Network Diagram Proposal

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The first step I took in improving the network configuration of Me, Myself and I, Inc was improving the cables. I swapped the 10Mbps and 100Mbps links with a mix of Cat5e and Cat6 cabling. Even though Cat6 can support 10Gbps, it isn't the most reliable for longer distances, it can perform at it's rated speeds over a maximum distance of about 160 feet while Cat5e is still able to reach its 1Gbps speeds at around 320 feet. Because of this, I opted for the Cat5e cable for the longer runs while Cat6 was used in shorter runs. I feel as though this is a good option as it will last several years into the future without any additional upgrades to the cables and will provide about 10 times faster data transfer if the full speed is utilized. After upgrading the cables, I made some updates to the switches that are in place. For the main set of switches, I opted for three managed switches, specifically, I would use the Cisco SG350-28-K9-NA. This switch has 28 ports, which is more than enough, and supports up to Gigabit speeds. This would also allow for future expansion as not all of the Ethernet ports are in use. The system administrators would also be able to configure the switches to work better with the network as they are managed and can be tweaked remotely. For the different departments, I went with the Cisco SG220-26P smart switch. This switch is capable of Gigabit speeds and does not require as much configuration as the other switches being used. They have 26 ports which using one switch per department will work and even have some room for expansion. I opted for the same switch to run the servers. For the 200 users on the call floor, I decided to go with the Netgear GS752TPSB. This smart switch has a total of 52 ports and using 4 of them would support the entire call floor with no room for expansion. It would be possible to expand however by adding an additional switch where the printer is currently. The only downside to using a switch with this many ports is that only 4 of the

ports support Gigabit speeds, which shouldn't be an issue because I don't think many large file transfers will be happening on the call floor. I created three different subnets for the network on each of the main switches. This would eliminate the overflow of network traffic, especially with 200 active users on the call floor. I think with all of the upgrades in place the network will remain relevant for several years and this proposal also leaves room for upgrades in most areas.

References

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