Whatever functionality is implemented, there is a cost associated with it. This paper bolsters the idea that when a function is placed more near the top layer or the application layer, it would be more useful and would do justice to the resources associated with it then it would if it were placed at a lower level. Additionally, it also avoids redundancy if it is placed at a higher level as the function would have to be written again if there were some additional functionalities that are to be provided. It also takes into consideration the fact that the functionality implemented at a lower level is futile if it is not useful for the application and the application end up paying the cost for it even if it is not using it.

The paper explains end-to-end arguments, which essentially means to place the functionality in more proximity to the application later, using certain examples. The paper uses the example of “careful file-transfer” to elucidate that a task as trivial as transferring file from one host to another involves so many stages that can cause failure and disrupt the process. The paper discusses some threats and what are the solutions to the threat and states that it is very difficult to take care of all the threats. One such threats is that there may be an issue in copying data from one host to another. The communication system provides a reliability to successfully deliver the correct data using checksums and sequence no checking, but it is possible that while writing data on the hardware “one of the threats” can cause trouble in writing the file even though the communication system successfully delivered the correct package. Then the application must again implement the redundant check using checksum and hence there is it must do the work again. The paper using a real-life example which shows the kinds of threats that occur in real life.

The paper then goes ahead to state that it is wise decision for the lower level to provide some level of reliability instead of complete reliability. Using an example to support this, it further goes on to say that there is a trade off between performance and correctness. The “level of reliability” that each layer provides differs from case to case and it requires careful thought. The end-to-end argument does not tell us where to put the functionalities but tells us that a great deal of information of the system is required to make an intelligent choice.

The paper perfectly explains this using the example of the application of transmissions of voice packets namely the digital telephone instruments and speech message system. The paper goes on to say that in digital telephone instruments performance if of utmost importance as any error in efficiency can be corrected in real time whereas in the case of speech message systems where the efficiency of the message delivered is of utmost importance a little compromise on the performance is acceptable.

The example perfectly sums up the paper’s gist that there exists a tradeoff between the placement of functionalities and that entirely differs from application to application.