

To: CIO
From: Vince Galasso
Re: Tier III Data Center Investment

XYZ manufacturing has incurred 10 outages to its Enterprise Resource Planning system over the past year. These outages are estimated to cost XYZ \$14,800 per minute the system is down. My proposal is to upgrade our current data center to a Tier III certified data center in order to significantly reduce the number of outages to our ERP system by installing redundant components such as power supplies and distribution paths. Adopting this recommendation can result in a net benefit of over \$10.9 million for XYZ over the next three years.

Currently, XYZ operates a Tier I data center which does not use any redundant components and utilizes a single distribution path in order to serve the critical environment. This setup increases the probability that XYZ's ERP system will go offline because any single component failure, such as the failure of a switch, will cause the entire ERP system to incur downtime. Additionally, lack of redundancy in the construction of this data center, requires XYZ to incur downtime when maintenance is being done to any of the components as well. In contrast, a Tier III data center introduces redundant components to protect the ERP system from shutting down due to the failure of a single component. Furthermore, a Tier III data center does not have to be shut down annually for maintenance because of the redundant components. A recent study performed by Gartner on ways to minimize down time related to technical failures recommends, "Implement[ing] redundancy to ensure alternate processing capabilities in the event of a catastrophic failure" (Smith). Therefore, the redundancy of components added to the data center through upgrading to a Tier III data center reduces potential instances of downtime which cannot be accomplished through a Tier I data center.

Through adoption of this recommendation, XYZ will realize a net present benefit of \$10.9 million as a result of increased uptime. The project will cost \$35 million and take one year to complete. However, after three years, XYZ will recognize the total savings noted above which would result in ROI of 31% for this project. The net present benefit was derived by assessing the cost of downtime under a Tier I data center against a Tier III data center to arrive at annual savings of \$24.2 million in years two and three (year one is dedicated to upgrading). A discount factor of 2%, based on the average yield of investment grade five-year US corporate bonds, was applied to the annual savings to arrive at total savings after three years of \$45.9 million. This was then offset by the project costs in year one of \$35 million (see Exhibit -1) to arrive at the net savings and ROI of \$10.9 million and 31% respectively.

Exhibit-1

	Year 1	Year 2	Year 3
Initial Project Cost	-\$35,000,000.00		
Tier I Annual Down time Cost		\$25,670,304.00	\$25,670,304.00
Tier III Annual Down time Cost		\$1,555,776.00	\$1,555,776.00
Savings		\$24,114,528.00	\$24,114,528.00
Discount Rate		2%	2%
Discount Factor		0.961168781	0.942322335
Discounted Annual Benefit		\$23,178,131	\$22,723,658
Total Benefit			\$45,901,790
Net Present Value of Benefit			<u>\$10,901,790</u>
ROI			0.31

Works Cited

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Turner, Pitt W., IV, John H. Seader, and Vincent E. Renaud. "Data Center Site Infrastructure Tier Standard: Topology." *Uptimeinstitute.com*. Uptime Institute, LLC, 1 Jan. 2009.

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