

## Flash Research Paper 2 - Server Technologies

As our business continues to grow we must be able to serve tens of thousands of visitors per day without a bottleneck on our system. Due to increased traffic on our websites, and lack of IT support to meet this demand, we are unable to provide efficient service to our clients. An affordable solution to this problem is implementing Tera-architectures. Tera-architectures separates software from hardware and are designed to “detect, tolerate and automatically respond to component failure” (Claunch and Chuba). By significantly reducing the overhead of managing hardware, tera-architectures promise to reduce the cost of computing by a factor of 10 over traditionally managed and designed systems. Tera-architectures will allow our business to grow, while at the same time mitigating the cost of increased traffic and data storage.

This technology allows us to manage and preserve our data through the use of virtual infrastructure. “For scalability, flexible provisioning and fault tolerance, the state data must be managed in real time. The tera-architecture approach eliminates this overhead (and cost) by decoupling state data from workloads as much as possible” (Claunch and Chuba). This means that our data will not rely on the hardware on which it is stored and is therefore not as vulnerable to hardware failures. If hardware failures do occur, tera architecture technology is designed to automatically detect, tolerate and respond to the failure of hardware components without a visible impact on service levels. Therefore, if one of our parts goes down we are still able to provide service to our clients without any interruption while we attempt to fix the problem. Also, because we are not limited by our hardware we can use less-reliable and lower-cost hardware.

Implementing a Tera-architecture system would drastically reduce the cost of computing by a factor of 10. Reducing costs is directly linked to savings which we can use to improve our business process and the quality of service we offer our clients. We must analyze if our current IT systems can support transactional loads that are 10 times or 1000 times what they are today. Right now this is not the case, but we must prepare for this increase in traffic in order to stay ahead of competitors and be able to continue to increase our market share. Google and Microsoft are the two main Tera-architecture systems providers. I strongly suggest that we implement Google’s App Engine because we will only pay for what we use. There are no set-up costs and no recurring fees. Also, App Engine costs nothing to get started (Google). If we see that we need to increase our capabilities due to increased traffic we just enable billing for our application, our free limits are raised, and we only pay for resources we use above the free levels. We cannot wait another minute, we must implement a tera-architecture system within our organization today in order to minimize cost and meet service demand.

<http://www.zdnet.com/blog/btl/tera-architecture-gartner-says-bank-on-it/3047>

<http://code.google.com/appengine/docs/whatisgoogleappengine.html>

Hype Cycle for Server Technologies, 2011 . Gartner