Student

Professor

Course Code

Date

 There are four other variables used in global infrastructure apart from people and cultures. It is worth noting that these variables operate dependently and the efficiency of one variable may determine that of the other. To start with, I would like to talk about network and network systems. Under these two variables, I shall major on security and communication aspects. Looking at security, it is observed that it consists of both the policies and practices put in place to monitor and to limit chances of unauthorized access, misuse, modification or network accessible resources. Security is, therefore, an important variable which aids in offering defense for the global infrastructure. It is through the use of security that a user may be able to install various passwords for authenticating information and allowing only the relevant persons to get access (DeHaan 52). Besides, security is vital in facilitating confidentiality, data accuracy and integrity as well as consistent data availability. There is also a possibility of the infrastructure being attacked by evil software such as malware. To prevent such incidences, security may be used in installing firewalls and other programs to prevent virus attacks. The second variable I would like to talk about is communication. This variable is a crucial component of IT infrastructure since it is what determines how information is dispatched, and how the information flows. This variable relates to the first variable, security, in that communication plays major roles in ensuring data confidentiality and privacy. The communication channel set in place determines whether or not the secured information may get to the public disposal or not. Communication works alongside security to foster integrity, data availability, and confidentiality. Looking at security, it may be observed that it has some relationship with the already mentioned variables, people and cultures, and has great impacts on them. I may argue that security plays important roles in shaping how people behave towards IT infrastructure. When security is well established, people end up understanding the demands for confidentiality and as such, they end up limiting themselves from providing the public with information relating to the infrastructure. In other words, security and communication have an impact on making people to avoid chances of data exposure and develop a culture of confidentiality and utmost integrity.

 The third variable I would like to talk about is computer hardware and software. Basically, information system contains both hardware and software. Through definition, it is observed that hardware refers to the part of the information system that one may touch. In other words, hardware is the variable of IT infrastructure which represents the physical components of technology and may include flash drives, keyboards, etc. On the other hand, software refers to a set of instructions which guides the hardware on what actions to be executed. Software programs are created by typing the instructions which tell the hardware what to do and may include word processing and excel sheets amongst others. The relationship between the hardware and the software is clearly visible since the computer software controls the hardware. Besides, the two variables cannot operate independently since they are complimentary. For any computer to efficiently process data and give accurate output, it is vital that the hardware and the software work together. Without computer hardware, computer software is useless and conversely. Computer software may be categorized into two, which include operating system software and application software. Looking at the relationship between these two variables with the already mentioned variables, people and cultures, an observation is made that both the hardware and software may only operate when actions are initiated and effected by people. While the software is responsible for providing commands to be turned into actions by the hardware, it is noted that the influence of people is important in the process of converting these commands into actions. On the other hand, culture influences the behavior of people and therefore, when people live under a culture of applying technological practices, it positively influences the ease of using the hardware and the software variables.

 The fundamentals of system development mentioned already include software development life cycle (SDLC), RA, Agile and extreme development methodologies. To start with is the SDLC which refers to a structure guiding the development team within a software organization and in which, all the details outlining how to develop, maintain and replace certain software are provided. Basically, it is observed that SDLC involves several activities which include planning, implementation, testing, documentation, deployment, and maintenance. Under the planning activity, the gathering of the requirements and development of important parts of the software are done by software engineers. Implementation stage involves the aspects of writing the code in accordance with the requirements of the client while testing involves finding out the defects of the developed software. Documentation is a process whereby all the steps undertaken in developing the project are recorded for purposes of improving the project in the future. It is noted that the documentation may include the writing of application programming interface (API) (Vijayasarathy, Leo, and Dan Turk 145). The software is then brought to application and maintenance enhanced for the future reference. On the other hand, registration authority (RA) serves the duty of verifying user’s requests for digital certificates and alerts the certificate authority (CA) to provide it. Registration authorities are networked systems facilitating the safe transfer of information and money amongst companies and users. Lastly, extreme programming (XP) is an agile framework intended to produce higher quality software as well as a higher quality of life for the team responsible for software development. It is noted that extreme programming is applicable when the requirements of software development are undergoing dynamic changes when there are risks brought forth by fixed times using technology when the development team is small and co-located and the technology being used allows for automated unit and, functional tests.

 Block diagrams are very important in describing the processes in infrastructure due to many existent reasons. To start with, it has been argued that block diagrams provide a representation of all the functions performed by each of the components under any given scenario. Therefore, since it is important to compare and contrast the functions performed by different variables in the processes of infrastructure, block diagrams become significant. Secondly, block diagrams provide for the inter-linking of all system variables. This is an indication that comparison of the effects of the various variables on the output of the process may easily be determined from the block diagrams. Thirdly, block diagrams have an advantage of indicating more realistic signal flows of a system. I suggest that the use of block diagrams is important in understanding the layout of a company infrastructure majorly because it gives room for easy analyses and comparison of the different components involved in the process (Dingsøyr et al., 84). Global IS infrastructure is the developing communication framework intended to eventually connect all the telecommunications and computer networks across the world. For instance, the internet is considered a facto global IS infrastructure in the current times since it links people from all over.

 Looking at the five levels of automation as discussed already, it is observed that within the first level, it is the human operator who does the task and turns it over for the computer for implementation. In my opinion, this is the most analog stage which was only applicable at the time computers and computing works were first invented. During that time, computers did less work than human operators. It was more of manual performances than of automation. Moving forward, looking at the second level, it is observed that the computer was able to help human operators by determining some of the options available for the task to be completed. This level was the real marked the real introduction of computing in the area of task completion. Human operators, therefore, seem relieved from the intensive tasks which they used to do during the level one era. However, even in this second level, still, automation is not realized to a greater extent since when a comparison is made, a realization obtained shows that still the human operators perform more tasks than the machines. The computers only determine options but the whole process of suggesting the options and determining which option to undertake relies on human operators. Therefore, we are also past level two in terms of automation. Level three, on the other hand, presents a scenario whereby the computer helps in determining options and also provides suggestions. The human operator may, therefore, make a choice out of the recommendations suggested by the computer. Ideally, it is observed that most of the computers in the near past did help in determining the options and giving more suggestions about the presented options. The human operator was left to make a choice of which option to take and decide on executing it. In my opinion, we have attained level 4 where a computer takes part in the selection of an action, leaving the human operator only with a task to decide whether the action should be done or not. It represents almost a full level of automation and the computers are now performing more tasks than human operators. Yes, I think we will achieve level 5 of automation. Looking at the faster rates at which technological advancements are taking place, it is evident that soon computers capable of selecting and implementing an action as long as human operator approves it will be invented.

Works Cited

DeHaan, Michael Paul, Adrian Karsten Likins, and Seth Kelby Vidal. "Discovery of network software relationships." U.S. Patent No. 8,990,368. 24 Mar. 2015.

Dingsøyr, Torgeir, Tore Dybå, and Nils Brede Moe, eds. *Agile software development: current research and future directions*. Springer Science & Business Media, 2010.

Vijayasarathy, Leo, and Dan Turk. "Drivers of agile software development use: the Dialectic interplay between benefits and hindrances." *Information and Software Technology* 54.2 (2012): 137-148.