Distributed Network Design

Name:

School Affiliation:

**Areas of functionality needed by the organization that can be provided through distributed networking.**

**Expansion**

Every company yearns to grow and expand in size. As this happens, the company will need to host its infrastructure either internally or externally. The information that the company will be handling means that it will need extra storage services which have to be secure since the company cannot afford to lose information and data (Caballe, Xhafa & Abraham, 2011).This means then that the company will need to have a distributed system infrastructure so as to keep pace with rapid expansion. Capacity to expand will mainly be determined by the availability of finances and need to have extra markets. Also, the sustainability of the entire project will need to be considered.

**Performance**

Performance is at the heart of every institution. Every company wants to perform well and excel. Distributed systems happen to be more fault-tolerant as compared to single servers. This, therefore, means that the company will have its operations continuing in case there is a mishap in one machine which means that there is more reliability (Schilling, 2017). The distributed systems mean that when one stops working, other nodes will continue functioning and therefore the performance of the company is assured. It is also possible to establish a node in several physical localities where the distributed systems permit traffic to hit the nearest node which results in low latency and improved performance. Even though this may require high costs to implement, it is mostly one-off. In the long run not only does this ensure data efficiency but also the good performance of the company (Speciner, Perlman & Kaufman, 2012). After a certain period of time, there will be a need to see if the performance is indeed improving as a result of the distributed network. The output will need to be compared before and after the distributed networks were installed.

### Administration

### Any company has the administration department which is tasked with will want to have an integrated distribution network that will support the entire product cycle from the design of the product to the moment it reaches the end-user. When the distributed network design is employed, things become easier as it facilitates communication among groups and aid in decision making (Nin & Herranz, 2010). When the main company is connected to the branch companies dispersed over a geographical region, it becomes easier to undertake administrative duties. Network infrastructures help in reducing the role played by time, place and hierarchy in the structure and hierarchy of a firm. To identify the capacity of the system, the ease of administrating the company will determine if indeed the distributed network design is having an impact.

### Visibility/ Market Recognition

### Distributed network infrastructure helps a company achieve visibility. It helps a company manage customer relationships and experience and where to improve customer engagement. Price may happen to be the only difference among competing products of different companies and full visibility and presence may reduce customer defection to the rival company. The company will be able to know more of the customer needs from this visibility. The company is able to expand as earlier stated and this means more customers are able to reach its services. It enables the parties in

### the business to be on the same page and be aligned with the business objectives and user needs (Memon & Safari, 2017). It will be expected that the company will be a key player and force to reckon with in the market as a result of adopting the new network design platform. That is how the performance of this functionality will be determined.

### Security of the company and its data

### Distributed network design is one way in which a company can enhance its security (Memon & Safari, 2017). It comes with message integrity, authentication and confidentiality. When the information is stored in a single server or a single machine and then it happens to go down, all company’s data gets lost. When the company employs a distributed system, and the system goes down, only some specific services may go down but not the entire system. The company is then assured of its security and continuity by adopting distributed network systems. To identify the capacity and performance of the security functionality, the determination will be having zero incidents of the security breach.

### Connectivity and security requirements for the proposed network at AT&T

### Some of the security requirement that will be included comprise of specific policies and procedures. The company will have a solid policy and procedure that will be a blueprint for management and remediation of issues. There will also be laid out firewalls that will provide security at the gateway. Next, there will be endpoint security through using a good antivirus to prevent compromises and multi-factor authentication. Lastly, AT&T will have wireless networks that block devices from connecting unless authenticated to pass the required set rules. All these security features will be subject to the availability of finances and approval from relevant authorities.

### References

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### Memon, Q., & Safari, an O'Reilly Media Company. (2017). *Distributed Networks*.