Is SDN the next OSI?

In a recent letter to the editor of Network World, the letter's author suggested that SDN protocols would likely go the way of ATM and OSI. To drive home his meaning, the author posed the question "Where are those protocols now?" In part because I have spent a lot of time recently working on varying SDN projects, I reacted somewhat negatively to the author's comment and question. However, after a bit of reflection I came to see that the author could well be correct, and that I was ok with that.

The fate that ATM and OSI experienced was very different. In the early 1990s, industry pundits were advocating ATM as a technology for both the LAN and the WAN. It is somewhat of an understatement to say that ATM-based LANs were never very popular. A more accurate statement is that ATM-based LANs were run over by the juggernaut that was and is Ethernet.

The situation was different in the WAN as a significant percentage of large IT organizations began to deploy ATM in production WANs in the mid 1990s. At its peak, ATM was deployed in over half of all Fortune 500 WANs. Based on some market research I did two years ago, almost a third of IT organizations still had ATM somewhere in their WAN in 2011. In the current environment, however, few if any IT organizations are adding ATM to their WAN, and most of the organizations that currently have it in their WAN are reducing or eliminating their use of the technology. I expect that by the time that ATM has been essentially eliminated, that it will have had a nice, twenty to twenty-five year run. Not great, but not shabby either.

When I think of "OSI", I think of both a set of protocols and a communications model. As the previously mentioned letter writer implied, the OSI protocols were not widely adopted in the market. X.400 was one of the very few OSI protocols to have even modest success. It was intended to provide standards for email communications and it was a core part of Microsoft Exchange Server until 2006. In the current environment, variants of X.400 are important only in a few niche applications.

So, while I have to agree with the author that the OSI protocols had little impact and are essentially absent from the current IT environment, I don't feel that way about the OSI communications model. The OSI communications model is a universally accepted prescription for characterizing and standardizing the functions of a communications system in terms of seven layers. It is difficult to read an article in the trade press about some new networking functionality and not see a reference to which layer of the OSI model that functionality belongs to.

So, was OSI a bust? Given that the OSI model lives on and the protocols had little impact, I would say that OSI was correct from a direction setting perspective, even though it got the implementation details wrong.

What direction is SDN trying to set? I suggest that some of the key attributes of SDN are increased automation, more programmability of network elements and more reliance on

software. SDN is also often associated with network virtualization. There is an excellent chance that the vast majority of networks five years from now will reflect those key SDN characteristics. If that happens, will anybody really care if OpenFlow is one of the enabling technologies?