**Justin’s Computer Network Diagram**

**Definition and Importance**

**IP address and DNS:**

A DNS is a domain name system, a server/database where a site’s web domain is housed. A DNS server is crucial to a computer network because DNS server is also a system where web domains are translated into a unique Internet Protocol (IP) address. IP addresses are significant to a computer network because it is the element that identifies every device on the internet. Additionally, IP addresses facilitate communication between devices (i.e., PC, Laptops) and websites.

**Server and client:**

A server can be defined as software and/or hardware that provides client services. To elaborate more within a computer network, a web server is used to interchange data from the internet to connected clients. Without a server, a client cannot connect to the internet. A client is defined as a device and/or user. A client could be a laptop and/or a PC within a computer network. Clients are essential to computer networks because it is the physical device that a user utilizes to interact with his/her computer network.

**VPN:**

A VPN is an acronym for Virtual Private Network. Within a computer network, a VPN is used to protect the IP address of a client by adding ambiguity to it. To elaborate more, a VPN serves the purpose of hiding a user/client’s actual IP address which provides the user with the ability to surf the web anonymously. A VPN is crucial to a computer network because it adds a layer of security to an individual’s data.

**Firewalls:**

A firewall is the network security infrastructure that funnels incoming/outgoing traffic based on established network security preferences. The firewall is essential to a computer network because it can block/prevent communications malicious traffic, which keeps a user’s data and devices safe.

**LANs and WANs:**

A local area network is generally referred to as a LAN. A LAN is a cluster of interconnected clients that are located within the same area (i.e. same house or building). A wide area network is a cluster of interlinked clients in a larger geographic area.

**Justin’s Computer Network**

*As discussed within this week’s learning module, a network is a group of linked elements. Specifically, a computer network is a group of linked computer elements. For instance, computer networks could include elements such as the internet, a firewall, a server, a modem, a router, computers, and add-ons such as a printer and/or digital cameras.*

*I chose to illustrate Justin’s computer network for this week's diagram. Within the upper left-hand portion of the diagram is his internet/web server connected to a firewall. His firewall connects to his modem. His modem is wired connected to his router, and his router is wirelessly connected to the clients/Justin’s devices, which are his PC, laptop, cell phone, and printer. His printer is connected to both his PC and Laptop wirelessly. Lastly, as shown within the diagram his digital camera is connected to his laptop through a wired/USB connection. When considering Justin’s computer network, the primary recommendation I would make is to establish a LAN to allow seamless collaboration between the different devices he utilizes for work (i.e. PC, Laptop, Digital Camera, and printer). Establishing a LAN could simplify the process to share files uploaded from his digital camera to his laptop, to his PC, and ultimately to his printer. Additionally, I would suggest adding a VPN in order to add a layer of security and ambiguity to his data while searching the web.*

**References**

*Fox, R., & Hao, W. (2017). Internet Infrastructure: Networking, Web Services, and Cloud Computing (1st ed.). CRC Press. https://doi-org.ezproxy.snhu.edu/10.1201/9781315175577*