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VIRTUALIZATION AND CLOUD COMPUTING

Virtualization is a technology that has evolved in the past 40 years to its current form which has brought great advantages to the businesses that apply; if our firm takes advantage of this technology, we can save $9,000,000 in a three year span after our hardware refresh cycle. Its current applications in business allows this technology to create virtual versions of servers working in a more capable host server. This allows a firm to reduce the amount of necessary physical servers by virtualizing some of the servers that are not working at full capacity into a larger server that can host multiple virtual servers within it and therefore using all of its capacity. Less physical servers translate into lower costs in the purchase and maintenance of the servers, for this firm, this could mean $9,000,000.00 in savings.

A virtual machine is a virtual representation of an operating system installed in a computer hardware condensed in a physical host computer using a software application in such as VMware Workstation. VMware Workstation allows compatible servers to host other operating systems to work as if it were installed in its own physical computer hardware allowing it to run its own set of programs and commands. These virtual machines are also stored as files in the host computer, a system failure or the need of extra server capacity can be fixed as easily as copying and pasting a file. Since these virtual machines are separate from each other, if a crash occurs in one of them, the other virtual machines in the host server would remain unaffected.

Our firm currently uses 1,000 servers in our data center; each costing $8,000 plus $2,000 per server in yearly maintenance costs. This translates into a total of $14,000,000 in expenses within three years. If we were to install virtual machines in more sophisticated servers, we could consolidate 10 virtual machines into a single server. About 80% of our current servers can be virtualized. If we purchased the remaining 20% of our servers that cannot be virtualized and consolidated the remaining 80% into these computers using virtual machines, our company could experience $9,000,000 in savings. These new servers will cost us $16,000 each because they are more sophisticated and their yearly maintenance will be $3,000. Since we will only need 20% of the physical servers we are only going to need 200 physical servers. Our initial investment will cost us $3,200,000 and our yearly maintenance costs will be $600,000. Compared to an initial investment of $8,000,000 and yearly maintenance costs of $2,000,000 from our original strategy. Virtualization translates into a $5,000,000 cost within three years. Compared to our previous approach which would cost us $14,000,000, we will be saving $9,000,000 or a %44 ROI in a three year span. We will also have an extra 1,000 virtual machine capability for other servers in case we need to increase our system capacity in the future. Having 200 servers with the capacity to hold 10 virtual machines in them gives us a total of 2,200 server capability.

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