

Michael Dennis

Flash Research Paper: Data Centers and Networking

Our firm can save over \$13 million over the course of the next three years by upgrading to a tier III data center. Tier III data centers leverage redundant components and concurrent maintenance which reduce downtime. By upgrading, we will increase system availability which will decrease the costs created by downtime.

Our data center is the hub of all our IT operations. Imagine it as the brain of our network and imagine downtime as that brain receiving concussive force. Downtime stops any IT related operation. A tier I data center is defined by its basic site infrastructure, meaning it has enough working parts to operate. Tier III data centers are defined by their concurrently maintainable site infrastructures, meaning that they have many more components than they need. Whereas a tier I data center has just enough fans to cool the system, a tier III data center have enough fans to run if a few go out of order. If one or more fans need to be turned off for either planned or unplanned maintenance, the tier I datacenter shuts down. However, the tier III datacenter will continue to run throughout the repair process. Tier III data centers have redundant critical components which allow them to run through routine maintenance that occurs. So a whereas tier I data centers are expected to experience downtime even if nothing with their performance malfunctions, a tier III data center will only experience downtime due statistically improbable malfunctions.

The Tier III data center will take a full year to build and cost a projected \$35 million as a onetime cost to build. So sticking with our current datacenter will save \$35 million next year and then won't save the firm a dime for the next three years. The tier III datacenter won't provide any saving the first year but will save over \$24 million each of follow years. In three years, the tier III datacenter will save the company over \$48 million. The net benefit of upgrading to a tier III datacenter over three years adds up to over \$13 million.

### **Net Benefit Analysis:**

	Year 1	Year 2	Year 3	Total
Tier I	\$35,000,000	\$0	\$0	\$35,000,000
Tier III	\$0	\$24,114,528	\$24,114,528	\$48,229,056
Difference				\$13,229,056

### References

Cecci, Henrique. "Select The Right Data Center Design Standard To Reduce Risk and Save Money ." 10 March 2015. *Gartner.com*. <<https://www.gartner.com/doc/3003419/select-right-data-center-design>>.

Lerner, Andrew. "The Cost of Downtime." 16 July 2014. *Garner.com*. <<http://blogs.gartner.com/andrew-lerner/2014/07/16/the-cost-of-downtime/>>.

Uptime Institute Professional Services, LLC. "Data Center Site Infrastructure Tier Standard Topology ." *Uptime Institute LLC*. (2012): 1-12.