Business Value of Performance – The Strangeloop Site Optimizer Customer Experience

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Many vendors claim to improve application performance—but what does that really mean for your business? NetForecast's mission is to quantify the value of better application performance.

To justify a technology purchase, you need to know it will deliver sufficient business value. Although vendor-provided data is helpful, actual user experience is even better. With this in mind, NetForecast interviewed five Strangeloop customers to learn firsthand how Strangeloop's Site Optimizer (formally known as AS1000) technology delivers business value by improving the performance of their web-based applications.

Business Value of Performance

The business value delivered by improving networked application performance varies depending upon the eye of the beholder. For example:

- a *business manager* sees the business value of performance in terms of increased sales, improved competitiveness, and/or faster work completion,
- a *software development manager* measures business value in terms of developer productivity and faster software feature deployment, while
- an *IT manager,* in contrast, perceives performance-related business value in terms of IT infrastructure cost savings, fewer calls from disgruntled users, and improved IT staff productivity.

This study links application performance with business goals for a variety of enterprises and perspectives—and documents the tangible business values Strangeloop AS1000 customers experienced.

Strangeloop AS1000 Business Value

NetForecast's research identified that the AS1000 solution delivered the following critical business benefits to enterprises.

- **Faster web application response time enabling:**
  - Faster revenue growth
  - Improved user productivity
- **Improved customer/end user satisfaction leading to:**
  - More customer conversions
  - Fewer help desk calls
- **25% developer productivity improvement**
- **Bandwidth savings**
- **Faster feature implementation**

≤ 6 MONTH ROI

The Strangeloop AS1000 Solution

The Strangeloop AS1000 transforms traditional code-based optimization techniques into automated application performance-enhancing "treatments" that speed performance of dynamic web applications and ultimately improve the end user experience. The AS1000 also improves page performance by reducing the total number of application turns (round trips) required between the browser and the server—and it reduces the total server-to-browser payload size, optimizes browser caching for future visits, and addresses other dynamic web application performance pain points.

The AS1000 optimizes each web page for best performance at the browser. These per-page optimizations take into account page composition, the specific browser's capabilities, and where a user is within the flow of a website. The AS1000 actually rewrites the HTML code produced by the server in real time to streamline it and reference new optimized resources. The rewritten HTML enables the AS1000 to instruct each browser how best to fetch and display a page.

The AS1000 is a centralized, single-ended application delivery system that can be purchased as an appliance placed in the data center as shown in Figure 1. It is also available as a virtual appliance, and as a service through cloud computing providers.
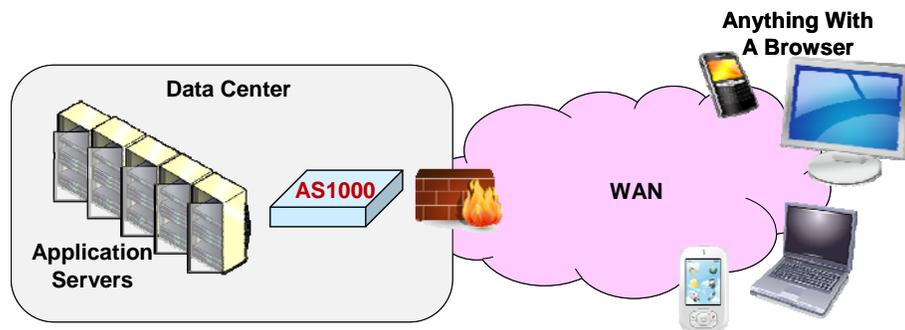
Figure 1 – Typical Strangeloop AS1000 Appliance Deployment

Additional information about the Strangeloop AS1000 solution is available at http://www.strangeloopnetworks.com.

The NetForecast Methodology

NetForecast performed primary research to gather information about the business benefits experienced by customers using Strangeloop's AS1000 solution. We performed in-depth telephone interviews with technology professionals within five companies, all of which use the AS1000 technology to support dynamic web-based applications.

We asked a series of questions to identify: the business motivation for the customers to choose Strangeloop's AS1000 solution; the benefits they actually experienced; and how each company translated the improved performance into business value.

The Companies We Interviewed

The five companies interviewed use the Strangeloop AS1000 solution to improve the performance of web-based applications located within centralized data centers. The magnitude of the AS1000 deployments vary, with some supporting thousands of simultaneous users accessing up to six servers from around the world, while other AS1000 deployments support much smaller, more concentrated user populations and fewer servers.

The companies we interviewed varied in size from 8 to 1,500 employees, and included:

- A $330M global relocation company
- An online consumer automotive accessories retailer with $100M in annual revenues
- A long-term care pharmacy providing drugs to nursing homes and assisted living facilities
- An insurance management firm with $25M in annual revenues
- A small independent software vendor (ISV) developing third-party software for web-based business applications

Key Findings

Faster application response time and increased user satisfaction were cited as the most critical business benefits the AS1000 delivered to the Strangeloop customers we interviewed. Improved developer productivity, bandwidth savings, and faster feature implementation were also cited as important business benefits delivered by the AS1000. The Strangeloop customers interviewed found the AS1000-specific business benefits they experienced resulted in a six month or faster return on their product investment.

AS1000-related business benefits have proven critically important for most of the customers we interviewed. The CTO of the online retailer told us that: "[The AS1000] has a bottom-line impact. I would not think about not having it at this point. It's a critical piece of our business." And when asked his advice to other online retailers, he joked: "If it's our competition, I would tell them not to use it." In a similar vein, a senior software architect at the long-term care pharmacy told us that, if forced to give up his AS1000, "I would be devastated because we rely on it."

Faster Web Application Response Time

Web application performance immediately and dramatically improved for all of the companies interviewed. Although not all of the Strangeloop customers we spoke with measured the magnitude of the AS1000-enabled response time improvement, those who did clocked response times improvements of 50 percent or better. This speed improvement contributed directly to faster revenue growth and improved end user productivity for a subset of those interviewed.

Faster revenue growth: Faster application response times promote revenue growth, and AS1000-enabled revenue growth was by far the most important benefit experienced by the online auto accessories retailer we interviewed. The company's CTO told us that faster application performance improved conversion rates so dramatically that *the company experienced nine percent revenue growth immediately after the AS1000 was deployed*. And the revenue increase has been sustained ever since.

Improved user productivity: After AS1000 deployment, the insurance management company calculated that its software users of experienced a 40 percent productivity improvement.

Improved User Satisfaction

All of the companies we interviewed experienced improved end user satisfaction once the AS1000 was installed. The president of the insurance management firm told us that customers asked what had happened to improve the user experience so dramatically. They made comments like: "The system is much faster—what did you do? It's coming back like a desktop application, whereas before it was perhaps a three, five, or seven second wait for a page to refresh and reload."

Similarly, the long-term care pharmacy told us that, once the AS1000 was in place, users made comments like, "Wow, this is a lot faster now."

Reduced customer support costs: Because users were more satisfied with application performance after the AS1000 was deployed, companies we interviewed found users made fewer help desk calls to complain about slow application performance. Fewer help desk calls and trouble tickets, in turn, lowered user support costs.

Better Developer Productivity

The AS1000 enabled developers in the companies we interviewed to take the time previously spent reworking applications to speed them up, and devote that time instead to more productive tasks. In fact, three of the companies interviewed told us that the *AS1000 improved developer productivity by about 25 percent.*

According to the president of the independent software vendor we spoke to: "You can spend a lot of hourly rates and weeks trying to enhance the performance of software functionality, and a matter of installing the [AS1000] accomplishes a milestone leap forward that is just amazing. I'd much rather deploy [a solution] that's going to take me from zero to 50 right now guaranteed, than spend a lot of time working out how to tweak this line of code versus that line of code in an unknown time period. Not only does this take a lot of an engineer's time, there's also the risk that you will get very little improvement in the end."

Similarly, the senior software architect of the long-term care pharmacy explained to us that, before his company installed the AS1000: "There were lots of times when we had to drop what we were doing new-development-wise and dig into speed issues—and many times we'd come to a dead end and decide that we'd have to redesign a whole page. So we had the tradeoff of redesigning/refactoring versus [implementing] new features."

Bandwidth Savings

All of the Strangeloop customers we interviewed experienced network bandwidth savings once the AS1000 was deployed. For example, although not a key reason for initially buying the AS1000, the director of enterprise applications for the global relocation company was pleasantly surprised with the bandwidth savings his company realized once the solution was in place: "The amount of bandwidth saved was outrageous. Within the first month several terabytes of data were saved from going across our WAN."

The long-term care pharmacy found the AS1000 reduced its bandwidth usage by one third. In fact, the senior software architect for the company told us: "If we took the box away, [the network group] would wonder why in the world our network connection is spiking."

Faster Feature Implementation

Developers in the companies interviewed can apply the time they would have spent coaxing faster performance out of existing features, to focus on new feature development. This is extremely important to companies like the insurance management firm, whose president said: "We have a much quicker turnaround time for new features because we don't have to spend a great deal of our time doing performance tuning. We can just give [our clients] what they want."

In a similar vein, the president of the independent software vendor we interviewed told us that his engineers no longer have to continually "refactor" for performance. This means they can now move forward with feature development they couldn't get to before the AS1000 was deployed.

Return on Investment (ROI)

The NetForecast survey results show a compelling ROI of six months or faster among the AS1000 customers interviewed (see Figure 2). The online retailer had the fastest ROI of the five companies interviewed. The AS1000 improved the online retailer's revenue by nine percent, resulting in a payback period of "a couple of weeks".
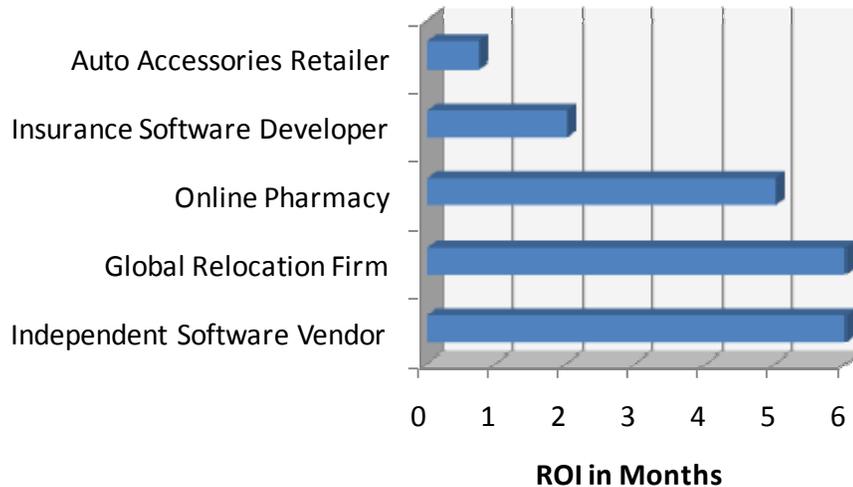
Figure 2 – Strangeloop AS1000 Customer ROI

The online pharmacy experienced a five month ROI based on improved developer productivity, and the independent software vendor estimated a six month ROI based on better developer productivity. The insurance management company calculated a better than two month ROI based on improved productivity of its customers' end users. And according to the president of the independent software vendor, "We shaved six months off our internal production work, so our return was six months. [Purchasing the AS1000] became a no brainer."

Conclusions

The Strangeloop customers NetForecast interviewed found the AS1000 immediately and dramatically alleviated slowness problems plaguing their dynamic web applications. The resulting speedup precipitated a variety of business benefits such as improved customer conversions and increased revenue (nine percent in the case of the online retailer), 25 percent higher developer productivity, lower user support costs, bandwidth savings, and faster feature implementation. Based on our survey results NetForecast estimates that the return on an AS1000 investment for enterprises with critical, resource-intensive, dynamic web applications should be months—even weeks.

Strangeloop customers told us that without the AS1000 they would have to throw valuable development resources at the slowness problem—a laborious process that diverts developers from rolling out new application functionality and features. Strangeloop customers were consistently delighted by how much application performance improved by simply slipping in the AS1000. In fact, there was general consensus among those interviewed that the AS1000 is now indispensable. As one customer put it, "You can't have it back".

About the Authors

Peter Sevcik is a Principal of NetForecast and is a leading authority on measuring, and assessing the performance of networked applications. Peter has contributed to the design of more than 100 networks, holds the patent on application response-time prediction, and pioneered many performance management techniques including Apdex. At BBN Peter played a pivotal role in the development of the Internet. He can be reached at peter@netforecast.com.

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