

How Embroidery Designs Built a Scalable B2C Marketplace with 1.5M+ SKUs Using Virto Commerce

Executive Summary

When Embroidery Designs needed to replace their legacy Microsoft Commerce Server, they weren't just looking for a new ecommerce platform, they were searching for a long-term technology partner that could support innovation, flexibility, and growth. Since partnering with Virto Commerce, they have transformed from a niche embroidery website into a multi-tenant B2C marketplace, now powering 5 distinct storefronts, all running on a single modular platform. Together, we:

Scaled the catalog to over **1.5 million SKUs**

Expanded from digital-only to include **shippable products** and **subscriptions**

Enabled **horizontal scaling** during peak shopping seasons with no added cost

Improved performance and **site stability**, reducing downtime during large promotional events

Customized over **40 platform** modules to support their unique ecommerce model

This strategic collaboration has empowered Embroidery Designs to keep innovating while maintaining full control over their ecommerce architecture.

1.5M+

SKUs

5

storefronts

80+

vendors

40+

modules



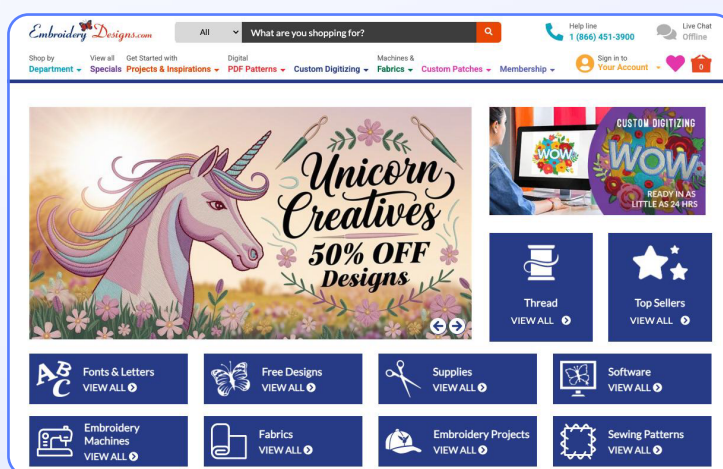
We started as a digital embroidery website, but with Virto, we've been able to grow, add new verticals, and serve both hobbyists and boutique businesses at scale.

- Chetan Ramachandra, eCommerce Application
Development Director, Embroidery Designs



From Passion to Platform: About Embroidery Designs

EmbroideryDesigns.com launched in 2005 as a niche destination for machine embroidery enthusiasts, a place to browse and instantly download digital design files. Since then, it has evolved into a vertically integrated ecommerce platform that supports a wide range of crafting disciplines, including quilting, sewing, and hand embroidery. Today, the website also offers embroidery machines, software, and accessories, positioning itself as a comprehensive marketplace for both digital and physical products.



Today, the platform manages a **catalog of over 1.5 million SKUs** — a scale that demands serious infrastructure, advanced search, and reliable performance. It operates as both a digital marketplace and a multi-vendor platform, with **80+ third-party contributors**, including international partners supplying hand embroidery kits and artisanal products.

The business serves a hybrid audience of B2C and B2B customers, from hobbyists working on personal projects to boutique businesses sourcing designs in volume. With product prices starting from \$3-\$5, the platform must deliver an experience that is fast, and optimized for high-frequency, high-volume purchasing behavior.

Beyond individual transactions, Embroidery Designs also offers subscription memberships (monthly, annual, and multi-year) allowing customers to access exclusive content and curated design collections through recurring billing models.

The platform also supports a true **vendor-driven model**, where third-party contributors manage their own catalogs, upload new designs, and operate independently within the same system. This self-service approach is made possible by Virto's native multi-tenant architecture, allowing Embroidery Designs to scale its marketplace without adding operational complexity.



Digital Designs



Embroidery Machines
& Software



Subscription
Memberships



Kits & Physical
Products

The Breaking Point: Outgrowing a Legacy System

Embroidery Designs was originally built on Microsoft Commerce Server, a solution that had served them well in the early years. But when Adobe officially discontinued the platform in 2017, it pushed the team to reassess their entire ecommerce stack. The evaluation quickly revealed just how much the business had outgrown its legacy system.

The limitations were hard to ignore:

- **Unreliable performance during high-traffic sales events.** During major promotions, particularly their 90% off sales, the site would slow down or crash entirely.



We used to have to slow the site down manually during sales just to keep it running. Customers noticed, and it hurt retention.

Chetan Ramachandra, eCommerce Application Development Director, Embroidery Designs

- **Search functionality had become a bottleneck.** With a growing product catalog, the legacy search engine struggled to deliver relevant results quickly, frustrating users and limiting conversions.
- **Rigid architecture couldn't support embroidery-specific workflows.** The platform lacked flexibility for handling downloadable digital products, a key part of Embroidery Designs' value proposition.
- **Outdated frontend technology created long-term risk.** While the backend was already under strain, the team had also built a custom frontend layer using AngularJS. This framework eventually reached end-of-life in 2022 and, although it remained functional at the time of migration, it was clear that continued reliance on unsupported tech would become a security and compliance concern down the line.

These challenges were starting to impact the business. Embroidery Designs needed a modern, flexible platform that could keep up with their growth and support the unique needs of their customers.



Site crash during promotions



Outdated AngularJS frontend



Poor search UX



Discontinued legacy platform

Why Virto Commerce Was the Right Fit



With other platforms, you often have to give up your core features to migrate. With Virto, we didn't have to compromise.

Chetan Ramachandra, eCommerce Application Development Director, Embroidery Designs

The team evaluated Shopify, WooCommerce, and Adobe Commerce, but none could offer the flexibility or customization they required. Adobe's solution demanded the purchase of multiple bundled products, most of which were unnecessary for their business model. Shopify lacked the technical depth and self-hosting capabilities.

Virto Commerce stood out for several reasons:

True modularity: Each of 80+ Virto modules could be used as-is or customized entirely.

Developer-friendly architecture: With a 15–20-person offshore development team, the company needed a solution they could fully own and build upon.

Scalable pricing: Virto allowed them to scale horizontally during traffic surges without increasing licensing costs.

What We Built Together



We weren't looking for a product with consultants attached. We needed control. Virto gave us a real development platform."

Chetan Ramachandra, eCommerce Application Development Director, Embroidery Designs

Embroidery Designs didn't just migrate to Virto. They re-engineered their business on top of it. The collaboration focused on both backend customization and frontend optimization, resulting in a platform that's faster, more scalable, and tailored to the needs of a high-volume, design-rich business.

Key initiatives included:



Custom digital download modules built specifically to manage embroidery file fulfillment. It allowed customers to access their purchases quickly from their account history.



Modified customer account systems to support embroidery-specific workflows, such as managing download formats, device compatibility, and accessing the order history.



Revamped checkout and cart modules that simplified the path to purchase and improved the UX across both desktop and mobile.



Improved search powered by Elasticsearch and Lucene, enabling lightning-fast filtering and navigation across more than 1.5 million SKUs.



Infrastructure scaling for seasonal traffic spikes, especially during high-volume periods like September through December, when major promotions drive heavy site activity.

How the Platform Upgrade Paid Off

Since migrating to Virto Commerce, Embroidery Designs has seen tangible improvements:

Performance: Page load times have significantly improved thanks to code optimization & caching, even during peak traffic. Large-scale sales events no longer impact speed, helping maintain high conversion rates.

Reliability: The website now handles major promotions, including 90% off flash sales, without downtime or system strain.

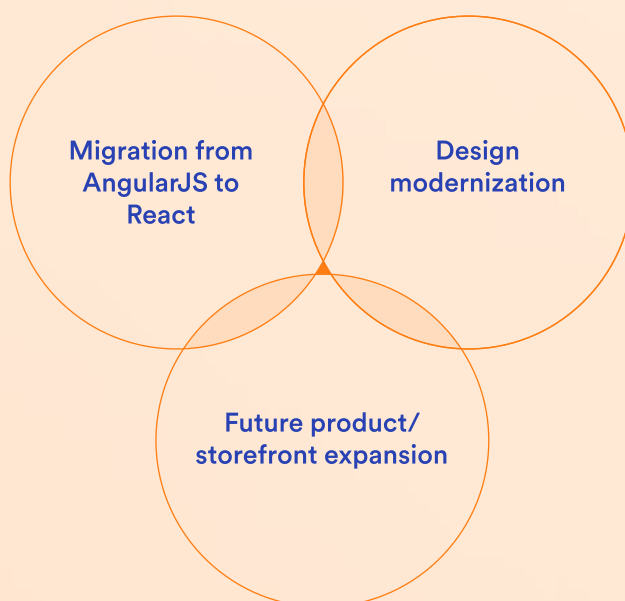
Conversion and retention: With faster speeds and smoother UX, customers are more likely to return.

Product expansion: The business launched entirely new revenue streams, including shippable products and subscription memberships, all supported by custom features built on Virto.

Operational confidence: With hands-on support from the Virto team, especially during major upgrades, platform stability has remained strong despite continuous evolution.

Next Steps

Embroidery Designs is now transitioning from AngularJS to React as part of a broader effort to modernize the frontend experience and align with current web development standards. The move is all about gaining the flexibility to iterate faster, improve performance, and deliver a more seamless user experience. Virto's decoupled architecture makes this evolution easier, allowing the team to modernize without disrupting core functionality.



What Makes Virto Commerce Stand Out

Embroidery Designs attributes much of their success to the flexibility and partnership they found in Virto Commerce. Several key strengths made the platform a standout choice:



Supportive partnership: The Virto team consistently provided hands-on support, stepping in quickly to help resolve upgrade issues and compatibility challenges whenever they arose.



Deep customizability: Unlike other platforms, Virto allowed the Embroidery Designs team to tailor each module, from customer accounts to checkout, to fit their unique digital fulfillment model.



Scalable licensing model: As site traffic surged during major promotions, they were able to scale horizontally without incurring extra licensing fees, giving them freedom to grow without added overhead.



Hybrid business model support: While Virto is increasingly B2B-focused, it continues to handle Embroidery Designs' complex B2C operations with ease, proving its adaptability across use cases.

Internally, the development team refers to Virto as “**the thing that changed our lives**”. This is a reflection of how much easier and more productive their day-to-day work has become. Virto's developer experience has earned exceptionally high praise, with the team citing full control, clear architecture, and speed of execution as major advantages.

Conclusion: From Legacy Limits to Long-Term Growth

For Embroidery Designs, the end of their legacy platform was a turning point. What could have been a forced migration became a strategic leap forward. With Virto Commerce, they redefined how their business operates.

From subscriptions to shippable products, and from digital-only workflows to multi-vendor operations, Embroidery Designs has grown in every direction, powered by a platform built for adaptability.

As they continue to modernize the frontend and expand into new offerings, Virto remains the engine behind that momentum: a flexible foundation that supports innovation.

This isn't just a story about technology. It's about what happens when the right platform meets a bold vision, and builds something future-ready, together.

About Virto Commerce

Virto Commerce, founded in 2011, is a global leader in B2B ecommerce and marketplace solutions, with offices in Los Angeles, Limassol, and Vilnius.

Virto Commerce specializes in innovative, highly customizable headless commerce platforms. Our mission is to empower businesses with cutting-edge ecommerce solutions through relentless innovation.

At the heart of our offerings is the Commerce Innovation Platform, which enables businesses to build commerce products that drive sustainable business transformation.

Powered by our proprietary Virto Atomic Architecture™ and Virto Cloud, our Commerce Innovation Platform offers unparalleled flexibility, seamless integration, and extensive customization, enabling businesses to create unique, high-performance digital experiences and to drive sustainable business transformation across various industries.

Let's Discuss Your Goals

Craving the same level of success for your ecommerce company?

Virto Commerce's top-notch technology is trusted by hundreds of global enterprises like HEINEKEN, Hyundai, Bosch, De Klok Dranken, and Standaard Boekhandel. Your business can be next in line for ecommerce excellence.

We don't just provide adaptable, future-ready ecommerce technology—we partner with our customers to guide and support their digital transformation journey. From aligning technology with your business strategy to ensuring cost-efficient solutions, we work alongside you to achieve your goals.

Ready to discuss your ecommerce solution?

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