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MIS 2501 – Flash Research Assignment # 1
February 2, 2014

Data Centers and Networking

Our organization can save $72,343,585 if we upgrade from our current Tier I data center to Tier III data center. The increasing energy and operational costs are evidence for need to upgrade the data center, actions need to be taken to reduce cost and improve benefits. At the very minimum a contingency plan is needed to survive in this competitive business world. Tier III data center is concurrently maintainable and 99.98% availability.

Over the past years, our organization has experienced 10 unscheduled outages in its ERP system. Negative effects of this downtime include decrease in order processing, production, and shipping orders. The Tier I data center experiences 2 separate 720 minute shutdowns per year for maintenance, while a Tier III data center is concurrently maintainable, meaning three are no shut downs for maintenance. The benefits of a Tier III data center are that it allows the equipment and distribution paths to return to a new condition on a frequent and regular basis. A Tier I data center experiences an average of 1.2 equipment or distribution failures every year, and the unplanned outage is 1728 minutes per year, or 99.67% availability. The unplanned failure is reduced to 240 minutes every 2.5 years or 96 minutes on an annual basis, and 99.98% availability in a Tier III data center.

Since installing a Tier III data center can take one year and cost is $35,000,000, the first three years will cost $63,781,856 (Table 1). However, the total downtime cost of three years with a Tier I data center is $77,010,912, creating net savings of $13,229,056 in the first three years (Table 1). Also it affects business and customer relationship; losses that cannot be expressed in dollar amounts. Costs are justifiable since the benefits are higher than expenses. In the long run, there will be a net benefit of $72,343,585 over three years, after a Tier III data center with 99.98% availability is installed (Table 2).

Table 1: Tier I vs. Tier III including Upgrading year

Data Center System	Upgrading Cost	1st year Total Downtime Cost	2nd year Total Downtime Cost	3rd year Total Downtime cost	Total Cost
Tier I	0	25,670,304	25,670,304	25,670,304	77,010,912
Tier III	35,000,000	25,670,304	1,555,776	1,555,776	63,781,856
				Net Benefits	**13,229,056**

Table 2: Tier I vs. Tier III after Upgrading year

Data Center System	Total Minutes in Three Years	Downtime Cost/min	Availability	Total Downtime Cost
Tier I	1,576,800	14,800	99.67%	77,010,912
Tier III	1,576,800	14,800	99.98%	4,667,328
			Net Benefits	**72,343,585**

Work Cited

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