



NEW YORK  
STATE OF  
OPPORTUNITY.

Office of Information  
Technology Services

## NYS WebNY/Distribution

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Category: Emerging & Innovative Technologies

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#### **EXECUTIVE SUMMARY**

In 2015, WebNY was created with the mission to bring New York State's websites from 16 different platforms into a centralized enterprise web platform utilizing a robust Content Management System (CMS) that could support all NYS agencies and entities. This enterprise platform would be built with a mobile-first philosophy, use the newest technology, and it would comply with the latest accessibility requirements. Considering that WebNY currently serves over 45 agencies and 150+ public websites of varying size, usability and technical agility, this was a very ambitious goal.

To reduce licensing costs and the state's dependency on proprietary software, NYS decided to use an open-source CMS. Drupal 8, released in November of 2015, was selected due to its simplicity of use for content editing, potent website administration tools, development flexibility, responsive and intelligent security features, and superior accessibility attributes. Given that accessibility is a central priority for NYS, the WebNY team incorporated the WCAG 2.0 A and AA standards into the building of the NYS Distribution. This means that WebNY had implemented the federal standards, even before they were announced in early 2017.

In order to accomplish these stretch goals, WebNY would need to implement a brand-new platform; and "Build Once and Deploy Many" became the team's mantra, defining a new philosophy of working. "Build Once" would mean that the NYS Distribution be built using an Enterprise Drupal 8 Distribution with robust functionality and flexibility. It would include the development of a component library that supports multiple agencies and uses different information types, but displays in a familiar and user-friendly way. "Deploy Many" would mean that these components would be re-used and refined as each website is created and would provide the flexibility needed to meet agency needs without additional development.

Today, the time needed to build a site on the NYS Distribution has decreased drastically. The WebNY team can create a new web environment within minutes and configure the site to be ready to input content in just days. The reduction in development time and the ease of set up allows NYS to cut the cost of delivery for each website from as much as a half to a third of the cost of development for a customized site. In addition, ongoing maintenance, security updates, and support costs can be as little as ten percent of that of a stand-alone customized website. Ultimately, the NYS Distribution allows development and maintenance costs to be spread out the many agencies using the platform.

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## **CONCEPT**

### ***Build Once and Deploy Many.***

The State of New York faced a dilemma familiar to most governments: a lot of different platforms meeting the same need. These platforms needed to be supported by teams with different skill sets that were geographically and organizationally separated.

In terms of website solutions, this meant that the NYS websites were built on 16 platforms, with six different proprietary solutions, numerous custom-developed content management solutions and manual coding updates that were supported by nine different web teams. WebNY's mission was to create a reusable framework that was capable of housing, organizing and managing this great variety of agency content using a powerful and flexible underlying code-base. WebNY accomplished this goal in 13 months by building the NYS Distribution, and launched the first website in January of 2017.

With the mantra to "Build Once and Deploy Many" at the forefront, NYS developers and staff set to work in 2015 to build the Distribution infrastructure from the ground up using automated deployment processes, automated testing (including regression testing), built-in security reviews and testing, all while also meeting the most aggressive standards for accessibility. The NYS Distribution was built to the WCAG 2.0 A and AA federal accessibility standards, even before they were announced in early 2017. Many powerful tools such as BHAT, Travis, Jira, BLT, PHP Unit, Site Improve, and Browser Stack were also used to build the Distribution.

As a matter of discipline, regular security and vulnerability scans are hallmarks of the Distribution, while all code and configuration must pass several levels of scrutiny before making its way to production. A benefit of the NYS Distribution that can't be overstated is the ability to build new web environments that can be stood up in hours, and be ready for new content in days, rather than it taking weeks and months of building hardware solutions and doing backend development.

In addition, WebNY began an ambitious training program to certify everyone on the team as a Drupal 8 Site Builder. As a result, New York State was the first large organization to certify over a dozen developers in Drupal 8 skills. WebNY has also concentrated on the development of its state staff (keeping vendor support to a minimum), resulting in New York developers building a New York Distribution for New York citizens.

As a testimony to WebNY's success, a half dozen projects for website redesign are already signed and ready for transition onto the NYS Distribution, with nearly 20 in the pipeline for 2017-2018 Budget Year.

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## **Significance**

WebNY's developers were tasked with thinking differently and achieving a new goal: to build a component-filled interface which allows the most technically-averse agency representatives the power and confidence to maintain responsive websites for their citizens. This was done by building a Distribution which allows the agencies to concentrate on the content not the development or design. It also makes continuing development and technological advancement of the platform a natural process; standardization, reduction of costs, and speed of implementation of new requirements and directives is made possible now because agencies will share the same platform.

### **Easy to Use Catalog of Components for Agency Clients**

Through the use of the NYS Distribution, agencies are able to choose from a catalog of over 20 diverse website components (the number of which are expanding at an average of four per month), while ensuring that they are remaining within New York State's prescribed guidelines for color, style, usability and accessibility. The simple-to-use interface also empowers them to make and publish their own content updates quickly from anywhere on any device, eliminating the need for an IT professional.

One of the most impressive characteristics of the Distribution is its ability to make plug-and-play technology available to content owners at the agencies. Most of these content owners are not technical people, but are crafters of their agency's messages. WebNY is doing user testing to determine the easiest way for content owners to input information, and using the latest technology to provide content updates. In short, WebNY is providing a custom user experience for content owners.

Keep in mind that although there is a standardized look and feel for all NYS websites, the Distribution also offers an enormous variety of options from which to choose, such as color scheme options, a variety of page design options (landing, contact, document, basic, press release, etc), form creation options, user permission levels, built-in media options, and an automated menu system to name a few. And content displayed digitally through the use of the Distribution supports mobile-first design and scalability.

### **New York State as Frontrunner in Drupal 8 Technology**

New York State is already establishing itself as a frontrunner in the use of this progressive technology in the following ways:

- New York State has built the first Enterprise Drupal 8 Distribution and is alone in its implementation of continuous integration through the Agile development process. Continuous integration allows the WebNY team the ability to detect – within the development process – when a piece of code fails, which allows for an early fix. Additionally, it allows the continued advancement of functionality and the integration of technologies like Enterprise Content Management (ECM), Security Assertion Markup Language (SAML), and Web Services, making each release better than the last.

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- New York State is the first large organization to certify 14 developers on the Drupal 8 platform as official Site Builders, with the goal to certify its entire development team. In addition, WebNY's talented development staff includes a Certified Drupal 8 Developer.
- New York State is offering advanced training opportunities in other important topics such as the federal accessibility standards, analytics, API, SEO, automated testing, and security. This allows WebNY to develop a well-rounded team of experts to support their customers.
- New York State participates in Drupal Global Training Days and Drupal Global Conferences (oftentimes serving in training and leadership roles) which increases the available Drupal resources within New York State and the Drupal community.
- New York State has played a key role in defining standards in the Drupal community for enterprise-level configuration management as a result of our early adoption of Drupal 8. WebNY continues to contribute to Drupal Government Summits and Drupal GovCons, passing on knowledge to the larger community.

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## Impact

Eleven states power their main portals' using Drupal, and NYS Distribution is pushing boundaries using open source technologies that few states or even large organizations can replicate. WebNY has succeeded in developing and deploying a Drupal 8 enterprise distribution, 12 months after the global Drupal 8 release, and is in the vanguard of the entire Drupal community.

It is important to take a moment to recognize why this is important it established a production-ready enterprise-level platform that provides better and more reliable service, at a reduced cost of building and supporting it. The project is a vehicle to meet federal and state initiatives, including accessibility and security standards, common look and feel, and making services easier to find and use for all New York State websites.

Expanding a distribution that has 24 different developed functionalities and flexible custom theming capabilities. This is a model, not just for government, but also for all large organizations with distributed content and branding governance requirements in addition to heightened needs around security, stability, and scalability.

Some instances where we've seen the greatest advances as the result of the implementation of the Distribution are:

- New websites can be spun-up in days not weeks or months
- Agencies are fully focused on content and engagement, and are barely involved with the technology
- High performance and code quality, usually reserved only for big budget sites, are available to even the smallest customers at extremely low costs due to scale
- Highly reliable, secure and elastic hosting is also provided to agencies of all sizes equally

**Cost Savings.** Currently, New York has websites that were built on 16 platforms, with six different proprietary solutions, numerous custom-developed content management solutions, and 60 sites stuck in a manual HTML updating process. This results in high costs associated with licensing fees for website maintenance and support, and significant challenges related to the use of different platforms across the state.

New York State anticipates great savings in resources and dollars as more and more sites are transitioned onto the Distribution, which will allow individual state agencies to share a common code-base. This will also allow security patches and module upgrades to be rapidly deployed across the entire platform reducing costs, increasing security, and minimizing the number of staff necessary to implement these operations.

As agency sites migrate to the NYS Distribution, they will no longer incur licensing fees for maintenance and sharing code. In addition, the sharing of functionality and components will significantly reduce costs for development across the state.

WebNY's success will be measured differently by different agencies. Some will look to monetary savings (the average cost per site will be reduced from \$300K to \$75K), others will focus on

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analytics, and still others will simply look at the number of sites migrated onto the platform, and how quickly they are being deployed with the benefit of continuing development by the use of the Agile development process. We aim to exceed expectations in all categories.

**Technology and innovation leadership.** We know that WebNY is recognized nationally as a platform technology leader because we are frequently fielding inquiries from other states and even a foreign government about the policies and software that enabled us to accomplish this work in such a short timeframe, at such low cost. Specifically, NYS has been contacted by Texas, Tennessee, Arizona, Pennsylvania, Massachusetts, Rhode Island, Ohio and South Africa. As WebNY continues to refine and improve the NYS Distribution through the use of cutting-edge technology, it will further propel NYS's position as a technology solutions leader in state government and beyond.

With a vision to create an enterprise-wide, sustainable platform, WebNY will lead web development efforts in New York State by establishing common processes, procedures and practices for the 65+ state agencies, authorities and state programs. WebNY will also continue to provide extensive training towards the goal of employing the top developers in the industry, solidifying New York State's role as a leader in the Drupal community.

**Program leadership.** WebNY is responsible for not only the development and delivery of public-facing websites for New York State, but also for providing internal program leadership. In order to do so, WebNY will provide a "train-the-trainer" program to NYS agencies and entities who create and maintain website content through the use of the Distribution. WebNY will also provide tools, guidance and consulting services to ensure NYS agencies and entities are enabled to publish accessible information in support of their respective objectives. In addition, WebNY will provide agencies and entities with a Customer Engagement Manager, Customer Support Line, and Web Team to assist with technical needs as they arise.

WebNY develops and delivers websites that are usable, functionally accessible, responsively designed, compliant with NYS standards and best practices. The NYS Distribution will house websites from over 65 state agencies, authorities and state programs. Using Drupal 8 and integrating social networking tools, open-source software, open data standards, and cloud-based hosting services will reduce costs substantially going forward.

The NYS ITS organization launched WebNY to deliver a web solution that was engaging, informative, cohesive, accessible, and inexpensive to the taxpayers and that would usher in a digital era which eliminated the challenges of old – a disjointed, clunky New York State web experience that lacked cohesiveness and accessibility. WebNY has built the NYS Distribution in such a way as to deliver on this ambitious goal, and New York State government, and its over 19 million citizens are better served because of it.