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MIGRATING A HIGHLY COMPLEX HEADLESS SITE FROM M1 TO M2

Guidance performs a large-scale data migration to re-platform Avery's backend system from Magento 1 to Magento 2 with flawless implementation.

Who Should Read This?

This Case Study Will Be Especially Relevant For Those Interested In The Following Topics:

B2C COMMERCE	SINGLE SIGN-ON (SSO)	COMPLEX BUSINESS LOGIC
M1 TO M2 MIGRATION	HEADLESS	CUSTOMIZED INTEGRATIONS
ADOBE COMMERCE	DEV OPS	COMPLEX PDP CONFIGURATIONS

THE CHALLENGE

Avery's highly customized Magento 1 platform reached its end-of-life for both the application and many of its underlying dependencies, including PHP. This prompted Avery to upgrade to Magento 2 and migrate massive data sets and customer records. Avery's headless frontend powers the shopping experience and uses Magento for the cart, checkout and admin.

This headless re-platform needed a seamless implementation that didn't disrupt Avery's business operations. Guidance mapped out a comprehensive technical strategy for Avery's headless integration, data migration, SSO authentication, custom product types and backend operational workflows. Customers can visit Avery's site and make purchases without noticing changes in performance or user experience.

THE BRAND

Ray Stanton "Stan" Avery made history in 1935 when he invented the first self-adhesive labels. This breakthrough in business stationery led him to launch his company with a $100 loan from his fiancee. Stan's inventive spirit would help him earn 18 patents and establish Avery Adhesives, a pioneer in branding and business communications. Decades later, Avery is global leader in manufacturing and distributing adhesive materials, custom-printed assets, office and DIY supplies, and specialized medical products.

A SEAMLESS DATA MIGRATION PERFORMED WITH PERFECTION

During the technical discovery, Guidance analyzed the source systems to understand how data flows between existing integrations on Magento 1. The migration process starts with the extraction of master and transactional data. Then Guidance deploys it into a staging environment. This helps craft a schema map and create a migration strategy to meet Avery's business goals.

M1 and M2 run simultaneously to avoid disrupting Avery's business operations during implementation. Hundreds of tables with millions of rows of data update every second with new orders, user reviews or changes in customer profiles. Guidance captures these updates and transfers the data incrementally to M2 using Delta mode in the Adobe Commerce Data Migration tool. This preserves Avery's headless frontend functionality and allows business processes to run seamlessly while the data migrates. Every phase of the Guidance team's data migration strategy involves rigorous testing to maintain fidelity between M1 and M2.

MAINTAINING PAYMENT CONVENIENCE FOR CUSTOMERS DURING DATA MIGRATION

Traditionally, moving customer payment information from one database to another presents many complex challenges. If this information isn't transferred, it would force Avery's customers to re-enter their payment information and introduce more friction to the checkout process. Guidance performed a clever lookup within the payment gateway, retrieving stored payment methods and saving the results into Magento 2. This allows Avery's customers to access their saved payment methods during checkout even though they're checking out through a new M2 application. This convenience for customers also helps Avery avoid abandoned carts and maintains a seamless path to conversion.

INTEGRATING 40 HIGHLY COMPLEX MODULES WITH MAGENTO 2

Avery's website consisted of 40 modules with over 5 years of customizations layered into their code. Several highly complex modules needed refactoring and customization to ensure they were compatible with M2.

The project's complexity calls for a "divide and conquer" approach. Guidance built the high-complexity modules, while Avery's team developed the modules with low to medium complexity. When it didn't make sense to refactor a legacy module, Guidance built new modules to ensure compatibility. This approach required careful collaboration and close communication between Avery and Guidance during development and testing.

Guidance also conducted heavy testing for the UI, business logic, 3rd party system integrations and custom presentation layers to confirm all modules function properly with M2. The Guidance team's ability to customize complex modules without interrupting the customer experience (CX) allows Avery's business operations to continue running smoothly.

IN THEIR OWN WORDS

"With some exceptional help from Guidance, Avery was able to cross the M2 bridge last week. While this is a milestone for us internally, it's also a testament to the great partnership and collaboration between our teams."

- Jeff Dawkins, Senior Director, Digital Experience at Avery

CUSTOM-BUILT SINGLE SIGN-ON INTEGRATION (SSO)

Avery's shopping experience is powered by a headless frontend, while Adobe Commerce powers the cart, checkout and admin. Headless commerce sites always present the challenge of maintaining a consistent customer session. The customer expects a seamless transition between the two applications as they shop through Avery's website.

Guidance implemented a custom SSO solution to authenticate customers between the headless frontend and Magento 2 backend. This requires a custom public-facing REST API on M2 to match the legacy interface. The REST API enables efficient two-way communication between the frontend and M2, allowing data to pass between the two applications seamlessly. The end result is a frictionless shopping experience for Avery's customers.

DESIGNING ACCURATE DATA MODELS TO REPRESENT CUSTOMIZED PRODUCTS IN MAGENTO 2

Avery provides multiple levels of product customization to their customers. The initial configurations allow customers to choose the format, shape, size, material and quantity from the product detail page (PDP). Customers can also upload their own images, select templates or create their own designs.

The models representing these custom products require complex integrations into Avery's business logic. Guidance builds customized solutions to allow M2 to identify these custom product variations as transactable units.
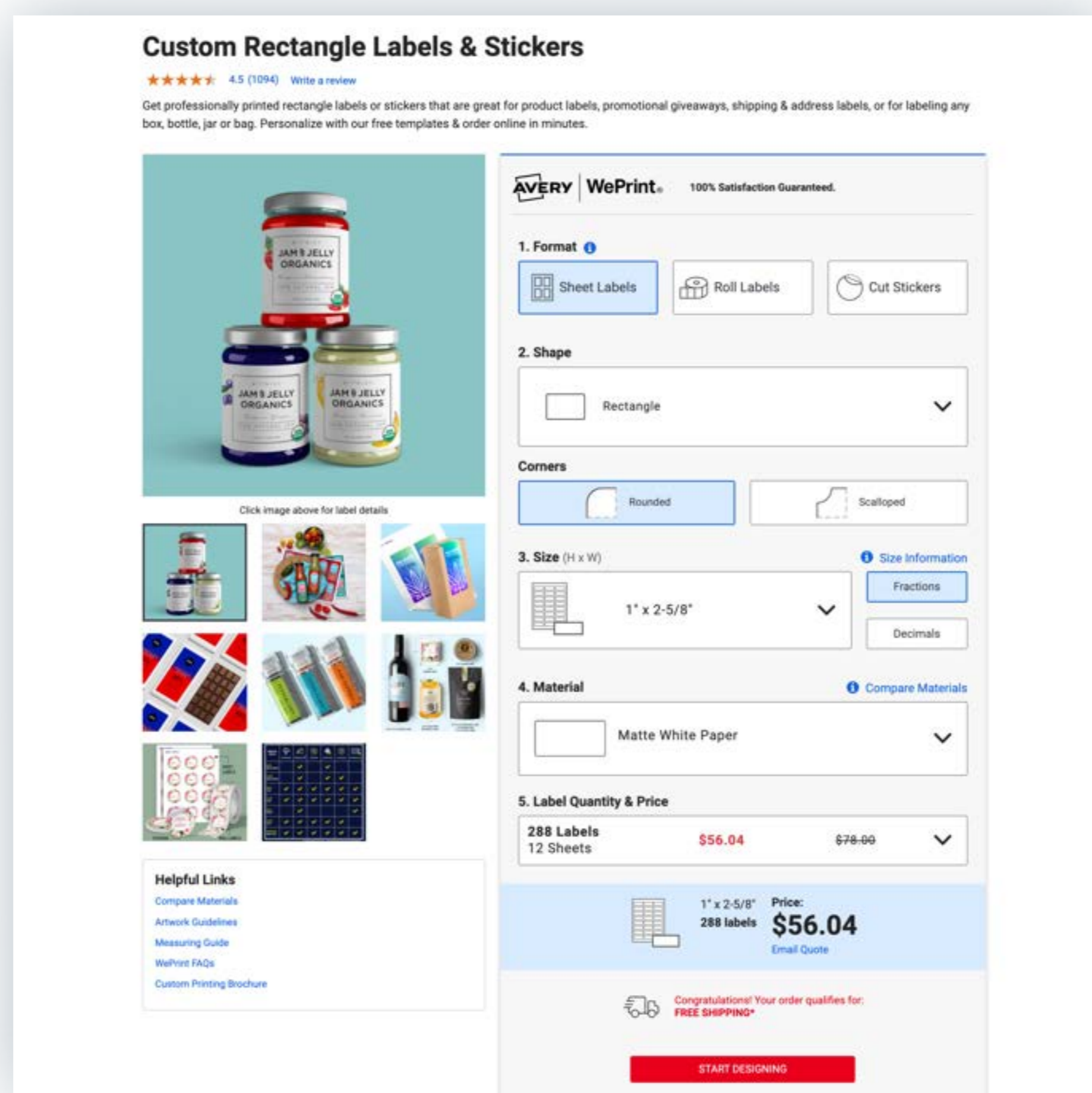
AUTOMATING THE DEV OPS DEPLOYMENT PROCESS

Toward the end of the project, Avery needed to transition away from their existing DevOps deployment process built on Kubernetes. Guidance set up new automated software deployment processes using a different technology with the existing configuration. Guidance also provided expert knowledge to ensure Avery's DevOps team understands how to use these new tools. Avery's DevOps team can now push a button to automatically deploy a new version of the M2 application to the staging environment.

EASING THE TRANSITION BETWEEN M1 AND M2 WITH CUSTOMIZED ADMIN INTERFACES

Avery wanted to maintain consistency between their Magento 1 and Magento 2 backend UIs to make the shift between applications easier for their team. Guidance's approach ensured the M2 UIs perform the same as with M1.

Several large, custom grid reports also needed migration and refactoring to remain performant in the new M2 framework. Guidance took a meticulous approach during this customization phase to preserve the formatting of these grid reports. These customized UI admin and grid reports allow Avery's team to seamlessly transition to M2 without learning a new application or disrupting business operations.

OPTIMIZING BACKEND WORKFLOWS WITH A CUSTOM QUEUE

Avery's headless site has dynamic functionality and high order volume, requiring a queue to maintain backend workflows. Magento 2 receives signals from external applications used to progress these various workflows. These signals must be able to pass from external systems to the M2 backend with efficiency and preserve a "first in, first out" (FIFO) list of "tasks."

To give Avery's headless site durability, Guidance developed a custom queue to store the list of "tasks." If the M2 application quits unexpectedly, Avery's site will still have its list of "tasks" in sequential order. Once M2 is running again, the queue starts with the first "task" in the line.

For example, a custom order relies on signals from the design software, where a user reviews and approves the artwork. M2 receives the signal and adds it to the queue. In the future, M2 processes that item and the order is moved along in its workflow.

The queue's flexibility allows it to handle various tasks and support configurable functions: batch size, retries and locking. The queue also keeps a log of technical issues. This allows Avery's administrators to debug communications errors between systems more easily.

RESULTS

The Guidance team's Adobe Commerce re-platform enhanced Avery's eCommerce website and business on multiple fronts. Customers experience faster load times during the cart and checkout process. Integrations to backend fulfillment systems work as expected.

Guidance maintained the original customer experience throughout the entire data migration. Re-platforming this large and complicated website with limited issues showcases the Guidance team's expertise with the Adobe Commerce Data Migration Tool.

SUMMARY

Avery needed to upgrade its backend systems from Magento 1 without disrupting the customer experience. Avery also wanted its customers to benefit from Magento 2's framework and performance upgrades. Guidance completed a massive data migration, customized 40 modules, and performed a series of complex integrations.

The launch was relatively seamless, with minimal hyper-care needed to stabilize the website. Consumers can visit avery.com and purchase without noticing changes to customer experience or performance. Guidance was successful in re-platforming Avery's website on M2 without negatively impacting the user experience or the day-to-day operations.

SERVICES

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Technology

Data Migration

DevOps

Headless Commerce

Ecommerce Website Migrations

Ecommerce Web Integrations

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