You work for an advertising firm with offices in Albany, NY, and Springfield, MA. The offices in Albany serve as the headquarters. The Albany headquarters is home to the executive team and 150 employees. The headquarters also stores the corporate data and is the corporate internet backbone. It hosts the IT department that centrally manages all LAN services, including the wireless LAN. The IT department also manages the wide area network (WAN) that connects all of the offices via site-to-site virtual private network (VPN) tunnels. The Springfield office hosts about 50 employees. Approximately 50% of these employees are mobile, defined as traveling more than 80% of the time. To hire and retain the best talent, the firm allows employees to work from home. This removes the constraint that employees have to live within commuting distance from the firm’s offices. Remote and mobile employees are provided access to the corporate network via a VPN client. The VPN client requires employees to have access to reliable internet services to allow for effective collaboration across teams and for access to media content. The company provides all employees with a laptop with full disk encryption, data loss prevention (DLP), and antivirus software. The IT department manages all corporate laptops and has the ability to log into all systems for support. This means that all laptops are centrally managed by the one IT department. Due to an increase in opportunities for expansion to new markets, the firm has embarked on an initiative to hire and train new college graduates for the company’s Future Vision program. Future Vision focuses on global expansion. The initiative is to hire graduates into the marketing, finance, and IT departments. You were hired as part of the Future Vision program and have been working at this for some time now. You have spent a considerable portion of your time troubleshooting and analyzing the organization’s computer network to keep it running smoothly. Your direct supervisor and lead network administrator have been very impressed with your skills and fast learning abilities. To determine whether you are ready to take on more responsibility, you have been asked for your input regarding the new Fayetteville, NC, office setup project. Your task is to conduct research on this area and deliver a report to the team with key considerations and recommendations for the setup of the network infrastructure. The Fayetteville office will be home to 50 employees, including the new executive vice president of sales and marketing. All the possible sites have offices located in an office building with access to fiber, cable, and T1 internet service providers. In addition to the standard network, the site must support live video teleconferencing calls with employees based at the other sites. It must also reliably send print jobs to billboard printers located in the company headquarters in Albany.

1. **Internet Service Provider:** This section is based on research into actual providers at the new office location.
   1. Explain key considerations for identifying an internet service provider for the new location.
   2. Compare at least two internet providers available on the basis of speed, security, and reliability.
      * Be sure to address how these specifics would impact business goals and objectives.
   3. Based on your analysis, determine the appropriate internet provider for this location to meet the business goals and objectives. Be sure to explain your reasoning.
2. **Additional Configurations:** In this section, you will address the accompanying considerations for the network based on the needs of the new office location.
   1. Identify **hardware and software** solutions to meet the needs of the new office location. Be sure to explain your reasoning.
   2. Identify a **printer configuration** solution to meet the distance printing needs of the new office location.
      * This could include such printer configuration considerations as tracking devices, automating driver distribution, and controlling access.
   3. Identify **bandwidth and device solutions** to meet the teleconferencing needs of the new office location. Be sure to explain your reasoning.
3. **Network Diagram ( draw a word document)**
   1. Include a network diagram that illustrates the recommended technical network configuration of the hardware and software, taking into account the recommended LAN topology from Milestone One. Use a diagramming tool of your choice.
      * The diagram should identify the relationships between:
        + Subnets
        + Network objects and devices
        + Routing protocols and domains
        + Traffic flow and network segments
   2. Paste the diagram into the final Word document, rather than submitting a native file from your chosen drawing application.

This the milestone one

In designing a good network for a business, the first step is to verify the goals and technical requirements of the company (Schmitz, 2014). I would also determine the features and functions required in the network system to achieve the purposes of the business. The next step should be to perform a network readiness assessment. Afterwards, I would create a site acceptance and solution test plan and finally generate the networking plan of the project.

Designing a business network is not a daunting task, as many people think. A network is simply a link that allows the computers in your business to communicate. Most modern computer operating systems are network-ready, eliminating much of the manual work involved in configuring the network with the communications and hardware procedures. However, to create a basic plan for an efficient and expandable network, one must be aware of the business communication needs and know about networking technology. When creating a network for the computers in the business, the factors to consider include cost, security, expansion, and support the first consideration in network designs measures the equipment and maintenance costs. The equipment includes hubs, cables, routers, and network switches. Other items to be considered is the cost of labor in setting up the network. Another vital factor to consider is building a network for expansion. Good network infrastructure should be designed to accommodate the needs of the business as it grows. As the company expands, it creates a demand for more computers and bandwidth. The network system should also be designed in a way that allows the incorporation of future technologies.

Securing a network from external threats and attacks should be the primary concern of any business. While Wi-Fi networking is the least secure networking method, a company should design a network with rigid wired Ethernet connection that eradicates the danger of hacks to only those with physical access to the network (Dsparks, 2018). Another factor to consider is the support the business will require in the installation and maintenance of the network system. If the business needs a multifaceted fast network, the company should consider the availability of local technical help. The local area network should be designed to minimize the level of service, thus reducing the maintenance costs. The following are various network that are commonly used.

Point to point topology, Bus topology, Star topology, Star topology, Ring topology, Mesh topology, Tree topology, Hybrid topology. Since the company has vision to grow globally it needs to merge all types of networks topologies to assimilate all the computers at dissimilar branches operating with dissimilar levels of entry and advantages. Hybrid topology is highly recommended, because it is faster, reliable, effective, scalable it is also having some disadvantages such as it is very complex due to the fact that it is a combination of different topologies and it is expensive. The hybrid topology is easy to add and remove nodes, it is also difficult to design and maintain.

**References**

Schmitz, A. (2014). Chapter 6 Goals and Objectives. Goals and Objectives. https://2012books.lardbucket.org/books/management-principles-v1.0/s10-goals-and-objectives.html.

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