Vikrant Gokhale

**Flash Research 1: Data centers and Networking**

Our company can save $13.2 million over three years by upgrading our data center from Tier I to Tier III. In the past year we have dealt with ten unscheduled outages in our ERP system which prohibits everyday business functions. A Tier III data center has multiple pathways with redundant capacity components, which will significantly increase the availability of our ERP system, reducing the chance of interruptions. This saves us costs associated with downtime.

A Tier III center provides us with a state of the art “Concurrently Maintainable Site Infrastructure” (Uptime Institute). This means that we would have dual power distribution paths, the ability to concurrently perform maintenance without disruption, and as twelve hours of on-site fuel to power our backup generators in the event of a power outage. Availability will increase from 99.67% to 99.98%. We experience 1734 minutes of down time over the year with our current data center, during which business processes cannot be performed. With the new Tier III datacenter, downtime will be reduced to 105 minutes a year.

Investing $35 million in a Tier III data center will increase availability by .31%. As a result of decreased downtime, we will save $24,144,528 a year, with a total benefit of $48,229,056 over the next three years. The three-year net profit of upgrading to a Tier III datacenter to increase availability is $13.2 million.

Table 1

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |
|  |  | **Savings in Downtime Cost Per Year** |  |
|  |   |  |  |
|  |   | **Minutes in a Year** | **System Availablity ( in %)** | **Downtime (in minutes)** | **Downtime Cost(in $)** |  |
|  | **Tier I** | 525600 | 99.67 | 1734.48 | $25,670,304.00 |  |
|  | **Tier III** | 525600 | 99.98 | 105.12 | $1,555,776.00 |  |
|  | **Savings** |  |  | **1629.36** | **$24,114,528.00** |  |

Table 2

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |
|  |  | **Net Benefit after 3 years** |  |
|  |   |  |  |
|  |   |  **Year 1** |  **Year 2** |  **Year 3** | **Total** |  |
|  | **Cost** | $35,000,000.00 | $0.00 | $0.00 | $35,000,000.00 |  |
|  | **Benefit** | $0.00 | $24,114,528.00 | $24,114,528.00 | $48,229,056.00 |  |
|  | **Net Benefit** |   |   |   | **$13,229,056.00** |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

**Works Referenced**

"Data Center Site Infrastructure Tier Standard: Topology." Uptime Institutes. Web. 8 Sept. 2014.

< http://www.gpxglobal.net/wp-content/uploads/2012/10/TIERSTANDARD\_Topology\_120801.pdf >

"2014 Strategic Road Map to the Intelligent Data Center." Gartner. Web. 8 Sept. 2014.

<http://my.gartner.com/portal/server.pt?open=512&objID=260&mode=2&PageID=3460

702&resId=2717318&ref=QuickSearch&sthkw=data+center+topology>

"Redundant Power Supply." *WTI*. Western Telematic, n.d. Web. 08 Feb. 2017.

< https://www.wti.com/t-redundant-power-supply.aspx>

"Understanding Tier 3 and Tier 4." *OVH*. OVH, n.d. Web. 08 Feb. 2017.

< https://www.ovh.com/world/dedicated-servers/understanding-t3-t4.xml>

"What is uninterruptible power supply (UPS)? - Definition from WhatIs.com." *SearchDataCenter*. Tech Target, 2015. Web. 08 Feb. 2017.

< https://searchdatacenter.techtarget.com/definition/uninterruptible-power-supply>