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Enterprise It Architecture

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Flash Research Paper #1: Data Centers and Networking

Our company can generate ~ $13 Million in net benefits over three years by upgrading to a Tier 3 data center. Those saving come from an increase in availability, because the new data center will have redundant components that independently keep computer equipment operating. This increase in availability will save us $13 million in 3 years (figure 2).

The key capability to a Tier 3 data center is being concurrently maintainable, or “allowing for any planned maintenance activity of power and cooling systems to take place without disrupting the operation of computer hardware located in the data center” (Colocation America, 2015). For example, an electrician could work on a power source, and the data center would perform as if there were no maintenance. In a Tier 1 system, the data center would need to be shutdown to perform that work.

By upgrading the data center to Tier 3 we reduce outages from 28 to 1.7 hours, saving $48 million in downtime costs over the next 3 years (figure 1). The $35 million cost of building and maintaining the data center will be recovered in 3 years, generating a $13 million in net benefits.

Figure 1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Downtime (min /yr) | Minutes per year | availability | Yearly Downtime Cost |
| Tier 1 | 1729 | 524160 | 99.67% | $25,589,200 |
| Tier 3 | 104 | 524160 | 99.98% | $1,551,513 |
| Savings |  |  |  | $24,037,687 |

Figure 2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Year 1 | Year 2 | Year 3 | Total |
| Cost  | $35,000,000.00 | 0 | 0 | $35,000,000 |
| Savings | 0 | $24,037,687 | $24,037,687 | $48,075,374 |
|  |  |  | Net savings | $13,075,374 |
|  |  |  |  |  |
| ROI | 0% | 68.7% | 137% |  |

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