

Panel Supply

Plywood, panels, sheet goods, and other supplies for makers.



Contact:

Karl T. Ulrich

ktulrich@gmail.com

Background

- Existing scooter business (Xootr LLC) is flat.
- Challenge is to find a \$1 mm - \$10 mm market we can serve with our existing team and capabilities, primarily from our Scranton, Pennsylvania facility.
- Prefer a growing B2B niche market.
- Prefer to self finance (<\$100k to launch, <\$500k working capital).
- Goal is to generate cash over next 10 years.
- If earnings can exceed \$1 mm/yr will likely be good exit opportunity after that.



Customer Persona

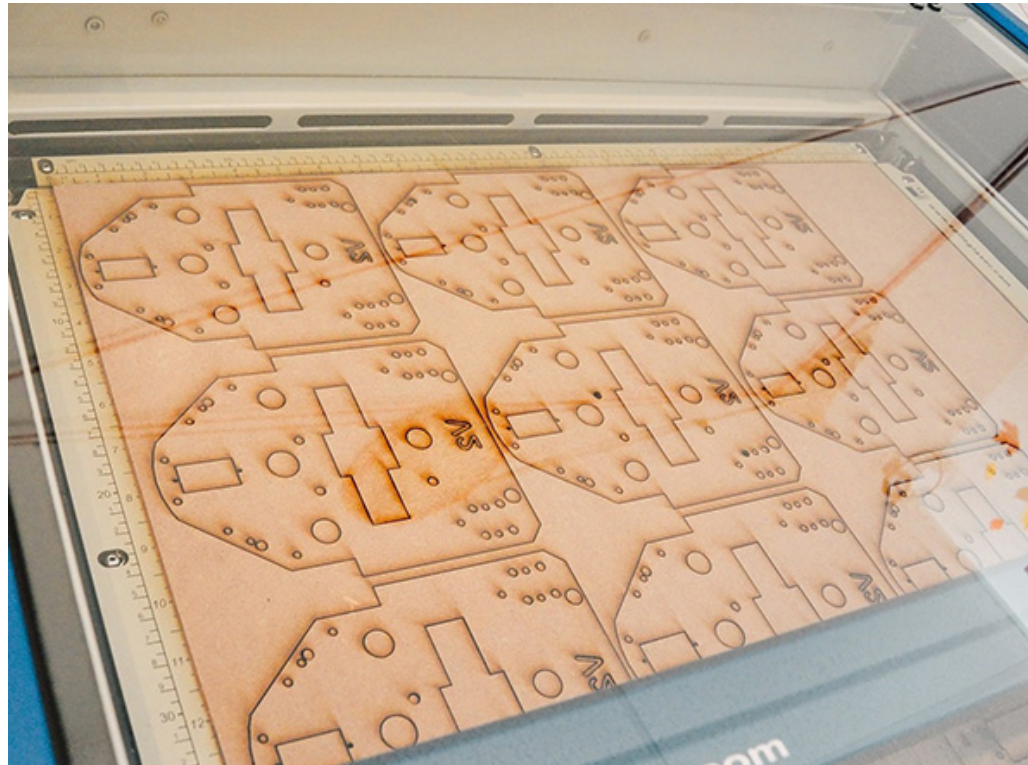


Peter Bruno – Educational Laboratory Coordinator – UPenn Mechanical Engineering Department

- Laser cutters and Makerbot 3D printers
- Buy a single-size sheet 16" x 24" of two materials MDF and Acrylic
- Use \$30-40k / year in materials (1-2 orders per month)
- Thicknesses 1/8 in or 1/4 in nominal
- Serve hundreds of Penn students – **who purchase their own non-standard materials**
- Buy from Tague (local lumber supply company) and Curbell Plastics (national plastics distributor)
- Prices are all over the map – purchasing not too professional (e.g., MDF prices very high, Acrylic quite low)

Mission Statement – Job to be Done

- Supply sheet goods to maker labs and individual makers.
- Key benefits / Value Proposition
 - Pre-cut to the size used in cutting machines
 - Single source for wood, plastics, metals, specialty materials
 - Easy to manage inventory – easy ordering, 1-2 day delivery, easy receiving
 - Attractive prices on high-volume materials (e.g., MDF and Acrylic)
 - Large selection of specialty materials, available in single pre-cut sheets (e.g., bamboo plywood, Kirei board, cork, silicone rubber)
 - Single source referral for individual makers, who are the end customers of maker labs (e.g. “no, we don’t stock bamboo, but just go to Panel Supply to get it.”)



Market Segmentation

	Indie Maker Lab	Edu Labs	To-Order Production Firm	DIY / Hobbyist	Bespoke Designer/ Artist	Furniture/Fixture Fabricator	Sign Makers
End User	Hacker, Maker	Students, Research Staff	Designer, pro				
Application							
Benefits							
Lead Customers	NextFab Studios	UPENN FabLab	Neal's CNC				
Market Characteristics		Novice users	High customization, interactive engagement				
Partners/ Players							
Market Size							
Competition							
Platform							
Complementary Assets							
Assets Required							
Typical Panel Sizes			5'x10' bed				
Typical Materials			any non-ferrous				

Note to finish

Beachhead Market

Indie and university maker labs and their maker customers



Land the lab with very good price and service on their stock material (usually MDF and Acrylic).

1



Be the lab's referral of choice for all their users who need other materials.

2

Market Size – Beachhead Market (Materials only, US)

- Bottom up estimate – Total Addressable Market (TAM)
 - 200 universities each with 1-3 significant maker labs
 - 100 maker spaces in US with significant laser cutting
 - Annual materials spend per lab \$30k
 - Each lab has 200 users ==> 60,000 users @ \$45 per user
 - \$11.4 million per year

TAM ~ \$11 mm/yr
(small, but
underserved, easy
to access)

Nate to finish

- Top-down guess
 - Students -- laser/router/waterjet makers
 - 40k/yr mechanical engineering grads
 - 10k/yr architecture grads
 - 2k/yr industrial design grads
 - Educational systems producing 60k/yr at 3 yr period of engagement ==> 180k student population
 - Makers – swag 100k
 - Average use of materials: -- swag 50 USD/yr
 - 280k individuals at 50 USD/yr ==> \$14 mm/yr

<https://makezine.com/2017/11/01/open-world-20-databases-help-find-local-maker-resources/>

Customer Acquisition

- Sales call in person to Maker Labs
- Mailing list within Maker Lab community
- Deliver very nice sample box with lots of branding – sample board for wall (tethered samples)
- Adwords for “laser cutter materials” etc. for individual maker acquisition
- Referrals from cutter manufacturers
- Lots of swag for lab managers



Images from laser-cutting service Ponoko

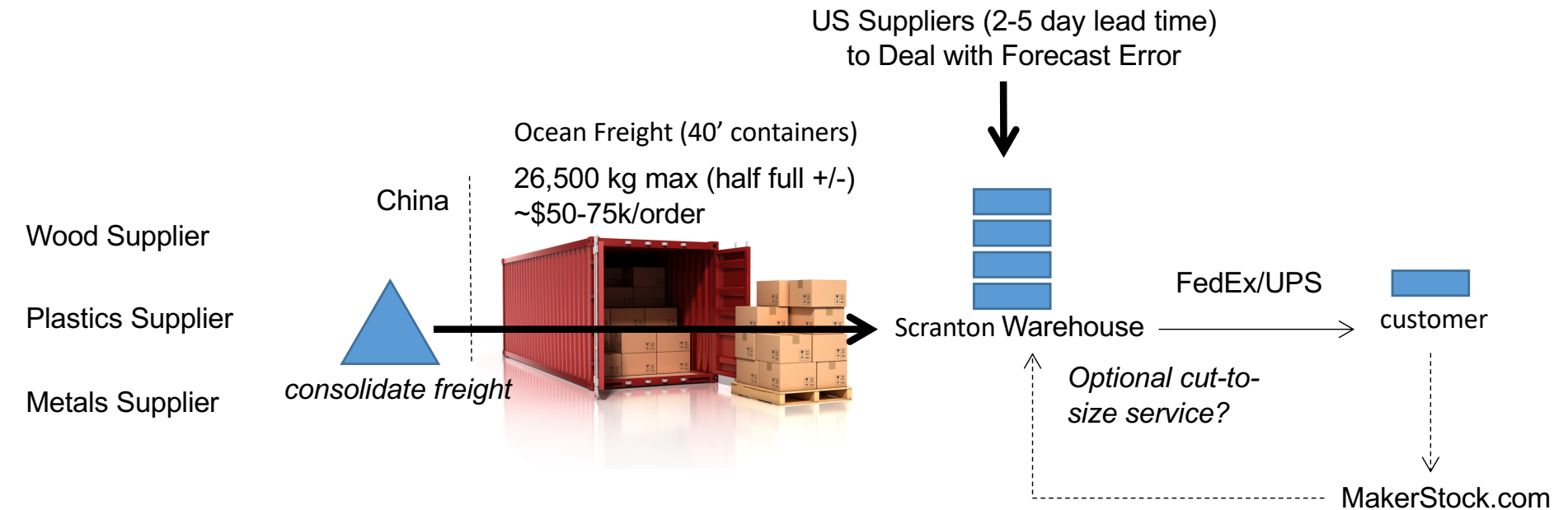
Benefit proposition...

Panel Supply

- Materials pre-cut for your machines (e.g., 18 x 24, 18 x 32) and ready to ship. Orders received before 2pm ship same day.
- We stock your materials so you don't have to waste valuable space in your shop.
- Attractive pricing so your budget goes farther.
- One-stop shopping for your community to buy single sheets of other materials you allow on your machines (e.g., acetal, polycarbonate, baltic birch, and more).

Order at panelsupply.com or call Steve at 383-478-4566

Solution Concept




- Some large panels for cut-to-size use in Scranton
- Most product pre-cut and packaged in ready-to-ship cartons (e.g., 12 18x24x1/4 Acrylic panels)






Phase 2



Laser cutting service
(cut entire panels from customer file)

Competitors

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1/4" Baltic Birch Plywood

Item #: GRP40632_2


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Our 1/4" thick baltic birch plywood features quality one-piece plies for exceptional strength and screw holding power.

Product Name >



1/4" Baltic Birch Plywood, 12"W x 30"L

Item #: 63388

IN STOCK >

Price	Qty
\$6.99 Each	<div><div>-</div><div>0</div><div>+</div></div>

	DIY	Professional
Wood	Woodcraft Rockler Home Depot	Tague (regional lumber supply)
Plastics	Curbell Plastics TAP Plastics	Curbell Plastics
Metals	McMaster-Carr	Ryerson
Misc Sheets	Michael's, Utrecht, Blick	
Convenience	Amazon	McMaster-Carr

Competitors are either specialized by type of material (e.g., plastics from Curbell Plastics) or prices are very, very high through convenience sources like McMaster-Carr.

12

Business at Modest Scale

- 100 maker labs @ \$20k/yr in materials
- 20,000 individual makers @ \$50/yr in materials and services
- \$3 mm revenue
- \$1.5 mm in gross margin
- \$300k in sales and marketing expense
- \$200k in general and administrative expense
- (\$500k in working capital – 30-90 days COGS/payables)
- \$1.0 mm/yr in EBITDA



Can cover most of the US market with 2-day ground service from two locations.

MVP

- 10 materials
- 2-4 thicknesses per material
- 1-4 sheet sizes per material
- Order one full-weight 40' container from China to start (~\$50,000)
- Scranton facility
 - Source pre-cut panels in cartons from China
 - Panel saw + radial arm saw to cut low-volume sizes from full sheets
 - Use local suppliers if necessary to address forecast error in panel sizes and materials
- Shopify eCommerce site
- Laser cut samples





Plywood, panels, sheet goods, and other supplies for makers.



Contact: Amy Bennett (amy@makerstock.com)

Beachhead Market

University maker labs and their users.



Land the lab with very good price and service on their stock material (usually MDF and Acrylic).

1



Be the lab's referral of choice for all their users who need other materials.

2

Job to be done:

Provide a single-source for pre-cut materials for use by labs and their (student) users.

Sources of Sustainable Advantage

1

Brand



2

Customer relationships with key EDU maker labs

- Requires:
 - Outside sales, direct relationships with labs
 - Maker culture
 - Community engagement

3

Scale

- Big enough to buy from original manufacturers (e.g., \$100k orders)
- Requires:
 - 200+ lab accounts

Naming

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1		Bought It	NBU	In Use	Available	For Sale	NBU friends	Score	Length	L-1to5	K Like	spelling ambig	Evokes 1st	Serv	Easy to Say	Flex to Other	Flex to Services	Flex to Products	Notes		
2	makermill					can't find	5	4.63	9	4	5	5	3	5	5	5	5				
3	makercraft					3595	3	4.50	10	3.5	4.5	5	3	5	5	5	5				
4	makerways					3795		4.38	9	4	4	5	3	4	5	5	5				
5	makerguys					588		4.25	9	4	4	5	3	4	5	5	4				
6	makerman					899		4.25	8	4	4	5	3	5	4	5	4				
7	makeroo					2195		4.19	7	4.75	3.75	4	2	4	5	5	5				
8	makersupply				offer			4.13	11	3	4	4	5	4	5	4	4				
9	makera					1895	3	4.13	6	5	4	4	2	3	5	5	5				
10	makercenter				offer			4.09	11	3	4.25	4.5	3	4	5	5	4				
11	makerstock					4495	4	4.00	10	3.5	4.5	4	5	4	5	3	3				
12	makertopia					3750		4.00	10	3.5	3.5	4	3	4	5	5	4				
13	topfab					2288		4.31	6	5	3	5	3	4.5	5	5	4				
14	panelworld				TBD			3.97	10	3.5	2.5	5	5	3.75	3	5	4				
15	panelworks		1			10000		4.06	10	3.5	2	5	5	5	3	5	4	counter offer made, 3000 reservation price			
16	fabmatix	1						4.00	8	5	2	3	2	5	5	5	5	5	fabmatics.com in use by a factory automation company		
17	makerhaus					2875		3.84	9	4	3	2	3	3.75	5	5	5	5	makerhouse.com in use -- probably too close		
18	panelmill	1	1		1			3.84	9	4	2	5	4	3.75	3	5	4				
19	panelzone					sedo make offer		3.84	9	4	2	5	4	3.75	3	5	4				
20	makersoutlet					2495		3.81	12	2.5	3	3	4	4	5	4	5				
21	makersdirect					3295		3.81	12	2.5	3	3	4	4	5	4	5				
22	sheetsmith					2095		3.78	10	3.5	2	5	4	3.75	3	5	4				
23	panelcentral		1			2995		3.78	12	2.5	2	5	5	3.75	3	5	4				
24	panelplex		1			875		3.75	9	4	2	5	4	4	3	4	4				
25	fabmat					2595		3.72	6	5	3	4	3	3.75	5	3	3				
26	makersystems					2695		3.69	12	2.5	3.5	4	3	3.5	4	5	4				
27	paneldepot		1			4995		3.69	10	3.5	2	5	5	5	3	3	3				
28	flatworks					offer		3.69	9	4	2	5	3	3.5	3	5	4				
29	panelmart					TBD		3.63	9	4	2	5	5	4	3	3	3				
30	panelyard	1			1			3.56	9	4	2	5	4	3.5	3	4	3				
31	makertaste				1			3.56	10	3.5	3	5	2	4	4	3	4				
32	sheetsupply					2888		3.50	11	3	2	5	5	5	3	3	2				
33	panelsmith					lost bid		3.50	10	3.5	2	5									
34	panelpad	1			1			3.38	8	4	2	5	3	4	3	3	3				
35	panelsupply		1			1888		3.34	11	3	2	5	5	3.75	3	2	3				
36	panelmedia					2795		3.31	10	3.5	2	5	3	4	3	3	3				

142 available names considered
 18 registered (~\$7 each via dynadot.com)
 10 tested with small sample (N ~ 15)

Name Testing

MakerStock



plywood, panels, and
supplies for makers.

makerstock.com

MakerCraft



plywood, panels, and
supplies for makers.

makercraft.com

MakerWays



plywood, panels, and
supplies for makers.

makerways.com


Makertopia



plywood, panels, and
supplies for makers.

makertopia.com

Makera



plywood, panels, and
supplies for makers.

makera.com

★ Purchased for \$4495 via sedo.com

highly specific

highly flexible


PanelSupply



plywood, panels, and
supplies for makers.

panelsupply.com


SheetStock



plywood, panels, and
supplies for makers.

sheetstock.com


PanelMill



plywood, panels, and
supplies for makers.

panelmill.com

PanelWorks



plywood, panels, and
supplies for makers.

panelworks.com

Makeroo



plywood, panels, and
supplies for makers.

makeroo.com

Identity



MAKER STOCK

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Graphics done in 4 iterations over 2 weeks for about \$300 via Upwork (Lisbon-based freelancer).
"Design Brief" (e.g., spec) for designer is [here](#).



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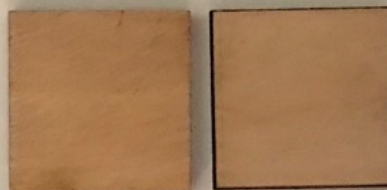
MDF



CHIPBOARD



BIRCH PLYWOOD



BALTIC BIRCH PLYWOOD



ACRYLIC



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the right materials, at the right size, at the right time

YOUR ONE
STOP SHOP
FOR MATERIALS

makerstock.com

Customer Acquisition

- Dedicated salesforce focused on Maker Labs.
- In-person sales calls, building relationship with lab manager.
- Mailing list within Maker Lab community.
- Deliver very nice sample box with lots of branding – sample board for wall (tethered samples).
- Adwords for “laser cutter materials” etc. for individual maker acquisition.
- Referrals from cutter manufacturers.
- Lots of swag for lab managers.



MVP sample board

Team

Karl Ulrich
Co-Founder & Advisor



Karl is a lifelong designer and maker, some of whose exploits are described on his infrequently updated blog <http://baubilt.com/>. His training is in mechanical engineering and he's created lots of hardware products ranging from kitchen tools to medical devices. One of his goals is to own a big barn with lots of reclaimed materials stored for some possible future project.

Amy Bennett
CEO



Amy has over 25 years of experience leading global product, customer, and project management teams in a variety of industries including for-profit, nonprofit, and startups at companies such as General Mills and Revlon. She holds an MBA from Wharton and a Master of Science in Engineering from the University of Pennsylvania. An avid maker, sci-fi writer, anti-bullying champion, and traveller, Amy's most recent adventure was to Antarctica.

Canyon Kornicker
Director of Strategy



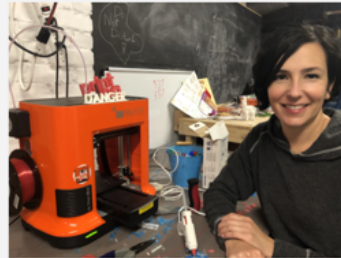
Canyon is a rising junior at the University of Pennsylvania where he studies Management and Behavioral Economics. In his free time, he enjoys reading, exploring food and art in Philadelphia and hiking. Since joining MakerStock, Canyon has helped plan out market launch as well as website optimization.

Catie Gore
Director of Marketing and Social Media



Catie is an incoming senior at Penn State University majoring in Digital and Print Journalism. She loves reading and writing about trends in both the entertainment and fashion industry. She is excited to be a part of the Makerstock team and looks forward to broadening our social media presence.

Elisha Snedeker
Director of Finance & Administration



Elisha Snedeker is the Director of Finance and Administration for MakerStock. Prior to joining MakerStock, Elisha has held finance positions at Xootr, The University of Pennsylvania and Drexel University in Philadelphia and Macy's in New York. Elisha holds her B.S. in Finance from Penn State University. Elisha is married with two wonderful sons and an adorable black lab and enjoys playing squash and reading in her free time.

Brian McCoy
Director of Operations



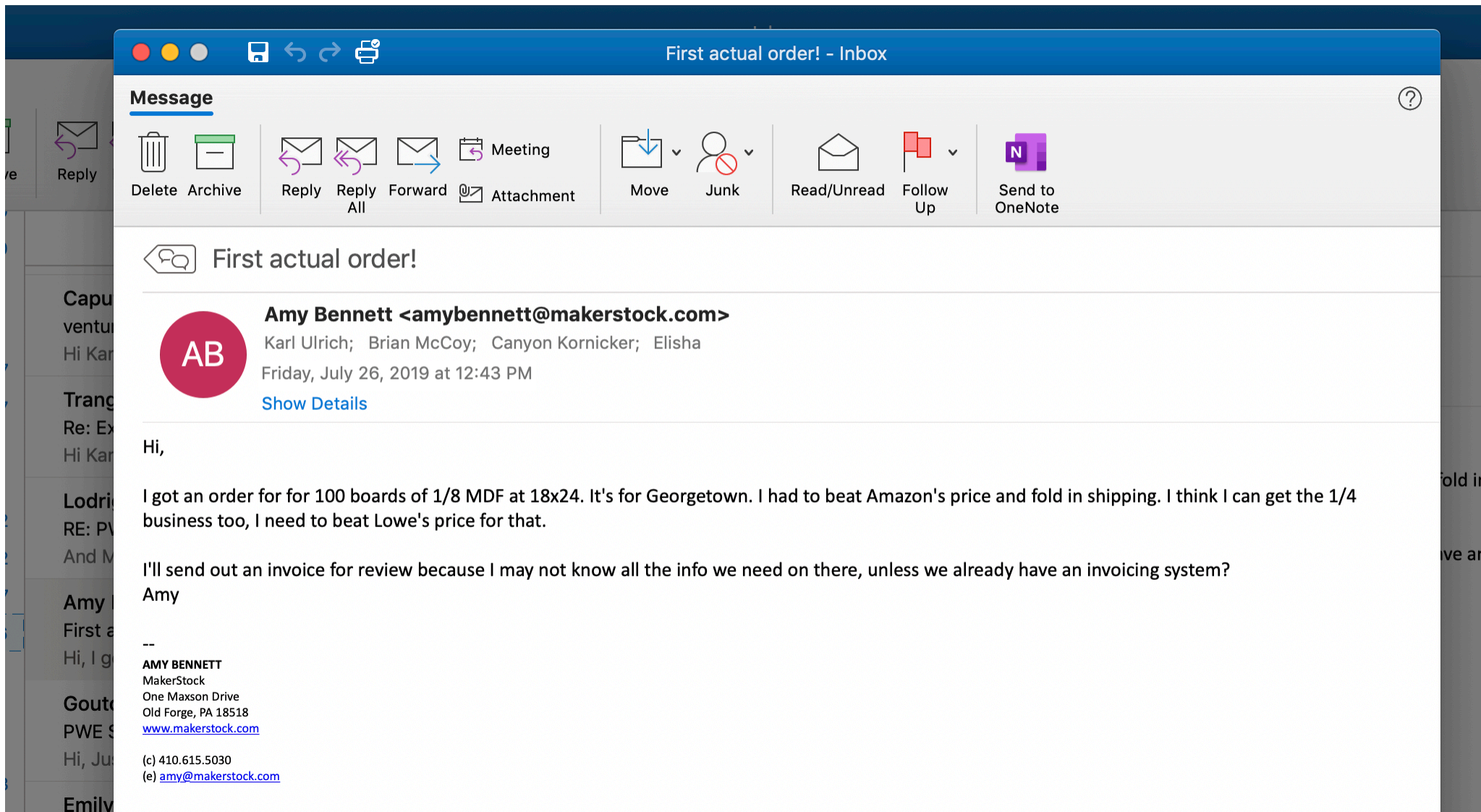
Brian is self proclaimed handyman... jack of all trades, master of none. He holds degrees in Computer Science, but learned how to rebuild motors racing motocross and hammer nails while doing construction projects with his father. He currently oversees the operations at MakerStock and ensures we have all of the necessary materials and items needed to fulfill your order.

Shared with Xootr LLC

★
Full-time CEO
(Very strong B2B
sales experience)

Interns!

July 26, 2019 - First order!



Direct-to-Maker (DTM) Business via makerstock.com (built with Shopify)

https://makerstock.com/collections/plastics



Search all products...



CART

1

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Home > Plastics

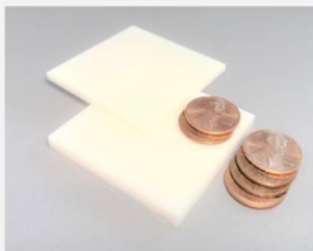
Plastics



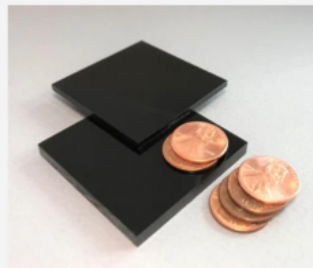
To Launch August 2019

Sort by

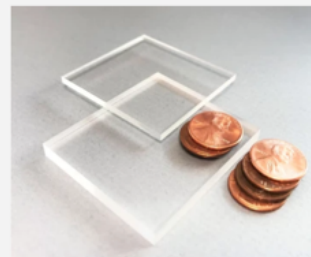
Best selling



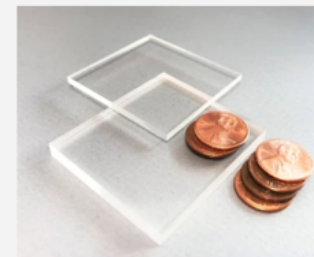
Acrylic (White)



Acrylic (Black)



Acrylic (Clear) Multi-Pack
(12 Pieces)



Acrylic (Clear)

MVP – Operations and Equipment

COWLEY
REAL ESTATE
AUCTIONS

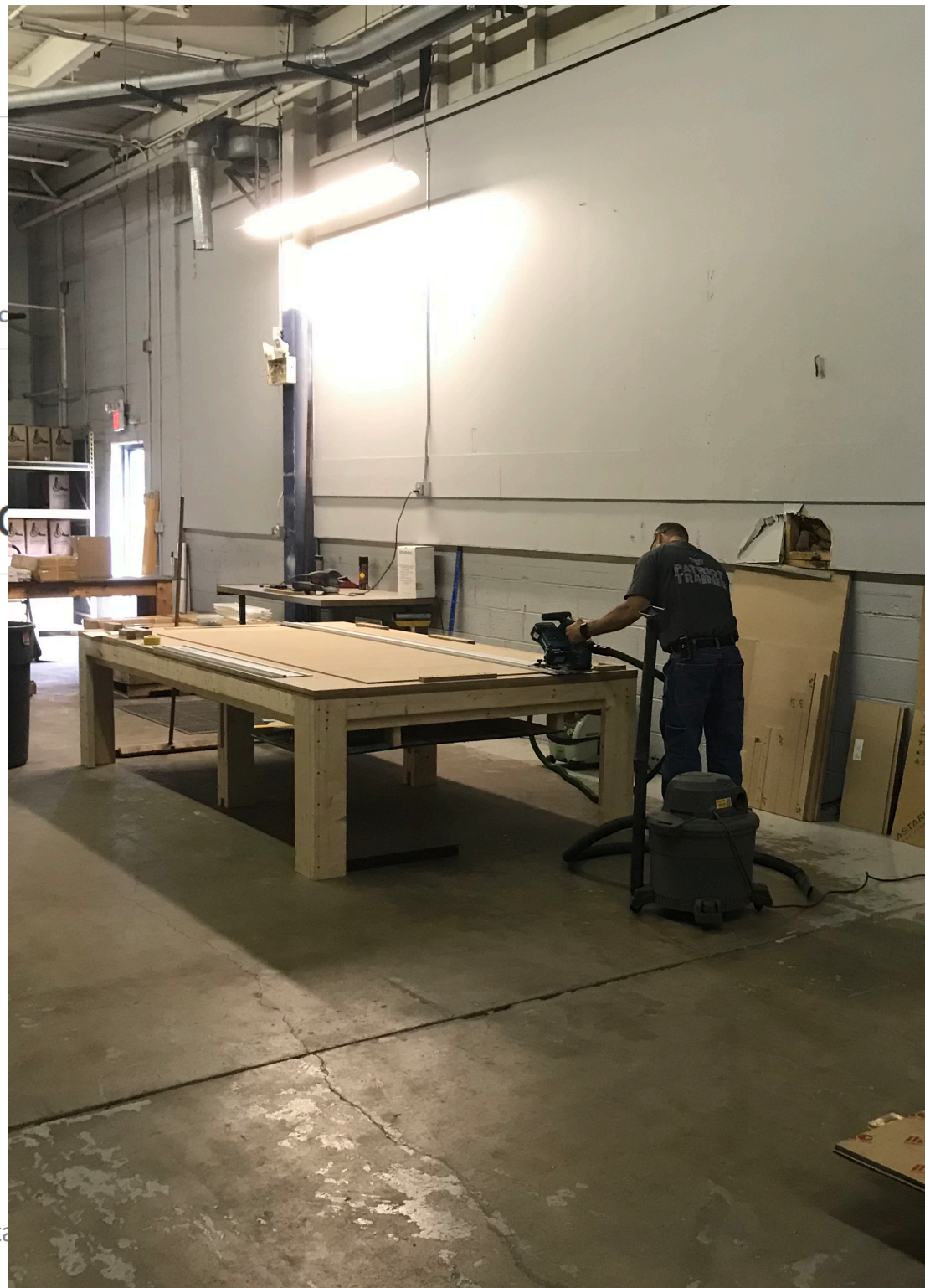
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Result: 2 of 3

Lot # : 101 - Rockwell/Delta rad



8/22/20


Proprietary

Business Phases


	MVP "10 Customers 10 Materials" (June '19)	Expand materials selection (Sept - Dec '19)	Add Reno Location (2020 or 2021?)	Expand to Cutting? (2020 or 2021?)
Base materials	1/4 and 1/8 in: MDF Birch plywood Acrylic Chipboard CNC foam (e.g. Renshape)	Add any materials that a significant customer stocks (e.g., hardboard)		Interesting non-standard materials (e.g., Kirei, Wheatboard)
Suppliers	Regional Distributors	Regional Distributors	Global / Manufacturers	
Key Strategic Objective	Prove product-market-fit	Be single-source to EDU segment	Achieve scale Build brand	Grow profits Develop capabilities Build brand
Geographic Focus	Northeast / Mid-Atlantic	Northeast / Mid-Atlantic	Northeast / Mid-Atlantic Mid-west West	
Equipment Installed	Track saw Radial arm saw Dust collector	Panel saw Track saw Radial arm saw Table saw Dust collector Lift table	<replicate>	Wazer waterjet cutter Universal 24x36 Laser Router
Space Needed	2000 sf	2000 sf – shelving at least four high.	5000 sf Scranton 2000 sf Reno	
Skills/roles needed	Outside sales Sourcing eCommerce SEO/SEA – Adwords Social media; community	Plus... Ops / inventory management		Plus...community engagement manager. Designer in residence.

March 2020

What happens when your entire customer base shuts down completely in a single month?

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 Menu

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Coronavirus and important changes to our operations for the remainder of the semester

March 11, 2020

The novel coronavirus, COVID-19, presents our world, country and University with a unique public health challenge that is all the more disquieting because of the uncertainties associated with its spread. We write today with the latest update on the additional steps we at Penn will take in dealing with this unprecedented challenge, guided by current data and expert advice. We will continue to communicate with you and update our plans as new data and evidence emerges. Our primary goals, as always, are carrying out our educational, research and clinical care missions while ensuring the health and safety of our students, faculty, staff and visitors.

To help us achieve these goals under demanding conditions, we are compelled to make major changes to the final weeks of the semester.



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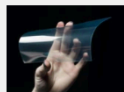
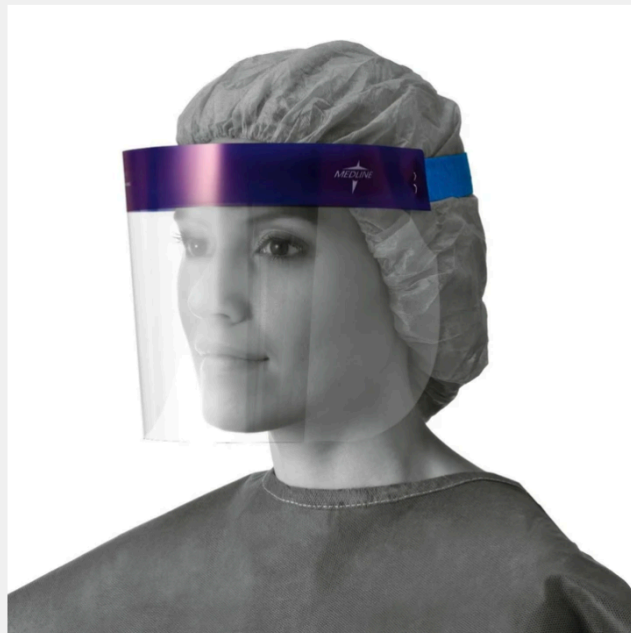
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Home > PET Plastic Film (Ideal for Protective F...



PET Plastic Film (Ideal for Protective Face Shields) - 20 x 25" - pack of 12

\$34⁹⁵

Quantity

-	1	+
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 ADD TO CART

Polyethylene terephthalate or polyester (PET) is a crystal clear plastic film that is sturdy and versatile. PET film has higher tensile strength, excellent dimensional stability, low moisture absorption, and good retention of physical properties over a fairly wide temperature range. It also has superior UV resistance, excellent electrical properties, good optical clarity, high gloss, and good gas barrier. It is the ideal film for quality printing and lamination and a good choice for a high performance plastic films and sheets. It has a relative high melting point, which makes it suitable for applications that require sterilization at high temperatures.

DLS™ Face Shield Assembly and Care Instructions

Page last updated: Tuesday, 07-Apr-2020 21:52:30 UMT



Focus on “DTM” (Direct to Maker)

