

# Applications of Teleworking Based on a Study of Disabled Workers

Masahisa NISHINA<sup>1</sup>

<sup>1</sup>Nishina Occupational Health Consultant Office, 1–9–9–401 Obana, Kawanishi City, Hyogo 665-0015, Japan

*Received November 2, 2009 and accepted March 12, 2010*

**Abstract:** There are many problems involved in maintaining safety for different kinds of handicapped workers. One of the biggest problems is how these persons can commute to their workplace safely. One possible solution to this problem is using a teleworking system. This system is also good for saving money and the environment because it does not require commuting. The teleworking system has many other merits including enhanced safety and can be applied to many other aspects of life. For example, it can be used for the care of solitary elderly persons, watching small children in a two-income family, and working or providing medical treatment in remote and underpopulated areas. However, these applications are not yet common, and few reports have dealt with such merits. The case studies of disabled workers using teleworking reported here demonstrate the safety, financial and environmental benefits of teleworking.

**Key words:** Teleworking, Disabled workers, Safety, Finance, Environment, Lifestyle

## Introduction

Employing different kinds of handicapped workers while maintaining their safety is difficult for employers financially and from the point of view of risk. Even if it is possible for handicapped employees to work under these conditions, the biggest problem that remains is how these persons can reach their place of work safely. Commutation may be possible if they can somehow get around by themselves, but it is a very serious problem for the physically handicapped workers who can't do so. It is therefore usually very hard for them to get jobs. On this occasion I would like to introduce the case studies of two physically handicapped workers who, because they can't go to their place of work by themselves, work at home as company employees, a situation which is not yet common.

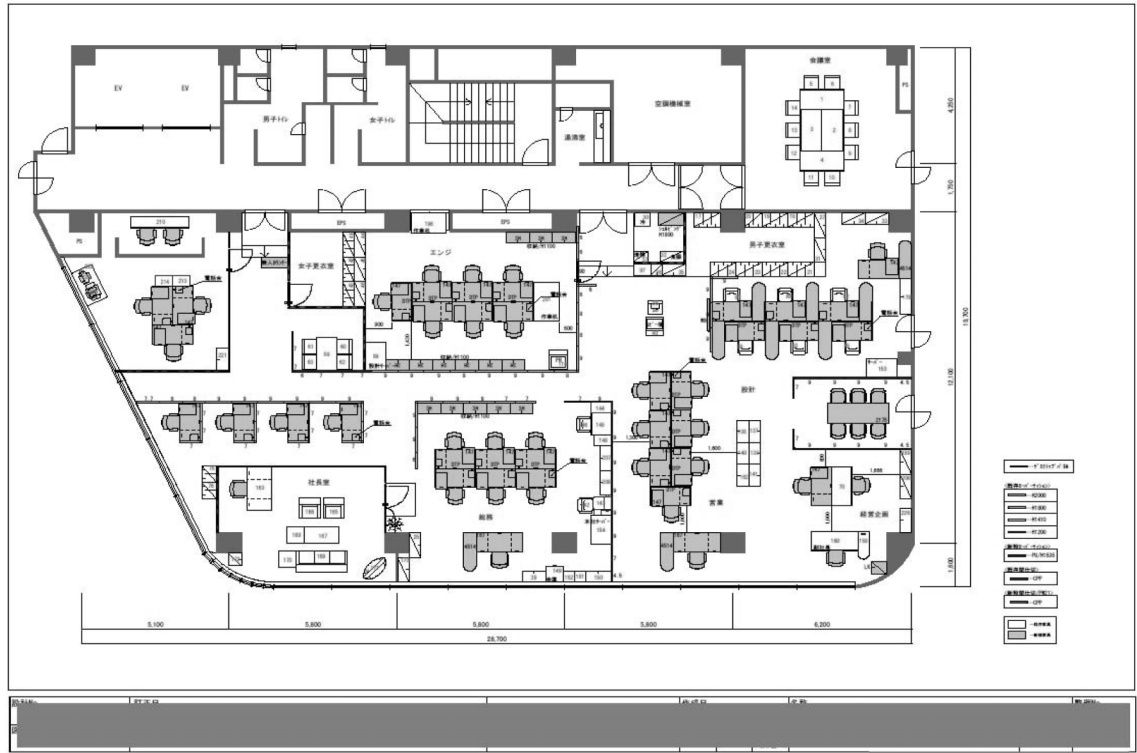
Recently, we can sometimes find working conditions which have achievement of targets as their principal requirement, while the place and time for performing the work are not so important. Some companies put achievement of targets ahead of having safe working conditions. However, we also realize there may be many risks for handicapped workers' safety and health when they are

working without any supervision.

The following two case studies are of subjects who are both working under supervision. They illustrate the many previously unrecognized merits of teleworking for working conditions and how they can be applied to other aspects of the life styles of the handicapped.

## Subjects

The first case is a male employee with progressive muscular dystrophy. He can't get around by himself though he can use a computer with his hands to a limited degree. He is skilled in CAD (Computer Aided Design) (Figs. 1, 2). He has been working as a CAD engineer at the Kokuyo Group Company (general office supplies), and his real working hours are calculated as the amount of time spent logged onto the company's computer network (Fig. 3). He doesn't need to go to his office every day because this work system has been integrated with company's payroll system (Fig. 4). The second case is a male employee who is suffering from paralysis of the right side of his body as the result of a traffic accident. Like the first case, he can't get around by himself. His CAD skills, working style and condition are the same as those of the first case so that the only real difference is the name of his disease. They hope their working conditions will be pub-



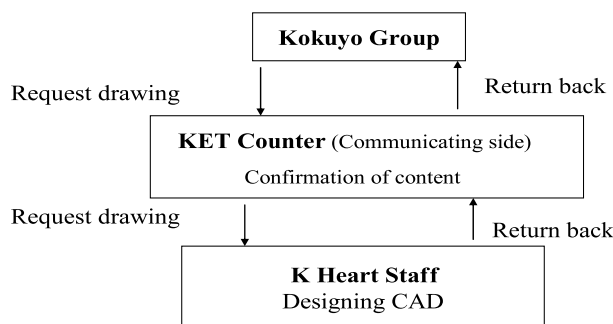
**Fig. 1.** One example of a CAD design result. It took 1–2 h.  
CAD: Computer Aided Design.



**Fig. 2.** One example of a CAD design result. It took 30–40 min.  
CAD: Computer Aided Design.



**Fig. 3.** K Heart staff working at home (left side), and communicating with the KET office (right side).  
K Heart: Kuroda Kokkodo Heart, KET: Kokuyo Engineering and Technology.



**Fig. 4.** Layout of business line.

KET and K Heart are both subsidiaries of Kokuyo Group Company.  
KET: Kokuyo Engineering and Technology, K Heart: Kuroda Kokkodo Heart, CAD: Computer Aided Design.

licized to help other disabled persons attain a better life style. Both subjects have given their informed consent to participate in this study.

## Results

The two cases show the following merits. First, there is no need to worry about traffic accidents because they usually do not need to come to their place of work. In addition, no time is needed for commuting except on a few occasions, so that money and time are saved and may be used for other, more useful purposes. Moreover, it is good for the environment since no transportation is needed.

Second, they do not need to worry about difficulties concerning social interaction. On the other hand, working alone may create a sense of loneliness. One solution to this is that they can seek counselling using computer connections during their working time. It is also possible to go out, at agreed upon times with other workers on request. The demerit can thus be changed into an

advantage.

Third, we can easily find out whether they work hard as well as give them advice. Once one of these two employees was working for a long time without rest, and he was immediately told to take a break. We can also become aware of something untoward happening and provide help as soon as possible.

Fourth, it is easy to get the results of their work because they are sitting in front of their computer most of the time. Results can thus be obtained in quite a short time (Figs. 1, 2). It is comparatively difficult to give orders to non-handicapped workers because they often leave their positions to do other work. In addition, disabled workers spend much time in front of their computer so that their work skills are quite advanced compared to those of non-handicapped workers.

Fifth, the advantages seen in these two cases can be applied to other aspects of life. As can be concluded from the results described here, using the teleworking system for disabled workers can be generally advantageous from the point of view of safety, savings and environmental protection. Other aspects may include caring for solitary elderly persons, watching small children in a two-income family, and working or providing medical treatment in remote and underpopulated areas. All these problems need to be solved in the near future. The two cases of disabled workers using teleworking thus suggest that there may be applications which could benefit people in a variety of situations.

## Discussion

We may imagine that it is hard for handicapped workers to go to their place of work, particularly for physically handicapped workers, and also that it is hard for the handicapped to get jobs and for the employers to provide

them with jobs. The two cases reported here may represent solutions to these problems, since this teleworking system has many merits. There are also demerits, but it is possible to focus on the confirmed merits or even to change the demerits into merits (see Conclusions)<sup>1-4</sup>. By taking advantage of the fact that they are connected to their company's network, persons who can't get around by themselves can benefit in many ways.

There may be many opportunities to make life better by using the teleworking system in other ways. These ways may demonstrate that teleworking is important not only for handicapped workers but also for non-handicapped persons with other life styles because of its advantages in terms of safety, savings and environmental protection and it may even offer a solution to the lack of highly skilled workers<sup>5</sup>. Teleworking may be beneficial to solitary elderly persons as well as two-income families wishing to keep an eye on their children. It may also help people living in remote areas find employment and receive medical treatment. However, such applications of teleworking are not yet common, and few reports have

dealt with such merits. The two cases of disabled workers using teleworking reported here may have important implications for the enhancement of many aspects of our future life styles.

## References

- 1) Baker PM, Moon NW, Ward AC (2006) Virtual exclusion and telework: barriers and opportunities of technocentric workplace accommodation policy. *Work* **27**, 421-30.
- 2) Schopp LH (2004) Telework for persons with disabilities in the E.U. and the U.S.A: what can we learn from each other? *Stub Health Technol Inform* **106**, 47-51.
- 3) Bricout JC (2004) Using telework to enhance return to work outcomes for individuals with spinal cord injuries. *NeuroRehabilitation*, **19**, 149-59.
- 4) Murray B, Kenny S (1990) Telework as an employment option for people with disabilities. *Int J Rehabil Res* **13**, 205-14.
- 5) Kitou E, Horvath A (2003) Energy-related emissions from telework. *Environ Sci Technol* **37**, 3467-75.