Written Testimony before the Subcommittee on Economic Growth, Tax, and Capital Access

Committee on Small Business

United States House of Representatives

"SUPPLY CHAIN RESILIENCY"

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Chairman Kim, Ranking Member Hern, and the other Members of the Subcommittee, I wish to thank you for inviting me to testify in this hearing on the topic of Supply Chain Resiliency.

My comments today are in the context of someone operating a small business in America, a promising business yet vulnerable, in this unprecedented time of the COVID-19 pandemic.

And my frame of reference during this challenging time is perhaps unusual, as I have been fortunate enough to serve as a leader in two large businesses, Intel and Walt Disney, both Fortune 100 scale. And I have also co-founded startup companies, several of which became quite successful and several that failed. I have also served as a venture capital investor for a decade, resulting in both successful and unsuccessful outcomes. I have been a capitalist for as long as I can remember.

I am familiar with the challenges that small businesses face, and that positive results are never assured. I am sure you have heard that a third of small businesses (with employees) fail within the first two years, and I have seen that up close. I have been known to say that you're not a real entrepreneur until you've personally handled the wind-up of a failed business, found a home for the former employees, and sold all the furniture and fixtures before locking the door for the last time.

In addition to my business experience, I have also worked as an EMT, firefighter, and search and rescue expert for 40 years, which will turn out to be a key factor in the decisions made at Kitsbow in this time of the pandemic.

I do not approach today's topic with any particular agenda, except to speak up for the owners and operators of small businesses in North Carolina, and across our nation. Kitsbow has survived COVID-19 so far, but we have to consider that *if it was hard to operate a small business before, it is nearly impossible today.*

But I'm getting ahead of myself. If you will allow me to describe Kitsbow's journey, you can draw your own conclusions.

Our Supply Chain from Asia

Kitsbow Cycling Apparel is a premium brand of clothing carefully designed to meet the nuanced needs of expert mountain bike enthusiasts. We were founded in California 8 years ago by an experienced and successful entrepreneur, Zander Nosler, with the goal of making gear that was highly functional when riding a bike, made of the best materials in the world, incorporating the latest technologies offered in fabric (and fasteners such as snaps, belts, zippers and buckles) and at the same time, designed to be classy and timeless in style such that the customer could wear the same clothes to a restaurant or even a business meeting. This combination of technical performance and timeless style was unprecedented in the cycling industry for mountain bike riders.

We also wanted our clothes to be durable, both to survive a crash and tumble in the woods while riding a bike, as well as surviving for several seasons before needing replacement. Long-lasting clothes are inherently more sustainable, as whatever negative impact manufacturing the clothes has on the planet, that impact is halved (relative to competitor's products) if the clothes last twice as long as the others.

To do this, we sought out the best fabric for durability and technical performance, such as shedding rain or resisting tearing. In fact, many of our fabrics were originally developed for the military, before transitioning into civilian form and function.

Naturally, with these parameters our products as requirements, our products are among the most expensive in the market.

Eight years later, our brand is a noted success in the target market of affluent mountain bike riders. We have about 1,000 positive 5-star reviews from customers, and nearly

every media review in cycling apparel has weighed in with accolades for our products. As a brand, we “won.”

But as a manufacturer, our first 6 years were very tough. Because there are essentially no clothing manufacturers in America doing work at this level of quality. Surely there are exceptions, but we haven’t found many -- and very few were available to make the clothes for Kitsbow under contract. So we did what 97% of the clothing brands in America do[1], we went offshore.

The legendary Kitsbow quality and durability is due in part to our U.S.-based designers, and our choice of fabrics and raw materials, but much of the credit must go to our contract manufacturers in Vietnam and China.

But that business model wasn’t sustainable. I joined the company as CEO two years ago, and it rapidly became apparent to me that the company would eventually fail if it continued to make the products offshore. The costs of the supply chain were weighing

[1] In the 1960s, more than 95% of apparel bought in the U.S. was made in the U.S. Since 2015, 97% of clothes sold in the U.S. were imported (*Business of Fashion* 11/7/2016 and *Industry Week* 1/18/2018).

down Kitsbow's forward momentum in several ways, well known to the experts that study offshore manufacturing.

First of all, the cashflow is terrible. Offshore manufacturers require a financial commitment 9 to 12 months prior to making the products. The direct implication is that not only is working capital tied up overseas, but brands are forced to choose color and style 9 to 12 months in advance.

The implications of these choices are severe, essentially gambling with operating capital -- if blue shirts are not popular 12 months from now, then the brand is forced to discount the blue shirts once they finally take delivery. But there is a double penalty, if the red shirts also ordered are popular, it is at least 6 to 9 months to restock the red shirts. So brands lose on the unsuccessful styles and colors, and they lose again when successful products are capped by inventory on hand.

Brands larger than Kitsbow theoretically have the volume to break up their offshore orders into multiple shipments, for a steady stream of shipments, but the advance payment is still required and the timing issue is similar. And there is plenty of evidence that the big brands gamble too, forced to guess what will be popular in the future.

The venerable Burberry brand, for example, was thrashed in the U.K. media when it was revealed they were burning unsold finished goods, to the tune of $40M a year[2]. H&M revealed they had $4.3B worth of unsold clothes[3], and despite the secretive apparel industry there are numerous estimates of 30% (or more) of all new clothes are destroyed before ever worn.

As Kitsbow began to grow in 2018 and 2019, we faced the same issues. Placing million-dollar bets on styles and colors, a year in advance. Taking all of the risk, and fronting all of the cash. The problem would get even worse as our brand became more successful, not better.

In this sense, after the first six years of the company, we were not winning, but losing. The answer was obvious: make our own clothes.

Kitsbow would work to part of the 3% of U.S. apparel revenue earned on apparel made here in the U.S.

[2] *Reuters* 9/6/2018.
[3] *Forbes* 9/9/2018.

Our Onshoring Journey Begins

In January of 2019, the Board of Directors at Kitsbow endorsed our plan to cease ordering any more product from Asia[4] and invest instead in our own factory.

We turned our attention to U.S.-based contract manufacturers, and more importantly, building our own capacity to make clothes.

The U.S. contractors operate somewhat like our Asian suppliers, but without the emphasis on quality and without the latest sewing technology. In my view, these are the last of the traditional sewing operations with an older workforce, typically without access to capital for new technology, and operating on very narrow margins.

Kitsbow sources all of the raw materials, ships it to the contractor, and the cashflow is improved -- although orders are still made in batches, with significant minimum quantities.

We have had mixed results in the past two years with various U.S. suppliers, including two experiences in 2019 of rejecting nearly 40% of the output of each of two contractors for quality issues. This stressful event consumed time, left us with little product when customers wanted it, and consumed our custom-ordered fabric.

So while we haven't given up on this part of American manufacturing in our supply chain it is quite challenging.

And Kitsbow isn't their ideal customer either, as we want to buy just enough product for 30 days of sales, at most 60 days. A supply chain for a niche, premium brand such as Kitsbow challenges the minimum order quantity requirements of the vendor.

These American operations all operate on a "batch" methodology of sewing that resembles Henry Ford's assembly line. The apparel industry as a whole may be the last hold-out resisting the wisdom and flexibility of lean manufacturing, of what is usually called the *Toyota Way*.

Our experience moving apparel contract production onshore has meant higher costs and many more quality control issues than our previous offshore suppliers.

In parallel with the U.S. supply chain, we also ramped up our ability to make clothes ourselves. Kitsbow built a small Toyota-type sewing operation in our California facility in

[4] We continue to order premium merino socks from Italy, made to our design, and gloves from Vietnam designed with our collaborative partner Mechanix. In both cases there simply was not an equivalent source in the U.S. We continue to search for both.

2017, and by 2018 it accounted for 10% of our sales. In 2019, we ramped this up as part of our onshoring initiative, accounting for almost 20% of our revenue.

The cashflow was fantastic: as we could take an order from a customer in our online store on Monday, make it on Tuesday, and ship it on Wednesday. Instead of guessing at the proper size and color 9 months in advance and then attempting to sell it… we only made what we could sell. We never had to throw away, or even discount, a product we couldn't sell, because we never made it.

It didn't always work smoothly, but Kitsbow was using a basic concept for manufacturing that is used in almost every other industry, in every other sector, from iPhones to automobiles. We had proven to ourselves that it worked, and that we could do it. There was just one problem.

The San Francisco Bay Area where Kitsbow was founded did not support a community of experienced sewers. We needed to move.

Making Clothes in North Carolina

On August 28, 2019 we held a press conference with the Governor's Office of North Carolina in the small town of Old Fort, a historic location, railway and mill town at the base of Mt Mitchell, the highest point in the Eastern United States and a few minutes drive from Asheville, NC. Old Fort is surrounded on three sides by the Pisgah National Forest.

We unveiled our plans to move almost all of our California-based operations into a former sock manufacturing building on the edge of a protected trout stream, minutes away from some of the best mountain biking in the U.S., in the Pisgah National Forest, and a short drive from Asheville, NC.

In our announcement, we promised to be making clothes by Christmas. With a new round of funding, we hired 27 employees and purchased more sewing machines. We upgraded the 23,000 square foot building and installed new, modular electrical for the sewing machines. We started training the new employees, and moved our inventory from California into the new building on December 5.

Only 1 employee relocated from California, so we added 26 jobs to a small rural town in 60 days.

These were the first jobs of many we promised, as the first new manufacturing business in the town in at least a decade. Old Fort was a key railroad stop, and then the location of multiple manufacturing mills and operations for decades, before heading into a 30-year steady loss of jobs through the declining economies of the rural South.

We have consciously built a specific culture for our modern apparel factory, drawing upon values and norms that were proven to work in California, and adding new norms such as company-sponsored stretching exercises in the middle of production shifts.

Above all, we emphasized to our brand new team that we needed to be nimble, and respond quickly to shifts in the customer market -- to make clothes to order, and adjust our designs constantly.

Unlike most rural factory operations, we provide hourly employees with 8 paid holidays each year. We initially provided 50% of the employee's health insurance premium, but when it became obvious that production employees couldn't afford their portion, we upped it to 100%. We are actively engaged in improving the lifestyle and healthy choices available here, and we have more ideas in mind for the future, so that our work force stays healthy and values their workplace, and in turn, stays with us for a very long time.

Utilizing the Toyota-style lean manufacturing model for apparel, which is used by a select few other apparel manufacturers in the U.S. (but to our knowledge, not by any other outdoor brand) is quite different from most of the apparel industry.

If you search for "images of sewing operations" on the Internet, world-wide you will only see pictures of long tables of sewing machines, with sewers sitting for the entire shift at one machine, making one item. Each sewer makes one part of the garment, performing the same action over and over.

In a lean methodology, the sewer makes one perfect shirt, and then makes another. The sewing machines are typically arranged in a “U” so that the garment begins at the first machine, and then is taken by the sewer to the next machine, and so on until the garment is complete at the last machine.

The numerous advantages to this methodology are well-documented elsewhere, but the distinctive aspects are that the machines are moved around on rolling casters, to be in the best position for making each type of garment. And the tables are stand-up, because the sewer will be moving from machine to machine. And the electrical system is in the ceiling, like track lighting, so that the position of the machines are easily changed.

Our new employees were trained on this equipment, and this methodology, and warned that after training we would be re-arranging the equipment to make different types of clothing, all the time. That fast-changovers of equipment were inherent in our business model of making products to order, with plenty of variety.

On December 13, 2019, with our employees standing proud, we presented our first clothes made in North Carolina and ready to sell at a ribbon-cutting ceremony celebrating the accomplishment, with the families of our employees and hundreds of supporters.

We ended the year accomplishing our revenue goals for 2019, while simultaneously building a new factory and moving a business across the country in just two months. Our investors were delighted, and the team was proud of their work.

Our future looked bright. Heck, our future *was* bright. We were taking small steps, but we were making clothes in the U.S., and word was getting around that you could visit Old Fort and see your clothes made, and even meet the people that made them.

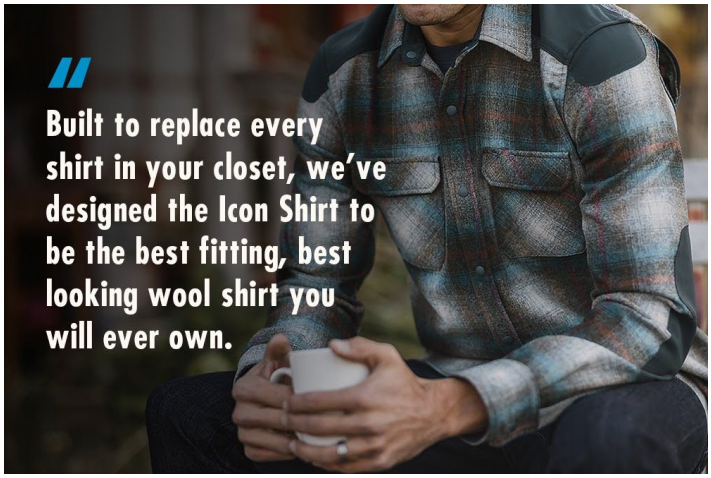
We had no idea what was about to hit us.

Everything Changed

January and February 2020 for Kitsbow went well, we were making more products every day and settling into a routine in Old Fort. Word was slowly getting out to the rest of the apparel industry in the South, and a few potential suppliers contacted us about supplying raw materials. We switched to using a local supplier for all of our cardboard and shipping supplies, just 10 minutes away.

Our most popular product, the Icon woolen shirt is made with Pendleton Wool made in Portland, Oregon. Additional rolls of that fabric started arriving in Old Fort as we were making and selling more shirts than we had forecast.

We also use fabric from Polartec, and some of their rolls come from Tennessee, near Chattanooga.



But we still required top-quality fabric and fasteners from Japan, Italy, Vietnam, and China. In every case, there was no U.S. equivalent of the quality. As with the rest of the Apparel industry, we knew that we would need to get our orders filled before February, because of the Lunar New Year.

This is the only time of the year that the Chinese-based operations halt all operations, and they don't answer phones or email. Because everyone knows about the Lunar New Year celebrations, the apparel suppliers in other countries follow suit and close up operations too. So we knew we would be waiting until after the festivities to even place new orders for supplies, let alone see them shipped.

Except this year was different. The end of the holiday came on February 8, and phones weren't answered and emails weren't returned. That's when we knew the COVID-19 crisis in China was real.

At the time, that view certainly wasn't common, although companies entrenched in Asia noticed -- Apple warned investors that iPhone production was hampered by factory shutdowns.[5]

[5] *CNBC* 2/17/2020.

As a result, in the first week of March we developed our first protocol for protecting our manufacturing staff with 6 feet of separation, twice-daily cleaning, and other measures. We cancelled long-planned events to meet customers (and were met with surprise and skepticism by event organizers, who clearly thought we were over-reacting).

Our theory was that if we could keep our team safe and not infected, then we could keep manufacturing apparel and shipping it, despite the economic impact. We hoped for the best, but planned for the worst. And in early March, Kitsbow apparel sales plummeted.

But our supply chain was the problem. Our raw material in Asia wasn't shipping, and no one was answering our inquiries. Our contract manufacturers in the U.S. started warning us of delays of finished product, as Apple struggled to make iPhones in China our apparel contractors in California struggled to make our clothes. We expected shipments from Italy, and it became clear they were in crisis. Then the World Health Organization announced that COVID-19 was a pandemic.

On March 19, the Board of Directors met to discuss layoffs. As we considered this, it should be remembered that we only had new employees. We had only been making clothes for 4 months (and only shipping for 2.5 months). We've just gotten started, and it was a herculean effort. Contemplating furloughs or layoffs after all of that would be a huge setback. It wasn't the right thing to do, so we paused on taking action.

Our U.S. contractors either wouldn't answer our inquiries, or confirmed that they had sent their employees home and had stopped working on our products. This had a double-effect: we wouldn't get the finished product (we still haven't received any of it, as of July 1) and they were holding all of the raw material we had shipped them, so we didn't even have the option of making it ourselves in North Carolina.

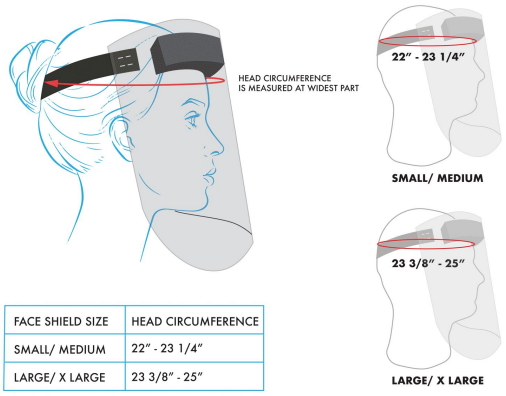
During this same time, our North Carolina was considering stay-at-home orders (which would be announced on March 27) and our staff was worried. Two were pregnant, and worried about exposure. The science and data was not clear at this point in the pandemic, so we weren't sure our protective protocols to keep our work force safe would be adequate. It was grim, and it was frightening.

The Pivot

On the same day of the Board Meeting to discuss layoffs, our founder Zander Nosler in California sent an email with a design for a face shield. This is a type of PPE used by medical professionals, and it makes the face mask more effective and last longer by

protecting it from moisture. He pointed out that our new equipment in our North Carolina factory could make face shields in volume, that we had an inventory of elastic, we would only need plastic and foam… both of which were available online.

He in turn, had received the design from a group of Stanford Design School alumni, considering similar projects to provide the PPE that no one in the U.S. seemed to have. The open sharing of the design represents, I believe, the best of Americans responding to a crisis.



FACE SHIELD SIZE	HEAD CIRCUMFERENCE
SMALL/ MEDIUM	22" - 23 1/4"
LARGE/ X LARGE	23 3/8" - 25"

Our product design staff, all with less than 4 months at Kitsbow but eager to help with what was quickly becoming the defining natural disaster of our lifetime, jumped on it.

The design was tested, refined, and ingredients easily ordered online for overnight delivery. The next day the prototypes were made, the design refined again, and production began.

On the third day, most of the production employees and sewers came in on a Saturday to make the first few hundred face shields.

My personal view was that *we had to do this* -- I wasn't thinking about a PPE business, or even a price. I have worked as a first responder in a parallel career for nearly 40 years, and I can remember treating patients as an EMT before we regularly wore gloves or face shields. Over the years, the transition to protecting ourselves while treating patients became deeply engrained. I couldn't imagine my first responder colleagues confronting COVID-19 patients with inadequate PPE, let alone no PPE.

To backup that intuition, I reached out to local public safety leaders, all long-time friends and professional colleagues, and they all said the same thing: "We don't have much, so if you can make shields and masks, make as many as you can, as fast as you can."

Anthony Penland, the chief of my own fire department Swannanoa Fire & Rescue helped coordinate, as he was assigned to the logistics section of the Buncombe County emergency operations center, charged with obtaining PPE. William Kehler, EMS director for McDowell County where Kitsbow is located also helped. The agencies asked for a price, so we made our best guess and took a few orders by email and phone.

As volume production commenced for face shields that third day, the product design team turned their attention to face masks.

This was directly in their wheelhouse, as apparel designers. Kitsbow got lucky with a 4-person team with excellent collaboration skills (low ego) and strong opinions (pride in their work) so they worked through multiple prototypes, and scoured the Internet for information about filtration, fit, and other aspects of masks.

Using the production sewing machine equipment, each mask initially took about 12 minutes to make to commercial quality. The team created technical documentation, started tracking results, and measuring effectiveness using whatever techniques they could glean from the Internet. Quality control specifications were established, and product SKUs (Stock Keeping Units) assigned and barcode labels were created.

Everyone on the team treated this “project” as a consumer-grade product line, made at commercial quality standards. Like Kitsbow clothes, they aimed for a great fit, durability, and technical performance.

Unprecedented Demand

Sometime that afternoon, Saturday March 21, 2020 I posted three pictures on my personal Facebook account. I showed the face shield, the first face mask prototype, and the production crew hard at work. I was proud of the way they all put their shoulder to the wheel, despite the increasing fear of the virus. The post got immediate attention locally, and with friends and relatives across the country.

Kitsbow like many companies has a social media expert, various social media accounts, a public relations firm, a website, and a worldwide email list. But that’s not how our PPE

project was announced. It was simply posted on my personal Facebook page, where normally I would post pictures of food, bicycles, and our dog.

It is hard to understand what happened next. Perhaps it relates to the demographic segment looking at Facebook on a Saturday afternoon (skewing older, more vulnerable to the virus, and thus more fearful). Perhaps it was the absence of leadership in America addressing the PPE shortage, and no believable or credible plan in sight for resolving the issue… but that post was ultimately shared 634 times.

And my email and phone blew up.

Everyone wanted to know how to get the PPE we were making. They didn't even ask how much it cost. They were almost all medical professionals and first responders, and while it was from all over the nation the most urgent and emotional requests were from the initial hotspots like Seattle.

We restricted sales to medical professionals and first responders only. It would be weeks before we could sell to civilians. In fact it would be weeks before I would send any to my own parents, vulnerable in their 80s.

Local to the region, representatives of the Dogwood Health Trust leapt into action that very same day. This private foundation had already been monitoring and studying the PPE shortage, with an acute interest in ensuring that enough PPE would be available in the 18-county region they serve in Western North Carolina. The concern was that the federal PPE stockpile and even state resources might be consumed by North Carolina's more populous and urban areas such as Raleigh and Charlotte, and little would reach Western North Carolina.

Dogwood Health Trust CEO Antony Chiang was keenly interested in providing a safety net of PPE for the medical and first responder agencies, but also for front line workers

in public-facing roles as social services, food banks, bus drivers, and others that would continue to interact with the public.

An additional focused effort would soon develop for providing PPE to people of color, members of communities that it was quickly becoming apparent were suffering COVID-19 at three times the rate of the rest of our region.

Antony and his team reached out to Kitsbow on Saturday with an offer to help with supply chain sourcing, and a request to buy in volume (an initial order of 20,000 units). Like me, Antony had worked in technology venture capital and was familiar with making significant financial investments with limited information and limited time.

Dogwood's belief in Kitsbow came at an important time: further fueling the commitment of the team staying up late making the PPE and reassuring the Board of Directors that we were making the right decision.

It was the most profound shift in customer demand I've ever experienced in 40 years of business, let alone in a single day.

At Kitsbow, we refer to Saturday, March 21 as *Day 1 of PPE*. The crew worked Sunday too. And that's when we started running out of materials.

The PPE Supply Chain

The first example of supply chain difficulty is the face shield. The plastic we used in the first few thousand shields was acquired on a Thursday. By Saturday afternoon, that supplier was already out. The race was on for suitable plastic, and we were competing with scores of would-be face shield makers.

Our product design team scoured the Internet, and found two more sources which would arrive Tuesday. And that was it, there was no more plastic available anywhere online in the U.S. In just four days. Over a weekend.

This experience would be repeated over and over, where the dominant suppliers of essential ingredients for PPE are located in Asia; the U.S. distributors for those suppliers maintained a shallow inventory in their place on the chain, and the users of these essential ingredients of PPE were simply overwhelming the supply. It wasn't just plastic for face shields. Elastic was completely unavailable anywhere in the U.S. within a week (and still is in very short supply).

We needed to remain nimble, and move up to the next level beyond retail outlets. Our product design team hit the phones on Monday morning to industrial distributors. This was the next difficulty for the supply chain of a small business -- these distributors aren't like Amazon, they don't move quickly, they don't have much of a website (they still use paper catalogs) and they're not accustomed to responding even on the same day that you call. And the telephone is their tool, not email. And they don't stock much either, you order it and then wait for 6 weeks.

And above all, they will generally only work with businesses they already know, have visited, and vetted. Over days of conversation they realized we were serious, and albeit new to North Carolina, an established company. Still, payment was 100% up front and by wire transfer.

At first our team got through to the distributors, but within 3-4 days they stopped answering their phones. Yes, we were in competition again with all of the other potential users of the precious ingredients. We weren't the only buyer that had moved up the supply chain from the retail outlets. Later we would hear that distributors were receiving 200-300 phone calls per day during this time, per salesperson.

We did get help: other small businesses in Western North Carolina had heard about what we were doing to make PPE, via local news and social media, and contacted us to help. And they could.

One had the equipment for cutting the face shields faster than we could with our equipment. Another had a line on plastic sitting unused. By Tuesday we acquired enough plastic for 30,000 face shields… which was a good thing, because we had already taken orders for more than 20,000.

The sense of community and support among small businesses was remarkable, especially as Kitsbow had moved to Old Fort just four months earlier. Again, the best of American spirit and cooperation was apparent in these partners, all members of the regional Outdoor Gear Builders association which Kitsbow had recently joined.

Then it got real. We received information that calculations had shown that if COVID-19 hit Western North Carolina region the way it had in Italy, the local hospitals and first responders would consume 400,000 face shields a month. We were asked if we could supply this. We charted a plan to make 10,000 shields each day up from 1,000.

As a technology industry venture capitalist, I had heard the phrase “We were building the airplane while flying it” often. Now I realized that all the previous use of that phrase was an exaggeration. This was really it, and we felt that lives were at stake.

The news from Italy was horrific, and constantly in our minds. We were learning about the chemical and mechanical specifications of plastic, the importance of the width of the plastic sheet when delivered so it would fit into the machine, the specifications of filter media, and the forms it was available in, as well as the efficacy as a filter of the 0.3mu virus particles. All in parallel with negotiating schedule and price with multiple sources..

Our product team created spreadsheets of data, and cross-indexed sources. We asked for help with introductions, and vetting suppliers so we wouldn’t inadvertently choose a supplier with poor customer service. Days of work went into understanding, let alone managing, our new supply chain of PPE raw material.

It was time to move up from the distributor-level. We went direct to the best of several U.S. manufacturers, and ordered custom plastic sheeting from one just 1 hour away in South Carolina. They would make plastic sheet to our specific needs including anti-fog treatment. It would take 3 weeks to make and deliver, but that lined up with our production schedule. We bought enough for 880,000 face shields, paid cash in advance, and arranged for a semi truck to pick it up. It was a massive commitment for a small business.

Another contact on Facebook, related to my family in Minnesota, provided a sample of foam for the headband of the face shield, previously sourced from overseas. We placed another huge order, delivery in 4 weeks from MN.

Ultimately, all of the ingredients of the Kitsbow Face Shield would be sourced in the U.S., making it the only completely U.S.-sourced and U.S.-manufactured face shield available in commercial production (to our knowledge). We had solved our supply chain problem for face shields.

Our second supply chain example is the Kitsbow Face Mask. That first weekend, the product design team quickly engaged a medical professional, a physician with a background in apparel, as our first advisor on the science of PPE. She had helped found a non-profit group sewing masks, Masks of Love. She helped us understand the latest research, and we helped the group by cutting all of their filters to size at no charge. Once again, amazing community collaboration between people who had never previously met, but assumed the best of each other.

We also received support, information and advice from the Carolina Textile District and SEAMS (the Association & Voice of the U.S. Sewn Products Industry) during this time period, as Kitsbow is a member of each, and each was helping organize the production of gowns, masks and shields. Again, the free exchange of information, sources, testing capabilities, and distribution of finished PPE was readily available and deeply appreciated.

After considering varying materials for filtering, with the scant scientific evidence available at the time, we opted to use HEPA filter media inserted into a pocket inside the face mask. The filter media wouldn't touch the face (the fabric would) and the result would be more protection than a mask made only from fabric.

With hours of research, and consultation with filter media technicians, product engineers, and other specialists in the filter world we became confident that the HEPA material might work to save lives. You probably recognize the term, since HEPA filters are found in vacuum cleaners and HVAC air exchangers (residential heaters and air conditioners). Its also used to filter air in clean rooms, and in consumer CPAP breathing devices. It's a proven technology, and comes in a variety of grades and specifications.

But on March 24, it was hard to find. Word was getting out via the Internet, and everyone wanted HEPA filter media. Twice we had an order for approximately $30,000 of filter media from a distributor or manufacturer, and once the wire transfer was already set up, and then they would cancel the sale, with no explanation. It was clear that others were bidding against us, or the manufacturers didn't want the liability of being involved even indirectly with PPE. We'll probably never know.

At first we were reduced to buying commercial air filters at retail, and deconstructing them to remove the filter media, smooth it out, and use it in the masks. We sent one of our employees driving to distant stores to find enough.

Eventually we found two different manufacturers, each with inventory in stock, and we bought all they had. It took hours and days to find this, and once our wire transfer was effective, we sent an employee with a truck to Virginia to pickup the precious material. We half expected that he would be turned away at the loading dock, but we got lucky and we had filter material for our first 30,000 masks.

In June we would secure a reliable, U.S. manufacturer, but the memories of the difficulties and extreme frustration of having orders cancelled will be with us for a long time to come.

100% PPE Production in 4 Days

A visit to the Kitsbow factory in Old Fort, NC makes an impression. Most apparel operations are by necessity a dusty environment because of the cutting and stitching of fabric. In some facilities, debris and scrap material can be found everywhere. Many operations haven't been funded for an upgrade in years, so at Kitsbow the all-LED lighting overhead and at each station, along with a policy of twice-daily cleaning (long before COVID-19) means that the physical space is clean and gleaming.

As previously described, all of the equipment is on rolling casters, ready for re-positioning. All electricity and compressed air is modular. Everything can be easily rearranged. The flow of raw material from the inventory floor to the production floor is also thoughtful, with many carts and rolling tables.

All the equipment is at standup stations, since the sewers move from machine to machine as they make each garment.

An in-house technical team keeps everything running with periodic preventable maintenance, and this staff is a part of the production team -- they know the challenges the sewers and cutters face, and work through problems with them.

So on Tuesday morning, March 24, when the sheer number of pending orders for face masks became apparent, we made the decision to halt making apparel, despite at least 100 orders pending for customers.

The technical team literally shrink-wrapped all of the work in progress for apparel and wheeled those carts, shelving units, and tables into a corner of the factory.

The sewing machines and other equipment was re-positioned, plugged in, and tested, there was a capacity for at least 1,200 masks a day configured and ready for use before lunchtime.

We had pivoted to 100% PPE production from apparel production in just 4 days since the email with the first idea.

Building Out the Team

The original work force of 27 employees was woefully inadequate for this kind of volume, so the word went out on social media that Kitsbow was hiring additional sewers in temporary positions, and within two weeks 50+ staff were making either face shields or sewing face masks, on two shifts a week.

Increasing levels of unemployment in Western North Carolina helped fuel the hiring, and the State of North Carolina workforce agency lended a hand with collecting applications and interviewing candidates.

We also realized we were running out of space, and that production of the plastic face shield was taking a toll on the leadership team and our logistics capability. Local county economic development staff put us in touch with Foothills Industries, a non-profit organization employing adults with disabilities and nearly 50 years of experience manufacturing regulated items, including surgical drapes and other medical devices. We quickly formed a working agreement, and shifted all production to their FDA-registered facility.

It was a “pivot within the pivot”, taking us out of the plastic shield manufacturing operation in less than 6 weeks after we had entered it. We weren’t adding any value, and it was in Foothill Industries’ direct experience. We would continue to market and ship the shields to customers, source the raw materials and fund the raw material inventory, but they would build the product. And we kept the jobs not only in the U.S., but 10 minutes away in the same county. It was another example of our nimble leadership team taking quick action, and another example of amazing partners in the region.

Today Kitsbow employs more than 50 workers, and has 10 open positions. Many of the temporary positions in March and April were transitioned to full-time roles by May, with paid training and other benefits. We more than doubled our workforce during the Pandemic. Yes, this small business is creating jobs, and these are good jobs.

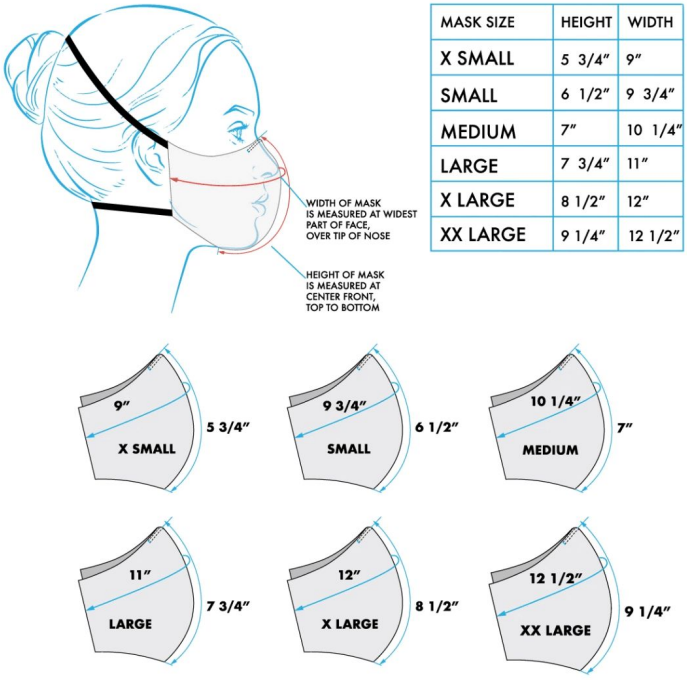
Before the Pandemic in Q4 of 2019, Kitsbow paid its employees an average weekly wage that was **125% of the average weekly wage** paid in the area, according to statistics measured by state economists for the same period[6].

With daily production incentive pay and overtime, the weekly wage will be considerably higher in 2020 than it was in Q4 of 2019. And full-time roles at Kitsbow include 100% employer-paid health insurance, paid holidays, and other benefits.

A Second Mask Design

The product design team at Kitsbow continued to learn about filter media, experiment with fabrics, and seek outside experts for more information. At the same time, we received contact from a team of community health practitioners at Wake Forest Baptist Health in North Carolina, led by the health system's Chief Wellness Officer, Dr. Bill Satterwhite.

It was the kind of expert collaboration that we needed, and their team needed a production partner that could manufacture a reusable, durable fabric mask for all-day comfort. The teams met in the parking lot for social distancing, and agreed that we could make a difference with a new kind of mask.



MASK SIZE	HEIGHT	WIDTH
X SMALL	5 3/4"	9"
SMALL	6 1/2"	9 3/4"
MEDIUM	7"	10 1/4"
LARGE	7 3/4"	11"
X LARGE	8 1/2"	12"
XX LARGE	9 1/4"	12 1/2"

We quickly began collaborating, and eventually signed an exclusive agreement to make the Wake ProTech™ mask for medical professionals, workers, and consumers that needed a close fitting mask comfortable

[6] Kitsbow's quarterly wage report certifying average weekly wages paid, and the Q4 2019 employment/unemployment data included in the *June 2020 North Carolina Economic Report for McDowell County* (included in Appendix 1).

enough to wear for an entire shift. With this mask we would offer 6 sizes instead of 3 sizes, and use a different way of holding it on the user's face.

During this period, we were exchanging prototypes and running tests nearly every day. Quickly a routine developed where one of the Kitsbow staff would grab the recently completed prototypes, and drive East towards Winston-Salem, North Carolina. At the same time, one of the collaborators from Wake Forest would drive West towards Kitsbow in Old Fort. The usual meeting spot was the Walmart parking lot in Hickory, North Carolina where the exchange of goods would be made, and each driver would return to their base.

Best of all, the Wake Forest model is made of raw material entirely sourced within the U.S., even the elastic and plastic toggles.

Volume production of the new mask in Old Fort, NC began on May 22, 2020 and we announced it to the world.

Results

As of Sunday, June 28, Kitsbow has delivered to customers **87,982 units of PPE**. That's **44,710** units of FDA authorized Face Shields, and **43,272** units of reusable face masks. All made in North Carolina.

Sunday was also Day 100 in the PPE Business.

Regulation Compliance Holds Kitsbow Back

There are two ways that compliance with federal regulations is holding Kitsbow back from being successful, and providing jobs.

First, we profoundly appreciate the efforts by this Congress to support small business with the *Families First Coronavirus Response Act (FFCRA);* the *Coronavirus Aid, Relief, and Economic Security (CARES) Act* including the PPP program; and the *SBA Economic Injury Disaster Loan* program.

Yet compliance with these programs is rigorous and difficult for the small business, effectively creating a bias against businesses that lack a professional staff for compliance.

Even the effort to evaluate the options and determine eligibility of these programs for Kitsbow required hours of work by our skilled finance and administration staff, and frankly set us running to outside experts in the accounting and legal industries to confirm our interpretation of the application forms, let alone the regulations.

This was made even more expensive with the ever-evolving guidance, which seemed to arrive nearly weekly, causing us to doubt anew our interpretation of the program benefits (and liabilities). Like many regulatory issues, this essentially played to the strengths of medium- and large-scale businesses with staff and compliance experience.

While we have professional staff at Kitsbow qualified to do this work, we believe many small businesses do not, and were left out, especially at the first step of correctly applying for these programs. We would respectfully ask that you consider the burden of these programs from the point of view of businesses without dedicated professional staff.

Second, Kitsow is being helped in a big way by how the FDA regulates PPE, and being held back in another way.

On April 13, the FDA took a huge step forward for new manufacturers of *face shields* and for the users desperate for the protection offered by face shields. The FDA provided a blanket emergency authorization, provided that a face shield met certain specific criteria. This allows Kitsbow (and others) to state that their face shields are authorized by the FDA[7], which in turn empowers supply managers to purchase face shields from non-traditional manufacturers.

The importance of the emergency authorization cannot be overstated, as purchasers from large institutions and especially medical facilities are not allowed to buy PPE that does not carry FDA approval or FDA authorization as a matter of internal policy. Even if the PPE is made in the U.S. as the Kitsbow face shield is, and even if the PPE is made from entirely U.S. sourced raw material, as the Kitsbow face shield is. This action by the FDA was consistent with a rapid response to an unprecedented disaster, and associated lack of PPE.

By doing this, the FDA not only helped manufacturers like Kitsbow meet unmet needs, but motivated U.S. manufacturers to begin making PPE again. We believe that this is key to establishing a resilient supply chain for future epidemics and pandemics.

[7] https://www.fda.gov/media/136842/download

Now we need the same mechanism for commercially-manufactured *fabric masks*. As it currently stands, we are expressly prohibited from providing any scientific data, any testing results, any information at all about the Kitsbow masks with regard to filtration.

Consistent with our focus on technical performance of our clothes since our founding 8 years ago, we of course tested the efficacy of our face masks. As have many customers in medical professions with access to testing equipment and/or independent labs. In third-party, independent testing the Kitsbow masks are very, very effective. But we cannot disclose that to you, even in this hearing.

I want to repeat that: in the absence of getting the information from Kitsbow, our *customers* have obtained testing data about the effectiveness of our masks, at their own cost and time (independent laboratory testing is not inexpensive). That is a measure of the need for this information.

The face mask regulations were apparently formed at a time when innovation in PPE was not urgent, and regulators and scientists must have concluded that disposable, single-use masks could be the only form of protection.

This has essentially guaranteed that customers, including government agencies funded by taxpayers, can only buy PPE made in China. Because with a single exception, all of the approved manufacturers for the N95 mask are not located in the U.S.[8]

Kitsbow has received constant inquiries from large organizations and medical facilities, but in the end these large organizations buy (FDA approved) PPE from China instead of from Kitsbow, because our masks are left in the same FDA category as a “homemade” mask -- including our Wake ProTech™ mask, co-developed with a leading medical teaching and research institution.

Using a regulatory mechanism similar to the FDA’s wise emergency authorization of face shields would help users get the masks they want immediately, provide a degree of comfort to corporate buyers, and bridge the time gap while non-traditional manufacturers such as Kitsbow pursue formal FDA approval of their masks.

Kitsbow has started the process to obtain approval, but we are told it will take months. In the meantime, we cannot tell any potential customer anything about our filtration efficacy.

[8] To our knowledge, Premiere Ameritech is the last manufacturer in the U.S. making the N95 mask. *The Washington Post* 5/9/2020. If there are others that have emerged, there aren’t many.

We will also point out that if reusable masks could be rapidly considered and adopted as an alternative to single-use disposables, we as a nation would also experience the substantial benefits of reduced impact on the environment by minimizing single use items disposed of in landfills in favor of reusable items.

Lessons in the Time of COVID-19

Kitsbow made the pivot to making PPE, ultimately turning it into a sustained business line for the company, because of the incredible coincidence of multiple factors aligning at the same time. While we're grateful for our good luck, we wish that hadn't been the huge factor it turned out to be.

We are profoundly grateful for and proud of a team of some 50 people that came into a facility every day during a state-wide lockdown, some in the vulnerable population and many with vulnerable family members at home. The safest thing to do would have been to stay home. Yet they came in, and the result is nearly 90,000 units of PPE made in America in just 100 days.

But we learned a few lessons too, which I'll attempt to enumerate here:

What went right?

- A brand new factory, with the best sewing machines money can buy and a flexible configuration for rapid changes, was available in Old Fort, NC. This enabled a pivot to 100% PPE in just 4 days.
- A "startup mentality" in the leadership at Kitsbow embraced the challenge, unencumbered with a conservative approach to rapid change, and continued innovating in design and production every day. "Nimble" is the greatest characteristic of the small business.
- Tenacious persistence by the product design team on the phone and email to secure new vendors for the supply chain, while creating new U.S. suppliers.
- The CEO knew and used PPE as a first responder for decades, and had a deep appreciation for how important it would be in the pandemic response, and had colleagues that could verify the urgency of the need.

- A community-minded Foundation, Dogwood Health Trust, acted swiftly and definitively to offer financial support and place large orders of PPE product without bureaucracy or delay. A nimble foundation.
- Others in the Western North Carolina business community, partners such as Wake Forest and Foothills Industries, SEAMS, Carolina Textile District, Outdoor Gear Builders, and dozens of unsung heroes delivering lunch and refreshments for the Kitsbow crew, helped keep this going.
- The FDA created a blanket emergency authorization for face shields that meet a set of simple criteria, so Kitsbow can accurately and ethically state that our face shields are FDA authorized.

What Could Have Been Different?

- To our knowledge (which is limited) the FDA did not provide emergency authorization of any reusable fabric face masks, so our commercially-quality face masks with HEPA filters fall into the same FDA category as a “homemade” mask with a single layer of fabric. Most medical institutions cannot purchase them, by internal policies that are tied to FDA approval.
- Kitsbow was competing with dozens (hundreds?) of other manufacturers for the same key material: plastic, elastic, HEPA filter media, etc. all of which was obviously critical and essential supplies in a worldwide disaster. This could have been recognized and the appropriate materials secured by a central authority.
- Kitsbow has received inquiries from medium and large organizations about the purchase of reusable face masks in large quantities (2,000 to 20,000 masks per order) from for-profit companies, non-profits, and college and universities. So far, none has purchased in volume. They confess that the lure of the inexpensive, disposable foreign mask is essentially mandated by their financial situation. This obviously works against U.S. production of PPE.
- Despite the FDA authorization for our face shields, the largest stockpile of medical face shields we know about in North Carolina is at Kitsbow. We have 60,000+ faceshields in stock, and the material to make another 800,000 face shields. Demand is low. We may need to scrap the face shields to recover some of our investment in plastic sheeting.

Conclusions

Small businesses supply the jobs in most communities, not the large corporations, as Chairman Kim has already stated. Large corporations can recruit talent from anywhere, and do. On the other hand, small businesses have the potential to get involved in their communities, and can make the smart choice to source locally, which isn't always (in fact rarely) the lowest bidder. Small businesses are nimble, and can move quickly to address problems and opportunities.

And we all know that running small businesses has become more and more difficult, with increased regulations, complexity of reporting on compliance with those regulations let alone reporting for various tax agencies. The cost of insurance is crippling, and has forced more than one small business to suspend. The cost of health insurance for the small business is staggering, since those business owners do not qualify for ACA subsidies.

COVID-19 was and is horrific, in the toll on human life and the impact on our society. While unemployment due to the virus is of course experienced personally by the individual furloughed or laid off, small business owners and managers such as myself experience the layoff viscerally multiple times, as we let each valued employee go.

Kitsbow has been fortunate, beyond measure, to survive the virus (so far) without forcing unemployment on its staff, but it has been difficult. Local governments and large businesses *aren't* buying our PPE. Instead, it is individual consumers across the nation buying in our online store, and a single forward-thinking, responsive community foundation intensely focused on keeping their local community safe. We got lucky.

We have deep empathy for the *millions* of American small business owners and operators who did everything right, and still had to let people go. 25% of small businesses nationwide have already closed, and 40% of the remaining small businesses expect to close, according to the U.S. Chamber of Commerce.[9] How many will reopen?

Thank you Chairman Kim and Members of the Subcommittee for your patience as we traveled the Kitsbow journey into PPE, and our challenges with the supply chain.

I hope the specific examples are helpful, as you contemplate future policy and continue to support small business in America. I would be happy to take your questions.

[9] *Forbes* 4/13/2020.