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The Challenge and Promise of Remote Work

A Brief Study of Remote Work and Best Practices

Leadership Computing Facility

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Executive Summary

This study examines several remote work models in use today and provides recommendations for the management of performance of remote workers, training of managers of remote workers, and building a culture compatible with remote work.

Findings

- Organizations develop remote work models to attract and retain the best employees worldwide. They're also competing locally for talent normally bound by geography.
- Time and focus are perceived to be more valuable in remote work cultures. As such, managing remote work teams requires effective and focused meetings and projects.
- Performance reviews of remote workers are performed much more frequently. Managers interact with remote workers more often, but in shorter bursts.
- Remote workers are not compared to their onsite peers; rather, they are assessed specifically on how well they executed tasks and met objectives.
- Managers resist relying on informal, in-person meetings. Information is spread quickly through multiple technologies to ensure awareness and promote focus.
- Onsite workers sometimes view remote work as a benefit not available to them. Companies work hard to develop cultural norms and managers collaborate to correct these potentially toxic attitudes.

Recommendations

- Determine what remote work model best achieves the goals of the project or team.
- Make performance review part of weekly discussions with remote workers.
- Set and reinforce technology, meeting, and collaboration norms that ensure success.
- Train managers and team leads to keep meetings and projects clear and organized.
- Steward a culture centered on how remote and onsite workers both increase the value of the organization, not a culture of the haves and have nots.

Limitations

The sample population was small for this introductory study. Early readers of this paper recommended another study of all remote work Argonne employees at ANL or within CELS focused on improving virtual team cohesion and individual performance. Also, there could be more research and recommendations on what options are available to onsite workers in hybrid remote/onsite work environments. During the writing of this report Trello published a remote work manifesto that provides an excellent example of a successful remote work culture: (https://info.trello.com/hubfs/Trello-Embrace-Remote-Work-Ultimate-Guide.pdf).

The Challenge and Promise of Remote Work

By Richard Coffey and Laura Wolf

Abstract

Due to the shift in labor market from manufacturing and construction to service-based (Statistics 2016); the commoditization of high-bandwidth communication tools; advancements in management techniques; a dearth of trained knowledge workers within a geographic region; and a growing demand for flexible scheduling options, organizations are embracing and encouraging the growing distributed workforce. These workers are actual employees, not contractors; they may work independently or as part of a team; they have direct organizational supervision; and they work in a variety of virtual arrangements. This informal field study looks at several organizations that support the remote work model from the perspective of individual employees and presents several technologies, tools, and policies that can serve to maintain company culture and otherwise close the gap between onsite and remote workers.

Key Points

- Remote work means separating duties that cannot be done remotely, therefore remote workers cannot be directly compared to on-site workers who have duties that must be performed onsite. This distinction must be carried over into an organization's performance review policy.
  Managers of remote workers may need to employ a more rigorous approach to communication and organization.
- Trust and accountability across the organization are essential for hybrid or pure remote work environments to be successful.
- Remote workers need to interact with their colleagues beyond their normal work-related conversations to help build and reinforce employee relationships.

Methodology

The researcher conducted 30-minute long interviews of 5 professionals who either manage remote workers or who are remote workers. Four of these professionals were in the tech service and one was in personal financial management. Remote workers are defined as full-time employees (not contractors) that telecommute, or work in a hybrid virtual/onsite arrangement. All five interviews were structured around the following five questions:

- What policies do you have to support remote workers?
- How are performance evaluations managed for onsite versus remote work employees?
- What management techniques does your organization use to improve communication?
- How working remotely is viewed by the organization: a benefit or a requirement?
- What tools or technologies do you use to improve the connection and communications between remote and on-site team members?

The interviewees were also asked their opinions about how to foster successful remote work organizations. Following these interviews, the researcher analyzed all the responses for common themes, which were then used to search leadership, technology, and management scholarship.

History

Two major changes in the workplace have spawned the growth of knowledge worker jobs. First, the computerization of business processes such as accounting, human resources (HR), logistics, and point of sale. Second, the need for teams to write software to replace and refine these business processes. Labor used to be collocated and concentrated on the assembly line or in the tall office buildings to reduce the cost of transportation and minimize the distance between work centers. Management was enculturated to efficiently manage labor organized in this fashion.

The Workforce of Today

Firms are embracing alternative working models to reduce labor costs. Very large firms in particular have offices worldwide to ameliorate risk, to take advantage of tax laws, to reduce capital costs, and to attract great talent in a specific location in the world. A modern labor force whose products are mostly accomplished through thinking and writing can be organized and managed much differently.

Certain organizations will likely continue to resist or restrict virtual work arrangements available to their employees, premised on the belief that the best solutions to tough problems come from the interpersonal working dynamics of collocated teams. Some companies adopt a remote working model and later reverse or revise their policies. Yahoo, Reddit, and IBM are examples of companies that once supported remote working models, but later reversed course in an effort to increase performance and improve communication between team members. (Simons 2017) (Swisher 2013) (Quora 2014) (Valdellon 2015)

For the purpose of this study, we are considering four remote working models: 1.) a purely remote working team; 2.) a few individuals working remotely; 3.) separate remote functional teams in different locations; and 4.) multiple individual contributors working remotely for a central manager or team.

A purely remotely working team

This is a team that has no central office and all its members telecommute from home or from a co-working space. The group holds its daily, weekly, and ad-hoc meetings, using video or phone chat sessions. Such teams rely heavily on tools like instant messaging, texting, and group chat applications. Transparency and accessibility of information to all team members is critical to the success of the team. Successful teams often physically meet somewhere on a quarterly or

annual basis. There are also unstructured, open video conferences for “hanging out” time on a weekly basis.

A few individuals working remotely

This is a traditional collocated team with a small fraction of the members working remotely. This is the most common approach in hybrid on-site and remote working environments. Meetings often take place with local participants gathering in the same room and remote attendees calling or videoconferencing in. The remote members work from home or from a co-working space. While instant messaging, texting, and group chat are used, e-mail is often the preferred communication mechanism. These satellite employees are flown in occasionally for face-to-face interaction.

Distributed working teams

Virtual teams are most commonly found in very large organizations. For example, project developers may work in one state, marketing and sales in another, and customer support located overseas. Designated team members or local managers serve as liaisons between these efforts. Meetings are primarily conducted via conference calls. Teams generally don’t chat or message across the functions unless they’re designated to do so. Virtual teams rarely, if ever, meet in person.

Multiple individual contributors

In this model, a manager or small management team manages a team of distributed workers from one central office. All meetings are held using video conference. Rarely, if ever, are all the team members brought together as a whole.

Challenges for Remote Workers

The challenges most frequently cited in the study were affiliation, visibility, and marginalization. Affiliation is the feeling of being part of a group of people working together. Visibility is how the remote worker fits within an organization’s future vision—both what opportunities they perceive for themselves, and how others view them as well—specifically, leaders and project managers. Marginalization refers to the worker’s isolation and potential dissatisfaction with their roles due to the lack of ‘connection’ with their team or organization.

Affiliation

Humans have a basic need for social interaction. Aristotle once said, “Man is by nature a social animal.” Studies have shown that without this interaction, our health and well-being will degrade (Berkman and Syme 1979). In a traditional collocated work environment, there are face-to-face management discussions, in-person team meetings, and unscheduled and random interactions because people are located together which satisfies this need for affiliation. In pure remote work environments, all team members interactions with their co-workers are mediated by technology. The challenge in a purely remote work model is how to provide unstructured time and periodic in-person opportunities for the remote workers to connect. Often, both of

these types of interactions are eclipsed by a perceived greater value in doing what is called *real work*.

Real work is work that is centered on a single person's skill. Data analysis, data transformation, software development, installing hardware, responding to an emergency, writing a paper, painting a fence, and changing the oil on a car are all classified as real work. Meetings, emails, instant messaging, informal conversations, visitor tours, committee assignments, and working out differences with peers, or *ad-hoc work*, are often cited as tasks that keep workers away from real work.

While onsite workers have more of this ad-hoc work, they also have the advantage that this type of work is expected and encouraged. For instance, co-workers can walk together to the cafeteria, grab a cup of coffee, and during that time recover from intense work, resolve conflicts, generate new ideas, and enjoy fundamental human interaction. Remote workers don't have these moments of in-person, face-to-face unstructured time with their peers.

In hybrid environments, remote workers may even feel disconnected from their co-workers because they spend all of their work time in a home office. Because of the value-add of remote work being a cost savings for an organization, remote workers may be blocked (either unintentionally or explicitly) from getting co-working space within the organization that could potentially alleviate their sense of loss in human interaction. For example, one interviewee who worked in computer security was restricted from working in all co-working spaces, as those were considered to be unsecured work spaces.

Visibility

Remote workers may not be offered the same career advancement opportunities and high-profile projects as their colleagues. Onsite project managers tend to strongly favor onsite staff because of their proximity and familiarity. It was also stated several times that if a manager or team lead was not collocated with senior leadership, their chances to rise within the organization was adversely impacted.

Morgan and Symon (Morgan and Symon 2002) discuss how the frequency and quality of interaction between remote worker and manager determines how much the remote worker feels part of the organization. Even if there is greater communication and transparency via computer-mediated communication, the worker perceives visibility when they are strongly connected to their manager. Again, being physically present and able to access your manager directly seems to be highly valued by remote workers.

Visibility issues can also lead to confusion among team members about who's working on what. When gaps in communication occur, onsite team members may not be fully aware of their offsite counterparts' expertise, or whether they are working on a particular problem. If not carefully managed, this dissonance can increase the manager's workload and decrease the performance of team members.

Marginalization

The physical isolation of one or more members of a team can be a major challenge if remote workers are routinely excluded from ad hoc conversations that take place outside of scheduled project meetings. From an organizational standpoint, the marginalization of certain team members can have a slow, insipid effect on the team as a whole.

Several people said that remote workers are not kept in the loop; meetings with remote workers are hampered by not being in the room; and incidental and unstructured conversations are missed. If some members of the team are always left out of impromptu conversations then the team grows accustomed to the remote members not being around.

Another aspect of marginalization is the potential for developing a haves and have-nots attitude within an organization. One interviewee cited an example where remote workers were viewed as being afforded more flexibility in how they accomplished their tasks, which occasionally caused tension between groups.

If an organization does not have a strong culture of holistic hiring, trust between teams, and use of electronic communication first, this tension can slowly degrade trust and commitment among its employees.

Management Challenges

The complexities of managing both remote and onsite employees with the same job classifications means that the line manager must deliberately supplement communication and connect team members. If all staff are co-located, it's easy for traditionally trained managers to connect people in an ad-hoc fashion to react tactically to an issue. In a hybrid environment, a manager may need to connect the onsite staff physically and then make sure they take time to connect with remote staff via chat, phone, or video. In meetings, managers who have remotely located staff dialing in need to eliminate side chatter so that the remote participant can hear. This can cause friction between the team and the manager. All of these issues increase the amount of time it takes to manage.

Equity can also be challenging. For instance, if managers have onsite staff that do more *ad-hoc work* than remote members (who do more *real work*), this can create a perception of inequity. Also, remote workers encounter miscommunications and interpersonal challenges as much as their onsite peers. Jealousy and miscommunication combined can have a negative effect on the performance of an organization.

The literature supports the notion that remote work management is challenging. Hertel et al (Hertel, Konradt and Orlikowski 2007) states that direct control over work is very difficult which requires managers to adopt delegative management principles. This means that remote team members are expected to fulfill these delegated management functions. However, the team

member must see this task or duty as aligning with the team's goals. Also, delegative management requires managers to provide timely and regular feedback both to individuals and teams. In survey done by Horwitz et al, they found that the highest cited factor for success in a virtual project is "to have a clear definition of objectives, roles and responsibilities (Horwitz, Bravington and Silvis 2006)."

Moving from in-person to technology mediated communications introduces further potential for miscommunication. It is critical in a successful remote work environment that managers and workers build trust and have norms about asynchronous communication (email/IM). Likoebe Maruping and Ritu Agarwal, researchers in collaborative teams, found that "individuals who are members of virtual teams that are in the early stages of development may be subject to misinterpreting constructive criticism as disparaging (Maruping and Agarwal 2004)." This may mean setting norms on how we confirm communications between peers and managers.

Morgan and Symon (Morgan and Symon 2002) provide several examples where managers and leaders of an organization failed to listen to their employees and failed to cultivate direct communications with their remote workers. Staples (Staples 2001) tied job stress to trust in remote workers. Low trust, lack of cohesion, and an increase in alienation will negatively impacted remote workers' performance. Again, the role of the manager overseeing remote workers is to coach the worker on how to take on delegated tasks because control is not direct (Hertel, Konradt and Orlikowski 2007).

Finally, not all staff members are suited for working remotely, and in cases of low-performing remote team members, HR issues must be handled swiftly; the overhead for a manager to correct behavior over a long period is too high.

Conducting Performance Reviews

All of the subjects reported that remote workers and on-site workers were subject to similar quarterly or annual performance reviews. However, all of the remote workers interviewed said the most useful feedback they received came not from these reviews but during the regularly scheduled meetings with their group lead or manager. This was either a formal, weekly review agenda item or an informal touch on performance.

The literature supports the need for coaching more often. Boris Ewenstein, of McKinsey & Company, says that frequent performance coaching will inspire and motivate individuals (Ewenstein, Hancock and Komm 2016). Training managers to provide short, data-driven, discussions to shape future performance instead of dwelling on past performance is key.

General Recommendations

Everyone Uses Telecollaborative Tool for Meetings

All meeting participants should use the same mode of communication – be it telephone, video conferencing, or screen sharing – even if that means the local team attend from their offices. Hambley et al. found that team cohesion is greater when using video teleconferencing versus voice, chat, or e-mail (Hambley, O'Neill and Kline 2006). Technologies used included phone bridges, BlueJeans videoconferencing, ScreenHero (https://screenhero.com), Slack, Zoom (https://zoom.us), Hip Chat (https://hipchat.com) and Skype.

Conduct Prepared and Focused Meetings

Meetings that adhere to well-thought out agendas can be short and effective. When there is a strong culture of effective meetings, all members in the meetings are more prepared and leaders of the meetings provide structured, thoughtful agendas. Team members tend to spend far less time on tangential topics and discussions. The interviewees said that high-performance organizations have meetings that are more frequent and much shorter.

Manage for Equity, not Equality

In order for the organization to be successful, the teams must be built with the best candidates managers can hire. Remote and onsite workers often have different duties in order for the organization to achieve success. Develop separate job descriptions for remote workers that describe how and why the job can be performed remotely and how job performance is assessed. Manage toxic behavior like entitlement and jealousy by focusing performance discussions on the value individual performance as well as team cohesion.

Recommendations for promoting a Remote Work Culture at Argonne

Overall, the Argonne Leadership Computing Facility (ALCF) and the Computing, Environment and Life Sciences (CELS) directorate has embraced some aspects of remote work culture. There are technical leads in these organizations who remotely manage a team of developers. There are individual contributors located throughout the country and, in some cases, throughout the world. Here are three recommendations to increase the likelihood of building a successful work culture that includes remote workers and teams.

Establish a Purely Remote Working Team

Of the four types of remote work environments considered in this paper, CELS primarily engages in two of the four: one or two remote workers as part of a larger team and multiple individuals throughout the country working as part of a team. For strategic reasons, CELS may want to consider starting a purely remote team. The advantage of this would be the ability to hire and retain talent from a wider pool of applicants. Those employees could choose where they live and provide value to CELS. If managed well, this could also lower operating costs for the team. For this to be successful, culture and training are key.

Hold Weekly One-on-Ones and Include Performance Discussions

Every person interviewed emphasized the need and importance of holding weekly one-on-one meetings with their manager. Without these frequent check-ins, remote workers quickly feel disconnected. Management researchers Cascio and Shurygailo found that one-on-ones should be structured according to an agenda to be effective (Cascio and Shurygailo 2003). Such meetings may be the only chance all week to raise and discuss issues, and head off potential problems. These one-on-ones also provide a richer environment for weekly or bi-monthly performance reviews.

Invest in Training and Coaching Managers

Provide additional training and coaching to team leads for managing remote workers, specifically, how to set and maintain norms on communication, how to conduct more effective meetings, conduct performance appraisals, and enforce a culture of transparency and trust. The role of the manager overseeing remote workers is to coach the worker on how to take on delegated tasks because control is not direct (Hertel, Konradt and Orlikowski 2007).

Managers will also need to identify potential team morale issues, such as feelings of being undervalued or overlooked by the organization (see Challenges to Workers). Management of such perceptions begins with the workplace culture and employment agreements. Even if the option to work remotely is part of the larger culture, the decision is ultimately up to the employee's manager or team lead.

Stewarding a Remote Work and Onsite Hybrid Organization

Remote work is a necessary extension of the organization in order to achieve the goals, not a benefit to be doled out for some and not for others. If another employee wishes to work remotely, there should be a widely adopted understanding that the decision is made on a case-by-case basis and ultimately up to the employee's manager or team lead. Miscommunications and arguments are natural in the in the work environment. Managers should seek to establish norms that help each employee understand the context of his or her teammates and work out interpersonal issues, regardless of where they are located.

Conclusion

The promise of extending high-performance organizations by investing in virtual teams of remote workers is bright. Today's array of social and data sharing technologies makes it easy to share data. However, management is even more critical in these environments. Crafting concise, clear goals and expectations and using many technologies to transmit them is key. Coaching more often and in shorter bursts gives remote workers the feedback they need to stay on course. Remote workers also are social creatures and management needs to ensure they are heard, can work out interpersonal issues, and feel part of the larger organization to ensure success.

Bibliography

Berkman, Lisa F., and S. Leonard Syme. 1979. "SOCIAL NETWORKS, HOST RESISTANCE, AND MORTALITY: A NINE-YEAR FOLLOW-UP STUDY OF ALAMEDA COUNTY RESIDENTS." *Social networks, host resistance, and mortality: a nine-year follow-up study of Alameda County residents* (American Journal of Epidemiology) 109 (2): 186-204.

Cascio, Wayne F., and Stan Shurygailo. 2003. "E-Leadership and Virtual Teams." *Organizational Dynamics* (Elsevier Science Inc.) 31 (4): 362-376.

Ewenstein, Boris, Bryan Hancock, and Asmus Komm. 2016. "McKinsey Quarterly 2016 Number 2: Overview and full issue." *McKinsey and Company.* May. Accessed August 27, 2018. https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/mckinsey-quarterly-2016-number-2-overview-and-full-issue.

Hambley, Laura A., Thomas A. O'Neill, and Theresa J.B. Kline. 2006. "Virtual team leadership: The effects of leadership style and communication medium on team interaction styles and outcomes." *Organizational Behavior and Human Decision Processes* (ScienceDirect) 103 (1): 1-20.

Hertel, Guido, Udo Konradt, and Borris Orlikowski. 2007. "Managing distance by interdependence: Goal setting, task interdependence, and team-based rewards in virtual teams." *European Journal of Work and Organizational Psychology* (Taylor and Francis) 13 (1): 1-28.

Horwitz, Frank M., Desmond Bravington, and Ulrik Silvis. 2006. "The promise of virtual teams: identifying key factors in effectiveness and failure." (Journal of European Industrial Training) 30 (6): 472-494.

Maruping, Likoebe M., and Ritu Agarwal. 2004. "Managing Team Interpersonal Processes Through Technology: A Task–Technology Fit Perspective." *Journal of Applied Psychology* (American Psychological Association) 89 (6): 975-990.

Morgan, Stephanie J., and Gillian Symon. 2002. "Computer-Mediated Communication and Remote Management Integration or Isolation?" *Social Science Computer Review* (Sage Journals) 20 (3): 302-311.

Quora. 2014. *Is Reddit closing their NYC and Salt Lake City offices? They have asked all remote workers to decide by the end of 2014 if they want to move to San Francisco or leave the company.* October 2. https://www.quora.com/Is-Reddit-closing-their-NYC-and-Salt-Lake-City-offices-They-have-asked-all-remote-workers-to-decide-by-the-end-of-2014-if-they-want-to-move-to-San-Francisco-or-leave-the-company?share=1.

Simons, John. 2017. *IBM, a Pioneer of Remote Work, Calls Workers Back to the Office.* Wall Street Journal. May 18. https://www.wsj.com/articles/ibm-a-pioneer-of-remote-work-calls-workers-back-to-the-office-1495108802.

Staples, D. Sandy. 2001. "A study of remote workers and their differences from non-remote workers." *Journal of End User Computing* (Proquest) 3 (12): 3-14.

Statistics, Bureau of Labor. 2016. *Current Employment Statistics survey: 100 years of employment, hours, and earnings.* August. https://www.bls.gov/opub/mlr/2016/article/current-employment-statistics-survey-100-years-of-employment-hours-and-earnings.htm.

Swisher, Kara. 2013. *"Physically Together": Here's the Internal Yahoo No-Work-From-Home Memo for Remote Workers and Maybe More.* Wall Street Journal. February 22. http://allthingsd.com/20130222/physically-together-heres-the-internal-yahoo-no-work-from-home-memo-which-extends-beyond-remote-workers/.

Valdellon, Lionel. 2015. *Remote Work: Why Reddit and Yahoo! Banned It.* Wrike. February 10. https://www.wrike.com/blog/remote-work-reddit-yahoo-banned/.

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