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How To Become A COVID-19 PPE Maker

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SylvanSport, a Brevard, NC, maker of outdoor gear, shifted into manufacturing face shields and other PPE. (Photo: Courtesy SylvanSport)

In March and April, as the coronavirus spread and the supply of vital personal protective equipment (PPE) dwindled, a variety of small businesses across North America transformed themselves practically overnight. From distilleries to roofing manufacturers, these companies quickly rejiggered their operations to become PPE

makers and provide the masks, face shields, and other gear desperately needed by medical and other essential workers, as well as civilians.

But how exactly did they do it? What's involved in turning a company into a PPE maker and doing so in a matter of days? Here's how several businesses pulled it off, and how your enterprise could too. In between the measures mandated by reopening protocols and the increase of COVID-19 cases in some regions -- plus the threat of a second wave in the autumn -- the need for protective gear isn't likely to go away soon.

Picking the Right PPE

The first step businesses face, of course, is deciding what type of PPE to make. In many cases, the answer depends on the type of raw material a company has handy. Take Isaiah Industries, a 55-employee, Piqua, Ohio, manufacturer of specialty residential metal roofing. In March, President Todd Miller's business partner learned from his mother, a nursing home resident, that she and other neighbors were sewing masks. But they had trouble finding strips to go across the nose bridge to help seal the mask against the face.

With that, Miller realized Isaiah was one of the few manufacturers in the country that had plenty of the necessary raw material for the strips sitting on the factory floor. There would be another benefit, as well. Deemed an essential business, the company was up and running, but demand was down 30% to 40%. By turning into a mask-maker, "It could help us stay open and keep people employed," says Miller.

Tom Dempsey, CEO and founder of SylvanSport, a Brevard, NC, maker of outdoor gear, also decided quickly to make PPE, right after seeing pictures of face shields in mid-March. With production on hold, he also had a lot of material on hand -- plastic sheeting, elastic and the like -- and a ready supply chain in place to make the equipment.

But he ended up expanding his product line beyond the obvious. When visiting his factory to make sure the premises was ready for employees to make the first batch of face shields, Dempsey asked an engineer on the manufacturing team if they could make foot-operated door openers, so employees could avoid touching handles. He also started thinking about the need for counter top guards, pieces of plastic that could be used to reduce contact between workers. Then he realized something else: A lot of businesses also needed such equipment. A week later, Dempsey started reselling the items to other companies.

In other cases, the raw material in question was a natural waste product resulting from the company's normal operations. In March, Sebastien Roy, CEO of Distellerie Fils du Roy, a nine-year-old distillery based in New Brunswick, Canada, for example, realized he had large amounts of alcohol waste left over from the spirits manufacturing process. In fact, at an 85% alcohol content, the liquid was more potent than the stuff used in hand sanitizer made by many other manufacturers. After talking it over with his business partner, who is a chemist, they worked on developing the formula.

Still, there was a problem: finding bottles for the hand sanitizer. Most were made in China, which was shut down. Initially, the only answer was to package the liquid in baggies. "People really wanted this," says Roy. "Whatever the container, they didn't mind." When word got out, however, a local bottle producer contacted Roy and donated around 30,000 containers.

Prepare for a Big Response

Getting into a different production realm also means getting into a different customer base -- and customer service, especially given the rush need for pandemic-related products. Most PPE makers were deluged with orders. About three days after posting a notice about the mask strips on the company web site, for example, Isiah Industries was receiving two to three requests a minute. Miller had to shut the web site down several times.

The demand also called for a new order-taking system, in many cases, and cool nerves. After Roy posted a notice about the hand sanitizer on the company's Facebook page, the phones started ringing nonstop. That made customer service a bit of nightmare: "We were not trained to deal with clients who were desperate, crying on the phone," says Roy. There was also a tsunami of emails.

It came down to a matter of triage, establishing a list of what types of establishments got priority. That included all critical services, like utilities, as well as ambulances, police officers and the like. Also high on the list were senior homes and food banks.

All order inquiries to Fils du Roy were directed to an employee who had chosen to work from home and kept track of everything, as well as maintaining a waiting list. Then at the end of the day, management held a debriefing of what had transpired.

Rejigger Manufacturing and Distribution

Even if a pivot to PPE production seems easy, some rethinking of the systems and processes is always necessary. Some companies, like SylvanSport, had to do a fair amount of equipment reconfiguration; the business also had to find space to store inventory. There, Dempsey got lucky. The county, which owns his 30,000 square foot production facility, let him move camping equipment and inventory into a neighboring 30,000 square foot space, freeing up an area in the primary building to make face shields.

He set up work stations at a distance of 10-12 feet apart; one worker took care of supplying everyone else with raw materials and collecting the finished product. The initial effort was done on a small scale -- just making one shield out of a small piece of metal. When that seemed to work well, his engineers set up a process making about 120 of them from one 4 x 8 inch sheet of 14-gauge steel.

Miller, on the other hand, needed to make only simple modifications on a tool and machine that also were used infrequently. His challenge: Shipping. He initially gave the material away for free, meanwhile paying for shipping, even though his regular business was down. Customers donated about \$3,000 to help defray expenses. Shipping and packaging costs came to around \$10,000 a week. Eventually, he decided to charge a nominal amount --\$20 for 500 strips -- and, using an e-commerce platform, set up a storefront that accepted credit cards and PayPal.

Make Plans for the Future

The ultimate question to decide is: How long do you want to continue producing PPE? Can it be in conjunction with your regular business?

For some companies, becoming a PPE maker turned out to be a temporary thing. After producing 15,000 liters of hand sanitizer, Roy decided his services were no longer needed, as other hand sanitizer makers were able to take up the slack. Now, he's back to producing single malt whisky, gin and the like, though business isn't back to normal.

Sylvan remains in the PPE business. "We continue at full pace making face shields, because every day, the demand is slightly more than what we can make," says Dempsey. However, the company has shifted to helping [reopening businesses](#). He's also selling door openers and counter top guards to medium-sized businesses that lack the resources to make customized solutions. It all comes to about 2,000 face shields, 2,400 door openers and 200 counter top guards a day.

Dempsey even hired four more employees, to allow his existing staff to turn their attention back to making core products (the company resumed making camping gear in May). But the PPE operation "allowed us to keep everyone employed and pay the bills," he says.

As for Miller, who has produced and shipped about 1.8 million strips in all, demand has largely shifted from individuals to apparel manufacturers making masks. His main business has also started to bounce back. Still, he thinks the experience might help him crack open the medical field, an area he'd considered targeting previously. "This could be our entry into that market," he says.

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