

Going Home: New Technology's Impact on Remote Work Engagement

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This study considers the literature concerning remote employment, how early estimates suggested 30-50% of Americans would be working by the beginning of the 21st Century. Surveys of top executives, though positive in outlook, would lead one to predict just over 13% of the population is involved in full-time remote work practices at the end of the last century and decreasing between 2006 and 2008. This paper suggests a technological solution that offers a means of resolving trust and control issues and/or determining the true underlying management dilemmas that might inhibit the growth of daily remote work.

Alvin Toffler wrote in his cult classic *The Third Wave*: “Until now the human race has undergone two great waves of change, each one largely obliterating earlier cultures or civilizations and replacing them with ways of life inconceivable to those who came before. The First Wave of change - the agricultural revolution - took thousands of years to play itself out. The Second Wave - the rise of the industrial civilization - took a mere three hundred years. Today history is even more accelerative, and it is likely that the Third Wave will sweep across history and complete itself in a few decades” (1980; 10).

This work is part of an ongoing research interest of the writer, and reflects a curiosity into the irony of the United States' historical business environment that spent nearly three hundred years leaving home-based employment only to return to it with the advent of open telecommunications and global competition. Home-based/remote work is one form of the many types of remote work or telecommuting. Daniel Pink describes the move away from the “jobs” of the Industrial Revolution, whether freelancing or working from somewhere other than the office, as a state of mind as much as a change of place (Pink, 2001). He describes those that remain in “jobs” do so “under terms closer in spirit to free agency than traditional employment” (2001; 11). In essence he is announcing the death of *The Organization Man*, a term and a non-fiction work made famous by William J. Whyte, Jr., in 1956 (Pink, 2001).

Prediction versus Movement to Remote Work

In 1997, 11.6 million employees of U.S. companies worked from home at least part of the time, though some estimated that figure to be more than 14 million (Pink, 2001). In 2004, the number was 23.5 million or about 16% of the American labor force. The self-employed (who often are home-based) also grew from 18 million to about 23.4 million in the same seven-year period (Friedman, 2005).

Another recent survey by the International Telework Association and Council noted that the number of remote employees who worked at least one day per month from home doubled during the period from 1997 to 2003 (*Home-Based Employees*, 2004). Most recently, the Dieringer Research Group, Inc. found that more people were teleworking at least once per month--28.7 million in 2006 to 33.7 million in 2008, but fewer were assigned remotely on a daily basis - 14.7 million in 2006 to 13.5 million in 2008 (*Telework Trends 2009*). This report also cited a decrease in remote contract labor and an increase in employees working remotely, and 100% of the total workforce working remotely were at least assigned offsite once per month (*Telework Trends 2009*). Dieringer (2009) also noted remote employment is increasingly taking place at home (up 12%), at the client's place of business (up 13%), on mass transportation mediums - e.g. trains, planes, and subways (up 8%), and at telework centers (up 3%).

Toffler predicted this “electronic cottage” industry would come within thirty years of his publication due to the development and perfection of the information technology that has permeated our society during the last thirty years. He sensed the natural return to the “hearth” at home where history tells us the world worker spent 10,000 years of service versus only 300 years at the factory or office. He had interviewed companies like Western Electric, Hewlett-Packard, and Ortho Pharmaceutical which felt that the technology would soon be available (this was prior to 1980) that would allow 35-75% of their collective work forces to stay home and be productive (Toffler, 1980). It is now within one year of Toffler's prediction window, and the United States is barely touching the low end of his “cottage” estimates, relating to daily-assigned to remote work. The technology, on the other hand, has surpassed Toffler's wildest imagination with the popularity of the Internet.

CONCEPTS OF REMOTE WORK

Motivations and Drawbacks to Remote Work

Since remote work offers a significant savings to those that implement such processes, the interest in working away from the office has received much attention in the last thirty years (Westfall, 1998). This section of the paper will review some of the reported positive and negative results anticipated and/or experienced by remote work applications. Organizational and individual perspectives will be analyzed to include the characteristics of successful remote work assignments and the employee types most likely to succeed.

Organizational Motivations

Depending on the management philosophy and the relationship the firm has with its employees - remote or non-remote - there seems to be at least six positive attractions. The positive attractions are explained but not listed in any order of magnitude of impact.

First, the utilization of remote or remote work offers the organization lower absenteeism rates among employees. Employees are less likely to avoid work if given the opportunity to work remotely or from home (Fitzer, 1997; Moskowitz, 1995; Hoang et al, 2008). Second, the ability to attract and/or retain employees that might otherwise be unavailable to relocate is a strong motivation to allow work from home (Moskowitz, 1995; Hoang et al, 2008). Third, this ability to retain and acquire otherwise lost employment is credited to increasing loyalty to the firm (Moskowitz, 1995). Fourth, the organization should expect increased productivity and quality of work (Hoang et al, 2008). Though Westfall (1998) offers more discrete criteria for actual productivity gains, Huws (in an earlier study) reported that managers rated their teleworking employees as 47% more productive). Five, decreased operational expenses in the normal office environment can be a plus to the firm implementing remote work (Westfall, 1998). Westfall (1998) related the savings to the positive correlation of employee/manager salary and number of days working remotely. He hypothesizes that the higher the rate-of-pay the greater the savings to the firm for that employee/manager to stay at home or work remotely. This is attributed to the office support rendered to higher-paid personnel (Westfall, 1998). Six, the organization should see a positive increase in the ability to respond more quickly to customers and/or unexpected events (Fitzer, 1997). This issue has also been related to the flexibility of the organization to respond or keep operations going when faced with non-business events and, more currently, security issues (Daniels et al, 2001). The aftermath of "9/11" has forced many organizations, including the Federal Government to consider the implementation of telework for maintaining operations during a terrorist event.

Individual Motivations

The individual motivations to engage in remote work are also valuable in understanding the effects of this growing form of work in firms. Three positive motivations are noted here. First, the reduction of commuting costs to the office could represent a rather large savings to the teleworking employee (Christensen, 1992; Moskowitz, 1995). Moskowitz offers a table of the commute savings of 90-minute (one-way) commuting for full-time remote workers could add 15-hours of time to the remote worker's life or work schedule. This could be prime time hours for reaching customers. One study by American Express Travel Services reports that home-based reservation agents handle 26% more calls per day or 46% more business per week than conventional office agents with strong experience (Moskowitz, 1995). Second, closely related to the previous reasoning is the increase in flexibility in work hours (Moskowitz, 1995; Reinsch, 1997). Reinsch reports on a survey that noted the most important motivator for individuals to choose to engage in remote work was the greater freedom and control in their personal schedule. Third, the increased productivity, for several reasons, was cited as making remote work more appealing (Moskowitz, 1995; Reisch, 1997). Nortel reported that 73% of its telecommuting employees reported less stress and 90% reported greater job satisfaction).

Drawbacks to Remote Work

While there are positive reports of the organizations and individuals that telework, the negative results or expectations are also noteworthy. Most of these items relate to organizational culture and existing practices - the concern of losing current processes or methods.

Organizational Drawbacks

Three organizational impacts of remote work may appear negative to those considering participation. One, having some of the best employees unavailable in the office environment can be negative in that more time may be involved in reaching those remote workers. Fitzer (1997) also suggests that this loss of input or availability can cost the organization synergistic capability otherwise available to all conventional office staff. Two, there is some concern for data security when basing employees out of the office and allowing them to move information via telecommunication technology across the Internet (Gray, Hodsen & Gordon, 1994). Firewall security for intranets has become quite common and very effective, but the systems inside the office can be just as vulnerable to inside threats. Three, managing remote workers creates added cost and time constraints to the organization (Christensen, 1992; Fitzer, 1997; Hoang et al, 2008; Westfall, 1998). Westfall (1998) strongly encourages more research into the reality of this economic cost, and he encourages the promoters of telecommuting to evaluate the real cost to management when presenting findings. This final negative impact creates some difficulty in evaluating the financial benefits of remote work (Daniels et al, 2001). Modeling and economic analysis of transportation and office duplication savings are considered by others too difficult to determine (Westfall, 1998).

Individual Drawbacks

Reports on remote work have also expressed negative impacts on individuals in the remote work environment. One, the remote worker reports feeling isolated (Fitzer, 1997; Reinsch, 1997; Hoang et al, 2008). Some of the more classical research in this area also relates the reduction of inner-organizational communication (Hoang et al, 2008). Two, individual remote employees report a tendency to overwork with the office at “arm’s length” whenever an idea for solving a problem comes to mind (Fitzer, 1997; Moskowitz, 1995). Three, a very popular concern for the remote worker, and a current obstacle to engaging the best employees in the process, is the concern for being bypassed for promotion when the remote worker is out of the sight of management (Baruch, 2001). This is where the need for the employee’s trust of the manager, or a system of control of manager-provided feedback/evaluation, supported and monitored within the organization’s performance structure becomes relevant. The employee must feel that the work they do in the remote environment, and the recognition for doing that work well, is valuable and contributing to their future stature within the firm (McCloskey & Igbaria, 2003).

Characteristics of Successful Implementations of Remote Work

This section will prepare the reader to understand what the research has reported as to the managerial and environmental attributes for successful implementation of remote work. The first subsection will define the managerial action or support needed to succeed. The second section will step back to view the overall organizational considerations of implementation of a successful remote work environment - taking the work to the worker. In this portion of the literature the introduction to the eight key elements of successful remote work environments will be introduced - input, evaluation, communication, consistency, defined rules, support/succession, feedback/motivation, control system. These eight elements are also key to measurement of work (remote or non-remote) performance.

Managerial Attributes

Five attributes of the management environment appear essential to the success of remote work according to the literature. These items all involve the manner in which the employee is treated or accepted by management within the relationship of the organization, manager/employee, or employee/employee. These relationships are only those areas in which the manager can have an impact. One, the most crucial area noted as determining the successful longitudinal implementation of remote work is the necessity of top-management to buy-in to the concept (Adam & Crossan, 2001). Higa and Shin (2003) reported in numerous case studies in Japan that the buy-in of top-management to the success of remote was one of the key reasons for all successful implementations that were examined. This could be key to consistency in the work environment, which is one of the eight elements. Harrington and Ruppel (1997) noted that top-management’s trust of the remote worker is essential to their buy-in. In fact, the obstacle to much implementation of remote work in Europe and Canada is not trust in general (which will be discussed later); but, as a Nextra study found, 23% of top-management does not trust their employees to be productive (Flexible Working, 2002). Two, management should develop a relationship built on confidence and trust with the worker and the remote work environment (Christensen, 1992; Harrington & Ruppel, 1997; Staples, 2001b). This element will be discussed more later, but this control system is a key element to remote work success. Three, the manager should

work with the remote employee to establish clear and distinct goals and objectives, then make sure the worker has all of the resources to meet the goals established (Staples, 2001b). The input provided by the worker is an element that is key to remote work success. Four, management must provide consistent feedback based on the evaluation of the remote worker's success at meeting the goals jointly assigned (Gray, Hodson, and Gordon, 1994; Staples, 2001b). The evaluation process in a remote environment provides another element of remote work success. Five, the manager must consider the remote worker to be as capable and available as non-remote workers (Fitzer, 1997; Staples, 2001a). In regards to this effort by management, a strong communication link between workers must be designed and maintained by management (Staples, 2001b). The importance of remote workers being informed and involved in organizational activities is also reported in this regard (Hoang et al, 2008). This communication is another element of remote work measurement.

Organizational Attributes

If the organization is to implement and sustain a viable remote work option for its employees, there are five success factors that the organization must be prepared to nurture, provide, and enhance. These five items have been reported to secure adequate workers to launch the remote work program while maintaining respect for the program from the non-remote employees. One, goals and objectives for the program and for each employee assigned must be established before implementation (Christensen, 1992, Gray; Hodson, and Gordon, 1994). Determining how the remote workers will be assessed by their performance is part of the important initial phase (Fitzer, 1997, Staples, 2001b). This process is more effective if the remote and non-remote workers are assessed equally and regularly-slated meetings are planned in advance of all workers - remote and non-remote (Staples, 2001a). A calendar available to all members of the organization is suggested (Christensen, 1992). A formal contract with the rules defined between the remote workers and management, on the behalf of the entire organization, is recommended to establish this first success factor (Gerber, 1995). Two, the duration and employee eligibility of the remote-work project should be shared openly within the firm to establish the aura of management approval at the highest level (Christensen, 1992; Higa & Shin, 2003). This feedback provided is motivational for the successful remote work environment. Three, complete training for all members of the firm should be implemented and explained before the program's initial rollout (Staples, 2001b). This support mechanism is key to remote work and succession of the firm's leadership, drawing from all workers - remote and non-remote.

The previous three attributes are designed to foster a positive viewpoint from all in the firm and seek enrollment (part-time and full-time) in the ongoing remote work process. The communication between remote and non-remote workers is also enhanced by this provision - (See the previous section for further details as to the importance of this relationship). Four, success of the ongoing process requires technical support for the remote worker and the determination by the organization to provide the physical environment needed (Staples, 2001b). This should be well planned before implementation begins (Dooley, 2005). Five, data security must be ensured if the program is to succeed (Hoang et al, 2008). Those impacted by this requirement are those stakeholders along all of the connections of the enterprise - including customers and suppliers (Adam & Crossan, 2001; Dooley, 2005).

Will Workforce Performance Management Solutions Encourage the Engagement of Remote Work?

Today, technological solutions exist in the form of systems (available online) by firms offering their services as ASP's or application service providers. Anyone, anywhere can access these Workforce Performance Management Systems (WPMS), in a pay for use environment, which were designed for employers/employees based anywhere on the globe. In this environment, companies do not need to take up large amount of space or manage memory-intensive programs in office-based servers. This is the perfect fit for remote work needs. Employees and managers can create, manage, and store real-time feedback and control processes by going to the service provider's website from anywhere on the planet (Getting There, 2005).

WPMS can provide the eight elements, as highlighted earlier, required to successfully implement remote work. These eight elements are offered by directed input from the performing employee; providing evaluation readily for work performed; allowing communication between remote employees and office-bound workers; encouraging consistency in the availability of performance evaluation; posting defined rules for the workplace not dependent on where the worker is geographically located; directing support to the remote worker as they remain viable candidates for upward mobility within the firm; assessing work and encouraging improvement or rewarding for a job well done via feedback mechanisms; and culminating in system of controls that can be trusted by manager and employee (Getting There, 2005). If this solution was provided, or its availability made known, would this enhance worker interest in accepting/supervising remote work assignments?

PROPOSED RESEARCH TO DEFINE THE PROBLEM

Problem Statement

In remote work environments, without temporal/tactile contact, a lack of systematic performance controls between management and employee represents an obstacle to engagement in remote work solutions and to the potential economic and ecological savings they represent.

Research Question

Can availability of Workforce Performance Management Systems (WPMS) positively affect the decision to engage in remote work environments?

Null Hypotheses

A paired-sample “t-test” should validate whether there is a statistically significant difference in the survey results between the pre-information and post-information sessions of participants. The results of the test will determine the answers to the two major hypotheses below:

H1a: Workforce performance management solutions are not perceived as positively affecting the willingness to engage in remote work.

Pre-information μ = Post-information μ

H1b: Workforce performance management solutions are perceived as positively affecting the willingness to engage in remote work.

Pre-information $\mu \neq$ Post-information μ

Necessary ingredients to the pre-information questions:

Flow of questions should relate the topic to the participant’s current interest to work remotely based on the validity of the eight elements of remote work performance success.

Necessary ingredients to the post-information questions:

1. System solution relates to the pre-information statement.
2. The participant is reminded that the technological solution is a part of a systematic approach thoroughly discussed within the Information/Education Element.
3. The key to success of the system solution will require the conformity, accountability, and integrity of the participant (whether supervisor or employee). People implement systems.

Research Questions Before and After

Likert Scale explanation: Considers willingness to consider remote work environment

0	1	2	3	4	5	6	7
← Unwilling to Consider Remote Work				Indifferent	Most Willing to Consider Remote Work →		
Before - Reflects current remote/non-remote work environment				After - Reflects desirable/non-desirable remote work environment after employing WPMS technology			
Input: Freedom to choose my schedule and set my goals of productivity within the current work environment has an impact on my willingness to work remotely				Input: Ability of management systems to allow my supervisor and me to monitor my goals and track my performance in relation to the goals has an impact on my willingness to work remotely			
0 - 1 - 2 - 3 - 4 - 5 - 6 - 7				0 - 1 - 2 - 3 - 4 - 5 - 6 - 7			
Evaluation: Level of management awareness of my work habits/ethic and the impact on current work environment				Evaluation: System capabilities to report work behavior to management and the impact on my willingness to work out of the current environment			
0 - 1 - 2 - 3 - 4 - 5 - 6 - 7				0 - 1 - 2 - 3 - 4 - 5 - 6 - 7			
Communication (Technology): The ability to communicate with fellow workers and supervision has an impact on my willingness to work remotely				Communication (Technology): Access to remote office files and fellow workers/supervisors via telecommunications technology would have an impact on my willingness to work remotely			
0 - 1 - 2 - 3 - 4 - 5 - 6 - 7				0 - 1 - 2 - 3 - 4 - 5 - 6 - 7			
Consistency: Feedback with management is sure and focused affecting my willingness to work in a distributed environment				Consistency: Constant availability of my current performance consistently related with agreed goals and management perceptions would impact my willingness to work in environment			
0 - 1 - 2 - 3 - 4 - 5 - 6 - 7				0 - 1 - 2 - 3 - 4 - 5 - 6 - 7			
Rules Defined: Agreed work performance measurement being articulated and implemented would impact my willingness to work remotely				Rules Defined: Management awareness of what my performance should be with the ability to readily/instantly compare with my daily effort would impact my willingness to work remotely			
0 - 1 - 2 - 3 - 4 - 5 - 6 - 7				0 - 1 - 2 - 3 - 4 - 5 - 6 - 7			
Support/Succession: Potential promotion within the company would impact my decision to work outside the office				Support/Succession: My supervisor's instantaneous access to my daily performance when making succession decisions would impact my willingness to work outside the office			
0 - 1 - 2 - 3 - 4 - 5 - 6 - 7				0 - 1 - 2 - 3 - 4 - 5 - 6 - 7			
Feedback/Motivation: Regular evaluations of my work based on agreed performance measurements would impact my work location				Feedback/Motivation: Knowing that management can readily provide feedback as to my efforts anytime/anywhere would affect my willingness to work remotely			
0 - 1 - 2 - 3 - 4 - 5 - 6 - 7				0 - 1 - 2 - 3 - 4 - 5 - 6 - 7			
Control (System is trusted): Control mechanisms to encourage me to maintain agreed performance goals, possibly realigning my efforts would impact my willingness to work remotely				Control (System is trusted): Systematic adjustments to my work via comparison to agreed goals and realignment suggestions would affect my willingness to work remotely			
0 - 1 - 2 - 3 - 4 - 5 - 6 - 7				0 - 1 - 2 - 3 - 4 - 5 - 6 - 7			

Information/Education Element

All survey participants will watch a ten-minute presentation which is completely Internet based. The presentation will contain information about Workforce Performance Management Systems (WPMS) that provide ready-made communication tools to monitor workforce performance, performance evaluations and automated feedback and control solutions. The purpose of this element is to supply a pedagogical process that encourages the participant to see that software is already available that can enhance the required feedback and control systems in which to utilize and maintain the eight key elements to successful remote work performance. The researcher expects the participants to become aware that the systems solutions will require considerable additional effort to communicate on the part of the manager/employee surveyed, if such a system of feedback and controls is to be implemented or does not already exist within the culture of the organization in which the participant works. The software will not set up the system of workforce performance management in the individual workplace, and unless the company employee/supervisor is willing to contribute to such a system, the impact of the WPMS will be statistically negligible.

Objective of Research

When knowledge of systematic feedback and control measures in the form of WPMS is made available to those considering remote work environments, no statistically significant difference in the interest to engage in remote work will be incurred. Thus, by providing information about WPMS in the context of working from remote locations, interest levels will not change before and after such education occurs.

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