

New Jersey's Growing Remote Workforce and the Skill Requirements of Employers

A Report of New Jersey's *Ready for the Job* Initiative

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the New Jersey State Employment and Training Commission

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New Jersey's Ready for the Job Initiative: Aligning Workforce Preparation with the Skill Needs of Key Industries

Economic growth in New Jersey requires a highly skilled workforce prepared to meet the evolving demands of the state's global economy. *Ready for the Job* is a key component of Governor Jon S. Corzine's Economic Growth Strategy for New Jersey. The initiative began in 2002 to collect and disseminate information on the workforce challenges and skill needs of the state's key industries and to identify education and training strategies to address these needs. *Ready for the Job* is a partnership among several state agencies and departments led by the State Employment and Training Commission and the New Jersey Department of Labor and Workforce Development.

This report describes the emerging workforce skill needs of New Jersey's remote workforce and outlines steps needed to address these needs. Three additional *Ready for the Job* reports for industries targeted in the Governor's 2007 Economic Growth Strategy for New Jersey will also be released in 2008. These industries are: life sciences, clean energy technologies, and finance. Another recently released *Ready for the Job* report, *Emerging Skill Needs of a Rapidly Changing, Innovation-Driven Economy*, identifies cross-cutting workplace trends and skill needs affecting employers throughout the innovation economy. Previous *Ready for the Job* reports identified the skill needs of the following industries in New Jersey:

Construction
Disaster Management
Life Sciences
Health Care
Hospitality/Tourism
Information Technology

Manufacturing
Port Newark/Elizabeth
Retail
Transportation
Utilities/Infrastructure

Information provided in the *Ready for the Job* reports is derived from an Industry Workforce Advisory Council for each industry, interviews with key employers and policymakers, focus groups of educational institutions and other stakeholders, a review of available labor market information, and background research on industry trends. Employer feedback collected in this and other *Ready for the Job* reports will be used to inform efforts to prepare individuals for industry jobs, including workforce development initiatives, K-12 education, higher education, and vocational training programs.

Results and reports from the *Ready for the Job* initiative are distributed through the NJNextStop website (www.njnextstop.org). NJNextStop is the State of New Jersey's primary career guidance Internet portal for high school students, counselors, teachers, and parents.

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Executive Summary

- Technological Advances
- Other Factors Driving Increase in Remote Work
- Types of Remote Work
- Skills Needed to Engage in Remote Work



This report highlights factors driving the rise in remote work jobs, the ways remote work is affecting the workplace, and the skills workers need to be effective in remote work environments.

Advances in information technology and the increased globalization of business operations are transforming the nature of work in New Jersey and nationwide. More than ever, employees are working and maintaining communications with co-workers in remote locations.

As remote work begins to play a larger role in the American workplace, the skill needs of workers in and outside of a traditional business setting will change as well. This *Ready for the Job* special report highlights factors driving the rise in remote work jobs, the ways remote work is affecting the workplace, and the skills workers need to be effective in remote work environments.

The number of Americans whose employers allowed them to work remotely at least one day per month increased 63% from 2004 to 2006.¹ Overall, it is estimated that 12.4 million people in the United States work from home at least once per month and 430,000 have become e-entrepreneurs using the eBay auction and selling website.²

Remote work is likely to continue to increase in New Jersey. New Jerseyans are more likely than residents in other states to have in-home access to high-speed Internet connections.³ In 2006, the Leichtman Research Group reported that New Jersey had the highest broadband penetration rate (48.6%) among the 50 states. New Jersey workers also have the fourth longest commute to work in the nation.⁴ Finally, the dominant industries in New Jersey are filled with service and information-based jobs that can be handled from remote locations.

Technological Advances

Technological innovations that increase the speed and quality of communication have enabled more individuals to work remotely and have changed the very nature of some jobs. High-speed Internet access, mobile computing devices, teleconferencing, videoconferencing, and other technological advances all allow individuals to work efficiently from any location.

Other Factors Driving Increase in Remote Work

There are several additional factors that are influencing the prevalence of remote work throughout the nation and in New Jersey. First, globalization of business has led to an increased need for more effective international communication and information accessibility. Information technology tools are being used to allow companies to establish global distributed teams that are able to use advanced tools that support complex interaction from remote locations.

In addition, competition for skilled workers has led employers to recruit workers from a broader geographic labor market and to offer alternative work options as a retention tool for newly hired and incumbent workers.

Finally, environmental concerns have led, and continue to lead, many of New Jersey's political leaders to support policies that highlight the environmental benefits associated with telecommuting in the state for more than 10 years. The New Jersey Department of Transportation reports that remote work options reduce rush hour traffic, conserve fuel consumption, and reduce air pollution.

Types of Remote Work

There are varying forms of remote work. Some of the common types of remote workers include teleworkers, mobile workers, distributed team members, workers in virtual organizations, e-lancers, online independent service providers, and Internet-based entrepreneurs.

- **Teleworkers** typically work at an organizational facility, but are also given the option of completing assignments from home.
- **Mobile workers** typically work in the "field" away from the office and from home.
- **Distributed team members** make up global teams and use advanced information communication technologies to collaborate effectively.
- **Workers in virtual organizations** are employed by an organization that does not have a physical office location. Employees interact with supervisors, clients, and co-workers via technology.
- **E-lancers** are independent contractors who collaborate with other independent contractors to create a temporary project team.
- **Online independent service providers** are individuals who provide services to clients remotely
- **Internet-based entrepreneurs** use online auction and shopping websites to market and deliver products to customers.

Skills Needed to Engage in Remote Work

Increasing use of remote work applications is transforming the skills needed by American workers. As a result, employees need to identify, develop, and strengthen a new set of skills in order to maintain an organization's productivity while working remotely. Individuals who intend to engage in remote work must focus on strengthening the following skills:

- **Technology Skills:** Remote workers must be able to operate, troubleshoot, and maintain computer software and hardware independently and understand network security issues.
- **Written and Verbal Communication Skills:** Many remote workers do not have the luxury of non-verbal cues to facilitate clear communication. As a result, they must rely heavily on written communication and verbal telephone conversations to establish and maintain a positive rapport with clients and co-workers.
- **Time Management Skills:** Remote workers must demonstrate time management skills in the creation of self-imposed structure, prioritization of work assignments, and the balancing of their professional and personal lives.
- **Problem-Solving and Decision-Making Skills:** Remote workers must demonstrate detailed knowledge about their assignments and the confidence to resolve business challenges on their own.
- **Lifelong Learning Skills:** Remote workers must be self-motivated to stay up-to-date on current trends that may influence their work and help to maintain their competitive edge.
- **Entrepreneurial Networking and Marketing Skills:** Both small businesses and workers who perform remote work for an organization need to demonstrate the drive and persistence needed to seek new business opportunities.
- **Supervisory Skills:** Leading a remote workforce is a unique challenge for today's managers. Much of the managerial resistance to remote work is related to an unwillingness to embrace new approaches to human resources. For example, managing remotely requires supervisors to focus on outcome-based performance, establish and nurture a good rapport among subordinates, engage in effective communication of goals and outcomes, and use of technology to conduct managerial functions.

Preparing future remote workers to work in innovative workplaces will require that they develop new skills that will be needed to work successfully. Educational institutions at all levels should consider developing and implementing creative ways of integrating these skills into school curricula and extracurricular activities.

Introduction

- Purpose
- Methods



This section describes the primary purpose and methods used to collect the information presented in this report.

Advances in communication technology are changing the way that Americans live and work. Today, more than ever, employers are developing remote work structures and protocols that take advantage of technological tools and strategies that can maintain business competitiveness in an innovation-based global economy. New Jersey's state agencies, educational institutions, and other stakeholders must work together to ensure that job seekers and workers have access to the training and education needed to develop the skills that they will need to work remotely in today's innovative economy.

Industries Included in the Study

- Education
- Pharmaceutical
- Telecommunications
- Law Enforcement
- Health Care
- Marketing
- Graphic Design
- Travel
- Administrative Services

Purpose

This report outlines the workforce trends and skill implications of applying computer-based information technology to today's organizations. It describes trends affecting workforce skill requirements that are influenced by the application of remote work alternatives. Specifically, it highlights the rise in remote work, the ways in which remote work is penetrating the workplace, and the skills workers need to be effective in remote environments. This report highlights the trends, popular types of remote work, and the skills required to be a successful remote worker.

Methods

In-depth interviews were conducted with 18 individuals representing 15 New Jersey employers in 9 industries. Interviews were used to understand the skill requirements for key occupations and to better understand the workforce challenges facing various types of remote workers in the state.

The most current available information was used to describe key trends and aspects of remote work. Researchers at the John J. Heldrich Center for Workforce Development at Rutgers, The State University of New Jersey, also reviewed relevant reports, scholarly literature, and websites on changing workforce skill needs.

Occupations Profiled in this Report

- Consultant
- Human Resources Representative
- Sales Representative
- Private Investigator
- Intelligence Analyst
- Medical Coder
- Travel Agent
- Designers
- Account Managers
- Event Planner

Key Trends Driving the Rise in Remote Work

- Technological Advances
- Other Factors Driving the Rise of Remote Work



Several important trends are driving the growth of remote work across many sectors of the modern economy.

The number of workers and businesses conducting some, or all, of their work from a remote location using some form of technology is increasing. The number of Americans whose employers allow them to work remotely at least one day per month increased 63% from 2004 to 2006.⁵ Employers increasingly report hiring consultants and full-time workers who conduct most or all of their work remotely. Indeed, there is now an emerging market of businesses that conduct all of their work outside of traditional office spaces.

As remote work increases in popularity throughout the nation, companies in New Jersey are finding that it is also gaining in popularity within the state. In 2002, the U.S. Census Bureau estimated that 98,226 New Jersey workers worked from home full time, or 2.5% of all workers over 16 years of age. By 2006, approximately 134,000 workers worked from home in New Jersey—3.2% of the working population.⁶

Several key trends are driving the advance of remote work in American society. Most importantly, advances in information technology have enabled workers to communicate and send large amounts of data and other information across the world in ways that could only have been imagined decades before. Other factors are also contributing to the rise of remote work, including globalization of business, competition for skilled workers, changing worker demands, and concerns about the effects of commuting on the environment.

Technological Advances

Rapid developments in information technology are transforming every aspect of life in the United States. From advances in telecommunications to the introduction of wireless Internet technology, these developments are affecting the way work is conducted. Information technology provides new tools workers need to access information and communicate more effectively from any remote location.

The telephone was one of the first technologies to enable remote work, and it is still relevant today. Remote workers, from customer service agents to project managers, use telephones to communicate with clients and colleagues across the globe. Many of the managers interviewed for this study indicated that they depend heavily on basic telephone conversations to nurture their relationships with their remote workers. The introduction of wireless telecommunications, such as the cell phone, has increased remote worker flexibility, allowing workers to communicate from virtually anywhere.

Internet, wireless Internet technology, and other forms of advanced telecommunications technology, such as videoconferencing, are driving remote work to new levels of acceptability and accessibility in the labor market. Workers can now send large datasets, images, reports, and other materials

Key Advances in Technology

Some key technology tools that remote workers rely upon include:

High-Speed Internet

High-speed Internet provides faster access to information than dial-up options, and allows a user to continue using the Internet while communicating over the phone.

Mobile Computing Devices

Mobile computing devices offer workers who travel or work outside of a primary office the advantage of accessing information and communicating with others. Mobile computing is a generic term for tools that workers can carry in their hands and use while moving about. These systems offer more flexibility than “portable” devices that are designed to be moved from one stationary location to another stationary location.

Intranet

Intranet systems are private computer networks that are used within organizations to share information among employees. Although many companies use intranet systems for internal use, they can also allow an organization to communicate in an online system that is protected from the open Internet. This allows employees to access confidential information while off site without risking security breaches that are known to occur over the open Internet.

Teleconferencing

Audio teleconferencing allows participants in different locations to speak to each other simultaneously over the telephone using various combinations of telephone lines, bridges, microphones, and speakers. One large organization interviewed for this study reported using teleconferencing to support regular communication among team members who were distributed in facilities across the nation and throughout the world.

Videoconferencing

Videoconferencing is a live connection between people in separate locations. Videoconferencing can provide low-level transmissions of static images and text between multiple locations or, when more advanced systems are used, full-motion video images and quality audio. Videoconferencing systems can be very expensive. As a result, advanced videoconferencing is used most often in large organizations to support formal meetings. Lower-resolution digital videoconferencing capabilities, which are less expensive and more accessible, are becoming more popular.

Online Storage Lockers

Applications that allow distributed workers to share large files are particularly popular among remote workers. For example, online storage lockers can be used to store and provide access to large files. In addition, many remote workers rely on zip files, which address the problem of large files by compressing them so that they can be shared via email systems.

to others across the world, as well as engage in face-to-face communications via videoconferencing.

Organizations that rely on communication between widely distributed workers tend to implement advanced forms of communication such as videoconferencing, teleconferencing, extranet instant messaging programs, and online communications. The availability of mobile communication systems depends largely on the size and type of the remote worker's employer. Many large firms issue company-owned laptops, portable printers, and Blackberry devices to mobile workers. Some large companies also provide computers, printers, fax machines, phones, office furniture, and supplies to remote, as well as on-site, workers. Many smaller organizations require employees to provide their own space, furniture, and equipment that are needed to work away from a typical office location.

Companies are finding that investment in systems that support remote collaboration are beneficial, as they reduce costs associated with travel, meetings, and employee time spent on non-essential work activities.

Other Factors Driving the Rise of Remote Work

In recent years, the globalization of business has encouraged increased flexibility in the operation of many organizations. As globalization fuels the need for employees to be able to work with global team members and serve clients outside of the local market, technology offers solutions that make these collaborations effective.

Many organizations are turning to non-traditional work structures and recruiting methods to attract and retain a qualified workforce. Remote work is an attractive option for companies struggling to find skilled employees who live outside of their local markets.

Alternative work options allow employers to hire experienced and capable professionals who work outside of the range of a typical commuter. In addition to recruiting applicants from a larger geographic range, remote work options also allow companies to recruit qualified workers who favor work outside of a traditional office setting. This group of potential applicants may include highly experienced individuals who have retired, decided to work from home to raise children, or who suffer from limited mobility related to disabilities.

Today's workforce is aware of the accessibility of information and is educated about the technologies that can be used to conduct work assignments in a setting other than the traditional workplace. As the concept of working remotely becomes more popular, employees are increasingly aware of the benefits that have been reported by others. These benefits include reduced commuting time and costs, savings on wardrobe and parking, increased time with family, reduction in stress, increased sense of autonomy, and an

overall improved quality of life. As information communication technologies advance, companies will need to establish and maintain an organizational culture that meets the expectations of skilled employees who understand the wider work options available in a knowledge-based economy.

Remote work, typically with a focus on telecommuting, has been classified by the New Jersey Department of Transportation and many political leaders as a strategy that could have a positive impact on the environment in New Jersey.⁷ In fact, the Sloan Work and Family Research Network reported that in 2005, New Jersey was one of nine states with a law that related telecommuting with the environment and congestion.⁸ In addition, in 1998, a bill was passed that provided corporation business tax and gross income tax credits for employers who allow their employees to telecommute.⁹

Businesses that provide commuter benefits, such as remote work options, are also recognized by the New Jersey Department of Transportation as New Jersey Smart Workplaces. As environmental concerns related to air quality and energy consumption continue to increase, policymakers may continue to influence the growth of remote work by continuing to support and promote state laws that reward employers, providing technical assistance for setting up home offices and supporting bills that could increase telecommuting options for public-sector employees.¹⁰

Types of Remote Work

- Organizational Employees
- Workers in Virtual Organizations
- Internet-Based Entrepreneurs and Independent Contractors



There are many types of workers across a variety of organizations that engage in some form of remote work.

The term “remote work” encompasses a variety of work strategies and methods of performing work tasks. Olsen defined remote work as organizational work that is performed outside of the normal organizational confines of space and time.¹¹ Additionally, there are other terms that are commonly used to describe remote work scenarios.

Examples of the common terms include traditional teleworker, mobile teleworker, virtual worker, e-lancer, and Internet-based entrepreneur. Each type includes a common element of working in a remote location, perhaps at a different time than other co-workers. In addition, each type involves the use of technology to interact with others at work.

Organizational Employees

Advances in communication technology are allowing organizations to implement innovative work options that allow employees to work more effectively from anywhere. As a result, organizational workers are better able to work from home, while traveling, and when completing assignments in the “field.” In addition, organizational employees who do not share the same location of other colleagues are increasingly able to work more effectively on distributed project teams.

Teleworkers

The traditional teleworker works primarily at an office location, but also works from home on a regular basis. Many companies report using the telework option as a business solution. For example, a company interviewed for this study was able to maintain operations without increasing its facility size by allowing appropriate functions to be carried out by personnel who work in remote locations. Other organizations were able to extend their working hours without increasing facility costs by establishing telecommuting operating procedures. Customer service operators, for instance, can manage customer concerns and questions online after hours from a location other than the primary office.

Remote workers interviewed for this study reported that successful remote workers have to be self-disciplined enough to **work effectively in an isolated environment** and to **establish boundaries** when working at home. These boundaries include both physical and non-physical barriers. Telework experts interviewed for this study warned that a lack of self-discipline may lead some teleworkers to work longer hours than they would have if they had been working in the office. In addition, managers often make the mistake of not setting clear boundaries for themselves regarding when to contact remote workers at home. This may add pressure to remote workers who have trouble distinguishing their work from their personal lives.

Not all jobs and workers are well-suited for telecommuting. A renowned telework expert interviewed for this study suggested that ideal candidates for teleworking are employees who have demonstrated that they understand

Law Enforcement

Police cars have been transformed into mobile offices. The cars include specially designed and installed systems that are made rugged enough to stand high levels of impact. These technologies include advanced radio systems, video capabilities, and mobile computers that are used for data management.

the job and have a proven track record of being able to complete assignments without step-by-step guidance from a supervisor. In addition, candidates should be self-disciplined, able to work alone, skilled in problem solving, and able to handle being accountable for results.

Mobile Teleworkers

Mobile teleworkers work away from home and work. Some suggest that one must work “on the road” at least 10 hours per week to be considered a mobile teleworker. In order to communicate with colleagues and supervisors, these workers use basic information communication technologies.

Mobile work is not a new concept. There are many jobs that require one to work away from both the home and the office for a majority of working hours. Some of these occupations include police officer, sales representative, and plumber. Although the job titles have not changed, the nature of work in these populations has been altered greatly by advances in technology. Law enforcement specialists consulted for this study explained that technology has transformed work at all levels. For example, support staff, officers, agents, and investigators are now expected to develop the skills needed to **obtain information using various advanced information sharing software programs**.

In addition to changing the way that work is accomplished, the influx of technologically advanced systems has also changed the skills that are required for incumbent workers, new applicants, and the future workforce in many traditional industries. Mobile teleworkers have to be particularly skilled at **keeping track of their activities** and **working independently** to meet performance goals. In addition, these workers must have **strong content knowledge** and the **ability to gather information** from the various available sources in order to address challenges and unique situations.

Distributed Team Members

Globalization of business has created increased demand for diversified teams. As organizations increase in size and continue to build operations around the world, globally and nationally distributed teams are becoming more prevalent. Technology is used to address communication needs of team members in widely distant locations. A large organization interviewed for this study uses several technological systems to enhance communication between distributed team members. Options that foster open communication between team members include online chat rooms, web conferencing, video technology, and teleconferencing. Representatives from this aforementioned organization agreed that once technology is introduced, increased communication becomes part of the organizational culture.

In order for the team to be effective, the members must demonstrate **strong teamwork, verbal and written communication, and the technological skills needed to interact with the advanced communication systems** that are being developed. Employees without these skills can hinder team functioning and lessen overall productivity.

Workers in Virtual Organizations

Marketing

Marketing firms rely on advances in technology to communicate with clients throughout the life of a project. Technological advances allow team members to collaborate and update project drafts. Some systems even allow clients to access and provide feedback at varying iterations of a project.

Virtual organizations are physically distributed and interact through digital infrastructures and mobile tools to perform their tasks in a mobility-oriented structure and culture.¹² Employers of virtual organizations interviewed for this study report that virtual infrastructure offers a financial solution to new business owners who cannot afford rising real estate costs associated with a physical business location. Virtual infrastructure also allows the employer to recruit talented workers who are located outside of the local job market.

Many virtual organizations are project-based and require individual workers to work in teams to conduct projects. For example, a virtual marketing firm that participated in this study employs virtual workers from graphic designers and account managers to administrative assistants. These various types of workers are required to complete all aspects of a given marketing strategy.

Advanced technology supports extensive collaboration and project management activities. Virtual organizations rely on various Internet-based programs to support everyday office activities. For example, online systems assist employers in determining the amount of time that should be billed to clients. Automated timesheet solutions provide a standard format for all employees, create summary reports, and even remind employees who are delinquent in submitting timesheet records.

Employers insist that virtual workers be **technologically savvy** and **adaptable** in order to work in virtual organizations. These skills are important because technology not only supports the completion and delivery of client projects, but also supports relationship development with co-workers. Virtual organization employees must be very **organized** and able to **maintain a record of their work tasks** so that their billable and non-billable hours can be tracked. Similar to other types of remote workers, virtual workers must also demonstrate **time management skills, organizational ability skills, administrative skills, and verbal and written communication skills.**

Internet-Based Entrepreneurs and Independent Contractors

Technology has provided many new opportunities for entrepreneurs. The entrepreneurs interviewed for this study provide services to clients from remote locations. There are several different types of entrepreneurs who use technology to recruit, communicate with, and deliver products to clients without ever meeting the clients or project team members in person. **E-lancer** is a popular term that has been used to describe independent, electronically connected freelancers who join together into fluid, temporary networks to produce and sell goods and services. These networks of professionals are project based. Once an assignment has been completed, the team disbands and the team members once again become free agents.

Many believe that e-lance teams will become more common as outsourcing increases in popularity among large corporations.

E-lance teams may include several types of team members. For example, e-lancers may work with project teams of full-time organizational workers or with teams where all members are independent agents. Overall, an e-lancer must have the ability to **work well in diversified team environments**. In addition, it is important that these individuals have an **up-to-date understanding of business practices, contracts, and networking strategies**.

Another type of e-entrepreneur is the **Internet-based independent service provider**. In this study, e-entrepreneurs were interviewed who offer various administrative and consulting services, including virtual assistants, a clerk, a meeting planner, a travel agent, and a bookkeeper. Often these individuals juggle many clients and work on their own. These small business owners require **accounting and marketing skills** as well as the **ability to balance work and family obligations**.

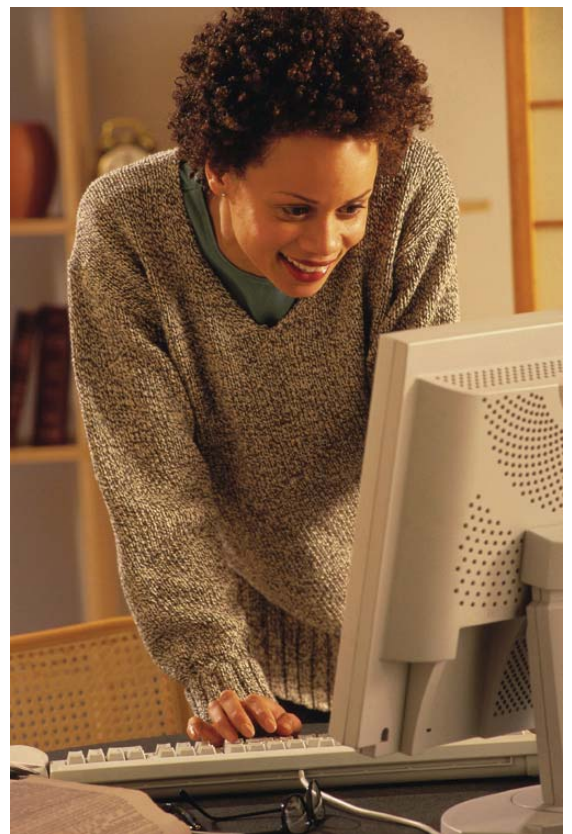
A third type of popular entrepreneur is the **Internet-based entrepreneur who sells goods and services worldwide on online auction and shopping websites**. These online businesses vary greatly, from hobby sellers to those who establish large-scale organizations that sell items electronically. Internet-based sellers must become **familiar with the structure of selling** specific to different online auction websites and demonstrate the **technology skills** needed to navigate the website, take and download digital pictures of products, and track deliveries. **Customer service skills** are also extremely important for Internet-based entrepreneurs, and success depends on being organized enough to **respond to inquiries and deliver products in a timely manner**. In addition, the seller must demonstrate proficiency in **written communication** and must also **provide detailed and accurate descriptions of the product**. On this site, buyers use customer service feedback information from previous buyers to determine the creditability of the sellers.

They must demonstrate basic business skills, as well as other skills unique to a remote work environment. For example, networking and marketing are key skills to any entrepreneur; however, Internet-based entrepreneurs rely more heavily on Internet finds, client referrals, and networking organizations to help them identify new clients.

Successful e-entrepreneurs demonstrate **strong computer, networking, basic business, self-discipline, and time management skills**. Time management and self-discipline were particularly important for entrepreneurs transitioning from working in an organization to working for themselves from home. Many reported that they worked long hours and struggled to set limits for themselves during their adjustment to working from home.

Priority Skill Needs of Remote Workers

- Technology Skills
- Verbal and Written Communication Skills
- Time Management Skills
- Problem-Solving and Decision-Making Skills
- Entrepreneurial Networking and Marketing Skills
- Lifelong Learning Skills
- Supervisory Skills



Working remotely influences the way that work is conducted and, as a result, influences the skills required to work effectively.

Today's technology allows access to information that can lead to increased flexibility, a reduced focus on process management, and an increased focus on outcome evaluation. These changes encourage increased acceptance of work conducted in off-site locations.

There are several common skills important to working effectively as a remote worker. Although these skills apply to both traditional and alternative workplaces, they have special relevance in remote work scenarios.

Technology Skills

It is no secret that basic technology skills are required in today's workplace. Most companies and most jobs require applicants to have basic computer skills and an understanding of the importance of technology in today's society. As technology advances and systems for specific applications become more sophisticated, however, many employers require that applicants also have experience using specialized software programs as well as more complicated hardware systems.

Several of the organizations consulted for this study use online chat e-rooms to support collaboration among dispersed workers. These rooms allow employees to chat, share confidential files, and edit files in real time at a private location on the Internet. In order to use this system, the remote worker must know **how to navigate the website, interact online, and maintain computer hardware to ensure reliable participation.**

Although many large organizations employ specialized technicians to support information technology functions in an organization, remote workers report having less technical support when working remotely than they did when working on site. Successful teleworkers adapt by **learning more about troubleshooting computer systems on their own.**

Another important component to maintaining a computer system is **understanding network security.** Many organizations have been hesitant to allow remote access to internal corporate networks because of fears of vulnerability of corporate confidentiality. Remote workers must be aware of the most reliable computer antivirus systems, cognizant of the types of websites and scams that are commonly used by computer hackers, and diligent in their care of company-issued equipment as well as confidential client information.

Verbal and Written Communication Skills

When communicating and establishing working relationships with colleagues in different locations, unique aspects of verbal and written communication begin to emerge: an inability to rely on visual cues and the reliance on remote communication to establish relationships with others.

Key Points

Remote workers must

- Be able to operate, troubleshoot, and maintain computer software and hardware independently; and
- Understand network security issues.

Employees who work and meet clients in remote locations are not able to rely on non-verbal cues to supplement general conversation and information delivery. Those interviewed for this study suggest that **clarity** in verbal communication is key since misinterpretation can sour business relationships and reduce productivity when collaboration is necessary to complete work assignments.

Accuracy of written communication becomes more important when distributed team members or remote clients rely heavily on written communication to establish an impression of the remote worker's competence. Misspelled words and messaging that is not clearly written in direct and concise language may work against the establishment of a strong working relationship.

An interviewee who participated in this study admitted that she was required to be more thoughtful in her verbal and written communication skills once she started to work remotely. She explained that over time, she strengthened her skills in this area to reduce her time in writing effective emails and memos.

Time Management Skills

Time management when working remotely may pose different challenges for different workers. The experts interviewed for this study suggested that time management becomes increasingly important for those remote workers who have trouble establishing boundaries for working.

The traditional workplace sets basic routine guidelines for working. For example, most employees arrive, eat lunch, break, and leave work at generally fixed times. These guidelines reflect a shared understanding of expected behaviors between managers and workers. When remote employees work away from a structured environment, **they should establish and effectively communicate their individual routines.**

Strong time management skills start with individual planning. Experts interviewed for this study suggested that office workers who are inexperienced in planning and prioritizing their work assignments on a daily basis are not good candidates for working remotely. These individuals may be more likely to become workaholics than those who are experienced at managing their work. Often they begin to work longer hours to meet results-based performance standards, but are not able to effectively establish interim goals that allow them to complete assignments in a timely manner.

Key Point

Many remote workers do not have the luxury of non-verbal cues to facilitate clear communication. As a result, they must rely heavily on written communication to establish and maintain a positive rapport with clients and distributed co-workers.

Key Points

Remote workers:

- Must create structure for themselves,
- Should be skilled at prioritizing work assignments, and
- Should maintain balance of their professional and personal lives.

Time management challenges vary across workers. While there are workers who may run the risk of overworking, there may be others who are not able to focus on work in an environment that is not structured by an outside entity. Experienced remote workers, experts, and literature all suggest that **overall self-discipline is also a key component to managing time effectively.** Not only will workers have to stick to a self-imposed plan, **they must also be able to work effectively in an independent and flexible environment.** For example, remote workers who require high levels of social interaction may need to develop and make a commitment to strategies that can be used to help them to remain focused on working during their allotted work time.

Problem-Solving and Decision-Making Skills

Experts suggest that workers who are transitioning from working in a traditional office environment to working as a teleworker or mobile worker need to **demonstrate a strong content knowledge of the work that needs to be accomplished.** In many organizations, this requires an understanding of the basic foundations of the industry, political savvy, and experience dealing with situations that require one to adapt pre-scripted solutions to meet the needs of unique situations.

Without a strong underlying knowledge, a worker would not be able to carry out the tasks needed to effectively solve problems and make decisions.

The **ability to effectively solve problems and make decisions** is important when working in a remote location where the worker may not have regular access to the opinions and suggestions of co-workers or supervisors.

Entrepreneurial Networking and Marketing Skills

Entrepreneurs are commonly understood to be individuals who seek business opportunities. Both e-entrepreneurs and remote workers who work for an organization have to demonstrate entrepreneurial skills to varying degrees. Those who start their own Internet businesses **must demonstrate the motivation, persistence, work ethic, basic business skills, marketing skills, and networking skills** that are required to grow a new business. Many of the online entrepreneurs interviewed for this study explained that it is very important to participate in online networking sites and formal local and or national networking organizations.

Key Point

Remote workers must demonstrate declarative knowledge about the assignment and the confidence to solve problems and make decisions on their own.

Key Point

Entrepreneurs must demonstrate effective online marketing and social networking skills.

Lifelong Learning Skills

Often, in an office environment, workers benefit from exposure to new ideas and information that has been sought out, consumed, and shared by others. This exposure to a diverse pool of information allows many employees to stay aware of current events within the society and in the company. When workers work in a remote location, they must take on the additional responsibility of gathering information that will assist them in being knowledgeable of the trends and events that may influence their work.

The core of developing lifelong learning skills is the **development of a learning attitude**. A strong learning attitude will assist in the transition from a traditional academic setting (in which individuals are provided with guidelines that outline the most important information) to a self-motivated approach in which individuals must identify their own learning needs. In addition to identifying the information to be attained, it is important that a lifelong learner is also able to **recognize reliable resources, develop strategies for gathering information, and identify appropriate applications for using information**.

Key Point

Remote workers must be self-motivated to stay up-to-date on current trends that may influence their work.

Supervisory Skills (for Managing Remote Workers)

Although alternative work options are gaining in popularity, many managers continue to resist encouraging non-managerial staff to explore various types of remote work. Experts believe that much of the managerial resistance is rooted in an unwillingness to deviate from the traditional setting where a manager can directly observe an employee in the office.

Successful remote work strategies depend on **effective communication between managerial and non-managerial employees**. Because many managers focus on results more than process, employee work and availability schedules may vary greatly. If not managed well, this arrangement may actually limit communication and lower morale. For example, employees who work in the morning and afternoon may become frustrated if they are unable to contact an employee who works in the evening when working remotely.

Many organizations overcome the problem of accessibility by issuing communication technology to employees. For example, many organizations issue pagers, cell phones, and/or Blackberries to employees. Managers must carefully manage open communication systems to avoid work habits that cause an employee to overwork and to have trouble distinguishing between work life and personal life.

Key Point

It is critical that managers of remote workers nurture a culture of strong communication among managerial and non-managerial employees.

Managers of remote workers must also be able to **effectively manage company-issued equipment and supplies**. Many managers may be accustomed to maintaining office supplies, and must be careful to distribute resources fairly across remote employees.

Several managers of remote workers believe that many managerial concerns regarding remote work are based on a perceived loss of power. To avoid that problem, managers with remote workers should:

- Focus on outcome-based performance,
- Establish and nurture a good rapport among subordinates,
- Engage in effective communication of goals and outcome standards, and
- Use technology to conduct managerial functions.

Conclusion

Advances in technology are likely to continue to increase and to affect the way that work is carried out in organizations. As consumers continue to demand improved access to the high-speed Internet from locations away from a traditional office environment, technology will continue to support the growing prevalence of remote work. In order for future workers to be prepared to work effectively to meet the needs of an innovative and globally competitive economy, workers will need to develop the skills that are required for success. Educators and policymakers must work to incorporate the development of essential skills into the learning experience of tomorrow's workforce.

Endnotes

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Appendix: Employers and Individuals Consulted for this Study

Representatives from organizations throughout the state as well as from national organizations provided input and guidance on the development of this report. They include:

Ampersand Graphics
Suzanne Piece

Capital Health Systems at Mercer
Endaya Anderson

Crowd Connect Group
Patrick Diogenis

Educational Testing Services
Dahlia Forde

Gil Gordan Associates
Gil Gordan

Ideal Assistant
Debbie Lonergan

International Virtual Assistant Association
Linda Seldon

Middlesex County Prosecutors Office
Rodney Blount
Jason Lucas

National Association of Women Business Owners
Judy Hathaway

The Regus Group
Donna Scott
Dennis Watson

Sanofi-Aventis
Nuala Culleton
Ayelet Mosaffi

Telework Exchange
Cindy Auten

Third Hand Secretarial Service, LLC
Linda Siniscal

Virtual Legal Assistant Inc.
Aretha Gaskin

Word Pro
Sue Spakowski