



“Varnish Plus,  
it's lightning fast,  
and flexible”

Case Study:

Nikon  
by Kanban

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## About Nikon

Nikon was founded in 1917, a long time before the need for web performance. They maintain a significant foothold in one of the most popular segments of the consumer electronics market – optics and imaging – benefiting immensely from digitization of both products and content. Nobuyoshi Gokyu, Senior Vice President and General Manager of Nikon's Imaging Business Unit †, notes that as the technology has matured, the products themselves have struggled to remain distinct. Consequently, price wars are becoming fiercer and Nikon has responded to this with investments in site efficiency, e-commerce, and a richer, more content driven customer experience.

Efficiency gains include focusing on the size of the business' 'footprint' and the resources required to drive Nikon's business forward at a lower cost. E-commerce tactics include being in more online channels at any time and responding to market shifts immediately. And lastly, providing a multi-platform (mobile and desktop) web experience that delivers exactly what Nikon promises in their products: high speed, high performance and reliability, presented in a content-rich environment.

[Kanban Solutions](#), based in New York City, is helping to drive these initiatives forward. We spoke to Josh Manton, CEO and Chief Software Architect at Kanban about how Varnish Plus helps to realize Nikon's goals.

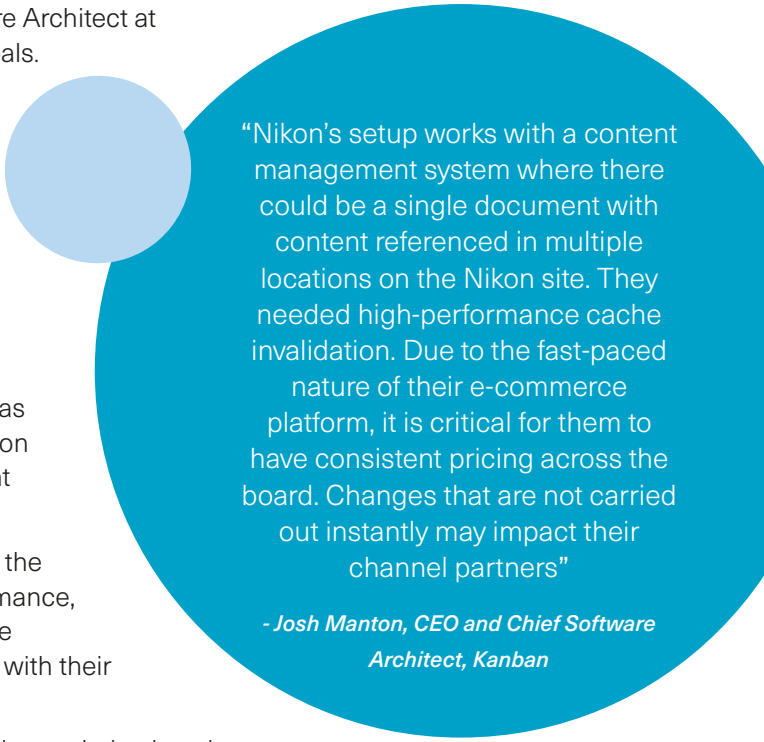
<http://www.kanbansolutions.com/index.html>

## Nikon's Challenge

Nikon and Kanban both understand the importance of web performance on the bottom line. It's Kanban's role to ensure Nikon is at the forefront of user experience delivery as audiences have developed extremely high expectations, regardless of channel or bandwidth. Nikon has a significant number of sites, as well as its mobile application experience– hosted on a single platform, delivering content across the globe.

According to Manton, Nikon's business is shifting to utilize the rich media capabilities of their products—they need performance, scalability, and reliability to leverage both their e-commerce presence and high definition content and video that aligns with their products and audience.

"We're in an industry where web performance is always being optimized, and it certainly appears that brands we work with are seeing the positive impact of these optimizations. It was important for Nikon's e-commerce function to have the ability to deliver pricing and offers instantly, without the 'Time-To-Live' (TTL) and purging constraints of previous caching solutions. We wanted to implement a front side cache that would complement the existing infrastructure already in place. This included a fine-grained cache, which provided some relief of rendering and load issues. It was important to provide Nikon with a solution that would cater to their high load spikes of thousands of requests per second and have a high degree of cache control," Manton said.



"Nikon's setup works with a content management system where there could be a single document with content referenced in multiple locations on the Nikon site. They needed high-performance cache invalidation. Due to the fast-paced nature of their e-commerce platform, it is critical for them to have consistent pricing across the board. Changes that are not carried out instantly may impact their channel partners"

- Josh Manton, CEO and Chief Software Architect, Kanban

† Imaging Products Business. (2014, September 30). Retrieved November 20, 2014, from [http://nikon.com/about/ir/management/business\\_info/imaging/index.htm](http://nikon.com/about/ir/management/business_info/imaging/index.htm)

## What Are The Features?

Kanban first implemented the open source version of Varnish Cache for Nikon and noticed immediate page speed improvements.

Manton explained that “The open source version of Varnish performed significantly better than the out-of-the box caching framework provided by the CMS platform.”

For the demands of Nikon’s user experience, however, Varnish Cache did not provide simplified administrative control or cache invalidation/surrogate keys. All page expiration was driven by set TTLs rather than being triggered by CMS publications or e-commerce pricing and promotional changes. After exploring their options, Kanban chose [Varnish Enhanced Cache Invalidation](#) and [Varnish Administration Console](#), both available with the Varnish Plus subscription, to better control their Varnish Cache installations. Subscribing to the Varnish Plus platform then became an easy decision.

According to Manton, the process with Nikon was very straightforward: “With our success using the open source version, investing in the benefits of additional features and capabilities available from Varnish was a simple conversation. Kanban was able to commit to significant speed and stability increases for Nikon. And with the technical support offered by Varnish, the proposition was virtually risk free.” said Manton.

Varnish Plus went live on Nikon’s website in July 2014.

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“With Varnish Plus, we can deliver a high performance user experience for Nikon and their customers. It’s lightning fast, and flexible.”

*- Josh Manton, CEO and Chief Software Architect, Kanban*





## Benefits and Performance – The servers are much healthier

Within three months of Kanban rolling out Varnish Plus, Nikon's site had experienced remarkable changes in performance, scalability and reliability. Here's an overview of the results:

- A reduction to 4 (from 7) Linux servers using HP LiveSiteDelivery Services. Varnish Plus has led to significant reduction in further server investments
- Page response time cut by more than half. Heavy pages are now returned in under 500 ms in contrast to 1300 ms prior to implementation• Varnish High Availability for cache replication to improve uptime and reduce customer impact
- Memory usage on the HP LiveSite servers has been reduced by 50%
- Cache Hit Ratio increased from approximately 50% to 90%
- Over 60% improvement in organic traffic for the three-month period following implementation This is expected to improve further over time.
- Significant drop in CPU and memory usage.
- Less server management has led to budgets shifting to more customer-facing initiatives.

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“We immediately saw how every tweak translated to performance in real time. Nikon is really excited about how fast the site feels now.”

***-Cindy Jeffus, Sr. Manager of Internet Operations, Nikon Inc.***

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Manton pointed out that performance reporting was not required to communicate success to Nikon. “It was nice to hear that they felt the performance increase before we had even presented any data. With cache hit rates around 50% prior to Varnish Enhanced Cache Invalidation rollout, Kanban increased this to around 90%.” Manton told us.

“It was a fun process to use the Varnish Administration Console to tune the cache hits. We immediately saw how every tweak translated to performance in real time. Nikon is really excited about how fast the site feels now.”

Before the installation of Varnish Plus, Manton noted “Uncached versions of Nikon's content heavy pages were taking seven seconds to load. Once we started on Varnish Plus, these were loading closer to one second. It's quite an improvement.”

## Implementation

Nikon chose Varnish Plus because it could be rolled out within a very short timeframe with amazing performance, scalability, and reliability. For most e-commerce sites, there are critical points on the sales calendar. To implement Varnish Plus quickly and safely was a real bonus for Nikon.

Using [Varnish Enhanced Cache Invalidation](#), Kanban created an entire content-to-cache map for Nikon, allowing them to develop a hashtag and purging strategy ‡.

All areas on the Nikon site are using this strategy now. And because [Varnish Enhanced Cache Invalidation](#) is integrated into their existing CMS workflow their content authors can instantly see changes on the site. Nikon can now make changes at any time and have it instantly pushed to their e-commerce platform, including scheduling and expiration of data, content, promotions and pricing.

## What's Next?

Kanban and Nikon are excited to further explore the possibilities of [Varnish Administration Console](#) as they work to streamline and improve Nikon's online experience.

"We'll be making good use of Varnish Administration Console. It's really great that you have the ability to manage your Varnish configuration in one spot and push it out to multiple servers," said Manton. "Originally the plans were to scale horizontally during holiday seasons where we would pop in new servers. I know based on load testing we will not have to add any new servers. In fact, we can likely take some away thanks to Varnish Plus."

## About Varnish Software

Varnish Software is the company behind Varnish Cache, a widely trusted open source web accelerator, significantly enhancing web performance for businesses online. We power major sites across all industry types—for businesses such as Vimeo, Transport for London, and Newsday as well as more than 1.8 million websites worldwide. Varnish Plus is our commercial suite, offering products for scalability, customization, monitoring and expert support services.

‡ More information available at: <https://www.varnish-software.com/blog/>

## About Kanban Solutions

Allenta Consulting specialises in the design and administration of Linux and Unix systems infrastructure. The Allenta team consists of highly skilled technical professionals with experience working with top level organisations. For several years they have been working with Varnish Cache as part of their catalogue of customer solutions. At some point, Allenta started to work with Varnish Software and became Integration Partner. Since then, there's has been a close partnership that has allowed Allenta to lead projects where deep skills in Varnish configuration and development of modules are necessary. Some of those projects focus in the access control to assets in the caching edge (e.g. paywall systems). Allenta is currently working in several access control/paywall projects for top media companies in Spain, Italy, Netherlands, Ireland and Argentina.

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