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Flash Research Assignment #1 - Data Centers & Networking

By simply replacing our existing Tier I data center with a Tier III data center, this company can save over \$24 million every year after it is fully built. Our current Tier I data center has become an outdated and financial burden. With an annual availability of only 99.67% offered by a Tier I, that equates to over \$25 million every year being wasted on data center downtime.

As opposed to our current Tier I data center, a Tier III is not vulnerable during planned maintenance activities, which is due in part to its multiple independent distribution paths, redundant capacity components, and dual powered equipment (“Data Center Site”). We have suffered 10 outages this past year because of our primitive data center’s inadequate facilities. A Tier III would reduce the number of outages we experience. Even though it does not have total modular redundancy (“Understanding Tier 3”), it is not an absolute necessity and would suit our company’s needs. Similar to a Tier I, an upgraded facility would be at risk of human errors or power outages but without any of the added benefits: uninterruptible infrastructure maintenance, and an on-site backup generator in the event of a power failure (DP Air Corp).

The Tier III data center is such a vital investment opportunity because it will decrease annual downtime from .33% to .02% (Figure 1). When each minute wasted costs \$14,800, that .31% difference equates to over \$24 million each year. Construction of the project would consume \$35 million and one year’s time, but it would only take 2 years after completion to see a positive return on investment (Figure 2). Benefits of upgrading our existing data center to a Tier III outweigh the cons and would leave the company’s mind at ease knowing that we are not wasting money on an outdated and underperforming asset.

Resources

Figure 1 - Costs of Tier I Downtime

	Minutes/Year	Availability	Downtime (min/yr)	Downtime Cost (\$)
Tier I	525,600	99.67%	1,734.48	25,670,304
Tier 3	525,600	99.98%	105.12	1,555,776
			Savings	24,114,528

Figure 2 - Costs/Benefits of Upgrading

	Year 1	Year 2	Year 3	Total
Costs	\$35,000,000	\$0	\$0	\$35,000,000
Benefits	\$0	\$24,114,528	\$24,114,528	\$48,229,056
			3-Year Net Benefits	\$13,229,056

Works Cited

- “Data Center Site Infrastructure Tier Standard: Topology.” Publication. New York: Uptime Institute, LLC, 2009. Web. 18 Sept. 2016.
- DP Air Corp. “Tier III: Concurrently Maintainable Site Infrastructure.” Web. 28 September 2016. <<http://www.dpair.com/design-data-center/data-center-tier/tier-iii/>>.
- "Understanding Tier 3 and Tier 4." Tier 3/Tier 4: Datacentre Classification. OVH, n.d. Web. 19 Sept. 2016. <<https://www.ovh.com/us/dedicated-servers/understanding-t3-t4.xml>>.