

Chapter 19

Distributed Work Environments: The Impact of Technology in the Workplace

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ABSTRACT

Technology is making the traditional workplace obsolete. Companies are taking advantage of the myriads of digital resources available to make their processes leaner, cut costs and have a larger presence in the global market through the concept of distributed work environment. In this chapter, the author provides an overview of the distributed work environment, as well as the impact it has on the human condition in the workplace. Although this technology driven work concept can be beneficial, companies have to ensure that it is the right business model for them and their employees. The author looks at different factors that companies need to consider in deciding to adopt a distributed work environment model. Several companies, over 125 of them, have successfully implemented the concept and the author shares some examples on how they were able to achieve success and employee satisfaction.

INTRODUCTION

Technology has had a significant impact on how humans live their lives from entertainment, medicine, education, to family life, dating, and social media. Technology has taking center stage in our lives and have allowed us to achieve things that we would not think possible a decade ago. We are sharing and consuming information at lighting speeding due to the availability and capabilities of technology. Technology has allowed for the development of robotic surgery to enhance the preciseness and accuracy of surgery as well as recovery time for patients. The popularity of online learning has increased tremendously as technology has become readily available for students to learn anywhere and at any time. We have self-driving cars on our roads and we can conduct videos chat sessions with anyone around the world by simply using our cellular devices. In other words, we live in a digital and technologically advanced age and almost everything around us is connected by technology, including organizations and their employees.

As Roper and Kim (2007) stated:

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A clear revolution is underway in when, where and how work is accomplished. The workplace of the future will be more physically distributed due to a variety of reasons, such as the high cost of land and buildings in urban areas, air pollution resulting from mass commuting, and changes in the nature of work (p. 103).

In the past two decades the landscape of our workforce has changed dramatically from traditional brick and mortar buildings to distributed work environments because of the advancement of technology. From having all employees in a physical building to having employees spread all over the world in an array of physical locations. By definition, a distributed work environment is an organization structure where "... the vast majority of employees work from wherever they are comfortable and productive. Perhaps most importantly, communication and culture are moved outside the boundaries of a physical location so that everyone is able to be included wherever they live" (Robins, 2014, p. 3). A more technical definition explains the distributed work environment as "... an environment in which a plurality of mobile workers using portable computing devices can gain access to a network via network access stations installed within the work environment" (Cole et al., 2002, p. 1). Both definitions reiterate the idea that traditional company headquarters are gradually changing from one main location to wherever an employee wants it to be.

As we begin to understand the concept of what a distributed work environment is, it is important to also understand what it is not. According to Jeff Robbins (2014), from Lullabot, a strategy, design and development company that has embraced and implemented a distributed work environment for his company, a distributed work environment is not:

- ... *One with a prominent central office where the majority of people work most of the time* (Robins, 2014, p. 4)
- *A corporation with multiple locations* (Robins, 2014, p. 4)
- *A company where people are often allowed to work from home* (Robins, 2014, p. 4)
- *A company that takes advantage of outsourcing, freelancers, or subcontractors* (Robins, 2014, p. 4)
- *A co-working space where people freelance on similar projects* (Robins, 2014, p. 4)
- *A single freelancer* (Robins, 2014, p. 4)
- *A department within a large company where most people work from home (for instance, the customer service branch of an airline) – though this may qualify as a distributed team* (Robins, 2014, p. 4)

Robbins (2014) goes on to say that it is also important to understand the difference between a distributed work environment and remote employees. In his words:

...the truth is that in-person communication and activities will always trump virtual/tele/digital communications. After all, humans have been communicating in-person since the beginning of time. It is our default setting. So a company with remote employees begins with the deck stacked against them. It's not an even playing field. It's really going to be a challenge to make remote employees feel like they're part of the team. Resentment and imbalance can build up between those who "get to stay at home" and those who "get to have lunch with the boss every day"(p. 4).

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Differentiating between remote employees and a distributed work environment is important, because by confusing them or making them synonymous, the above sentiments begin to be shared by several other companies that are thinking about implementing a distributed work environment. The fear that employees will be disengaged if they are removed from the physical office is real, and it preventing organizations to take the leap forward and try this new concept. However, Robbins (2014) describes what a true distributed work environment is below by saying:

A distributed company doesn't have these problems. Most of its communications happen online and are available for everyone in the company to participate. Whether these are phone conferences, email threads, or message-board and issue-queue posts, it's very easy to be inclusive despite geographical separation (p. 4).

Today's technological advancements are making the traditional brick and mortar headquarters slowly obsolete. Employers are realizing that they have the ability to have a larger top talent pool by having opportunities and presence around the world instead of the country. Josh Kramer (2011), CEO of Full-Stack, a software development company, describes the traditional work environment as a handicap where companies are "Geographically Challenged:"

Your company has probably been operating under a handicap for its whole existence. It's a handicap that has been so common that the vast majority don't even see it as such. The handicap is this: most companies are limited in their ability to find and hire the right people by a fixed geographic radius set up around their central office. We will call these type of companies "Geographically Challenged". Your geographically challenged company may have attempted to overcome this handicap by opening branch offices in multiple cities or paying for a new employee's relocation or maybe even introducing flextime into the mix. Though these steps help the situation, you are only slightly mitigating the root problem (p. 1).

We live a society where we are constantly connected and the cost of staying connected is decreasing everyday due to emerging competitors in the industry. Technology has made it possible for employers and employees to connect with their colleagues across the world in real time to collaborate on projects and expand their business. Employers are catching on to the idea that in order for their employees to perform at their high potential, they need to provide a technological experience in the workplace equivalent to the technological experience that employees have at home. One could further argue that employees have better technology at home than they have in the office, so distributed work environments make sense because employers can take advantage of these advanced technologies by paying for them and decreasing their overhead costs. This sounds like a win-win situation: employees can work wherever they want and be more productive than they would be at the office; and employers are reducing overhead costs and making profits due to the increased level of productivity of the employees and the reduced operating costs. Of course, there are no perfect systems, so this chapter will explore some of the benefits and downfalls of this logic later in the chapter.

THE CONCEPT OF DISTRIBUTED WORK ENVIRONMENT

An Overview

The economy is changing, so it only makes sense that organizations would be looking at strategies to improve and streamline their processes and services to reduce their operating costs and maintain or gain competitive edge. This change is mainly because of the rise and refinement of technology where information is being shared at an unprecedented speed and industries that were once human driven, are now technology driven. Once example of that is the newspaper industry. Long gone are the days of having a paper boy (or girl) ride on a bicycle to deliver newspapers; news is readily available the minute we open our eyes in the morning, on our cellphones, tablets and computers. Due to this technology boom, the nature of running a business has to change in order to keep up with all of these changes. One option many organizations are looking into or implementing is the concept of distributed work environment. Such a work environment is attractive to companies because it yields many benefits such as the rapid growth of affordable telecommunication technology, a decrease in overhead costs, as well as linkage to improved employee retention, more efficient use of office space, improve productivity and greater staffing flexibility (Holman, 2003).

As companies look to examine the landscape of the workforce, more and more they are looking closely at the distributed work environment concept as a way to preserve their existence and sustainability through the use of technology. In a book titled, *The Distributed Workplace: Sustainable Work Environments* (Harrison, Wheeler, & Whitehead, 2004), the authors expressed the concern that most companies have had on their minds in the past decade:

The relationship between sustainability and the build environment has always been a tortuous one: close but not warm. They're an uneasy pair Sustainability with its sometimes conflicting imperatives: ethical, practical, physical, economical. The built environment—a work of will masquerading as a force of nature. Perhaps as clash of fact and value. But at least, in certain key aspects, fixed. No longer (p. 1).

The above phenomenon is faced by companies around the globe and they have to strategically think about how they will tackle this issue as a competitive edge is harder and harder to get due to the changing market and workforce. Harrison et al. (2004) continue on the matter of sustainability by adding:

...Sustainability, once a simple matter for better resource use—difficult but achievable—now claims its rightful place at the shifting centre of all the issues raised by globalization. And the built environment—particularly the work environment- loses its monolithic status to stand revealed as a mercurial participant in the new economy. It is evident that the workplace is evolving in a distributed form to deal with these changed circumstances. It is equally evident that the fluidity of the distributed workplace will set society some urgent problems—not least in the field of sustainability (p. 1).

The authors described the issue that is in most CEO and executive teams' minds and narrows it down to sustainability. Staying relevant in this ever changing economy means that companies have to understand the true meaning of sustainability as it pertains to the barriers that have been broken down by the advancement of technology. Companies have to actively seek out strategies and solutions that

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will work for their organizations and employees while being financially responsible. As the authors of *The Distributed Workplace: Sustainable Work Environments* (2004) explain:

Sustainability needs to be seen as a dynamic process, not a fixed and attainable state. It is rather like the mathematical concept of a limit—an end point that does not exist as such, and cannot be reached, but represents the hypothetical end point of a tendency (p. 3).

Companies are constantly looking for ways to improve their practices on all aspect of the business: human and operational. Trying to stay ahead of the curve to maintain their competitive edge is a difficult task. As technological advancements continue to happen, and employee needs continue to evolve companies need to respond accordingly or it will cost them in the long run. Many organizations are either taking steps or making provisions to enter the distributed work environment community, or they are thinking about it as a strategic move for them to meet the needs of their talent pool and to ensure their survival. They understand that they are operating in a digital and knowledge age, and the “business as usual” concepts are no longer valid. Organizations need to keep up with the changing work patterns, which can be difficult, and at times, almost impossible to do. In a research paper titled *Successful Distributed Work Arrangements: a Developmental Approach* (2007), the authors explained that, given these economical and workforce circumstances, implementing a distributed work framework can look attractive to organizations, especially large organizations, because of the potential financial benefits; however they need to be sure that it is the right move for their organizations (Roper & Kim, 2007). As executive teams are turning toward distributed work environments, experts suggest that there are four factors surrounding this concepts that companies need to examine to make an informed decision: the organization, the employee, the work, and the support system that is needed to sustain such an environment (Roper & Kim, 2007).

First off, companies have to align their goals, objectives and culture as a whole to determine if a distributed work environment would work for them. They need to ensure that all three of these components are in sync and will not create any disadvantages for all or some of their employees, as well as the organization. In addition, they have to look at their current financial structure to ensure that they have the funds or can strategically locate funds to finance this major change in infrastructure. Further, they have to spend time determining if this change will positively or negatively impact their processes and productivity (Roper & Kim, 2007). Next, they have to examine the work that their companies perform to determine how conducive such an environment would be for that work. Distributed work environments work best with work that requires minimal interaction, such as programming, graphic design copy-writing, etc. (Roper & Kim, 2007). These types of work require only periodic interaction with team members and clients, as opposed to positions that need frequent interactions with others to complete their work: managers, and customer service representatives, as examples. Having a clear understanding of the work that is produced in the organization will guide an educated decision. Lastly, they have to examine how the work is completed. Roper and Kim (2007) referred to the concept of sequential and mutual work processes. Sequential work processes refer to “...process that reflect a one-way work flow and do not need frequent information exchange among workers to accomplish tasks” (Roper & Kim, 2007, p. 106). Mutual work processes refer to a “...work process that has a complex work flow and needs frequent and fast information exchange, frequent coordination and team-work” (Roper & Kim, 2007, p. 106). Understanding these type of processes support the decision making process as organizations can determine whether they can fully, partially or not venture out in the distributed work environment depending on if

it makes sound business sense to them. Although technology advances allow for both processes to occur virtually, being comfortable that it will give the organization a competitive advantage is key.

Organizations need to also review the types of employees who are part of their organizations. Although technology can connect us in ways that we could not imagine, employees who need constant interactions with others whether because of the nature of their work, or need assistance in completing their work may not be the best candidates for distributed work environments. If the majority of the organization's employees fit in that category, then this concept may be detrimental to the company instead of helpful. Organizations with self-directed, self-motivated and disciplined employees who hold positions that do not require a high level of interaction would be ideal for the distributed work environment as they would be able to self-manage and thrive. Organizations have to be comfortable with the fact that not all employees are cut out for a distributed work environment. As Roper and Kim (2007) explain that organizations need to look for two attributes when analyzing if their employee base would be a good fit for a distributed work environment.

The two attributes to consider, according to Roper & Kim (2007), are the employees' work setting preferences and their ability to work in a distributed work style. Some employees would welcome the idea of work schedule flexibility, which in turn would allow them to take care of family obligations; on the other hand, there are workers who prefer the consistency of coming to and leaving work at a specific time and working in a specific office location (Roper & Kim, 2007). Organizations also need to look if the employees can effectively handle the level of flexibility and self-directedness that comes with a distributed work environment. Roper and Kim (2007) explained that:

Some workers need a high degree of face-to-face interaction and direct communication to effectively undertake their work, whereas other professional and knowledge workers usually a high degree of choices available to when, where, and how their work is undertaken. The former type of worker might need a permanent work location and the latter type of worker would be better for DWA [distributed work arrangements] (Roper & Kim, 2007, p. 107).

Further, organizations need to assess the level of employee engagement and motivation to determine if a distributed work environment would be beneficial to the employees and the company. Because of the rise of the distributed workplace, companies have had to deal with a concept called cyberslacking (O'Neil, Hambley & Chatellier, 2014). Cyberslacking refers to "...a phenomenon in which employees are distracted by non-work Internet browsing when they should be accomplishing work tasks" (O'Neill, Hambley, & Bercovich, 2014). This is an issue that has been present in the office environment and has transferred over to a larger scale into the distributed work environment due to the flexibility and autonomy provided to employees. This can be caused by the idea that the employees feel less engaged by virtue of being removed from a physical office location (O'Neill, Hambley, Greidanus, MacDonnell, & Kline, 2009). O'Neil et al. (2014) went on to explain that:

...we treat both cyberslacking and engagement as indicators of distributed work effectiveness, given that these are top-of-mind issues for employees and their managers in distributed contexts. Moreover, this suggests that advancing knowledge of the antecedents of distributed work effectiveness could be valuable for theory building and practical application (2014, p. 152).

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As a result, employers need to assess employee personalities to determine if they would thrive or fail in a distributed work environment. The trait activation theory (Tett & Burnett 2003) suggests that employee effectiveness and performance level are high when there is a strong fit between the employee and the job duties that he needs to complete. O'Neil et al. (2014) furthers this concept by stating “specifically, person-job fit theory posits that employee attributes need to match the job environment to create high effectiveness levels, and distributed work may contain unique conditions that affect personality-job fit levels.” This suggest that employers need to pay close attention to these traits to either conduct organizational restructuring to place employees in the right fit before moving them into a distributed work environment, or be selective about who participates in a distributed work environment versus who stays in a physical office. The most extreme case, if an employer wants to go 100% in the distributed work space, would be to let go of the employees who are not a great fit and hire new employees to fill the gaps.

Finally, organizations have to ensure that they have the necessary technology and other resources that will support the distributed work environment infrastructure. They have to make sure that workers can easily gain access to equipment and resources to be able to complete their work. The access to important data requires resources such as laptops, internet connectivity, wireless phones, satellite, cable, etc. which are all directly connected to technology (Roper & Kim, 2007). Without the necessary equipment and resources, distributed employees will not be able to perform their work which may be construed as them not doing what they are supposed to be doing, instead of the fact they cannot actually do their work because they do not have the needed tools. Organizations have to take a serious look at their technological infrastructure and assess their capabilities to determine if, in fact, they have the necessary platform to support a distributed work environment.

DISTRIBUTED WORK ENVIRONMENT IMPACT ON THE HUMAN CONDITION

Influencing Factors on the Human Condition

Employment in general has positive and negative impacts on the human condition. On the positive side, it allows employees to earn a living, care for their families, and save for retirement. In contrast, there are instances where employment has interfered with family life, caused undue stress and sickness, and fostered unhealthy environments filled with conflict and lack of trust. Distributed work environments comes with positive and negative impacts as well, some similar to the above listed, but manifested in different ways.

Distributed work environments provide employees with many potential benefits such as: “more flexible working hours, more time for home and family, reduced commuting, greater job autonomy, less disturbance whilst working, and the chance to remain in work despite moving home, becoming ill or taking family care roles” (Holman, 2003). As well, this type of work environment also brings societal benefit which include increases entrepreneurial activities, less pollution, increased community stability, and more efficient use of energy resources (Cascio, 2000).

In contrast, there are some negatives impacts that may emerge in a distributed work environment such as fewer chances for development and promotion, increased conflict between work and home; and social isolation (Holman, 2003.) However, to truly understand the impact of a distributed work environment on the human condition, there are social and individual factors that need consideration. Social factors that may determine the feasibility, success or failure of employees in this type of work environment include:

the socialization of distributed workers, communication between distributed workers and traditional office workers, decision making and communication within virtual teams (Holman, 2003). In regards to individual factors, some determinants of feasibility, success or failure of employees include the connection between personality, competencies and the distributed work environment, employee motivation and the psychological contract in which they enter, the connection of job characteristics and the well-being of employees, and the home and work interface (Holman, 2003).

Social Factor 1: Socialization of Distributed Workers

Employees need to be able to socialize with their colleagues and managers in order to build rapport and trust, which in turn fosters highly effective and cohesive teams and a healthy work environment. Distributed workers need this socialization even though they are not physically present in a physical traditional office. These employees do not have the natural opportunities to interact with other employees as they would if they were in the office on a regular basis, which then affects their immersion in the organizational culture. Of course if the organization starts off on a distributed work environment platform, this problem is lessened as no organizational culture has been created with the walls of an office, but they still need to address this issue. This socialization issue may impact distributed workers differently depending on their level of intra-organizational contact within the organizations. Employees with high intra-organizational contact will have an easier time socializing virtually with other virtual employees or their office counterparts, and employees with low intra-organizational contact will have a harder time dealing with this issue. As Holman (2003) expresses:

...teleworkers with high intra-organizational contact, or who regularly use real-time communication media (e.g. telephone, [instant messaging]) are more likely to be socialized through natural processes. In contrast teleworkers with low intra-organizational contact and that use non-real time telecommunications (e.g. E-mail), are less likely to be socialized through natural means (2003, p. 205).

Therefore, especially for the workers with low intra-organizational contact, organizations who engage in distributed work environments must intervene and ensure that they are putting in place socialization mechanisms, using technology, of which distributed workers can take advantage to stay connected and feel part of the organization. Interventions such as regular virtual weekly meetings, minimum office presence requirements, social programs participation and off-site social events are all good strategies to use and tackle this issue (Holman, 2003) are all good strategies to use to tackle this issue. Such interventions prevent employees, especially the ones with low intra-organizational contact, from feeling isolated from the rest of the organization and begin to be disengaged and de-motivated, which then will lead to larger issues.

Social Factor 2: Communication Between Distributed Workers and Traditional Office Workers

Effective formal and informal communication is key to the success of an organization. It is often difficult to ensure that all lines of communication in an organization are being utilized effectively, and it can be even harder within a distributed work environment where workers are spread across the country and around the globe. The types of communication that occur between employees and managers within

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one physical office naturally are going to be different from the types of communication that occur with distributed workers. As well, group communication will be higher in the office than in the distributed work environment.

However, organizations have to mimic the office type communications as much as possible for the distributed workers in order to keep them informed and engaged in a timely manner. Using technology, they need to recreate the office communication experience for the distributed workers so that the lines of communication stay open and the distributed employees feel part of the team no matter how far away they are. Technologies such as instant messaging, voice-over IP phones, online meeting platforms, are just a few ways to mitigate this issue. Obtaining these technologies is the first step, but organizations have to ensure that the implementation and communication on the use of these technologies are thorough so that employees understand what, why and how to use them. Such communication integration will help both the employees with high and low intra-organizational contact within the company. Another aspect of communication integration, if these all of these technologies are not accessible, is to be comfortable with a lower level of communication among office workers and distributed workers, and most importantly ensure that employees being assigned to distributed work are comfortable with that level of communication and that it will not hinder their job satisfaction, productivity and quality of work. Holman (2003) summarizes this idea by saying:

Whilst teleworkers with lower intra-organizational communication requirements to perform their work tasks may experience fewer problems with task-related communication ... communication can have an important function beyond direct facilitation of work. Therefore, it is important to be sure that managers and co-workers are happy with low levels of intra-organizational communication, a separate “cyber-space” subculture based on mutual support and information sharing may be beneficial to teleworkers (2003, p. 206).

Communication can have a large impact, positive or negative, on distributed workers' engagement and motivation; therefore, it behooves organizations to invest time and technological resources into ensuring that communication is not a barrier for their employees.

Social Factor 3: Decision Making and Communication within Virtual Teams

Decision making is a normal part of the work environment and team members often need to communicate in order to ensure that everyone is on the same page to make decisions on how to approach and complete projects. Although distributed workers are virtually located, they are not exempt from team decision making. In fact, it is crucial that these employees stay in communication with their team members and are included in the decision making process so that they can effectively make their contributions to the projects. Often distributed workers report that the quality of the information that received, related to performance feedback, organizational politics and organizational strategy is reduced (Holman, 2003). This is often due to the subpar quality of the technology infrastructure of the organizations. They are not taking into account the impact of technology, or the lack thereof, can have on the productivity and motivation of employees when it begins to interfere with their work.

As a result, organizations are encouraged to create channels where the virtual employees can participate in the decision making process. Research has shown that opportunities to take part in decisions have decreased for distributed workers due to the remote access of their job, unless they are in high

“extra-organizational” positions where they are in constant contact with their office counterparts and/or clients (Holman, 2003). Therefore, companies have to find viable solutions to include these workers in making decisions. Some examples of channels could be attending meetings at the office, online meeting tools with video capabilities, etc. However the organizations choose to address this issue up to them; but the bottom line is to continue to foster a psychologically healthy work environments, employees need to feel vested in the organization through the decision making process.

Individual Factor 1: Connection between Personality, Competencies and Distributed Work Environment

Not all employees are suited to be distributed workers. Some employees thrive in the traditional office environment, but may not thrive as much in a distributed work environment. The same goes for some people whose performance will increase if they have an opportunity to participate in a distributed work environment, assuming that they have the proper technological resources to effectively complete their work and communicate with their virtual colleagues. One way to determine if an employee would be best suited for the office or a distributed work environment is to analyze employee personalities through the five basic dimensions, also referred to as the “Big Five” (Holman, 2003). These dimensions include extraversion, emotional stability, agreeableness, conscientiousness, and openness to experience (Holman, 2003). Evaluating employees using these dimensions can shed light and give a fairly accurate indication on whether or not they will do well in a distributed environment. If some employees score low on these dimensions, it may be an indication that they would do better in an office environment because they will have the needed interactions to help them develop these dimensions over time. On the other hand, employees who score high on these dimensions may be well-suited, and probably would even perform at a higher level because of their self-directedness and motivation level.

According to Holman (2003), personality plays a big role in making the determination of who would be best suited for distributed work especially in the case of manager feedback. In the distributed work environment manager feedback is either minimal or non-existent. Therefore, if employees require regular feedback to validate their performance, then it is best that they remain in an office environment because they will have direct contact with the manager. Holman (2003) goes further to make the point that:

... the characteristics associated with conscientiousness, such as persistence, care, capacity for hard work, and being responsible have been shown to influence the accomplishment of tasks. We would also expect that people who work with high levels of intra and/or extra-organizational communication are likely to be successful if they are higher on extraversion, agreeableness, and openness to experience (2003, p. 207).

In addition, personality plays a role in the way employees acquire knowledge. In terms of the employees’ preferred learning medium, personality can be an indicator of potential success or failure in a distributed work environment. Some employees are not comfortable with using technology to complete their work or to learn new concepts. These employees who are more comfortable and learn better in a classroom environment and would be better suited for the office environment where they can attend training sessions being offered through the organization’s training department or attend other outside face-to-face trainings. Their learning preference does not necessarily fit into a distributed work environment platform, as, due to the various locations, distributed workers usually attend online training and

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courses to further their knowledge. They require minimal supervision and are self-directed to complete the course or training at their own pace, and they are comfortable with using technology as an avenue through which their learning opportunities are administered. Consequently, having high levels of extraversion, openness to experience and conscientiousness would be important to have because they relate to how well people perform in training programs (Holman 2003). Research has indicated that intelligence is directly and positively related to work performance, which furthers the idea of learning preferences and also be an indicator of how well employees will perform as distributed workers in terms of success in training programs, knowledge retention and application (Holman 2003).

Finally, personality also affects how individuals interact in teams. Employees in distributed work environments still need to have and practice the traditional teamwork skills such as collaboration, effective communication, performance orientation and goal clarity (Holman, 2003). However, they have to find new ways to perform these skills since they no longer have the office environment where a meeting can be called at any given time and all team members gather in a room to discuss a project. Given this fact, researchers have established the below list of personality competencies that employees should possess in order to be effective distributed team members. The competencies have been grouped into four major categories (Holman, 2003, p. 208):

1. Personal competencies, such as self-discipline, self-direction, self-motivation, capacity for self-assessment, tough-mindedness, tenacity, personal integrity and self-confidence
2. Inter-personal competencies, such as strong verbal and written communication skills, negotiation skills, trusting others and assertiveness
3. Generic task competencies, such as organization skills, practical orientation, basing decisions on facts, flexibility, ability to take independent decision, time management skills, and possessing consistent, productive and organized work habits
4. Technical competencies, such as information and communications technology literacy, and good subject-matter knowledge

Although further research needs to be conducted on the connection of personality, competencies as they relate to a distributed work environment, employers and employees can use the above practices as means to determine fit. Interacting in a distributed work environment is an extensive undertaking; therefore, using all available avenues to make the right decisions is imperative as the impact is great both on the organization and employees in terms of business success, employee engagement and job satisfaction.

Individual Factor 2: Employee Motivation and the Psychological Contract

The landscape of human resources in organization has evolved over the years and has shifted from offering employees stability and predictability in their work to asking employees to be intrinsically motivated and take control of their role in the workplace. Holman (2003) expresses it as such:

...there has been a movement away from the traditional psychological contract where employers have offered career and employment stability. Instead, the emerging psychological contract emphasizes flexibility, mobility, where employees should expect to be flexible in their work practices, be prepared to take responsibility for their own training and career development, and be prepared to move jobs regularly (2003, p. 208).

Due to this shifting philosophy, employee motivation and commitment are affected because they no longer have the guarantee that as long as they perform their job tasks satisfactorily, they will remain stable in their jobs. Such uncertainty pushes employees to always be looking for the next job as they do not know if they will be able to fulfill the future demands of their current jobs. In terms of distributed workers, this can cause problems due to the isolation factor that exists with working virtually. Components such as an office network, counseling services and unions are not readily accessible to them, so they may see it as psychological contract violation on the part of the organization (Holman, 2003). Therefore, to attempt to remedy this issue and promote successful distributed work environments, organizations need to present "...clear career paths and training opportunities [which] may encourage employee retention and motivation without necessarily affecting the establishment of a mutually beneficial flexible psychological contract" (Holman, 2003, p. 208).

Individual Factor 3: Connection of Job Characteristics and Employee Well-being

Just as traditional work environments can be psychologically healthy or toxic and harmful, distributed work environments are no exception. Researchers have explored this topic and have identified that psychologically healthy jobs generally include ... "greater skills use, greater variety of work, greater opportunities for control through task discretion or participation in decisions, balanced demands from work, performance feedback and job security, high clarity concerning tasks, better physical working conditions, higher wages, greater social value accorded to the nature of the work and more support and contact with others" (Holman, 2003). Depending on the type of job within the distributed work environments, it is likely that task discretion, variety in work and skill usage may decrease. For example, this can be in jobs that have low knowledge intensity due to established output control and monitoring mechanisms given the routine nature of the work. In that case task discretion variety and skill usage are decreased, taking away from the psychological health of the job. One way to resolve this issue by allowing distributed workers, whether in low or high knowledge intensity positions, to have the autonomy over their work schedule and task completion. Technology plays a big role in accomplishing this because it has the capabilities to provide the employees with a sense of autonomy and support their success if organizations invest in the right technological resources for these employees. This will give them a sense of ownership and responsibility to the work that they do.

To enhance employee well-being, organizations have to take steps to ensure their distributed workers have psychologically healthy jobs. Researchers have suggested several ways in which employers can accomplish this task. One strategy, is to ensure that the employees have access to all of the technology needed to successfully complete their work, as they would have access in a traditional office. Another strategy is to establish clear goals and objectives for the workers and help them identify the important role that they play (Holman, 2003). Another strategy is to ensure that employees have readily access to information and channels of communication to discuss and clarify the information if needed. This practice can also help in the reduction of the social isolation that distributed workers too often experience due to the non-existent office experience (Holman, 2003). To reduce the risk of poor physical working conditions that may occur in low knowledge intensity jobs due to low wages and the routine nature of the work, companies need to ensure that they are providing the necessary resources to those employees, in addition to sharing information. These employees are more likely to experience isolation and burn out due lack of resources, where they have to perform additional steps to complete tasks that can be

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streamlined with the proper resources and equipment. Finally, offering appropriate training opportunities to not only training on job function, but on maintaining a healthy distributed work environment. Knowing steps they can take to improve their work conditions promotes autonomy and higher levels of job satisfaction and fulfillment.

Individual Factor 4: Home and Work Interface

Working from home comes with its set of benefits and challenges. As previously mentioned in this chapter, employees enjoy work flexibility and autonomy, as well as more time to spend completing family obligations. However, distributed workers who work from home face certain issues whether or not they have families. For employees without families, they struggle with creating an environment that is conducive to productive work by restricting distraction from neighbors, community activities, friends, and other social activities. For workers with families, they struggle with setting boundaries of work and home especially if there are family members present during their self-set work hours. The idea of separating work from family for a period of time as in a traditional office environment is non-existent for remote workers as their office is also home. The idea of work and family conflict arises and creates a certain level of stress on both the worker and family members (Holman, 2003).

These issues are sure to have an impact on work performance and job satisfaction if not handled appropriately. As organizations work with distributed workers to help them create a healthy and productive work environment, considering and being emotionally intelligent to the family and home demands placed on these workers can help. Training managers to be sensitive to these demands and structuring their work using a project based format with milestones and deadlines may be a positive alternative that supports flexibility and autonomy. In turn, employees' stress level will decrease, and they will be better positioned to deliver quality work and have high levels of job satisfaction and vested interest in the organization.

MANAGEMENT AND DISTRIBUTED WORK ENVIRONMENTS

Distributed workers require a different kind of manager than traditional office employees. To begin with, based on the earlier explanations of social and individual factors associated with distributed work environment, selecting of remote employees and their managers need to be a systematic process that goes beyond just matching job duties to personal candidate characteristics (Omari & Standen, 2000).

Given the nature of distributed work, management style matters in that specific, sometimes non-traditional and unconventional, strategies have to be employed to support the needs of the remote worker. Managing based on outputs may not be the best approach. As stated by Holman (2003) based on the work of Sparrow and Omeeren (2000) "Consequently, the usual adage of managing teleworkers by outputs—in of and by itself—may prove inappropriate for teleworkers, possibly leading to problems such as reduces well-being, reduced trust and low quality work." Holman (2003) suggests that managers need to play close attention to the social aspect of remote work due to the removal of the traditional office, they need to make a conscious effort is developing social networks, support systems, open channels of communication and establish trust in order to create environment where organizational learning can take place (Tregaski & Daniels, 2000). Further, human resources has an important role in identifying the organizational culture that currently exists and ensure that proper matching of managers and employees,

as well as providing appropriate trainings occur to promote culture integration in the distributed work environment. As summarized by Holman (2003):

...human resource managers should be aware of the cultures and contexts in each area of their organization and should endeavor to ensure that telework schemes, workers and managers suit those cultures and contexts (since changing the cultures and contexts to suit teleworking is a longer-term strategy) (2003, p. 212).

One final important aspect of management involvement in distributed work environment is the training of distributed workers. Training and development of remote workers is just as important, if not more important than traditional office workers due to the added circumstance of distance. Holman (2003) suggests that there are several areas where training can be beneficial to remote workers, such as communication, self-management, corporate values, time management, off-site health and safety requirements, company cyber security policy, legal and tax requirements related to working from home, computer operation and maintenance, and job-specific trainings. Managers need to work with distributed workers to facilitate access to these trainings and create a communication system that will allow them to monitor the application of knowledge gained from these trainings. As well, they need use different methods of training delivery such as face-to-face, online learning, webinars, online instructional manuals, etc. to ensure that the employees have all the resources and training they need to perform at their highest potential. In addition, managers of distributed workers also need to attend trainings to prepare them for the different aspects of distributed work compared to the traditional office environment, as well as company policies and procedures of distributed work, communication and socialization needs, and support systems (Tregaskis & Daniels, 2000).

Properly selecting and preparing managers to support distributed workers is a crucial function, as they can determine the success or failure of the remote work process. If understanding, empathy and mutual trust and respect do not exist between managers and employees, then the odds of a positive, productive and long term working relationship are slim to none.

EXAMPLES OF IMPLEMENTING DISTRIBUTED WORK ENVIRONMENTS USING TECHNOLOGY

In researching the popularity of distributed work environments, over 125 companies have adopted this method of doing business, some of them are in their first or second year in the adoption, and others have been employing this method for over 14 years, and from the looks of it seems to be working for them. A company named FlexJobs, which provides services to candidates seeking flexible schedules, telecommuting, freelance and part-time jobs and as well as a distributed work environment company itself, keeps track of other companies that have fully or partially adopted the distributed work environment (Shin, 2016). The list of companies that they provide has grown 26 companies in 2014 to 76 companies in 2015, and in 2016 the list grew to 125 companies (Shin, 2016). These companies range for HR/recruiting and education to IT/computer. Based on these increases, Flexjobs is estimating that by the year 2020, 50% of employees will work remotely (Shin, 2016). Included in that list are:

Articulate which is a company that develops web, mobile, and desktop applications for online learning space that are rapidly growing, and for which it has won awards. Articulate has been a distributed work

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environment company for over 14 years, and the management team has found the method successful for both their employees and the business. According to their founder and CEO, Adam Schwartz, all 150 employees work 100 percent of the time from home and their productivity level and quality of work is exemplary. Schwartz (Reynolds, 2015) added “We’ve always been fully distributed, so it’s in our DNA. Because working remotely requires a lot of trust, you have to put people front and center. Ours are smart, kind, fun, and results-oriented, which makes Articulate a pretty magical place to work.” Schwartz further expressed ““Being able to choose where and when we work empowers us to be more productive, more engaged, and more balanced in every aspect of our lives. After 14 years as a fully remote company, we’re convinced a distributed environment isn’t just good for our employees. It’s also one of the key reasons we’ve been so successful as a company” (Shin, 2016).

Mozilla, a not-for-profit organization and the developer of Firefox, also support a distributed work environment, as well as remote workers around the world. They accommodate employees who want to work from home or in one of their remote offices in 30 countries around the world. The company explains “We have 13 global offices and people working in more than 30 countries. If you work best from home, that’s not a problem. We can support you anywhere” (Reynolds, 2015).

Equation Research, is a strategic research company working with clients on brand equity and strategy, concept testing, advertising testing and tracking, and community panels (Reynolds, 2015). Its business model is quite impressive and the way they deliver services to their clients is quite unconventional. The CEO, Mike Travis commented and said “When we launched back in 2000, we set out to build and grow a company that NEVER HAD AN OFFICE. It was not a fear of the old food in the back of the refrigerator that drove us—it was the inspiration of building a different kind of experience for the people that shared in this adventure. It was part of the innovation we craved” (Reynolds, 2015).

Varsity Tutors, a private tutoring company that provides virtual and in home tutoring services, or where ever it is convenient for their clients. They provide one-on-one tutoring, they have over 20,000 instructors and a 24/7 online learning platform. The company prides itself in the “no commuting time” concepts as their instructors do most of their work using the online learning platform (Reynolds, 2015).

The list of these companies continues to grow and from the initial response to this movement, it is highly unlikely to see a decrease in this growth anytime soon.

In looking at the list of over 125 companies implementing the distributed work environment model, it begs the question: how do they do it? What strategies have they use to ensure that their employee and business needs are being met? In looking at companies that have been leading the way in distributed work environments, three main strategies have helped them be successful with this method and have grown their companies substantially over the years. These three main strategies are open communication, adequate resources and equipment, and promoting work/life balance.

Open Communication

In researching these companies, open communication, as a key to their success, was a recurring theme. Without having a strong communication system, these companies would most likely crumble as most or all of their employees are located across the country and the globe and not in central locations. Being a remote employee who feels that he/she is missing out on important information and discussions because the avenues of communication are not as robust as they need to be can be a very scary and demotivating position to be in. As a result, these companies employ several communication methods to keep their employees informed, engaged and productive. Let’s take Automattic, for example. Automattic

is the company that created WordPress.com and several other services for WordPress.com customers. They have over 400 employees spread across 40 countries to help to power companies' websites and their website needs (CloudPeeps, 2015). In their business model, to promote open communication, they have chosen to not use email. Instead they have worked on streamlining their communication channels to ensure that it is open and engaging. To replace the use of email, Automattic employees use an instant messaging chat system and an internal blog system, called P2, which comes with its own Google alert system so that employees are notified whenever new content has been posted on the blog (CloudPeeps, 2015). Automattic is also using an unconventional way of communicating with potential employees. Instead conducting traditional or virtual initial interviews, their process includes the following (CloudPeeps, 2015, p. 2):

1. The CEO screens all resumes
2. The hiring lead sends quality candidates a note
3. The hiring lead then pings them on Skype – and has a Q&A via Skype chat
4. The candidate completes a paid trial project on their own time
5. The CEO has a final review chat on Skype with the candidate

Even more unconventional is that there have been times when new hires have been brought on board without ever having a single voice interview (CloudPeeps, 2015). This method seems to be working for Automattic because it has seen 100% employee retention in its design and growth department (CloudPeeps, 2015). The CEO supported this process by saying “This has been amazing for the company in that we can attract and retain the best talent without them having to be in New York or San Francisco or one of the traditional tech centers” (CloudPeeps, 2015).

Another example is with Zapier, the company that creates software that connects applications (apps) that are used for the automation of tasks and leveraging more out of existing data. Zapier takes communication very seriously with its remote teams, and it uses a series of communication apps across the company that are specific to each department and its functions. For example, when a new hire comes on board in their marketing team, he/she is provided with a list of communication apps, such as the one shown below to get them acquainted and equipped to engage in the open communication platform (CloudPeeps, 2015, p. 5):

1. Slack for ongoing chatter in their designated channels
2. Trello Editorial Calendar board for discussion around individual blog posts
3. Google Docs for Weekly Marketing Meeting notes
4. Google Calendar for keeping up with each other's schedules, including out of office
5. Async (their internal blog modeled after Automattic's P2 mentioned above) for Friday Updates and Monthly Marketing Updates
6. The team@zapier.com email for Daily Recaps (automated), hiring decisions, hiring announcements, time-sensitive news or questions

The above tools and several others have kept the employees engaged and productive, which in turn has made the company successful.

Another method of open communication being using is called “daily standup meetings. A company named Groove, known for its exemplary story telling approach to present website content for their cus-

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tomers, values communication and understands its importance to keep a remote team productive and engaged. Groove also supports the idea of employees working during the times they are most productive; in other words, they do not have the expectations for employees to be at their desk at home or wherever at all times. This provides great flexibility for the employees and allow them to produce their best work every time. However, Groove also understands that, with this type of flexibility, having a good grip on what everyone is working on is crucial to keep projects moving and delivered; therefore, they instituted “daily stand up meetings” where everyone comes on and shares with the rest of the team what they are working on for the day, have weekly team calls, share their quarterly and annual goals, as well as ask or answer any questions, as well as have weekly meetings calls to discuss projects and any other issues that may have arisen throughout the week (CloudPeeps, 2015). Groove is able to provide such flexibility to its employees because of the strong culture of trust, principle and habits that they have engraved in their company. They are selective in their hiring practices; they look for candidates that will fit in their culture and move their mission forward. As they are screening potential employees, they look for specific qualities in the candidates such as (CloudPeeps, 2015, p. 6):

1. Have they worked remotely before or ran their own small business
2. Are they mature decision maker, meaning they can make the best decisions for customers and manage their energy on their own
3. Are they extraordinary communicators

A combination of these attributes is hard to find, but when it is found, Groove is confident that the employee will be a valuable asset to company and contribute to its success.

Companies like Automatic, Zapier and Groove, along with many others, have found that one key component of having a successful distributed work environment is open and streamlined communication. Keeping up with employees across the globe and not at a specific central location can be a difficult task; however, they seem to have figured a system that works for them, that just may work for other companies who are thinking about moving in the distributed work environment direction.

Adequate Resources and Equipment

Another strategy that companies in the distributed work environment have employed is ensuring that their remote employees have adequate resources and equipment to do their work. These companies realize that without the appropriate resources, employees will get frustrated and not perform to their highest potential. In addition, having remote employees means low overhead costs as these companies do not usually have headquarters or central locations. Therefore, they are able to invest in top of the line equipment and resources needed. On example of this strategy comes from Automatic. They ensure that they provide everything that the employees need to be comfortable and do their best work. Some examples of the resources that Automatic provides to its employees are (CloudPeeps, 2015, p. 2):

1. The best equipment for doing their jobs
2. A stipend for improving their home offices
3. Allowing any team to meet wherever they want for a “hack week”
4. Once a year, the entire company gets together for a “grand meetup” in a beautiful location
5. Employees make their own schedules

Another example comes from a company called Buffer, which provides services to clients to help them drive traffic to their website, increase fan engagement and save time through social media. They too understand that they need to provide the best resources and equipment to their employees. Being present around the globe means that their employees have to be available to clients at different time zones. Therefore, employee satisfaction is key as these employees interact directly with the clients and need to provide impeccable customer service. As a result, Buffer ensures that its employees have Kindles, laptops, software such as Timezone.co, used to know when and where team members and clients are; Speak.io, used to provide fast video conferencing; and Hipchat, for regular chat communication among team members (CloudPeeps, 2015). Buffer, like Automattic, also puts on gatherings in a nice location for all of its employees to meet face-to-face, networking and engage in team building activities (CloudPeeps, 2015).

Providing these resources motivate employees to do their best because they see that the companies invested in them and understands the value they bring to the team. So many times, employees do not have the adequate resources to do their work; they have to get creative and make do with what they have. After a while, they get frustrated and demotivated and end up leaving the company. This is an issue for companies as these employees who leave, take with them vast amount of knowledge that was not transferred and companies basically have to scramble to get the work done. So it behooves all companies, remote or headquartered to be sure and invest in providing the necessary resources to their employees as the companies mentioned above have, to ensure productivity, job satisfaction and success.

Promoting Work/Life Balance

Another aspect of distributed work environment is the work/life balance concept. Chances are that being remote employees most likely means that they work from home where their families live. Therefore, it is important to ensure that a balanced work/life environment exists where there is a precise amount of time set aside for work and a precise amount of time set for family. This way employees can enjoy their work and their family lives and not feel that they have to choose one over the other. Companies who are part of the distributed work environment community understand the importance of this concept and take steps to support their employees in maintaining that crucial balance.

One example involves a company called Baremetrics that provides data mining services to companies. They strongly believe in the work/life balance concept and have created an environment where employees are able to achieve the balance while performing at their highest potential and spending quality time with their families. One thing that they recognize as a priority is self-care, and they encourage employees to practice self-care by providing them with these tips (CloudPeeps, 2015, p. 7):

1. Have set work hours and stick to them
2. Exercise every single day
3. Alternate between sitting and standing
4. Eat well
5. Take frequent breaks

They feel that by following these tips, employees are less likely to burn out and their job satisfaction level will continue to increase.

A second example comes from a company called Help Scout, that leads the help desk software support industry. At Help Scout, they understand the anxiety that new employees face especially if they are

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remote employees. As a result, they have developed a buddy system that is solely there to support the new employees when they first get on board, and ease the stress and anxiety that comes with starting a new job. One of their marketing team members had this to say about the buddy system:

We figure being new at work isn't so far removed from being the new kid at school. Wouldn't it be nice to make a friend on the first day? For every new Help Scout teammate, someone who's been on board for a while steps up and becomes their go-to guy/gal who shows them the ropes. Work friends matter, and although they naturally form over time, feeling settled in shouldn't wait... A new buddy is especially important for remote work because you're not meeting a ton of people face-to-face your first few weeks. With so much to take in, now is not the time to let things get quiet (CloudPeeps, 2015, p. 10).

When new employees come onboard, team members have a list of activities that they can engage in with their buddy. Some of these activities include (CloudPeeps, 2015, p. 10):

1. Check-in every couple of days to see how things are going
2. Share a story from the team retreats, or what it's like to hang out in Boston
3. Share "unwritten rules," like the subtle difference between the #general and #offtopic channels in Slack
4. Have a video chat over Appear.in or Skype
5. Give them the run-down on who to ask for what

Such a system allows the new employees to get engrained in the Help Scout culture and be part of the family. Alleviating the stress of a new job in this way allows the new employees get on boarded at a much faster pace, which reduces the backlash that stress can have on their own families. Employees from this company and others mentioned above have written and expressed gratitude for the care they have been afforded through these companies which has allowed them to live happier and more fulfilled lives due to the unconventional way they work.

CONCLUSION

As presented in this chapter, the landscape of the work environment is changing due to the advancement of technology and more companies are considering or implementing distributed work environments. This type of work environment can be beneficial to organizations and employees if implemented correctly, using the right technology with the right employees and managers. In contrast, they can come at the detriment of organizations and employees if proper human and technological systems are not put in place. Over 125 companies in 2016 have fully or partially implemented the concept of a distributed work environment. They all have had their lessons learned, but they are pushing forward with the concept and are seeing positive results for their companies and employees.

As we examined the concept of a distributed work environment, we focused on the reasons why companies are entering this realm. The main reasons are for sustainability and having a competitive edge. In addition, companies have to respond to the needs of a new generation of employees who are looking for flexibility and autonomy in how, when and where they complete their work.

In implementing a distributed work environment, organizations have to consider several things, such as aligning their goals, objectives and culture as a whole so that they can clearly see if a system as a distributed work environment would work for their business and employees. They have to ensure that they have a robust technology infrastructure to support such an environment. They also have to look at the types of work and services that they provide to ensure that the same level of service and productivity or higher can be accomplished through a distributed work environment. In addition, companies have to examine the types of employees they have to determine if they would be a good fit for such a work environment. They need to figure out, based on what they know and have observed about employees, if they would thrive in a remote work environment. Looking for behaviors like self-directedness, self-motivation, time management, to name a few, are key to a successful distributed work environment employee integration. Further, employers need to make sure that they have the necessary resources, equipment and systems to support the distributed work environment infrastructure to promote business and employee success.

As with any system, distributed work environment have a definite impact on the human condition. As a result, careful considerations must be made to ensure that a distributed work approach is the best course of action for their employees. To make this determination, companies and employees need to pay attention to social and individual factors that surround the distributed work environment concept. The social factors include socialization, communication between remote and office workers, and decision making and communication with virtual teams. Individual factors include the connection that exists between personality, competencies and distributed work environments; employee motivation and psychological contract; the connection that exists between job characteristics and employee well-being; and the home and work interface. Failure to examine all of these factors to determine the best course of action on deciding on distributed work environments, will put organizations at a disadvantage because they will not have a clear picture of how their employees measure up against these factors in order for them to make sound decisions.

We also looked at the management of distributed work employees and how it differs from managing traditional office employees. Managing remote workers is not an easy task; therefore, human resources professionals have to ensure that they match the right employees and managers together for such a work environment as the communication, socialization and resource needs for these employees are different from the needs, for the most part, of traditional office employees. In addition, human resources and managers have to ensure that adequate training opportunities are available for both managers and employees to become familiar with the components of distributed work environments.

Finally, we looked at some examples of companies that have implemented a distributed work environment and how they have managed to make it successful. In reviewing these companies, there were three main practices they had in common that seem to be integral parts of their success: open communication, adequate resources and equipment, and promoting work/life balance. These three components seem to resonate with employees at these companies, and have allowed them to become stronger teams.

In the end, although distributed work environments need to be further researched both on the organizational and human aspects, the concept seems promising to companies as long as it makes sense for them. Given the continued rise of the digital age, distributed work environments may become the norm in the near future; therefore, it behooves organizations to be proactive and take the necessary steps to prepare their employees and organizational infrastructure for a possible change in that direction.

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KEY TERMS AND DEFINITIONS

Self-Motivation: Initiative to undertake or continue a task or activity without another’s prodding or supervision.

Teleworker: Employees who work from home or satellite locations for an organization.

Socialization: A continuing process whereby an individual acquires a personal identity and learns the norms, values, behavior, and social skills appropriate to his or her social position.

Intra-Organizational: The level to which an employees has built strong relationships with their colleagues within an organization.

Self-Directed: The ability to guide, manage or regulate oneself without supervision.

Communication: The process of imparting or interchange of thoughts, opinions, or information by speech, writing, or signs.

Virtual Teams: A team of employees working together from different remote locations. The majority of their collaboration occurs online.

Personality: The sum total of the physical, mental, emotional, and social characteristics of an individual. The organized pattern of behavioral characteristics of the individual.