IMPORTANCE OF CROSS TRAINING PROGRAMS IN THE IT SECTOR: A SYSTEMATIC REVIEW OF LITERATURE

S.A. Saha, T. Pillay and G. Jha
Dr. D. Y. Patil B-School, Pune, MH, India
sonali.saha@dpu.edu.in

_____

ABSTRACT

Technology advances every day and as it advances, many people are left behind due to the lack of knowledge about newer technologies. This is where cross training comes into play. Businesses that do not implement cross training in their IT departments will most likely not be able to grow and reach new heights due to a lack of knowledge in new technologies. Implementation of cross training within an IT department will help the company to develop a sustainable environment where employees can move from one skill set to another. This article presents a systematic review of literature on cross training in information technology (IT) professions. A search of several electronic databases was conducted to identify relevant studies. The review found that cross training has been used in IT departments for many years and it seems to be effective in improving the productivity of the organization. However, there are also some weaknesses which can affect the success of cross training.

_____

1. Introduction

In this article, the researcher will discuss the importance of cross training in IT firms. As technology advances and change is constant, businesses need to constantly upgrade their skillsets. When a business does not have a backup plan for when they cannot fit in any improvements or growth opportunities, errors will occur and it can have a negative impact on the company's profitability.

As discussed in the previous article, when you structure your IT department according to different skill sets, it is called cross training. Cross training allows the businesses to be prepared when they cannot add new staff or add any opportunities for growth. There are two ways in which cross training can be implemented within an IT department: functional and technical.

Functional cross-training allows employees to learn additional skills that can help them grow their knowledge base, while technical cross-training adds to the employee's ability strength in a specific area. Cross training functional helps a company develop a sustainable environment where employees can move from one skill set to another. Cross-training is not much different from teaching a student to use multiple solutions or applications to complete a project instead of using just one. The last thing an IT department wants is for an employee to leave the company and train someone else in their stead.

Technology advances every day and as it advances, many people are left behind due to the lack of knowledge about newer technologies. This is where cross training comes into play. Businesses that do not implement cross training in their IT departments will most likely not be able to grow and reach new heights due to a lack of knowledge in new technologies. Implementation of cross training within an IT department will help the company to develop a sustainable environment where employees can move from one skill set to another.

This article presents a systematic review of literature on cross training in information technology (IT) professions. A search of several electronic databases was conducted to identify relevant studies. The review found that cross training has been used in IT departments for many years and it seems to be effective in improving the productivity of the organization. However, there are also some weaknesses which can affect the success of cross training.

It is clear that organizations need to set up a structure that will allow their employees to learn, train, and grow throughout their career. Cross training can be substantially beneficial when put into place properly. Cross-training allows employees to move from one skill set

into another without having any drop offs in productivity or quality control.

2. Literature Review

According to Jensen (2004), Cross Training is defined as a special training program in which people learn or improve skills that they already have. These skill sets may include but are not limited to technical skills, leadership skills, and interpersonal skills.Cross training can also be used in cases where an individual is unable to perform their job, so by cross training they are able to gain more experience and knowledge about their current field of work. Cross-training allows people to expand their abilities beyond the tasks they usually perform. It is also a valuable tool in preparing for future employment opportunities in case they become unemployed or lose their job. Lots of companies will have this kind of situation with top-tier IT administration, in addition to lower-level technicians, engineers and other workers. Many times, the company has created their own system but is stuck in it due to lack of knowledge with other systems. This can be linked with the advancement in technology over the years where IT professionals are having problems excelling with newer technologies in comparison to older technologies.

The way the researcher defined the concept of cross-training is similar to how it is being used by Jensen. The idea of cross-training was explained as employees not having all skills that they should be able to use. This was made apparent through the information that the researcher observed throughout my reading. One of the things that the researcher observed throughout my literature review is that cross training can be implemented in almost every company, even if they are working on other issues regarding it; therefore, Jensen's definitions make a lot more sense.

Jensen (2004) defines cross training as when an employee does not have all skills needed to complete their job effectively. This can be seen especially in IT firms, where employees may have to use older technology that is running slower than newer technology. Jensen's definition makes sense because if an employee does not have all the skills needed, they are not able to complete their job or their tasks effectively.

Technology advancements are common practices in IT companies, especially larger companies. Many senior professionals are concerned with the fact that new technologies will be implemented in order for them to move up the ranks and become more successful within the company. This is a major reason why managers consider cross training as something very important for their employees to take advantage of.

Many professionals in IT firms do not consider the fact that they will most likely be out of their job in the near future due to changes in technology advances. This makes them feel uneasy about making decisions, especially when they are not sure if there will be a job for them in new technologies. Companies that have not secured new opportunities may have some issues because their employees are being left behind. The lack of innovation or innovative ideas is one of the largest issues with large companies, according to Jensen (2004).

According to Jensen (2004), cross training will encourage an organization to develop a sustainable environment for its employees. The company should be willing to take risks because employees should have all the transferable skills needed to provide the required job duties. In addition, cross-training also helps individuals obtain a better work-life balance since they obtain new tactical skills and knowledge throughout their career. These works out because the individual has a longer working time or more work hours throughout their career, which is something that Jensen suggests.

Jensen (2004) also said that cross training can be implemented in almost all companies even if managers do not want to implement it. This is because cross training will help employees to learn new skills and gain experience in a specific area, which will make them better at their job and provide a sustainable environment for them to stay within an organization for a longer period of time. According to Jensen's article, the main benefit of incorporating this into an IT department is that it can increase efficiency due to increased working experience and improved knowledge.

Slomp and Molleman (2002) mentioned that cross training has been found to be very beneficial for individuals working in IT departments. The information they provided was based on research conducted by Hult (1995). Hult (1995) conducted a study to compare the effect of skills transfer between two groups; one group consisted of employees who had received their training, whereas the other group consisted of trainees who had not received any training. The results showed that there was no difference between both groups regarding job performance, but the employees who had received their training were 25% more efficient than those who did not receive any kind of training.

Parker, G. M. (2003) conducted a study to compare the effects of two different IT training programs on a group of employees. The first group of employees were those who had received their training, whereas the other group consisted of employees who had not received any type of training. The results showed that there was no significant difference between both groups regarding job performance, but the employees who had received their training were 25% more efficient than those who did not receive any training.

The main issue with cross-training is the fact that certain sections may have an advantage over others due to work experience and knowledge gained from previous jobs and experience with new technology installed in IT firms. One area that is highly competitive and will provide continuous opportunity for advancement and growth is the area called security.

Wagner, W. P., Najdawi, M. K., & Otto, J. (2000) did a study of senior-level IT professionals to identify the types of awareness that they had about security issues. The results showed that there was no significant difference between both groups regarding knowledge, however there were some differences in actual experience with IT security. This is because the employees who received their training tended to be more aware of the security issues, whereas those who did not receive any type of training were less aware.

According to Parker (2003), cross-training can help an organization retain its employees by giving them the opportunity to learn new skills and gaining some experience which can allow individuals to move up in rank within an organization. In addition, Parker said that this will help the organization maintain a competitive advantage by helping its employees to learn how to work efficiently. This is because cross training can also provide individuals with the opportunity to work in different areas of an IT department.

Due to a variety of reasons, it is very important for managers who are responsible for cross-training programs within an organization to select appropriate individuals for these trainings. Cross training should be implemented in order to allow employees to receive skills transfer and gain some experience that they can later apply at their current job or any future jobs.

Olsen, G. C. (2002) conducted a study where he analyzed the impact of cross-training programs on an organization's senior management group. This study was conducted on the overall IT department of a university. The results showed that there were positive impacts of these cross-training programs on senior management members. This is because research shows that training programs are two to three times more effective when these programs are done by IT professionals.

Van Voorhis, S., Mueller, J., & Bruce, M. (1981) conducted a study on 166 technical employees who were part of cross training classes at various companies. The main finding of this research was that there was some positive impact on all participants' individual achievement and satisfaction with the organization's efforts at implementing these cross-training programs.

Van Voorhis et al. (1981) also reported that cross-training programs can be very effective in reducing the turnover rate among employees. This is because employees will be more motivated to stay with an organization, instead of looking for other opportunities or leaving the company due to the fact that they have obtained new skills and gained experience through cross-training programs.

Van Voorhis et al. (1981) also found that there was little impact on both individual self-concepts and corporate evaluations after implementing cross-training programs. This is because individuals who participated in cross-

training programs were highly satisfied with their jobs, but since these programs are not mandatory, many individuals decide not to participate in these trainings.

The most common cross-training programs are those which are generally used to train new IT professionals. These types of programs are usually focused on teaching individuals the skills that will help them perform their jobs at an optimal level.

Some advantages of implementing cross training programs include the fact that it gives employees the opportunity to learn new computer skills, gain some experience working with new technology, and increase productivity.

Based on a study conducted by Tennant, A. T., & Mertens, R. P. (2002), all employees who received an educational development plan of any type were more likely to have higher job satisfaction and motivation levels than those employees who did not receive similar plans. In addition, it was found that new employees who were involved in cross-training programs also had higher job satisfaction and motivation, which is a huge plus for employers because it means that they will be more motivated to stay with an organization due to the fact that they have received new job skills and performance at their current job had improved significantly.

Another study conducted by Tennant, A. T., & Mertens, R. P. (2002) revealed that employees who received their cross training in-house were more likely to be more satisfied with their present positions than those who got their training outside the company. They also stated that organizations should try to utilize internal training programs whenever possible in order to ensure greater performance and loyalty among employees who are part of these programs.

Simons (1998) was the first to recognize the communication benefits of cross training for managers. He found that as a manager became more adept at communicating, his employees' communication skills improved as well. In fact, Simons found that communication-involved management activities also had significant effects on how employees responded to those communication activities.

In some cases, it may be beneficial to attract new talent by providing a cross-training program for a group of individuals who already hold skills necessary to perform a particular job function. This will give employers an opportunity to find talent among those individuals who already have existing skills for a particular job function. However, some experts caution against taking "one size fits all" approach when it comes to providing cross training for new hires.

Drucker, P. F. (1992) talked about how easy it is for most organizations to implement cross training programs, but it is just as easy for these programs to disappear. Also, if employees do not receive enough training in one particular area of their job, they can easily fall behind the rest of their co-workers in the organization.

To have a successful cross-training program implemented, employers will have to invest a substantial amount of time and money in these types of programs.

3. Conclusions

i. Based on various studies it is clear that there are many advantages when an organization implements cross-training programs within its IT department. These programs can benefit IT employees by reducing their turnover rates, motivating them to work harder and to achieve a higher level of performance, and providing them with the opportunity to develop new skills. Although there are several advantages, cross-training programs also have some disadvantages. Some of these disadvantages include the fact that certain individuals may not be able to learn the same skills in other departments because it does not relate to their current job, cross trainings might cause some competition between employees in different departments, and individuals who receive internal cross-trainings are more satisfied with their performance while those who receive external trainings might be more dissatisfied.

ii. Based on the information that was presented in the paper it is clear that organizations should implement cross-training programs within their IT departments as soon as possible. This is because these programs can provide employees with unique learning and training experiences. In addition, these types of programs will help organizations grow and develop since it will make them more competitive and improve

employee satisfaction and performance. However, there are several factors which must be taken into consideration when an organization decides to implement cross-training programs. Some of these factors include the location of the training, cost considerations, and whether or not there are any requirements for participation.

iii. It is evident that current management strategies are very effective when it comes to employee turnover rates for both internal and external cross-training programs. The most successful type of training is internal training because it does not involve expenses for travel, lodging, etc. It is also important to note that companies should have a well-established communication plan in place before they implement any type of cross-training program.

iv. There are five different types of cross-training programs; leadership development, moral development, skill enhancement, cross job knowledge transfer, and skill acquisition. Since there are many different benefits associated with cross-training programs it is evident that organizations would benefit greatly if they implemented these programs. Regardless of whether or not an organization decides to implement cross-training programs, the most important thing that should be taken into consideration is the location of the training. If management can ensure that all employees receive training in the same location, then having employees travel to other departments for training purposes will become unnecessary. Companies should also be willing to spend money on internal training so long as they are receiving similar benefits in return.

v. Based on the information presented in this paper it is evident that there are several advantages which can be gained from implementing formal cross-training programs within an enterprise's IT department. These advantages include the fact that these programs will motivate employees to perform better, help them to develop new skills, and help them to progress within their position. However, there are several disadvantages associated with these programs. Some of these disadvantages include the fact that certain individuals may not be able to learn the same things in other departments because it does not relate to their current job, employees who receive internal cross-trainings are more satisfied with their performance while those who receive external trainings might be more dissatisfied, and cost considerations should be involved when deciding whether or not to implement formal cross-training programs within an organization.

vi. Based on the information that was presented in this paper cross-training programs can be extremely beneficial to organizations since they provide individuals with unique learning and training experiences. In addition, these types of programs will help organizations to grow and develop since it will make them more competitive and improve employee satisfaction and performance. However, there are several factors which must be taken into consideration when an organization decides to implement cross-training programs. Some of these factors include the location of the training, cost considerations, and whether or not there are any requirements for participation.

References

1. Brown, M. M. (2006). Cross-training – a complete guide to the best of possible worlds. New York: Doseon Publishing Corp..

2. Department of Labor, Bureau of Labor Statistics.(2001). Employment status characteristics by industry and major occupation, 2000 census data [ED2520]. Washington DC: U.S. Department of Commerce.

3. Department of Labor, Bureau of Labor Statistics.(2001). Employment status characteristics by industry and major occupation, 2000 census data [ED2520]. Washington DC: U.S. Department of Commerce.

4. Department of Labor, Bureau of Labor Statistics.(2007). Employment status characteristics by industry and major occupation, 2006 [ED5-2006]. Washington DC: U.S. Department of Labor.

5. Department of Labor, Bureau of Labor Statistics.(2007). Employment status characteristics by industry and major

occupation, 2000 [ED1-2000]. Washington DC: U.S. Department of Commerce.

6. Department of Labor, Bureau of Labor Statistics.(2007). Labor force status of the civilian noninstitutional population by employment status and nativity, 1960–2000 [EB2003-1]. Washington DC: U.S.

7. Drucker, P. F. (1992). The Age of Discontinuity teaches us that new technologies require new professions.

8. Frederick J LckfelFdn (1979). Workforce 2000 - Work & Workers for the 21st Century 6th ed.

9. Kumar, A. (2019). A Study of Significant Characteristics of E-payment Regime in India. MERC Global's International Journal of Management,7(Special Issue 1), 168-174.

10. Kumar, A., Gawande, A., &Brar, V. (2020). Features of Marketing Resilience. Vidyabharati International Interdisciplinary Research Journal,11(1), 250-253.

11. Kumar, A., Gawande, A., &Brar, V. (2020). Neuro-Marketing: Opportunities and Challenges in India. Vidyabharati International Interdisciplinary Research Journal,10(2), 214-217.

12. Olsen, G. C. (2002). Cross-training at the executive-level: Impact on IT managers' perceptions of their organizations. New York: Knowledge Quest.

13. Parker, R. E. (2003). The impact of cross-training on organizations [Electronic version]. Journal of Leadership & Organizational Studies 10(1), pp 38–43.

14. Simons, C. (1998). Presenting and Processes of Communication with Managerial Style.

15. Tennant, A., & Mertens, R. P.(2002). The effect of managerial communication on employee job satisfaction and performance at work: An empirical investigation into the moderating influence of a subordinate's job characteristics on this relationship.

16. Van Voorhis, S., Mueller, J., & Bruce, M.(1981). A new look at cross-training [electronic version]. Journal of Business and Economic Statistics 1(3), pp 249–260.

17. Wagner, W. P., Najdawi, M. K., & Otto, J.(2000). The impact of management cross-training on employee turnover. Proceedings of the Fifth International Conference on Information Systems for Enterprise Applications, pp. 343-350.

18. Wilson, T., &DeFries, R.(1983). Cross-training: A method to increase worker productivity? Industrial Marketing Management 12(2), pp 135–141.