: For large, professional meetings it is generally appropriate to keep your video turned off. This is because multiple videos can be distracting for the speaker and can impede meeting progress.
Social Events: Virtual social events are much less fun when everyone has their video off. Consider turning on video during department pictionary breaks or similar events.	**Limited Bandwidth**: When team members have limited bandwidth or meetings are very large, keeping video on can cause lag and voice issues.
Small Meetings: If the network connection is strong enough and team members would like to turn on their videos to enhance interactions during a meeting, it is appropriate to do so.	**Screen Sharing**: When it is important to share and control one participant's screen to work through something, it is best to turn off video to save bandwidth and so everyone can focus on the screen being shared.

2.2.4 Other Video Conference Call Tips

Some final video conferencing tips include that employees should come into meetings, especially large ones, with video turned off, unless the protocol for the meeting is for participants to turn on their cameras. This way if it is unclear whether others are turning their videos on or off an employee can read the situation and not intimidate the other participants if they do not plan to turn on their cameras. Additionally, it is better to ask than to assume whether or not it is appropriate to keep audio and video on or off during a meeting.

2.3 Supporting Virtual Collaboration

The next part of Section 2 will discuss best practices for virtual collaboration with peers and coworkers in the workplace. There are tips here for both employers and employees to create an

environment where virtual communication is efficient, productive, and respectful for all involved.

2.3.1 Building Trust While Remote

An important aspect of many workplaces is the ability to network with and learn from more experienced employees. This is especially important for interns and new employees who are starting their professional careers and who want to learn as much as they can about the company and the work done at the company. Asking for advice from coworkers while working remotely can be intimidating due to fear that the coworker is being disturbed, but is important to the success of a virtual team. Therefore, open communication among team members is extremely important. This is expanded upon in Section 3.2.1. It is also important for this communication to be substantive and respectful while in a professional environment (Bowman, 2010).

It is also important for members of all teams in a workplace to feel comfortable around one another and to trust that everyone will work together and not sabotage one another. Cordova et al. mention that it is more difficult to establish trust among members of virtual teams than in-person teams because members of virtual teams are not able to monitor the daily work ethic and quality of work of their coworkers as closely. As a result, coworkers may trust one another less when working virtually with one another. This trust is more easily developed through video conferencing with fellow employees than using instant messaging or other asynchronous communication (Cordova et al., 2013). Trust is important because it allows for effective sharing of knowledge and ideas among colleagues in the workplace (Brewer, 2015).

Teams coach Kris Plachy discusses how best to assess project groups for effectiveness while working remotely. She notes the importance of clearly communicating expectations, values, roles, behaviors, and performance indicators. She also mentions that overcommunication is best for building trust, especially if a team has just transitioned to a remote environment (Plachy, 2020).

A potential idea to maintain trust among members of virtual teams is to require employees to write brief daily or weekly statements of their progress the last day or week and their goals for the next day or week. This practice can hold employees accountable for their work and provide some structure to the work day. It can also enable managers to ensure their employees stay on task and get their work done to the best of their abilities. This is expanded upon in Section 3.2.1.

2.3.2 Social Communication and Interaction

S*ocial communication* is defined as "casual communication not directly related to work tasks" (Brewer, 2015, p. 98). The author mentions that this type of interaction builds the trust described in the previous section and helps acknowledge the humanity of one another even though coworkers may be separated by a distance. (Brewer, 2015). Some employees may find relief during the long work day by interacting with their peers.

However, working remotely offers the challenge of staying socially connected with coworkers. Some employees may prefer to work eight straight hours a day and then log off their computers immediately, while others may prefer to take breaks from work and converse with their fellow team members. An idea for how your team can maintain the social interaction so important to any team is you can set up an optional weekly half hour where coworkers can video chat with one another, play simple games such as pictionary, and catch up on each others' lives. Please see Section 3.4.1 for more information on this topic.

Section 3: Common Challenges for Remote Teams

3.1 Section Information

There are innumerable unique obstacles that challenge teams when working together remotely. The challenges addressed in the following section have been aggregated from the authors' own experiences, various sources' research conducted on the topic of virtual teams, and the results of a survey conducted by the authors.

3.1.1 Survey Structure and Methodology

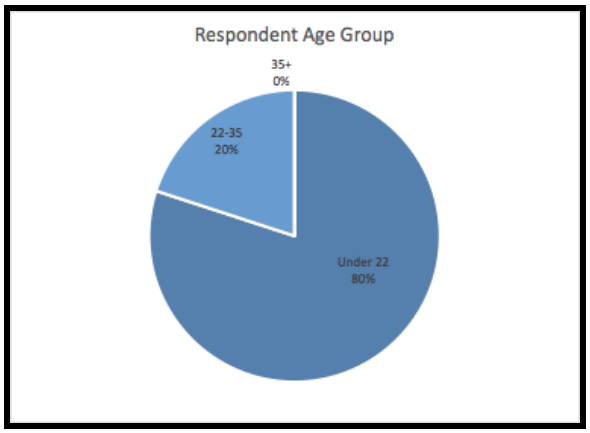
The survey conducted by the authors consisted of 14 questions created using Google Forms. This was a non-scientific survey and, as such, did not use Institutional Review Board (IRB) protocols. The questions first asked for information including current occupation and industry before asking respondents to detail their experiences with remote teams, preferred methods of communication when working in a team, and challenges that have impacted them while working remotely. The survey was sent out to members of the authors' personal and professional networks.

3.1.2 Respondent Demographics

The non-scientific survey conducted by the authors collected 35 responses. Of these respondents, almost 70% were under the age of 22 while the remainder were between the ages of 22 and 35. This is most likely due to the fact that all three of the authors also fall in the age group below 22, so most of the respondents from their network are in the same bracket. Similarly, almost 75% of

the respondents were undergraduate students while 20% were professionals and less than six percent were graduate students.

The general industries of profession/studies were almost entirely divided between business/financial services and engineering, both consisting of 45.7% of respondents with three percent in medicine and less than six percent in other fields. Another important demographic is that almost 90% of the respondents were affiliated with Cornell University in some way. While this may seem extremely high, it makes sense as all of the authors attend Cornell University and this handbook was crafted as a final project for Cornell class ENGRC 3350.



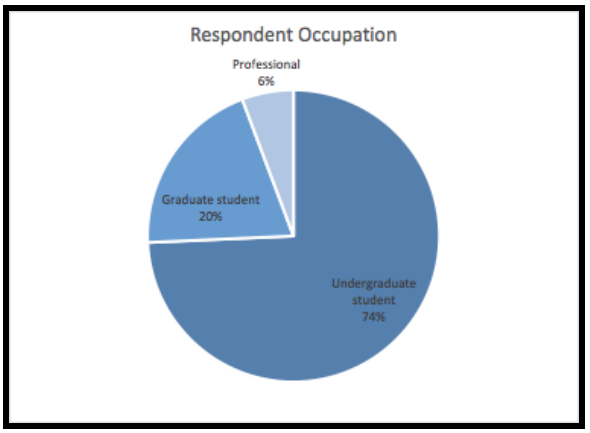
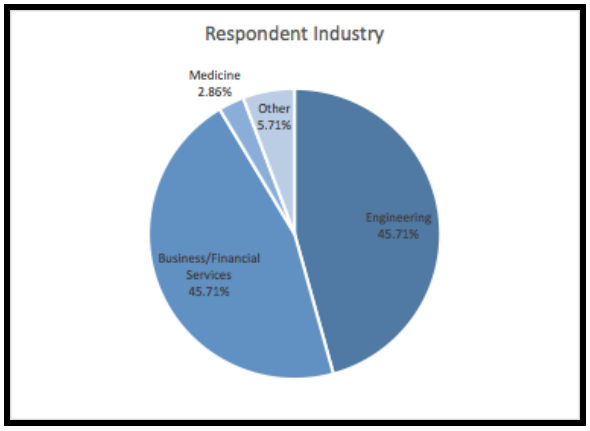


Figure 1 (above left). Survey Respondents by Age Group. Of the 35 respondents to this non-scientific survey, 80% were under the age of 22, while the remaining 20% were between 22 and 35.
Figure 2 (above right). Survey Respondents by Occupation. Of the 35 respondents to this non-scientific survey, 74% undergraduate students, 20% graduate students, and 6% working professionals.



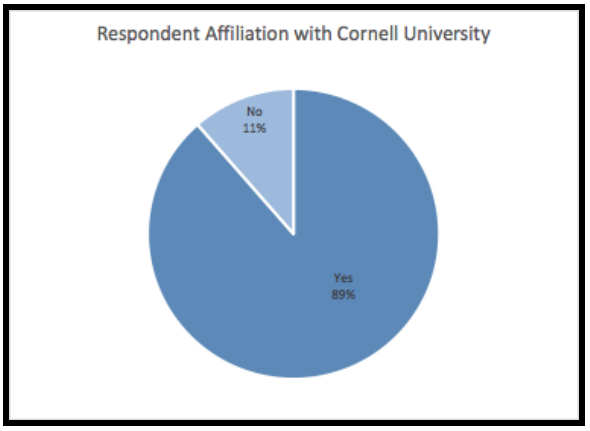


Figure 3 (above left). Survey Respondents by Industry. Of the 35 respondents to this non-scientific survey, 45.71% were in the engineering field, 45.71% were in the business/financial services industry, 2.86% were in the medical industry, and the remaining 5.72% were in other fields.
Figure 4 (above right). Survey Respondents by Affiliation with Cornell University. Of the 35 respondents to this non-scientific survey, 89% were affiliated with Cornell University and 11% were not.

3.1.3 Key Results and Insights

Given the nature of the respondent demographics as almost entirely near-career students or entry-level professionals, our non-scientific survey provides a unique insight into the viewpoints and perspectives of young people regarding online work with remote teams. As outlined in the introduction section above, this cohort of young people entering the workforce will experience work from home on a scale never before seen due to the COVID-19 pandemic and its long lasting effects on the workplace. Of the respondents, almost 90% either had or are currently working with a remote team. As expected, over 60% of these respondents have been working with remote teams since quarantine procedures began.

Email came in as the most popular form of team communication, followed by Slack, then video conferencing platforms such as Zoom, WebEx, etc., then texting, Microsoft Teams, G Suite, and Trello/Monday.com/Asana. When asked which forms of team communication worked the best, respondents overwhelmingly selected Slack, email, and video conferencing, while Trello/Monday.com/Asana and G Suite received almost no votes. While due to the fact that very few of the respondents regularly use these platforms, it is interesting to note that the most popular forms of communication were also selected as the most effective, denoting satisfaction with these particular methods.

Also of note, roughly 60% of people working on remote teams either did not believe that or were not sure if their remote team is being assessed for effectiveness in the same way that an in-person team would be. The survey also collected information on the impact of particular types of challenges that face remote teams while also collecting unique challenges from respondents. That information as well as insights from Section 1.1 of the handbook above has been incorporated to collectively address the most common challenges facing remote teams and information on how to attempt to overcome them.

3.2 Communication Challenges

Communication is arguably the most essential part of working with other people in a team (Jung & Gunawardena, 2014). Thus, when many teams were forced to shift to a remote setup, many key communication channels between team members were disrupted. The following section of the handbook highlights some of these key communication challenges and offers practices and methods to address them.

3.2.1 Face-to-Face Interaction

A lack of face-to-face interaction between team members was voted as the overall highest-net-impact challenge facing respondents who have or are working in remote teams from our survey. This is not surprising as communicating directly with someone in person versus over the internet transfers significantly more emotion, non-verbal cues, and other insights into the person's message than are possible over the internet, thus allowing for more casual, friendly conversations that can lead to a more comfortable and productive interaction (Kurtzberg, 2014). For many professions, without being in a physical workspace with team members, new as well as current employees miss out on learning the small tribal knowledge details that come from watching an experienced employee (Chastain et al., 2020). Inexperienced professionals also may have difficulty finding someone to answer quick questions that would be easy to do in a face-to-face setting but may come off as irritating over Slack or email.

Managers or supervisors may also feel that employees are not as motivated or efficient without their presence. One potential strategy to overcome these challenges is for remote teams to schedule daily check-in and check-out meetings. These meetings could take various forms, such as one-on-one, as an entire team, etc., but regardless of form are extremely important to giving team members a chance to voice their thoughts, concerns, and plan for the day (Jung & Gunawardena, 2014). These meetings also provide managers or supervisors a chance to check-in on the status of the entire team while keeping a big picture view on a daily basis. While these

meetings do not take the place of face-to-face interactions, they can help to provide some of the same benefits, including transparency, motivation, a forum to ask questions, to team members. The transition to remote work may also present a unique opportunity for teams to re-evaluate their current meeting schedules to determine which meetings are actually serving a purpose, how long those meetings need to be, and how often they need to be held (Chastain et al., 2020).

3.2.2 Information Flow

Communication is the key to any team. The shift to remote teams disrupted many communication channels that team members did not even realize were in place. For example, someone who asks a question to the person at the desk next to them no longer has that quick answer available to them. Instead, it is significantly more difficult to track down and hear from a teammate for even a quick question. In fact, over ten percent of respondents of our survey listed communication difficulties as their first or second biggest challenge from remote work.

Information flow may also be difficult as often key personal information is absent in remote teams. A strategy to help foster better information flow while remote is to communicate using several different technology options, each with a clear purpose (Lee, 2020). Team managers or supervisors should look to Section 1.2 detailed above for various communication methods to select which ones are best suited for their needs and Section 2.1 of this handbook for best practices on how to use these means of communication. For example, a team could use a messaging service such as Microsoft Teams for general communication, a texting group only for extremely important information, and a Zoom video conferencing channel

Case Study: Information Flow

Case Study: A project team's manager, Bob, came into the team's office space late after being stuck in traffic all morning. Bob then accidentally spilled coffee on himself and realized that he forgot his lunch at home. As Bob sits down for the morning briefing with the team, team members can clearly see that he is having a bad day and excuse him for snapping at a fellow team member, John, who was struggling with an assignment. However, this situation in a remote environment plays out much differently as other team members are not able to have face-to-face interaction with Bob to see the context of his frustration and only receive an email scolding John for not figuring out his assignment. In the remote environment, this has the potential to sow distrust or a lack of confidence within the team.

for meetings or conversations where it may be valuable to have a visual presence. Information flow for remote teams may also be seriously altered due to people working remotely from locations around the world after their workplaces closed. To maintain an efficient communication stream, remote teams should designate and standardize at least some period of the day where all team members are available to connect.

3.3 Productivity Challenges

The massive shift from traditional offices and school systems to work from home and remote learning from the COVID-19 pandemic left many people in a difficult position trying to accomplish the same work from a vastly different environment. The following section of the handbook addresses some of the key struggles remote teams face trying to stay productive and offers some strategies to keep team members engaged.

3.3.1 Distractions

There are various aspects of working with a team remotely that are very difficult. Given the quarantine situation due to the pandemic, many people found themselves trying to conduct their business or studies from their home, surrounded by countless distractions including other family members, friends, electronics, or other distractions and responsibilities that would not exist in their previous work space. As each distraction or additional responsibility takes time away from working hours, this becomes a serious problem for remote teams. In fact, in our survey, distractions in the environment where working was the most selected choice for the biggest challenge of working remotely.

To limit some of the distractions for team members working remotely, managers or supervisors should designate a period of the day as a standard “workday” for each employee with designated hours where they are expected to be online and contributing to their tasks for the day (Pickels, 2020). It is also important that while working from home, people try to minimize the amount of possible distractions from the physical area where they will be working. It may be helpful to

continue practices and routines from the traditional workplace such as a morning routine or professional dress to ease the adjustment to remote work and maintain productivity levels (Chastain et al., 2020).

3.3.2 Shared Responsibility and Accountability

Teams working remotely have less constant face-time with other team members and thus more individual responsibility to get their work done. This could mean that some team members will see their productivity levels drop if they are not using their time wisely. On the other hand, team members may also work extended hours for long periods of time as they are no longer bound by the constraints of their workplace to stop working (Chastain et al., 2020). While this may sound like a positive at first, people are likely to burn out or tire of their work if they continue to work these extended hours, and thus some guidelines need to be instilled. Assigning small groups to work on tasks can help resolve both of these situations as it will keep people accountable, while also providing support and monitoring that nobody is overworking themselves.

Tracking hours required to complete certain tasks may also be a valuable practice to gain some insight into how long certain projects may take on average, providing transparency for any client-facing work and monitoring the weekly hours of each team member (Chastain et al., 2020). An interesting insight from our survey was that roughly 60% of respondents either were not sure or believed that their remote team was not being evaluated in the same way that an in-person team would have been.

3.4 Cultural Challenges

One of the most defining elements of any team is its culture. How comfortable team members are with one another, how well they get along, and how well they know one another can all be important elements to operating as a successful team. Remotely, the chances to develop relationships with other team members with a cup of coffee before work, with a brief

conversation in the elevator, or however team members in a traditional workplace would interact are not the same. To overcome this and still create a team that operates effectively there are some strategies that managers and supervisors as well as other team members can implement.

3.4.1 Opportunities for Social Interaction

Effective communication and collaboration between team members is the key to success for most teams. Once team members are able to learn one another's strengths and weaknesses, the team will be stronger as a whole. However, the best way to build community and a sense of teamwork is through face-to-face interactions and conversations that are difficult to facilitate remotely. One way to promote social interaction between team members is to designate times at the beginning of a daily meeting for "coffee chats" where team members can share stories or just interact causally with each other. Managers or supervisors could also arrange for team happy hours or lunch meetings conducted over video conference for team members to get to know one another better outside of the professional sphere (Dean, 2020).

3.4.2 Team Mission Statement and Explicit Goals

Another potential challenge facing remote teams is that team members are lost on a general vision and are simply working on their own individual projects. It is important that managers or supervisors for the team gather the entire team online to ensure that all team members have the same vision for the project. Team members may also not be entirely clear on what exactly their manager or supervisor envisions their specific task to be as online instruction can be somewhat more difficult to understand. Thus, teams could create a shared document to encourage accountability outlining what specific project each team member is working on and their projected timeline for this project. This way it is very clear to each team member what they should be doing even though they are not together.

Team Member Biography

Kirk Hachigian
kjh233@cornell.edu

Kirk Hachigian is a rising senior in the College of Engineering studying information systems, science, and technology with a minor in business. He is interested in the intersection of technology and finance and has experience in fin-tech focused venture capital as well as manufacturing. Other interests include hiking, sailing, reading, and playing guitar.

Amaya Murguia
amm449@cornell.edu

Amaya Murguia is a rising senior in the College of Engineering studying electrical and computer engineering. Within her major she is specifically interested in signal processing, radio frequency communications, and biomedical image and data analysis. Outside of engineering she enjoys hiking, reading, and spending time with her family and friends. She brings organizational skills to the team.

Caitlin Sugita
cms489@cornell.edu

Caitlin Sugita is a rising junior in the College of Engineering pursuing a Bachelor of Science in Operations Research Engineering. She is passionate about the intersection of engineering and business, and is a believer that the techniques of problem-solving that come from an engineering perspective will shape the businesses of the future. She brings experience in project management to the team, as well as experience in a semi-virtual internship. Beyond engineering, she enjoys singing, writing poetry, traveling, and eating her way around the world.

Looking Forward

The massive move to remote work that has resulted from the worldwide pandemic will undoubtedly affect the future of corporate work. Many employees may want to continue working from home in the post-pandemic world, but many may be anxious to return to a normal routine and work in an office directly with their coworkers. However, in the post-pandemic world, many employees may no longer have the option to return to a traditional office space.

Some companies have already decided that they will maintain remote work after the pandemic, such as Shopify.com. Although these companies may save money by extending the remote work of its employees, this may cause an increase in loneliness and a decrease in productivity and efficiency of the workers. By continuing to mandate remote work, the author of an opinion piece on this topic notes that companies are disrespecting the private spaces of their employees and incurring costs for their employees, such as purchasing desk and office equipment. They may need to move to larger apartments to accommodate remote work, and though they may save money on transportation, they will still likely need to sometimes travel to the office for work. If companies decide to continue with remote work, they may not compensate the employees and force them to incur the new costs, but if they do, the author argues that the company may as well continue in-person work due to the many advantages of working in-person with one's coworkers in a shared office space (Shearmur, 2020).

On a different note, new tools that better enable remote work and digital communication are continuously appearing and being updated. As an example, Skype for Business is being phased out as the newer Microsoft Teams is being phased in by the company. Furthemore, corporate developers are responding to demands to innovate communicative and collaborative technologies. Companies need a means to evaluate these tools before deciding whether or not it is beneficial to switch over to using a new tool (Patel, 2014).

Much research has been conducted on strategies that worked and did not work for moving corporate teams to a remote environment. Paying attention over the next number of years to the results from this research will most likely greatly benefit those who incorporate the results from the work done into their respective teams. Once the panic of the pandemic is over,

thinking strategically about remote work and about whether employees completed work more quickly or more slowly, of a higher or lower quality, or met their goals in reasonable ways will help companies determine the best path forward for themselves in the future.

References

Banjo, S., Yap, L., Murphy, C., & Chan, V. (2020, February 3). The coronavirus outbreak has become the world's largest work-from-home experiment. Time. https://time.com/5776660/coronavirus-work-from-home/

This article provides insight on how companies have responded to the COVID-19 outbreak and how they have coped with working from home. It is useful for our project as it provides insight on how companies have successfully and unsuccessfully adapted to working remotely.

Bowman, L. (2010). O*nline Learning : A User-Friendly Approach for High School and College Students.* R&L Education.

This book outlines many strategies for students and teachers to maximize the usefulness of virtual courses. Each chapter covers a specific element of online learning such as how to stay organized and productive in the virtual classroom environment and how to contribute to discussions in this potentially unfamiliar online setting. This resource is valuable to our project as many of the strategies for effective learning in online classes are applicable to all teams that work in a virtual setting.

Brewer, P. E. (2015). *International Virtual Teams: Engineering Global Communication.* Hoboken, New Jersey: IEEE Press. Retrieved from http://onlinelibrary.wiley.com/book/10.1002/9781118886465

This book discusses best practices for communication among members of virtual teams who are around the world. It specifically explores communication in engineering disciplines. The book also explains how virtual teams are vital to the success of many

organizations and how effective communication is important to this success. The information is valuable for the project since it specifically discusses international teams and can provide insight into the barriers that global teams will face.

Chastain, J., Lau, W., & Lee, E. (2020, May 5). Guide to remote work and team management during-and after-COVID-19. *Architect*, *109*(5), 180–182.

This article, aimed at business managers and leaders, discusses how practices for management and team culture have been altered by the pandemic. For our report, this article actually has valuable information for all three of the main sections. It provides some color on best practices for teams, good communication technology to use, and offers some suggestions on how to overcome challenges from working remotely.

Cordova, A., Keller, K., Menthe, L., & Rhodes, C. A. (2013). *Virtual Collaboration for a Distributed Enterprise.* Santa Monica, CA: RAND. Retrieved from http://www.rand.org/pubs/research_reports/RR153.html

This book expresses the necessity for effective virtual collaboration and how different types of virtual collaboration affect team dynamics. It evaluates the benefits and drawbacks of audio conferencing, video conferencing, chat rooms, discussion boards, email, and shared document editing. It also discusses the challenges that the lack of face-to-face interaction can pose for a team. This source can provide a different angle into virtual communication because it is written specifically for military enterprises.

Dean, M. (2020). Replicating the office online is no easy task: Lockdown presents challenges and opportunities for company culture. *Property Week*, 16, 42.

This article was just written in June of 2020 and discusses many of the potential challenges as well as benefits associated with the shift to work-from-home that the COVID-19 pandemic has brought. In our report, this source is extremely helpful for

section three, where we detail common challenges that virtual teams face and how to overcome those challenges.

Gartner. (2020, April 3). Gartner CFO survey reveals 74% intend to shift some employees to remote work permanently. https://www.gartner.com/en/newsroom/press-releases/2020-04-03-gartner-cfo-surey-reveals-74-percent-of-organizations-to-shift-some-employees-to-remote-work-permanently2

This press release by Gartner provides reports on a survey conducted on CFO's about whether or not they will move previously on-site workforce to permanently remote positions after the pandemic has subsided. It is helpful to our project, as it provides key insight on how remote work will become increasingly relevant in the near future.

Hubbard, M., & Bailey, M. J. (2018). *Mastering Microsoft Teams: End User Guide to Practical Usage, Collaboration, and Governance.* Berkeley, CA: Apress. https://doi.org/10.1007/978-1-4842-3670-3

This book is a handbook for when to use Microsoft Teams. It includes information on how to use the application, how to help a company decide whether to use it, and how to administer its use among employees. This source is useful because it provides valuable information for the sections of our handbook that discuss the choice of platform for digital communication. It can also be used as a guideline for formatting our handbook.

Huggett, C. (2018). *Virtual Training Basics, 2nd Edition.* (2nd Edition). [Place of publication not identified]: Association for Talent Development. Retrieved from https://proxy.library.cornell.edu/sso/skillport?context=135286

This book serves as an extensive guide to virtual training. It provides detailed information about what virtual training is, how to move from traditional to virtual training, and how

to determine if virtual training is a viable solution. In addition to providing information about how to move to a virtual platform, this book is especially valuable as it provides information about how to do it successfully and how to cope with some common issues associated with it.

Jung, I., & Gunawardena, C. N. (2014). *Culture and Online Learning : Global Perspectives and Research.* Stylus Publishing.

This book centers around how culture determines the way an online environment is shaped and used – different cultures have different ways of implementing online learning strategies. The globalization of the world and prevalence of virtual environments from the COVID-19 pandemic make this resource extremely valuable to our report to determine how to effectively handle cross-cultural communication and interaction.

Kurtzberg, T. R. (2014). *Virtual Teams: Mastering Communication and Collaboration in the Digital Age.* Skillport: ABC-Clio.

This book addresses how to create an environment of trust and fairness while working remotely. It addresses why virtual teams are necessary and many common problems and effective solutions common to a digital environment. It includes anecdotes from managers so that readers can learn from their successes and failures. This source is valuable to the project because many of these conflicts can stem from miscommunication, which can stem from misuse of various communication platforms.

Lefferts, R. (2020, April 8). Microsoft shares new threat intelligence, security guidance during global crisis. Microsoft. https://www.microsoft.com/security/blog/2020/04/08/microsoft-shares-new-threat-intelligence-security-guidance-during-global-crisis/

This article is about cybersecurity threats that Microsoft has uncovered recently,

following the COVID-19 outbreak and the mass movement to remote work. It is useful to our project, as it provides insight into a major issue that comes with the nature of remote work.

Patel, F. (2014). *Online Learning : An Educational Development Perspective*. Nova Science Publishers, Inc.

This book advocates for a balanced focus on the use of technology in virtual learning. It sheds light on how technology can add value to learning and actually enhance the experience by providing alternative media to engage its participants. It is valuable to our project, as it provides information on how to properly incorporate technology in a way that it enhances the learning process.

Pickels, Mary. Work from home and avoid distractions -- it's a challenge. (2020, March 18). Tribune-Review (Greensburg, PA).

This article offers some useful statistics on the number of people that are currently working remotely as well as helpful tips for those people on how to remain focused and productive while working from home. This information is valuable to our report as it will definitely factor into how we advise teams working remotely on how to avoid distractions and remain in constant communication with other team members.

Plachy, K. (2020, May 24). Ep #67: How to hold remote team members accountable. https://krisplachy.com/2020/05/25/how-to-hold-remote-team-members-accountable/

This article includes a transcript of a podcast about how managers can hold members of remote teams accountable for their work, especially in the first stages after a transition to remote work. The author writes about how managers can assess their remote teams for effectiveness and the importance of clearly communicating expectations with their

employees. She also mentions the importance of performance indicators to help employees know how they will be evaluated.

Reynolds, B. W. (2019, July 29). 159% increase in remote work since 2005: FlexJobs & Global Workplace Analytics Report. FlexJobs. https://www.flexjobs.com/blog/post/flexjobs-gwa-report-remote-growth/#:~:text=Over%20the%20last%2010%20years,from%203.9%20million%20in%202015

This article reports on a special analysis of U.S. Census and Bureau of Labor Statistics, which provides insightful statistics about remote work in the United States in the last few years. It is helpful to our project, as it provides context about remote work and its increasing relevance today.

Shearmur Professor, R. (2020, June 18). Remote work: Employers are taking over our living spaces and passing on costs. https://theconversation.com/remote-work-employers-are-taking-over-our-living-spaces-and-passing-on-costs-140610?fbclid=IwAR21gxxLO2pl1sbHuQTQMUPI53sgA4ZHiIc23PijmY28pH4ekntMGy74JoA

This article discusses how employers can save money by requiring employees to work from home and passing off expenses to the employees. Workers may be required to move into larger apartments with private working spaces and purchase office equipment. The author mentions that if employees are properly compensated for these expenses, the companies may not save as much money as they originally thought. This article can provide context for our looking forward section.