

Workplace Automation

Abstract

Workplace automation is a delicate issue that is perceived as a tireless struggle between humans and machines with machines being more successful in many instances. The use of computers in the working environment is affected by the type of environment, with different jobs falling under predictable settings being the most likely to be changed, while those involving routine tasks in unpredictable setting being less probable to be affected by automation. The importance of studying this relationship is that there is a broad range of careers at stake when nations employ automation as human labor will be rendered useless while robots and computers increase in usage. However, even though a broad range of careers is at stake, there exist a few that will remain unchanged in large parts for a while in future. Thus, it will be interesting to study the trends of the effect, especially with the continued advancements in technology in many sectors of the economy.

Keywords: automation, machines, environment, technology.

Workplace Automation

While the advancement in technology is inevitable, the reality that it is accompanied by adverse effects on the survival of humankind is associated with concerns over the need to implement the anticipated inventions. Robots constitute a concept of technological advancement that is increasingly becoming popular in many parts of the world as engineers continue designing inventions that make use of automation. By definition, the word “robot” is derived from Slavic language “rabota” meaning servitude, justifying their use in workplaces (Murashov, Hearl, & Howard, 2015, p. 2). According to Manyika, Chui, and Miremadi (2016), the concept of automation is perceived in the sense of a titanic struggle that is increasingly being depicted between humans and machines while machines appear to be on the winning side in most instances. Their incorporation in the workplace is interestingly a debatable issue because while automation seeks to ease workflow, there is a possibility that a majority of employees would lose their jobs in the process. In a study done by Oxford University, it has been postulated that over the next two decades, an estimated 47 percent of jobs in the United States will be rendered obsolete (Lee, 2016). With the increasingly challenging economic times, it would be interesting to witness the outcome of the introduction of robot technology in America and other nations that are making the effort to mechanize the workplace.

The Outcomes of Workplace Automation

Through the introduction of robots in the occupational sector, it is described that the key outcomes of the interplay of robotics and the workplace is that it could either lead to human capital, robot workers, or, in other cases, the symbiotic workers. The initial consideration involves careers where it is impossible to replace human capital and irrespective of the

anticipated outcome, the primary effect is the human worker with an ability of executing functions with rationalism (Murashov et al., 2015, p. 15).

Another consideration involves the effect of symbiotic workers. The blend of characters that use the technology at their disposal constitutes a primary factor that defines the work environment in the process. The possible result, therefore, is the occurrence of the symbiotic workers. This is an element that constitutes human workers that have been programmed and sometimes equipped with robotic devices as though they were real robots. In fact, it is explained that such a step involves making rush decisions such as the use of robots to understand occupational safety (Murashov et al., 2015, p. 15).

Jobs that are Likely to be Complimented by Workplace Automation

A variety of jobs have been identified to be on the brink of shift through the automation process, with those involving physical activities the most probable to be replaced. In the United States, it is estimated that almost one-fifth of jobs involve physical activities that are easy to substitute using machines. Manyika et al. (2016) note that the works implied in this case are those that involve humans working in a predictable environment, which will make it easy to program computers to execute these services. The specificity in the actions done in a familiar environment thus further promotes the chance for the invention of programmable substitute. In fact, an excess of three-quarters of activities that involve physical jobs can be replaced by machines based on the technology at disposal today (Manyika et al., 2016). The best example of careers where the automation would be easily executed involve the manufacturing industry and the food service sectors where workers are used to performing routine tasks. In fact, in the production and manufacturing industries, robots are already being used as substitutes to

performing the product assembly and packaging of goods following production (Manyika et al., 2016).

Another set of careers that are on the brink of being replaced by machines are those that involve data collection and automation processes. Many people feel fatigued doing repetitive tasks that comprise filing processes and manipulating data into information that can be used in other areas. In the United States, it is estimated that Americans spend one-third of their time collecting data and processing it into readable forms, and such careers are most likely to be affected by the computerizations process. A broad range of jobs are implied by this factor with works involving the retailing sector, the financial services sector, and the insurance already ripe for automation (Manyika et al., 2016). It is stated that even high-earning jobs are likely to be affected in the process with an estimated 30 percent of high-paying jobs involve similar activities and are also likely to be affected in the process. As opposed to other sectors, however, there is a chance that rather than be wholly substituted, the most probable effect will be a shift in roles such that people will end up performing different roles other than those they have been used to previously. For instance, the mortgage brokers currently spend 90 percent of their time at work processing applications. With the introduction of automation processes, it is predicted that such employees would instead spend a majority of their time advising clients regarding loan availability and interests (Manyika et al., 2016). In the end, however, the automation process would have nonetheless resulted in shift in employment and role in the workplace.

Jobs Where Automation is less likely to be Successful

While it is predicated that a large majority of jobs will be affected through automation, there still exist a variety jobs that are yet to be perceived in the perspective of computerization. Areas where robots are less anticipated to thrive involve settings where machines are operated in

unpredictable environments. According to Manyika et al. (2016), examples of such sectors include the collection of trash in a public place and in areas where machines are operated in unpredictable settings such as moving a crane on a construction site (Manyika et al., 2016). The hotel industry where employees are involved in making beds in hotel rooms are less likely to be affected. The unpredictability factor acts as a protective element because only human cognition can be able to relate to materials thrown carelessly in the working environment as noted in the hotel environment. This area is, however, under intense research into possible ways of designing robots that can be programmed to work efficiently in such challenging environments.

The teaching profession is also expected to remain unaffected in large parts because it anticipated that jobs involving managing humanity will be affected in smaller proportions than other sectors. Other related careers that involve managing human beings and interacting with people include nursing and dental surgery which are expected to drop by 30 percent and 13 percent respectively (Manyika et al., 2016). However, among all, teaching is the least expected to be affected by automation because the education sector involves a complex interplay of experience with coding information. Other related careers that will be less affected in the process of automation involve careers where employees are involved in the use of software, the writing of promotional material, and advising customers about wear.

Reasons why it is Impossible to Replace Human Capital Completely

The primary reason that justifies the existence of automation while there is an appreciation of human labor is that tasks that cannot be substituted by the process of automation are only complemented by it (Autor, 2016). In many types of jobs, there is a multifaceted approach in the inputs used in production with the most probable outcomes involving labor and creativity. In other instances, there is a combined effect of adherence to the laid out standards

with judicious application of discretion in justice delivery (Autor, 2015, p. 6). While each dimension of the pendulum plays a critical role, it is not advisable to obviate the need for the other element, as each input plays a key role in production. In fact, it is considered that productivity enhancement in one setoff tasks is likely to result in an increased economic potential in the other. Thus, the existence of tasks that are dependent on each other in the perspective of the input are likely to remain unaffected for the long term.

The Future of Robot Technology

While it is only an emerging field, it is described that scientists are already getting bred at the realization that robots are intended solely for the execution of routine tasks. In recent times, a new collaborative robotics field has been identified called managerial robotics that seeks to make more use of the computer aspect of the robot in a constructive way (Murashov et al., 2015). Rather than relegating robots to the mundane and repetitive tasks in the predictive environments, it is described that researcher are working to perfect memories which can be in turn manipulated in the workplace for managerial roles. The high-powered computers are being studies to determine their effects in carrying out complex data analysis processes and keeping a workable plan of the progress report of a given task while offering decision support (Murashov et al., 2015). While the field is only in the advancing stages, it is expected be a success based on the preliminary findings that have proved that it is possible to utilize robots in the managerial roles in a broad range of working environments. Through the demonstrations by workers in describing the interplay of autonomy and sociality, collaborative robots are anticipated to be a huge success in the managerial roles.

Conclusion

In summary, there are three possibilities of effects of the use of robots in the workplace including the occurrence of workers, robots or symbiotic workers. A variety of jobs are expected to be affected in the process of workplace automation with the most at risk including those involving the execution of repetitive tasks in a predictable environment. Also, jobs involving collection and automation processes are expected to be affected by the implementation of machines as substitutes of human labor. However, while automation is expected to have a great impact on American jobs, some careers are less likely to be affected in the process. The primary criterion that should be used in the technical analysis of the feasibility of automation would be the amount of time spent on individual activities rather than the assessment the occupation as a whole (Manyika et al., 2016). Thus, other careers are expected to be less affected because of the complexity in the execution of tasks with the best example being jobs related to managing people. Examples of occupations within this bracket include the teaching profession and those areas where products are in a disarranged manner as occurs in areas with unpredictable environments. With time, however, it is expected that robots will take up more challenging roles such as managerial tasks as researchers continue to explore the limits of their utilization in managing systems and social elements.