STAHLS' Fulfill Engine Case Study: USColorworks

USCOLORWORKS

Already a successful contract shop turning out between 20,000 and 25,000 garments daily, USColorworks wanted to expand into print-on-demand decorating to fulfill a large volume of one- and two-piece orders. However, the shop team couldn't find a solution to help them successfully scale a print-on-demand (POD) operation while making a profit until discovering STAHLS' Fulfill Engine.

For over 20 years, Rodney McDonald, USColorworks co-owner and co-founder, attributes his shop's success partly to taking a manufacturing approach to t-shirt production. His team scrutinizes their processes and attacks issues at the root cause so they don't reoccur and impact other orders. "We also focus on repeatability," he says. "If a customer gives us an order today, then six days, six weeks, six months, or six years from now, the output is the same. Many orders hitting the promotional products industry are repeat orders."

Given that USColorworks' core value is doing exactly what it promises customers, the shop requires systems that help it deliver. "We hold ourselves accountable to deadlines or how we'll produce an order," McDonald says. "STAHLS' Fulfill Engine allows us to produce an order the same way every time. If you find and fix a flaw in the process, it's fixed forever, so it doesn't affect any other orders. That's not the case with other systems."

THE SEARCH FOR A SOLUTION

If a shop fulfills on-demand orders, most will be one- or two-piece orders that flow into the shop from different web platforms. "From a management standpoint, if you have to touch a one-piece order, you've lost money," McDonald says. "Everything about POD has to be a continuous, efficient flow. The process needs to be automated and very repeatable. You can't have operators within the system stopping and making assumptive decisions

about orders because you'll either get it wrong or cost your shop money."

USColorworks didn't venture into POD earlier because the team couldn't do it profitably. "We've always been on the lookout for an end-to-end solution, but most systems just do a good job on the front-end the customer sees," McDonald says. However, he notes, other systems "stop" when the order is created. "They don't handle the purchasing, receiving, or production steps that happen on the shop floor," he says. "That's the critical need because anybody can take the orders. STAHLS' Fulfill Engine takes all those areas out of play and makes the POD process a continuous flow so that the orders go through the system without operators making hesitant, micro decisions."

The game-changer for McDonald is that STAHLS' Fulfill Engine allows USColorworks to process POD orders effectively and efficiently to make a profit. "Nobody out there is doing it to the level of STAHLS' Fulfill Engine," he says. "Several systems have attempted to catch up, but they simply don't have the scalability and the variety of flexible decoration options STAHLS' Fulfill Engine has."

Now, the shop relies on STAHLS' Fulfill Engine for all on-demand production, drawing orders from various sources. These include white-label stores, network partners, enterprise clients, and direct API integrations from

USColorworks Launches Print-On-Demand with STAHLS' Fulfill Engine

USColorworks offers print-on-demand (POD) services powered by STAHLS' Fulfill Engine, scaling production and boosting revenue without sacrificing quality. See how automation helped the contract shop easily handle thousands of daily one-piece orders.

CASE STUDY SUMMARY

The Challenge: USColorworks, a decorated apparel and promotional products provider based in Monroe, NC, needed a reliable way to offer on-demand production across multiple decoration methods. Without an automated workflow, managing thousands of small, one-off orders alongside bulk production was impractical and risked quality inconsistencies.

The Solution: By partnering early with STAHLS' Fulfill Engine in 2021, USColorworks co-developed and implemented a fully integrated system that seamlessly connects incoming orders, automates production decisions via QR codes, and consolidates shipping for rapid turnaround. This end-to-end platform standardizes quality checks at every step, eliminating the manual "micro-decisions" that often lead to errors or inefficiencies.

The Result: STAHLS' Fulfill Engine enabled USColorworks to expand on-demand services and attract enterprise clients seeking high-volume, small-quantity fulfillment. Today, the company produces 30,000 garments daily—3,000 to 5,000 of which are on-demand while maintaining a consistent, repeatable process that reduces errors, simplifies inventory management, and delivers finished orders in as little as two days. This technology-focused workflow has solidified USColorworks as a go-to partner for distributors and retailers seeking rapid, high-quality decorated products.

platforms like Shopify. As a result, orders flow into USColorworks worldwide, creating a global funnel for seamless fulfillment. "Once the orders are in the system, STAHLS' Fulfill Engine tells us how to process each one," McDonald says. "The instructional recipe is built into the QR code the system pairs with the blank apparel, which flows through the entire process to shipping."

USColorworks currently produces 30,000 shirts daily, with 3,000 to 5,000 units — approximately 15% of total output — printed on demand. Those on-demand orders account for roughly 25% of the company's revenue.

STAHLS' Fulfill Engine appealed to USColorworks in a big way due to its rigorous quality control process. "You have a visual QC process your operators can see on screen every step of the way vs. other systems that offer reports," McDonald says. "STAHLS' Fulfill Engine not only gives us the ability to have the QC process down to a science, but a scalable process. As we start doing more orders with more decoration methods, that QC process has grown and allowed us to scale."

In addition, McDonald credits his shop's relationship with STAHLS' Fulfill Engine with capturing national accounts, which his shop would have previously had trouble scoring. "These accounts are coming to us because they know we have access to STAHLS' Fulfill Engine's vetted decorator network," he says. "If their POD volume grows beyond our capacity, we can push orders back into the network to a printer closest to the delivery location."

USColorworks uses STAHLS' Fulfill Engine's on-demand portal to manage various decoration methods, including direct-to-garment, direct-to-film, embroidery, UV-DTF decals for hard goods, and engraving. The platform also supports bulk screen printing within the same system, streamlining operations across the board. McDonald explains, "Pretty much all the processes we do as a regular part of our facility, we also do on demand through STAHLS' Fulfill Engine."

ELIMINATING COSTLY, TIME-CONSUMING MANUAL TASKS

STAHLS' Fulfill Engine's automated system eliminates the manual tasks typically required when introducing a POD operation. After the orders flow in, STAHLS' Fulfill Engine automatically batches and orders the blanks and any needed direct-to-film transfers. Once the garments arrive at USColorworks, an operator can print a corresponding QR code that carries the blank through the facility.
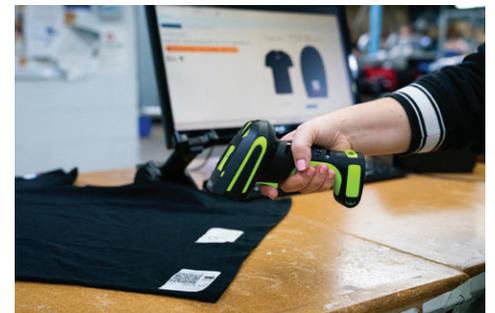
"That QR code has all the information we need," McDonald says. "If it's direct-to-garment, it specifies the pretreat, printing instructions, drying info, shipping label, and shipping method. Normally, operators make a dozen little decisions for every order, but STAHLS' Fulfill Engine automates all those micro-decisions — no more tribal knowledge or charts. It sets everything up to be the same every time. Think about how often an order runs through your process — will operators make the same decisions every time? STAHLS' Fulfill Engine takes that guesswork away."

STAHLS' Fulfill Engine also makes processing orders with multiple items and decoration methods easy. Let's say a customer buys an embroidered hat, a shirt with DTF, and an engraved tumbler. "All those orders process individually within the system, then get joined up before shipping so they go out as one package," McDonald says. "The customer doesn't need two shipping methods; it all happens simultaneously. It's not just for items we produce — it could be products we're

storing. You get the best of both worlds: A customer can mass-produce 1,000 screen-printed items, keep them in inventory, and then include them in the on-demand process."

Plus, from a shipping standpoint, order information only gets entered once in the STAHLS' Fulfill Engine network. "You're not re-keying data or typing shipping information — once it's in the system and on that QR code, every decision is just a scan away, and the system tells you what to do next," McDonald says. "As an operator, if I'm at one station, I can focus on that single production stage and ensure optimal performance."

STAHLS' Fulfill Engine allows online stores to stay open constantly or longer, resulting in more volume for shops like USColorworks. "It's a very cumbersome process to do POD without it," McDonald says. "If you're managing even 20 stores and need to collect and produce all the orders after a few weeks, you may collect orders in August and not deliver them to unhappy customers until October. You also deal with people calling afterward and saying, 'I need one more piece.' POD orders are only in our facility for one or two days."

McDonald says that when shops try to cut corners or do things quickly, they make many errors. "A determining factor for STAHLS' Fulfill Engine is that it makes doing things 'right' easier," he says. "We're at the point now where we're almost forcing our customers to put smaller orders into STAHLS' Fulfill Engine because there's just no way we can do them manually and make any money, and two, make them as error-proof as we can through STAHLS' Fulfill Engine. There are too many incentives to use STAHLS' Fulfill Engine versus doing it on a manual process."

AN EASY IMPLEMENTATION FOR ALL

USColorworks linked up with STAHLS' Fulfill Engine early on and acted as the initial test shop as the solution was developed. "We had a mutual customer doing a lot of high-volume, low-quantity orders," McDonald

says. "STAHLS' Fulfill Engine developed this software in our facility to handle that specific customer. Then, as that customer and the software grew, we could handle other POD customers and other decoration methods and processes."

Much of STAHLS' Fulfill Engine's development has been driven by firsthand experience on the shop floor, observing and optimizing workflows to ensure the software aligns with real-world production needs. Unlike other systems that approach production from a software-first perspective, STAHLS' Fulfill Engine was built from the ground up based on industry best practices.

"A lot of the software that STAHLS' Fulfill Engine has written has been because they've spent so much time on the shop floor, not just my shop floor, but other decorators," McDonald says. "They understand the best practices and built software to automate the process." This deep integration with production processes sets STAHLS' Fulfill Engine apart, making it a solution tailored specifically for decorators rather than a generic production management tool.

McDonald reports a STAHLS' Fulfill Engine integration and training can happen within a week. "You need a champion within your organization to focus on setting up processes in STAHLS' Fulfill Engine," he says. "With one dedicated person, the setup can be done fairly quickly. STAHLS' Fulfill Engine has a strong team to help you get set up and running, and you can tap into their networking community of decorators."

PICK A SHOP OWNER'S BRAIN

Q: What advice would you give a shop owner considering STAHLS' Fulfill Engine?

Rodney McDonald: If you watch the STAHLS' Fulfill Engine demo and think, "Oh, that's not how my shop runs," I'd challenge that. Many decorators are comfortable doing things the way they did them yesterday. So first, accept change in your processes if that's the best way to move forward. Second, STAHLS' Fulfill Engine is really flexible. If you're doing something and there's a real legitimate way of why you want to do it that way, you can configure STAHLS' Fulfill Engine to do it. We encourage people to visit our facility, and once they see fulfillment in action, they realize how

much that process has jumped past them.

Q: How versatile is STAHLS' Fulfill Engine for different types of businesses?

RM: Be very intentional about how you want to set STAHLS' Fulfill Engine up in your shop. Think about the results you want. Because it's so powerful, many of the decisions you make at the beginning of the process, as you set up the defaults, affect how you'll do business.

Q: Is STAHLS' Fulfill Engine always evolving to meet print shops' up-to-date needs?

RM: STAHLS' Fulfill Engine isn't static and I mean that in a good way. We meet once a

month with their product development team, and they lay out what they're working on next week, the bugs they've fixed, and the things we need next. It's not software they created and just left alone; it evolves based on industry trends and best practices. The QR label alone has evolved so we can present better information to the operator, organize details more efficiently, and use labels that won't bleach out. You can multiply that same iterative process across everything in STAHLS' Fulfill Engine — it adapts to meet our changing needs.

After implementation, USColorworks team embraced STAHLS' Fulfill Engine. "The software we used for other areas of our business isn't nearly as efficient," McDonald says.

KEEPING CUSTOMERS DELIGHTED

McDonald's customers offer positive feedback on their POD orders. "Since customers get their orders daily thanks to STAHLS' Fulfill Engine, you know in real time if you're doing things right," he says. "All of the feedback we've had has been 100% positive. One huge enterprise-level customer measures inventory and quality with their end users. They consider a good vendor at half of 1%, where our QC rests. That's all because of the quality control

processes within STAHLS' Fulfill Engine."

USColorworks has also taken advantage of the data STAHLS' Fulfill Engine provides through Microsoft Power BI, allowing it to analyze, visualize, and share data to help make better decisions. "We use it to create dashboards for our operators on our decorating floor so they can tell how well they're doing, what speed they're producing, and what their quality control looks like," McDonald says. "It's great for us to have operator-level statistics they can see on a big wall to see how they're doing."

STAHLS' Fulfill Engine presents a significant opportunity to leverage its extensive customer data for robust CRM solutions and large-scale clients. McDonald highlights the platform's

potential: "STAHLS' Fulfill Engine offers an excellent opportunity with the data there to do some excellent CRM packages for some huge customers." The ability to integrate automated customer interactions with platforms like HubSpot and other marketing tools is a valuable asset. Over the long term, he expects these integrations to be crucial in external client strategies and internal operations.

Looking forward, McDonald wants to continue expanding USColorworks' on-demand volumes and revenues. "As STAHLS' Fulfill Engine continues to evolve, we're excited to bring our bulk embroidery orders into the system, along with the screen-printing capabilities we're already enjoying," he says.

STAHLS'
Fulfill Engine