

# CONSIDERED furniture

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## SOLUTION SUMMARY

We will be providing attainably priced sustainable furniture, designed to be fully biodegradable. We are offering customizable suites of furniture, encompassing the entirety of living space needs. Buy-back credit and pricing incentives drive consumers to return our product at the end of their use for remanufacture, participating in our circular system.

We are providing a circular furniture company which shifts end life responsibility of bulk furniture waste from the user to the manufacturer. Our company responds to a need for effective return channels for bulk furniture, capturing the perceived "waste" and directing it towards new revenue streams. Considered Furniture's circular economy contends that raw material passed into the hands of a consumer as a product that does not exit our system as lost value. Rather, it remains in our system as an asset, returning to manufacturing to enter a new lifecycle, or is upcycled and returned to the environment as a positive nutrient.

## IMPACT ASSESSMENT

This proposal is shaped heavily by consumer lifestyle needs. By closing the gap between people and the systems that serve them, with a considerate approach to sustainable materials management, we can improve quality of life for people **and** the environment we depend upon.

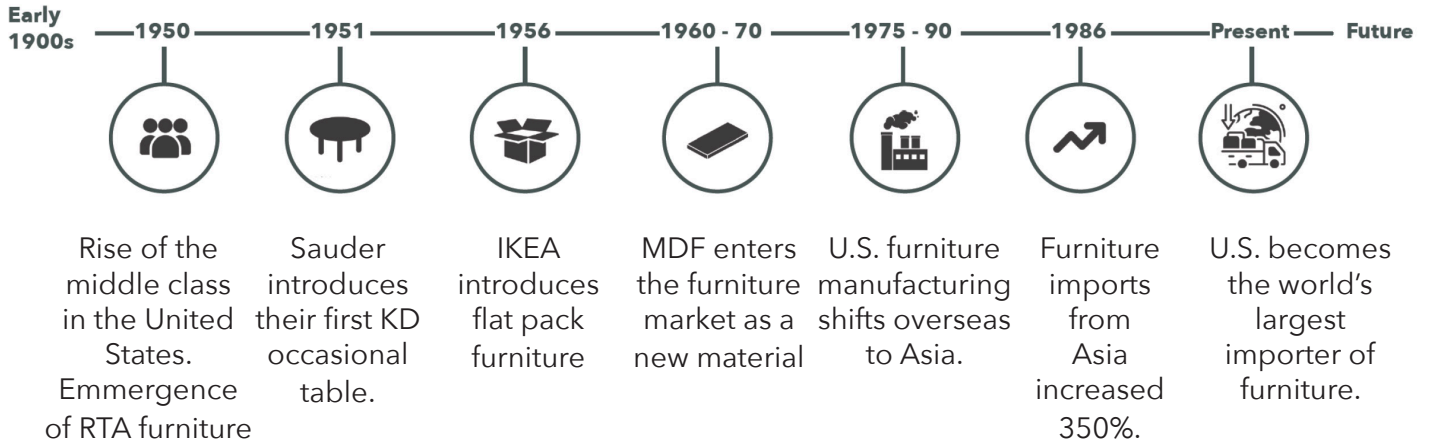
Considered Furniture places sustainable furnishings within an attainable pricepoint (pricepoint defined by consumer surveys) providing consumers the opportunity to enter a sustainable, circular economy earlier in their lives, impacting their future consumer habits. The effect is twofold: educational and provisional.

# CONTEXT

20% combusted for energy recovery

## Furniture Waste Management from 1950 - Present

80% landfill



## SCOPE & LOCATION

The Residential Furniture Industry is valued worldwide at \$350 billion, of which, the U.S. is the largest importer and consumer of furniture goods, accounting for 1/3rd of global furniture imports. As U.S. household starts (the driver of home furnishing demand) are projected to increase by 1 million new households per year, for the next ten years, this market provides the greatest platform for scalable impact.

## STAKEHOLDERS

The largest stakeholder group affected are those shopping, and producing, at a promotional price point. Companies in this price category face competitive "price tag shoppers" and make significant sacrifices in quality, longevity and sustainability of product.

## ECONOMIC

There are scarce sustainable offerings that match the demand for a conscious consumer group who require an attainable price point.

## GEOGRAPHIC

"Urban Nomads" Millennials: The millennial generation changes jobs twice as frequently as previous generations. In 2016 close to 50% of millennials moved without intentions of permanently staying. Increased patterns of nomadic living drive new demands on home furnishings.

## SOCIAL

Rapid rate of moving fostered new furniture solutions (RTA, KD) at the cost of lower-grade, technically complex materials, un-sustainable sourcing and a disposable mindset to furnishings. Yet recently, there is an increase in environmentally conscious consumption with a preference for sustainable options.

## TECHNOLOGICAL

Cutting cost has translated to forgoing hardwoods for chemically complex alternatives that combine biological and technical nutrients. This can be seen particularly in the current use of environmentally unfriendly stains, finishes, fire retardants, laminants and composites.

# SOLUTION OVERVIEW

# LIFECYCLE PATH

## What are you designing?

Suite of biodegradable, sustainably sourced furniture designed from the onset to cycle through multiple lifecycles. End of life products and by-products are upcycled through a carbon reduction compost program, generating additional revenue streams. This is supported by an incentivized, circular business model.

## Pathways for a Piece - Innovation

This disrupts the linear system of the residential furniture industry which accounts for significant amounts of technically complex bulk waste entering landfills. A circular model targets an identified unmet consumer need for a system that fits their lifestyle without a negative environmental impact.



### Target Consumer Needs

- The generation of "Urban Nomads", this customer moves frequently between urban centers and needs a product that addresses:

#### Convenience during move

- ease of transport
- disposal and return channels
- wear and tear during move
- product flexibility to account for changing floorplans

#### Sustainable but Financially Attainable

#### Fast Fashion

-Low commitment pieces to follow trends

### Target Consumer

Millennial

Recently established

Young professionals

New starts of households

Urban Nomad



### Considered Furniture (CF)

#### Convenience during move

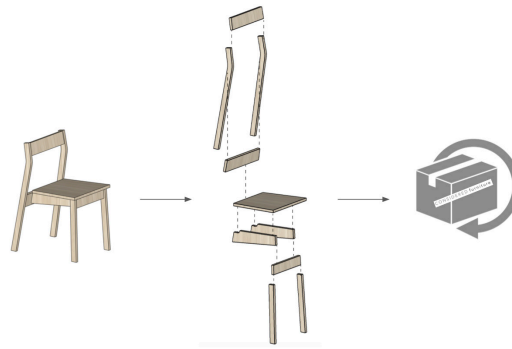
- CF buys back furniture
- Customer has new furniture delivered at next location that fits their new floorplan
- No wear and tear, transport or disposal hassle during move for consumer

#### Sustainable but Financially Attainable

- Competitively priced
- Two entry pricepoints: **New & Circulated** (discounted)
- Buy-back credit: ROI

#### Fast Fashion

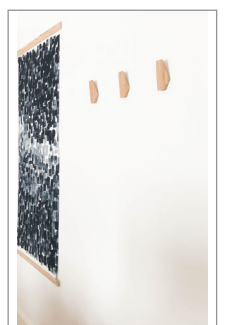
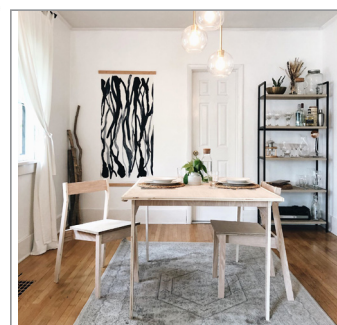
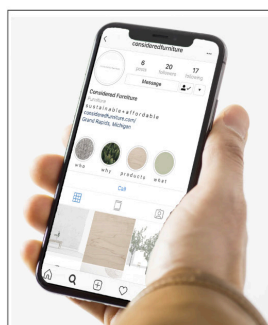
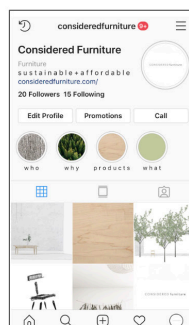
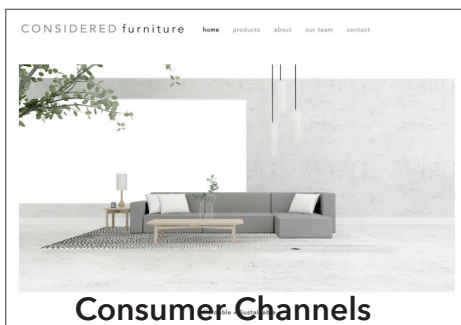
-Furniture is customizable, upgradeable, return for new set



### Buy-Back Credit

Incentivized participation in a circular economy

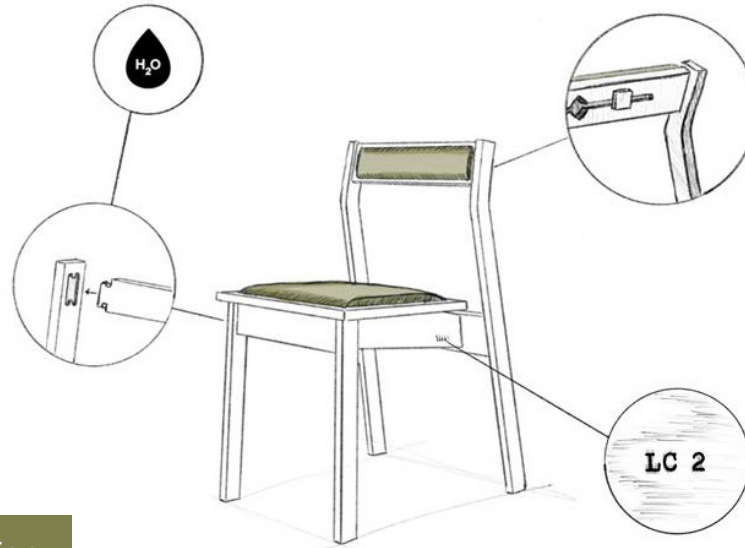
Two entry pricepoints to company



# PROTOTYPING

While the glue we are using is very strong and durable, it is also water soluble and biodegradable. Shooting hot steam into the wood joint would make the parts release from each other. This is extremely useful for repairing or replacing parts and disassembly for remanufacturing or recycling.

We have prototyped furniture using the CNC machine at our school. We are trying to simulate the manufacturing process that would occur at our factory. We used all of the products that we would use in our manufacturing facility as well, including the plywood, glue, coffee stain, and finish. We also looked into nesting our parts for one of our chairs. We found out that six complete chairs could fit onto one sheet of plywood utilizing 80.14% of the material.



With our upholstery locking system, upholstery pad can be switched and customized. By having the upholstery removable, we can easily change designs and patterns for trends that come and go. This system is also helpful when it comes to repairing or replacing damaged parts, and disassembly for reuse or recycling.

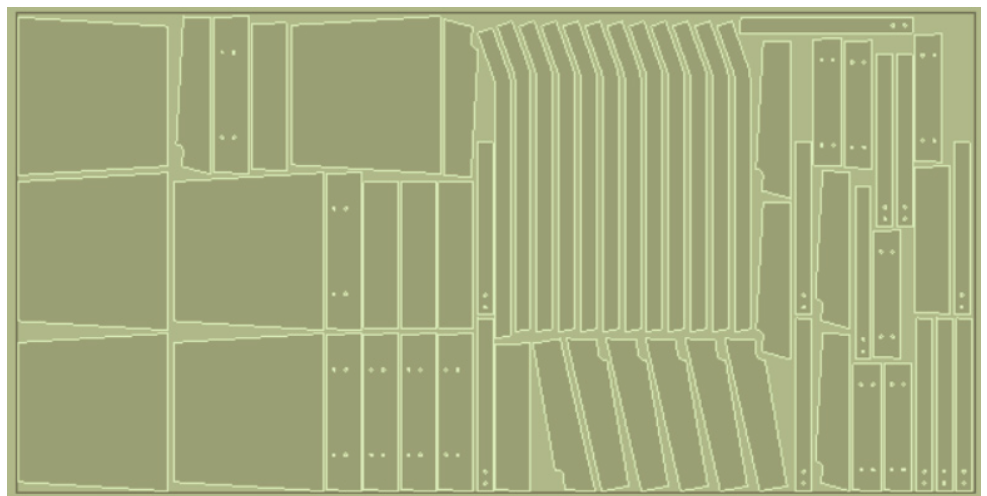
We talked with Strata Design a cabinet manufacturer in Traverse City, Michigan, asking them what determines their nesting layouts. Which they then told us the amount of cabinets for a job changes how their software nests their parts. That got us thinking about how this is going to make it hard for us to get the best yield possible if demand grows.

Learning - We have to find out and anticipate how many sales we will initially be seeing and adjust our product parts and CNC-nesting around that. We are noticing the more parts we produce the better the yield is. We want to look into if there is a potential "magic number" for the amount of parts and best yield that also meets demand, then base the price around that.

With using flat CNC joinery, pieces will be ready to assemble directly off the CNC machine with minimum preparation. Parts would only need a light sanding, then they could be glued and pressed.

Each product will receive a brand from a hot iron, visibly indicating which Life Cycle the material is in. We believe advertising and visibly showing which life cycle the product is in will inform and educate the consumer on circular material systems.

SIX CHAIRS FROM 1 SHEET OF PLYWOOD





## DETAILED MATERIAL ANALYSIS



### **Plywood**

Columbia Forest products  
Mellen, WI

We chose plywood as our main material because it is durable, provides a more efficient use of a tree regarding the yield, and is cheaper than hardwood. Columbia Forest Products FSC Purebond Plywood is sustainably sourced and manufactured in close proximity to us. The glue used for the plywood is soy flour blended with a very small amount of polyamide-epichlorohydrin resin.



### **Nature-Fil™ Corn Fiber**

Fairfield World  
Chicago, IL

This filling is an environmentally friendly, all natural PLA fiberfill made from corn sugar within the USA. It has similar qualities to polyester with superior resiliency. The PLA fiberfill is hypoallergenic, washable and biodegradable.



### **Coffee Grounds**

Ferris Coffee  
Grand Rapids, MI

Locally sourced used coffee grounds gathered and soaked, strained and sprayed onto the wood then wiped. For darker stains we would add vinegar to the mixture. All organic materials. 100% Biodegradable and giving a purpose to waste material.



### **Compost**

Considered Furniture  
Grand Rapids, MI

A composted agricultural nutrient product will be made from our two major sources of organic waste: plywood sawdust and spent coffee grounds. By restoring as much organic material as possible to the region from which it was taken, we intend to sustain a healthy balance of carbon cycling. Additionally, the moisture and carbon/nitrogen ratios will be tailored to suit the clay-enriched alfisol soils found in most regions of the midwest and made available for these agricultural industries. This promotes local regeneration as well as reduces our net carbon footprint.



### **Upholstery**

Organic Cotton Plus  
Lubbock, TX

We have chosen this grower and manufacturer for our cost effective fabric. The fabric is certified through GOTS, the Organic Trade Association and Green America. The organic cotton is grown using methods and materials that have a low impact on the environment. Organic production systems replenish and maintain soil fertility, reduce the use of toxic and persistent pesticides and fertilizers, and build biologically diverse agriculture.



### **Natural Oil Wax Finish**

AFM SafeCoat  
San Diego, CA

The finish is made of natural resins and waxes that together create a durable, water-repellant, finish and sealer. Based on natural vegetable oils, waxes and plant extractives, this product is free of lead, cobalt and citrus drying compounds.



### **Hide Glue**

LD Davis  
Monroe, NC

Hide glue is totally water-soluble, non-toxic, biodegradable, 100% natural and organic, made from animal proteins making it a very environmentally-friendly adhesive. In addition, the company uses recycled scraps from pharmaceutical companies to make their hide glue; helping the environment by utilizing their waste products.

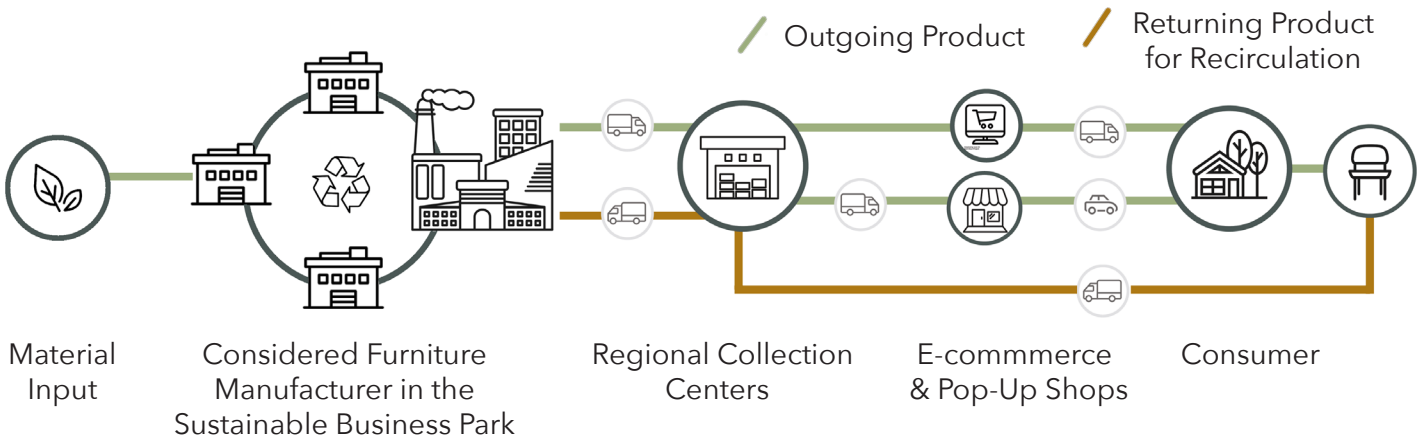
LOCAL DEVELOPMENT

Our solution responds to local development in Grand Rapids, Kent County, MI.

A Sustainable Business Park (SBP) is in development adjacent to the Kent County Landfill.



PRODUCT JOURNEY MAP



**Sustainable Business Park Master Plan**

“One of the goals of the Park is to develop non-landfill waste management capacity for regional manufacturers who have zero waste to landfill policies, making West Michigan a more desirable place to maintain and grow their business,” (8, SBP Master Plan).

**Key Partnerships:**

Kent County: Sustainable Business Park RFI (Request for Information)

200 acres adjacent to the South Kent Landfill in West Michigan are currently under development for an upcoming Sustainable Business Park. The benefits of this park for our company include the fostering of relationships between complementary businesses - meaning we can get materials and products from a close, sustainable source. It also provides an opportunity for our company to sell to other companies close by, creating an upcycle loop in Kent County.

**Categorized Placement in SBP (Image 1)**

- Our proposal fits in the park as:
- Pilot/Development/Research
  - Industrial: Manufacturing
  - Group A: Compost, End Life Organic Processing

**Local Impacts**

- The local impacts of Considered Furniture are threefold:
- Reclaim Furniture City for the Residential Furniture Industry with a new sustainable narrative
  - Participate in circular industrial ecosystem (SBP)
  - Upcycled compost mix specifically targets W. MI alfisol (clay-based) soil needs & reduces carbon emissions

**Sustainable Business Park Master Plan (cont.)**

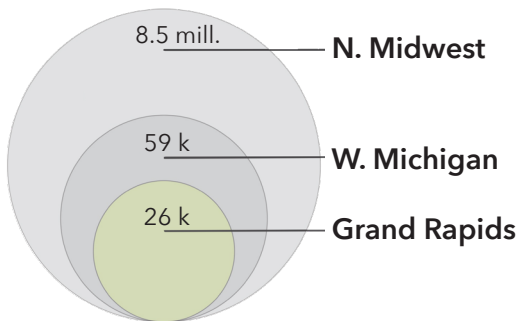
“Kent County will be home to an ecosystem of [complementary] innovation and environmentally sustainable businesses, putting West Michigan on the map as a leader in the modern economy when it comes to Sustainable Materials Management,” (20, SBP Master Plan).

# DETAILED ECONOMIC ANALYSIS

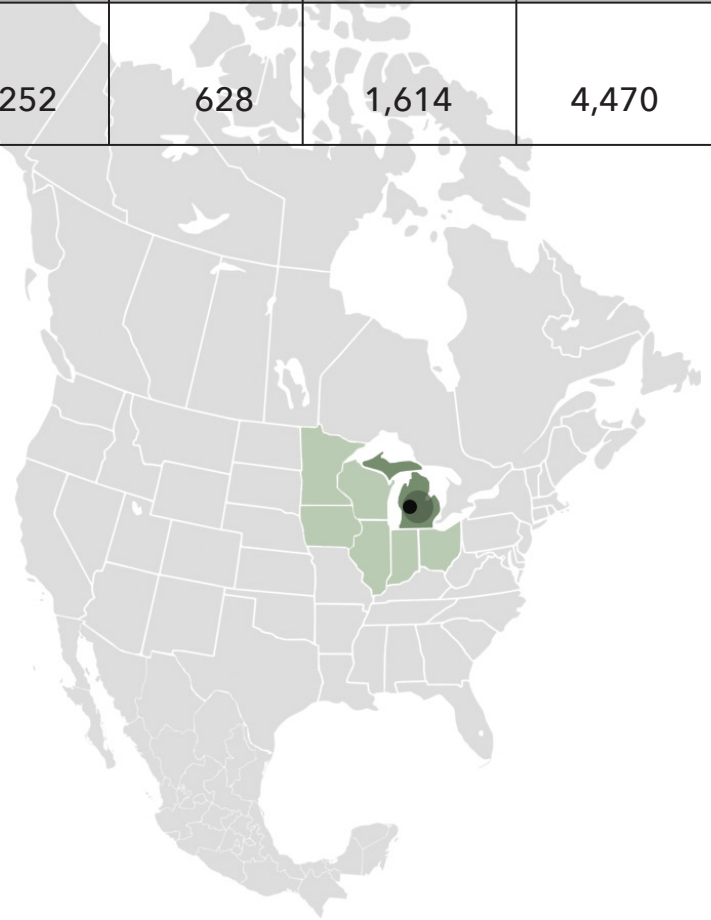
	WEST MICHIGAN	MICHIGAN	N. MIDWEST		
YEAR	ONE	TWO	THREE	FOUR	FIVE
<b>NEW VOLUME</b> (Suites)	50	200	400	1,000	2,500
<b>CIRCULATED VOLUME</b> (Suites)		12	50	100	400
NEW REVENUE (K)	150	600	1,200	3,000	7,500
CIRCULATED REVENUE (K)		30	125	250	1,000
20% BUY BACK CREDIT (K)		(7)	(30)	(60)	(240)
<b>TOTAL ANNUAL REVENUE (K)</b>	150	623	1,295	3,190	8,260
NEW COGS (K)	(47)	(190)	(375)	(939)	(2,350)
CIRCULATED COGS (K)		(9)	(38)	(76)	(303)
<b>GROSS MARGIN (K)</b>	103	424	882	2,175	5,607
SALES + MKTG. EXPENSES (K)	(5.5)	(22)	(44)	(111)	(277)
OPERATING EXPENSES (K)	(61)	(150)	(210)	(450)	(860)
<b>EBITDA (K)</b>	36.5	252	628	1,614	4,470

## Unique Value Proposition

We are providing an affordable and sustainable furnishing option that offers convenience and low commitment during nomadic periods in young professional life. Our buy-back program supports a circular business model and manufacturing system, which reduces waste entering the landfill.



**Market Opportunity**  
 Post-grad Millennials



Key Partners



# BARRIER ACKNOWLEDGMENT

## Keeping prices down for consumers:

Intentionally chosen products sourced locally with CNC'd parts that are easy to assemble. Mass manufacturing furniture parts that need little attention before the simple assembly with hydraulic presses. The CNC machine would be a large capital expenditure, but it would minimize our operating expenses.

## Unprecedented return of product

We will have to be ready for when we first initially start receiving furniture back in large quantities, remanufacturing systems will have to be in place and ready to operate smoothly. These systems will have to accommodate influxes in returned product.

## Changing consumption habits of upcoming generations:

Informing customers about what we stand for and why we believe so strongly that making responsible, sustainable purchases are important will be promoted through our online and social media presence. Accommodating lifestyle needs and providing an attainable pricepoint will increase appeal and draw.

## STRENGTHS

- in house product designers
- multiple affordable entry price points to purchasing products
- ethics
- appeals to wellness
- customization
- buy-back credit options

## WEAKNESSES

- brand new company
- small capital
- storage for returned or bought back products
- only selling locally at first
- new business concept & model that is new to consumers

## OPPORTUNITIES

- buy-back system
- upgrade furniture
- finishing options
- customization
- lifetime brand loyalty

## THREATS

- IKEA
- other promotionally priced furniture
- labor of refinishing or refurbishing items
- competition for discretionary dollars

## Risk Analysis

Missing current trends - Constant trend research

Not hitting price points - making multiple, easy to alter furniture lines that can easily change price points

