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**Making small batch producers in India economically and culturally
sustainable**

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sustainable**

by

Subodh Trivedi

Report

Presented to the Faculty of the Graduate School of

The University of Texas at Austin

in Partial Fulfillment

of the Requirements

for the Degree of

Master of Fine Arts

The University of Texas at Austin

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Dedication

To my beloved family and friends in both countries who always inspire me.

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Abstract

Making small batch producers in India economically and culturally sustainable

Subodh Trivedi, M.F.A.

The University of Texas at Austin, 2018

Supervisor: Kate Catterall

Traditional Indian furniture is bespoke and labor-intensive to produce. Thanks to recently lowered trade barriers, small-batch furniture producers in India now face economic challenges due to competition from industrialized producers such as Ikea, and a shift in the tastes of young, economically independent Indians, who embrace contemporary international styles rather than the hand carved furnishings that so appealed to their parents' generation.

These trends led me to ask, how can Indian small-batch furniture producers stay profitable in the face of foreign competition? And how can they retain their cultural and aesthetic traditions?

In response I have proposed a multi-purpose, inexpensive, and easy-to-fabricate contemporary furniture piece that could help local artisans stay competitive, while retaining their cultural and aesthetic traditions.

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Introduction

Last summer an old high school friend asked me for help. He currently runs a family-owned woodshop called Durga Furnitures, which his father, Mr. Manohar, started more than 25 years ago with five employees. Over the years, Mr. Manohar gradually expanded the business. He made his name through word of mouth and contributed to the making of every piece of furniture the shop produced. However, his dream of passing the business to his son—my friend—is now in question because he recently had to let almost half of his employees go. It was painful because some of these employees have worked with him for a decade. It seems that a journey started two decades ago will soon come to an end because business is slow.

Mr. Manohar has found it increasingly difficult to turn a profit in recent years because he and other Indian small-batch furniture producers now face greater competition from foreign mass manufacturers than they did in the past, and because Indian consumers' tastes are changing. As the Indian market becomes more open to global trade, traditional small batch producers are finding that their (very traditional) designs, (hand-tool intensive) production processes, and (bespoke large commission) business models are no longer viable. The furniture created by these small batch regional producers is highly decorated with patterns made by carving the wood with hand tools; it is bespoke and very labour-intensive to produce. Indian producers still want to make—and consumers still want to buy—recognizably “Indian” furnishings, but developing designs and templates for new products that can be produced in a traditional Indian woodshop is a very time-consuming process. How might we address this problem through design?



Figure 1. Traditional pattern carving using hand tools

The Crafts Council of India and Furniture & Fitting Skill Council have worked to keep Indian handicrafts competitive for many years now. They understand that the decorative tradition is very old in India and that it might die out if no efforts are made to preserve it. They work with individual artisans to help them *develop* their skills, but they are not working with small-batch furniture producers to *preserve* Indian aesthetics and develop furniture-workers' skills as shops begin to update their production processes. The main aim of the council is to organize workshops where individual trainees can come and improve their skills, but most often they focus on toys and small decorative arts, rather than on furniture-making.

These councils' approach is helpful, but it is not directly benefitting any existing small batch furniture-makers. The councils work with individual artisans to help them develop their skills, but they are not working with small-batch furniture producers to preserve Indian aesthetics and furniture-workers' skills. Most small-batch artisans have been working in this field for many years now, and they don't need skill development training. These artisans are already very skilled and can mentor or engage apprentices. What they need is guidance on how to modify their practices in order to make their work more competitive in today's market. As a designer, I approached this problem to figure out less time-intensive ways to express Indian cultural identity through furniture design, while simultaneously supporting artisans and preserving their skills. I wanted the solution to work with existing resources and methods of production.

Mr. Manohar's furniture portfolio includes bedframes, sofa, dinner table and other household products. I certainly could not aim to change every product in one year, but I had to start somewhere, so I started at the simplest level by proposing a multipurpose contemporary end table that can be produced faster and at lower cost, but that still "looks Indian." This end table could potentially be added to small batch producers' products lineup and made and sold on spec, rather than as part of a large bespoke commission, in order to help employ workers during slow periods, and also to earn money between large commissions.

RESEARCH PROCESS

Small batch producers in India

When my friend asked me for advice about how his family's shop could change their designs and/or their production processes to remain more competitive, at first I really wasn't sure whether I could help him; I study design, not business. Then I realized that this problem goes far beyond one shop: it affects a whole sector and might be treated as a systems-level problem¹.

India is a country full of small shops. Around 870,000,000 people work² in these small shops nationally. These small shops are often also small-batch producers. These producers have a small fabrication unit behind their storefront where they make the objects they sell. After finishing a product, they display it at the front of the shop for sale, unless they make large and expensive items—such as furniture—in which case they often produce goods only in response to bespoke orders. In these cases, they usually display only *pictures* of furniture in the front of the shop (or have magazines or catalogues available for customers to browse through for inspiration). Customers look at the pictures and find something they like; the producer then explains how close a match he can make, how long it will take, and how much it will cost. If the terms are agreeable, the customer will then place an order, and production can begin.

¹ Rith Chanpory, Dubberly Hugh. "Why Horst W.J. Rittel matters." *Design Issues*: no. 4, (2006). http://www.dubberly.com/wp-content/uploads/2008/06/ddo_article_rittel.pdf (accessed Oct 5, 2017)

² Dhawan Rajat, Swaroop Gautam and Ainulbhai Adil Z. "Fulfilling the promise of India's manufacturing sector." March 2012. <https://www.mckinsey.com/business-functions/operations/our-insights/fulfilling-the-promise-of-indias-manufacturing-sector> (accessed June 16, 2017).

A typical Indian small-batch furniture-producing workshop consists of 10-12 people. The fabrication time varies depending on the number and nature of the objects they are commissioned to make. Most Indian furniture commissions are for multiple pieces, ranging from a matching set of chairs to an entire household's worth of furniture. Usually, it takes two to three months to make all of the pieces in a suite of furniture, and each shop completes only about three or four major commissions in a year. A typical commission would be to make bedframes, a dining table and chairs, and the windows and doors for an entire house.



Figure 2. Small batch textile producers' storefronts in India



Figure 3. A small batch furniture producer's workshop

There are a number of challenges to increasing the productivity and profitability of small-batch Indian furniture producers. Some of the concerns over their current process are highlighted below.

- Use of traditional hand tools
- No safety procedures
- Limited set of templates and jigs
- Not enough storage capacity for completed works or spec works
- Tradition of laboriously hand-carved ornament



Figure 4. Indian small-batch furniture craftsman vs. IKEA factory employee. The Indian is working in the street behind his shop, without power tools or safety glasses, whereas the IKEA employee is working at a bench, with a power tool, while wearing safety glasses.

I could not hope to address all five of these problems. However, as a designer, I felt it *was* feasible for me to think about ways to speed up the process (and profitability) of making by identifying smaller, less time-consuming furniture typologies alongside less labor-intensive methods of ornamentation. I was also aware that I would have to find a way to do so while working within the constraints of hand production and limited space, and without displacing artisans who have practiced woodworking for their entire lives. It is not feasible for them to find other work for a living.

Traditional furniture industry in India is bespoke. According to IBEF (Indian Brand Equity Foundation) the breakdown of the Indian furniture industry looks like following.

Indian furniture industry (US \$8 Billion)

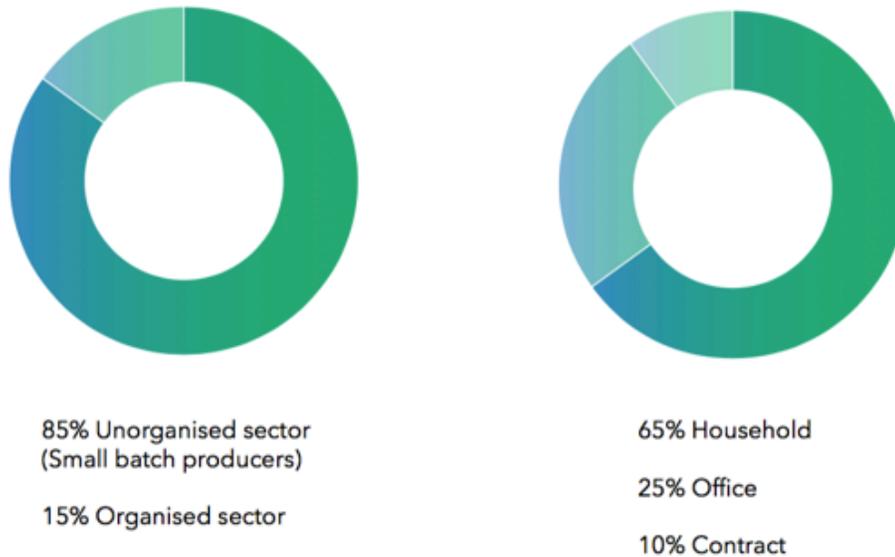


Figure 5. Indian furniture industry breakdown (ibef.in). My friend's shop is considered part of the "unorganised sector" with a focus on household furniture.

The figure shows that the small batch furniture producers control about US \$6 billion worth of the economy. The organised sector includes big Indian corporations like Godrej, BP Ergo, Haworth etc. As of 2006 about 11 per cent (US\$ 152 million) of this wooden furniture is imported and imports are growing at 50 to 60 per cent every year³.

Indian Ornamental Traditions

To understand more about the Indian furniture market I started exploring cultural history. It took me all the way back to the Ajanta caves, when Indian civilization first began 2100 years ago. These civilizations started in caves and left their mark through

³ India Brand Equity Foundation. "Furniture: Market & Opportunities." <https://www.ibef.org/pages/21423>. (accessed June 2017)

cave painting and carving. These paintings and sculptures are among the finest surviving examples of ancient Indian art and influenced the regional art that followed.

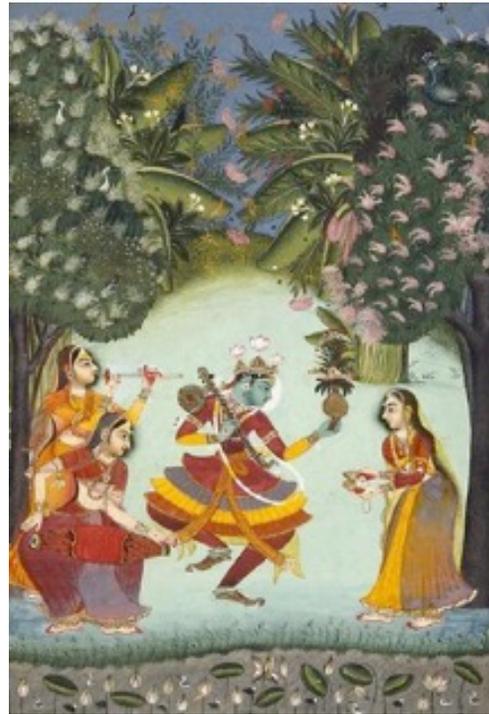
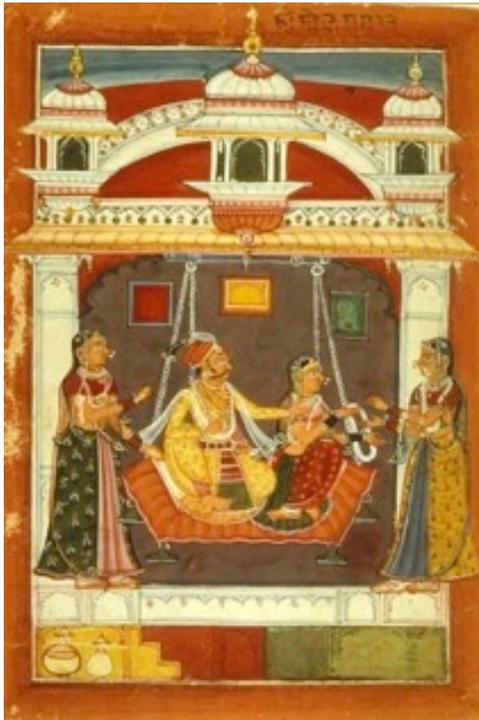


Figure 6. Ajanta cave frieze (Indian civilization 2100 years ago) (via Wikimedia commons)

One of the most important parts of this ancient art was decoration through repetition of patterns. After looking into this historical context, I wanted to know what was the basic need for decoration. During this time I explored this topic in other books and articles and found different hypotheses⁴ by designers and art historians. According to Kenya Hara, decoration has always been used as a language to show power over others. This thought gave me some useful insight and helpful information about my own culture.

⁴ Hara, Kenya. *White*. Baden, Switzerland : Lars Müller Publishers, 2010
Dissanayake, Ellen. *What is Art For?* University of Washington Press, 1998.

In India, the more decorated something is, the greater is its socio-economic and cultural status. In most Indian paintings, the dominant person is wearing heavily decorated clothing and they are surrounded by less decorated people. The same is true at Indian weddings today. In theory, the high degree of decoration indicates the power and influence of the people depicted in these examples.



Figures 7. Use of decoration to show power in Ragnala paintings (via Wikimedia commons)



Figure 8. Decoration on an entrance gate of an emperor's palace



Figure 9. Decoration on a cow and the lord Ganesh

Indians' expectation of ornament thus presents a particular challenge. Though it is still culturally important, hand-carved ornament is time-consuming and expensive to make. The goal of my research was to understand the structure of Indian ornament and deconstruct it to determine specific qualities that might be retained yet simplified or speeded up.

After talking to a group of artisans and observing the context within which they work, it was time to bring clarity and focus to the current problem they face. The group that I am designing for is the small-batch artisan. They have practiced woodworking for their entire life and it is more than a means of earning a living. It is a cultural practice for most of them, which they learn and pass along to their sons. It is not feasible for them to find other work for a living, so it is important to find a way to ease them into new patterns in order to keep them employed.

The important part of this problem these artisans have no idea about customer needs and trends. The younger generation doesn't want a dowry set of furniture that lasts 50 years. These artisans need to adapt to the younger generation's demands in order to stay employed as woodworkers. Apart from this, making new jigs is also time consuming because artisans work with hand tools for the most part. A new jig requires days of careful hand work and for the same reason cannot be discarded after a single use. Making a jig with hand tools is tough, so they don't update them often enough. The question we can ask here is: *How might small batch furniture producers make furniture faster without losing cultural identity?*

ARTIFACT ANALYSIS

I analyzed the formal qualities of the work that small batch woodworkers undertake. The emphasis of this activity was on the furniture itself. I examined the material, aesthetic and interactive qualities of the furniture to understand their physical, social and cultural contexts.

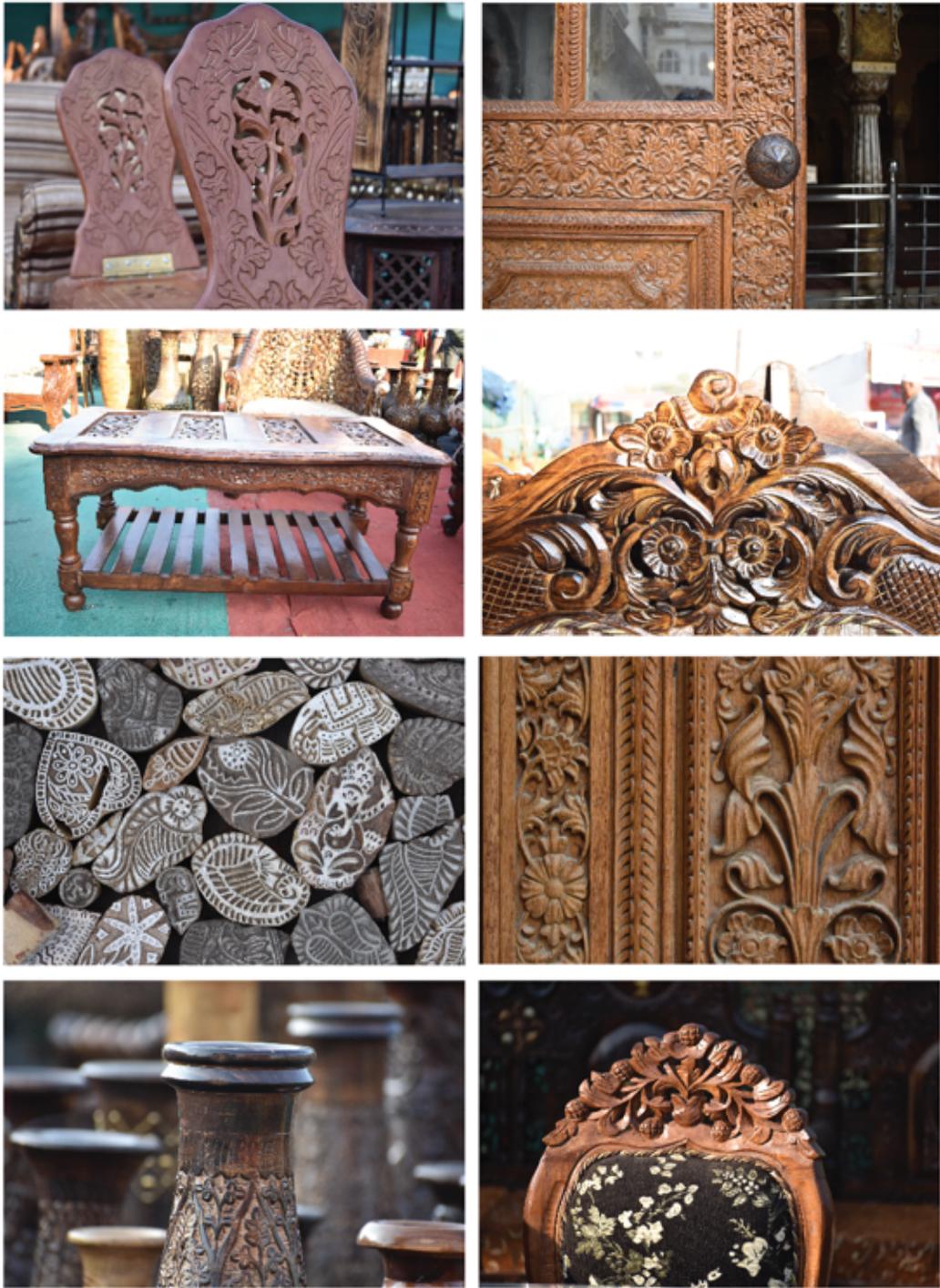


Figure 10. Typical woodcarving

The results of this phase were straightforward. The artifacts are heavily decorated with floral pattern and these patterns vary in size. There is a common theme, which is that the center part has the biggest pattern element and as you move outward the patterns become smaller in size⁵. Since small batch producers use hand tools to make these patterns, it takes more time to finish these products, but it's also necessary to make them look high quality in many Indian consumers' eyes.

IMAGE BOARDS

I began gathering examples of Indian patterns. I explored Google and Pinterest to collect examples of work that reminded me of my culture. I have seen this type of work all my life, but until I moved to the US, I had never thought to ask the question “what makes these artifacts Indian?”

⁵ Ashvini, Agarwal. *Legacy of Indian art: continuity in change*. New Delhi: Arya books international, 2013



Figure 11. Moodboard assembled on Pinterest from images available on the internet

This activity provided me with amazing results. At this time I began to analyze many Indian pieces and learned a lot about my own culture. There was an interplay between different pattern forms and colour. The ornament on Indian decorative objects tends to have three characteristics:

- Intricate patterns (patterns within patterns)
- Use of primary colours
- An ABC pattern structure (see below)



Figure 12. Pattern, form and colour together play a huge role

DESIGN PROCESS

I first began trying to understand the interplay of pattern, color and form. In the beginning I explored popular patterns and their connection with certain forms. I used black and white as a primary colour palette to understand the size, scale and direction of the patterns.

Pattern structure and colour

As I mentioned earlier, the biggest ornamental motif is usually in the center, and it becomes smaller as you move outwards. I call this an ABC pattern structure. In the example in figure 15, A is the biggest element and C is the smallest element in size. I tried to arrange them such that A stays in the center and B, C cover on top and bottom.

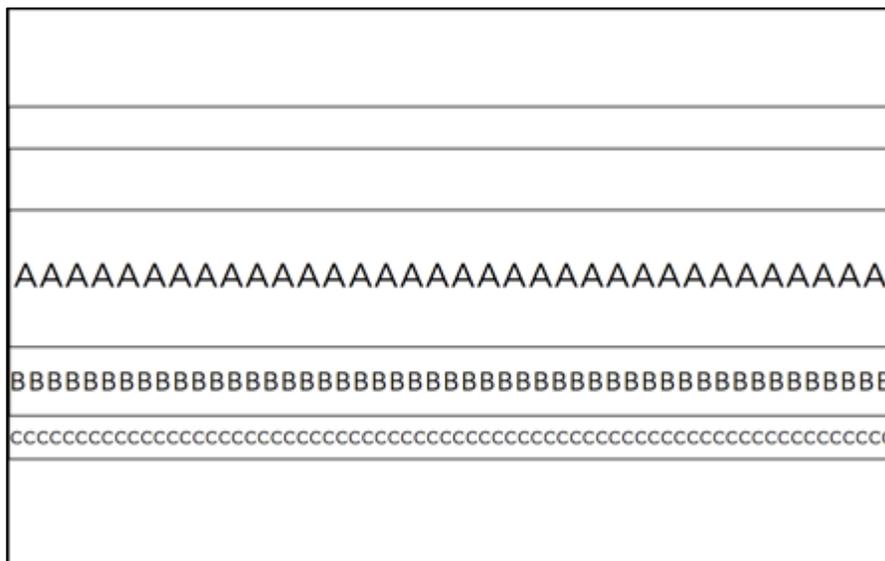


Figure 13. ABC pattern template

By making this template it became easier to quickly iterate many patterns. Certainly I can't iterate every possible design with this template but it helped me to reduce the complexity of these intricate patterns. At first I made a couple of rough ABC pattern drafts in black and white colours. Once I had some refined version of the ABC template I began adding colours to it. The target region is full of primary colours and sometimes other colours like orange, pink and green are also used to support primary colours.



Figure 14. ABC template with primary colours

These primary colours can be used in any order with ABC patterns. I did some user testing to confirm my hypothesis as well. The patterns I made worked well with the target audience and everybody agreed on them “looking Indian.” The next step was to make prototypes to explore my initial hypothesis. I took couple of prototypes with me to India and discussed them with my friend over winter break.

PARALLEL PROTOTYPE

Because I was not sure whether I would be carving, painting, or in some other way applying the patterns I'd made to the surfaces of furniture, I made parallel prototypes. This is a process of simultaneously exploring multiple design opportunities to keep from fixating on a design direction too early. My personal goal with this activity was to explore crazy ideas and seek an innovative solution. I used sketching, Illustrator, and the laser cutter to arrive at different possible solutions.

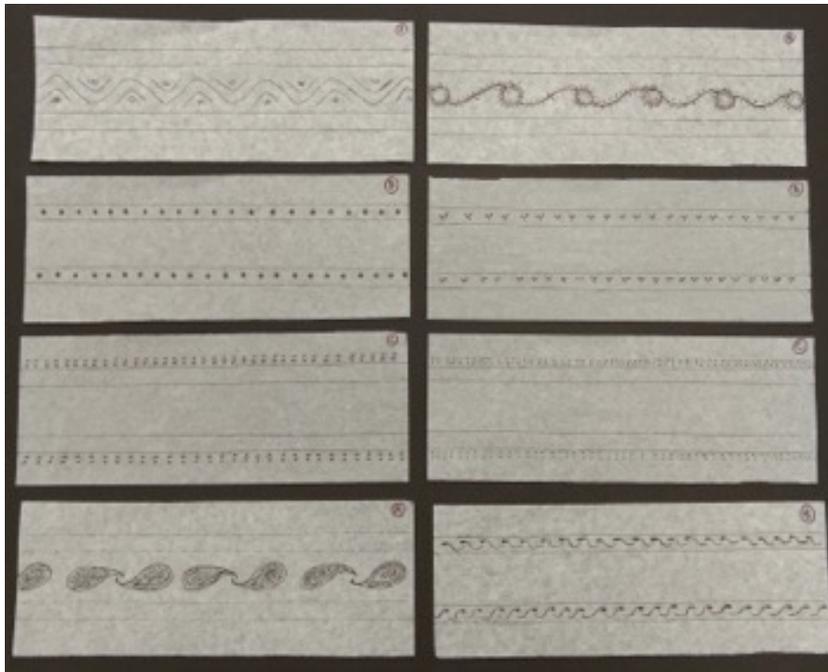


Figure 15. Initial ABC pattern sketches on tracing paper

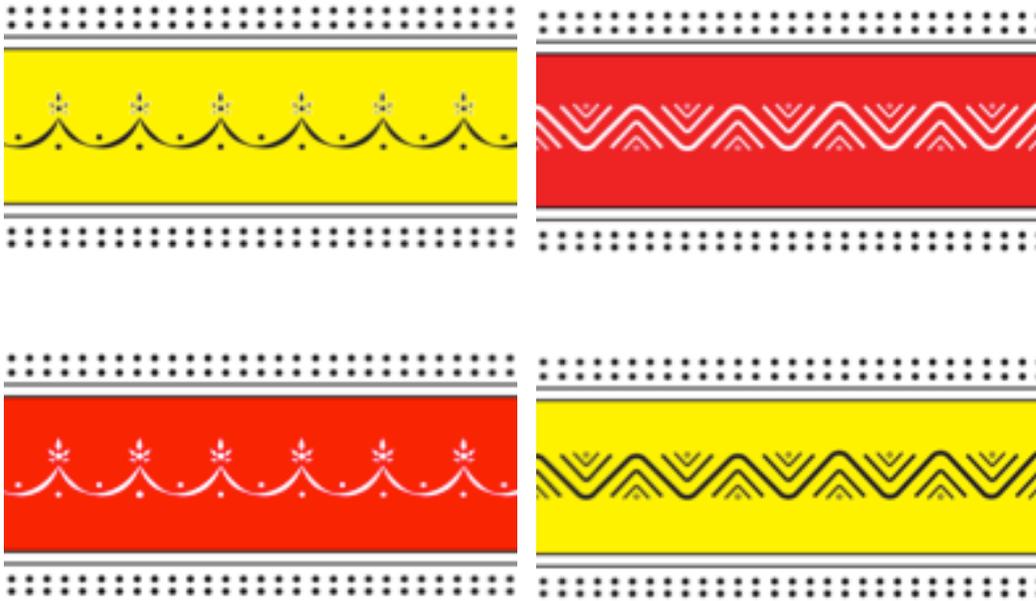


Figure 16. After tracing results in Adobe illustrator

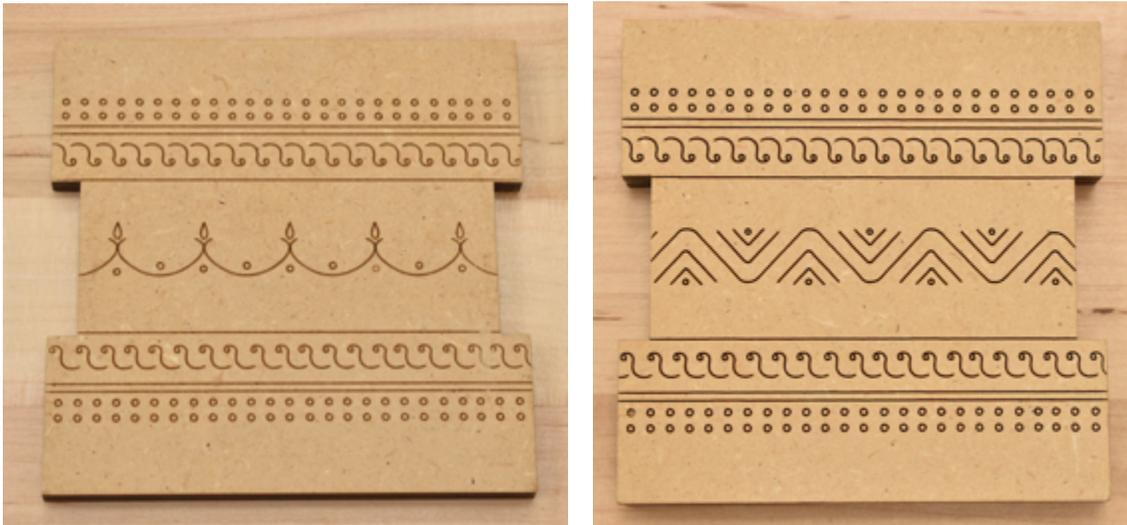


Figure 17. Laser cut prototypes (1/4 scale)

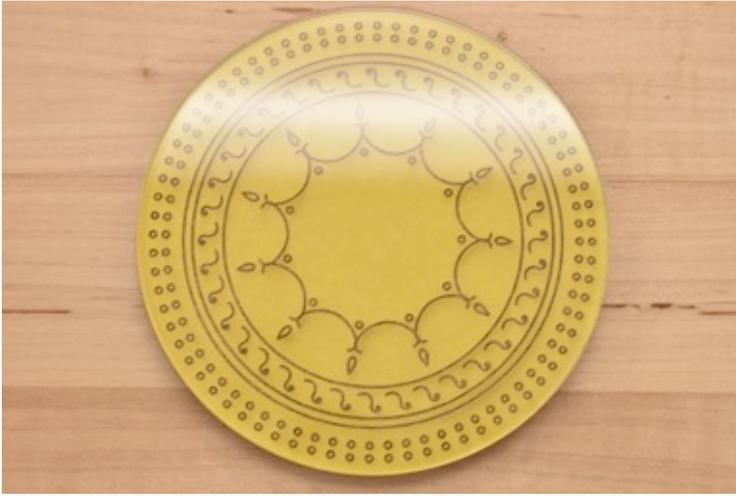


Figure 18. Prototype exploring pattern scale and direction (1/4 scale)

I then explored a number of materials and processes for applying patterns to furniture, including the following:

- Laser cutting patterns into the surface of the wood
- Painting the wood using a template
- Layering a textile or coloured veneer on top

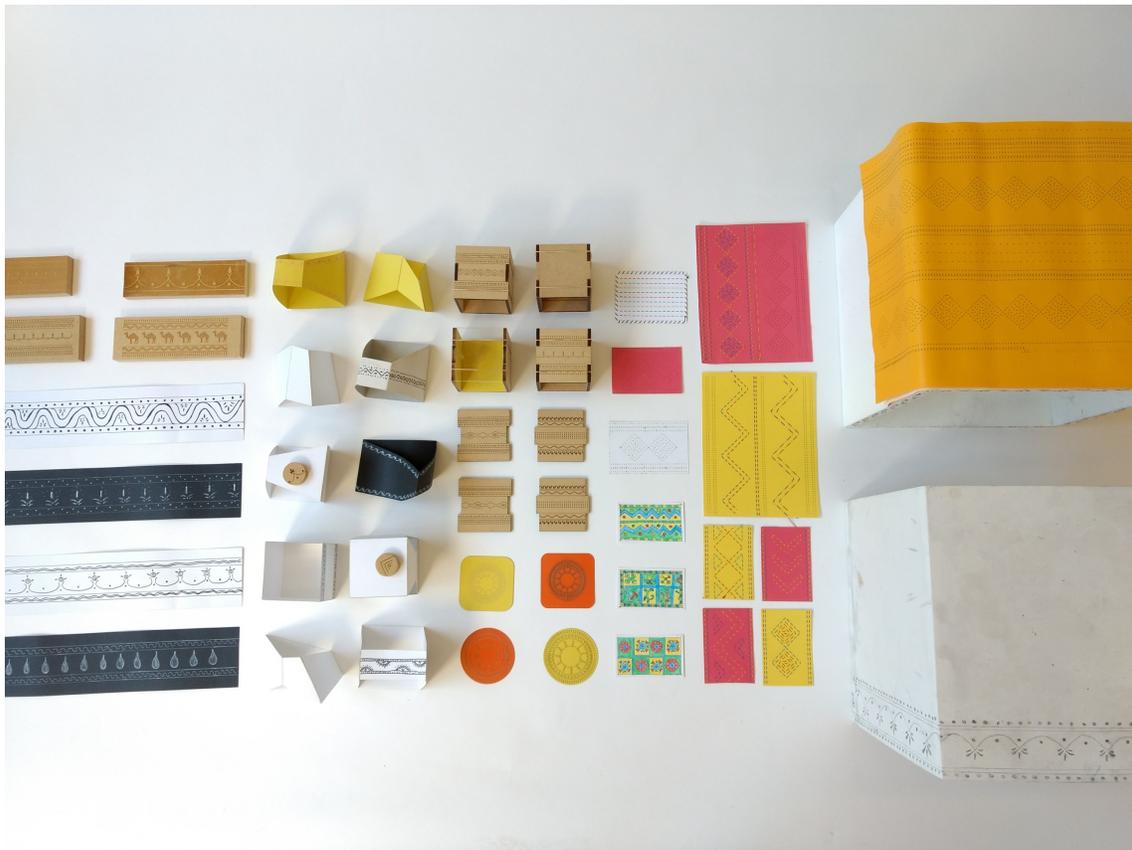


Figure 19. Prototypes exploring form and colour

Prototype

A bespoke commission furniture project includes bedframes, sofa, dinner table and other household products. I certainly could not aim to change every product in one year, but I had to start somewhere and I aimed to start at the smallest level. My design and business intervention focused on small, quick pieces that could support the workshop in fallow periods and might allow for playful experimentation leading to new ideas, forms, and products down the line. I proposed to start with an end table because these could be sold at low prices. These objects could be produced and sold individually rather

than as part of a large bespoke commission. An inexpensive end table could help artisans during slow periods to earn money and keep their jobs between large commissions.

I travelled home last winter with my end table prototypes and came back with a lot of feedback and inspiration. Initially, my idea was to try to use machines like laser cutters and CNC routers to carve patterns faster into the surfaces of furniture. But after meeting my friend in his workshop I asked myself, how feasible is it that these small batch producers might ever have a laser cutter? The solution of using a machine to carve out these patterns didn't seem viable, and would likely have made the employment situation worse, not better, for the skilled artisans they employed.

I initially thought that complicated forms—especially curved forms and relief carving—were what people wanted, but during my visit I realized that customers showed an interest in intricate patterns of any sort, even if they were on the surface of furniture forms rather than shaped or carved into them. After realizing this, my intention was to keep the form as simple as possible. An end table is a multipurpose furniture form, and I decided to modernise the form by removing all the unnecessary elements like drawers, handles and legs. I reduced the form to a minimal cube-like structure. The main focus of my project report shifted from furniture forms to surface patterns. I had been thinking more about furniture forms than surface patterns when I began this project, but pattern structures ended up being the heroes of this story.

FULL SCALE PROTOTYPE

During my first review I explored the idea of painting the furniture. The only problem with this idea is that it's been already done before and it doesn't necessarily

attract the target market. Painting furniture does not result in a very rich or tactile experience, and is very flat by nature.



Figure 20. Side table prototypes with painted patterns on them

The next idea was to explore using textiles as decorative elements for furniture. It looked more promising because people are accustomed to purchasing many kinds of furniture upholstered with textiles. Textiles have relatively faster development cycles than furniture forms, and can be updated more frequently and easily. Using textiles as a form of surface ornamentation provides the following benefits:

- Faster product development cycle
- Furniture look can be updated as needed
- ‘Indianness’ can be easily expressed using textiles

- It could help artisans keep their skills and jobs
- A possible collaboration between textile and furniture producers



Figure 21. Final end table prototypes

Ultimately, I proposed a simply constructed, multipurpose contemporary end table that could be produced faster and at lower cost, but still “looks Indian.” Simplifying the form of the object and using applied ornamentation, especially in the form of punched and embroidered leather or textiles, rather than painting or carving, not only saves time and production costs, but could also help save artisans’ jobs and skills.

I proposed to use local solid wood such as sheesham or sagwan for the end table structure. Both of these products are popular and termite resistant. I also proposed to stain the end table with oil to provide a dark contrast between colorful textile and wood grain.

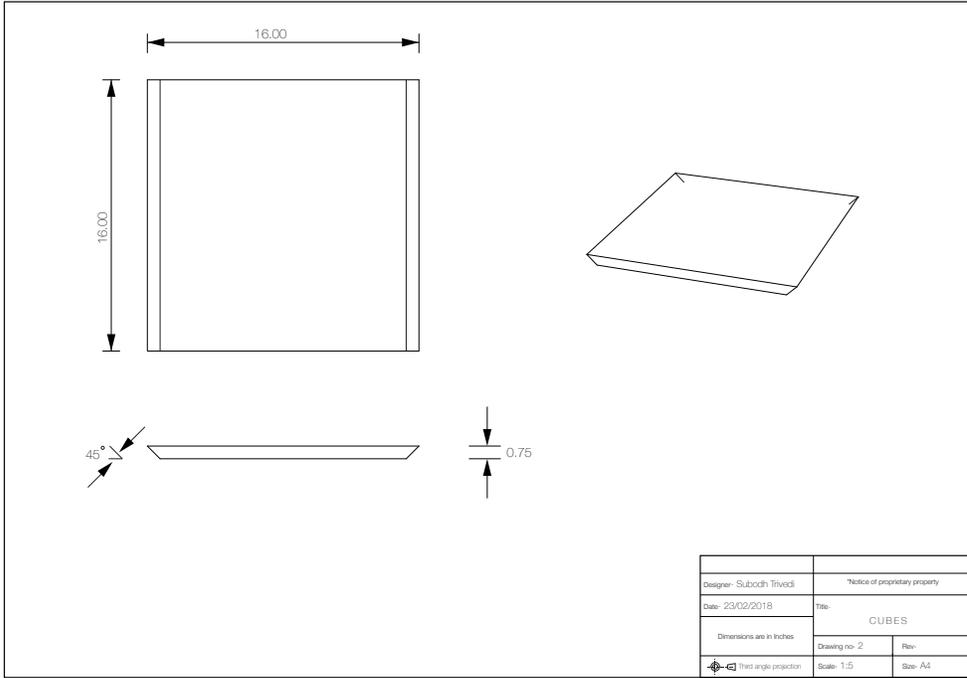


Figure 22. Final prototype drawing I

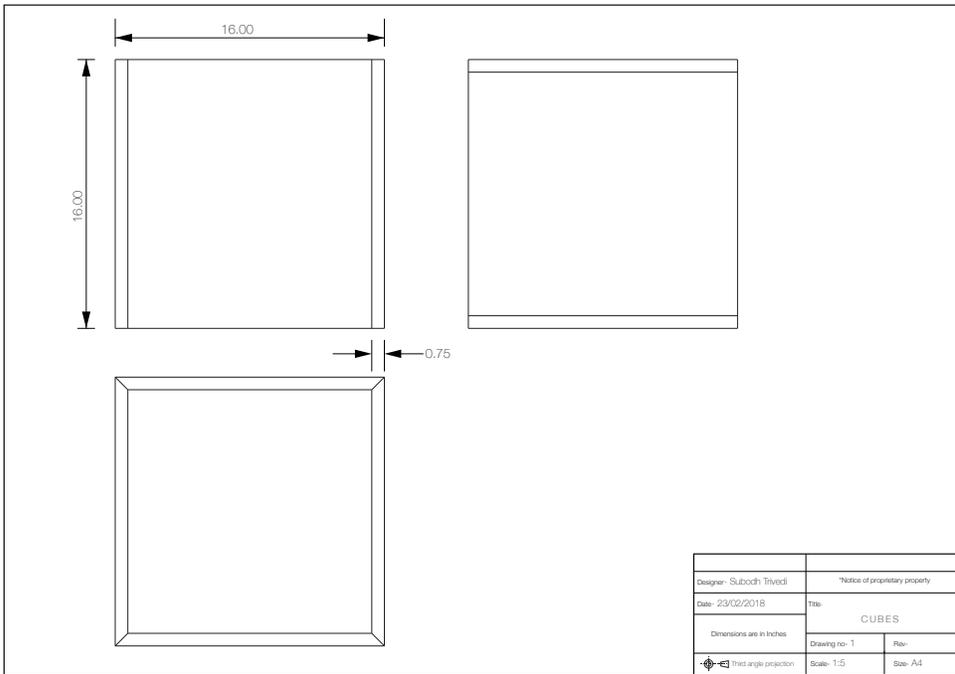


Figure 23. Final prototype drawing II



Figure 24. Pattern template I for leather or textile

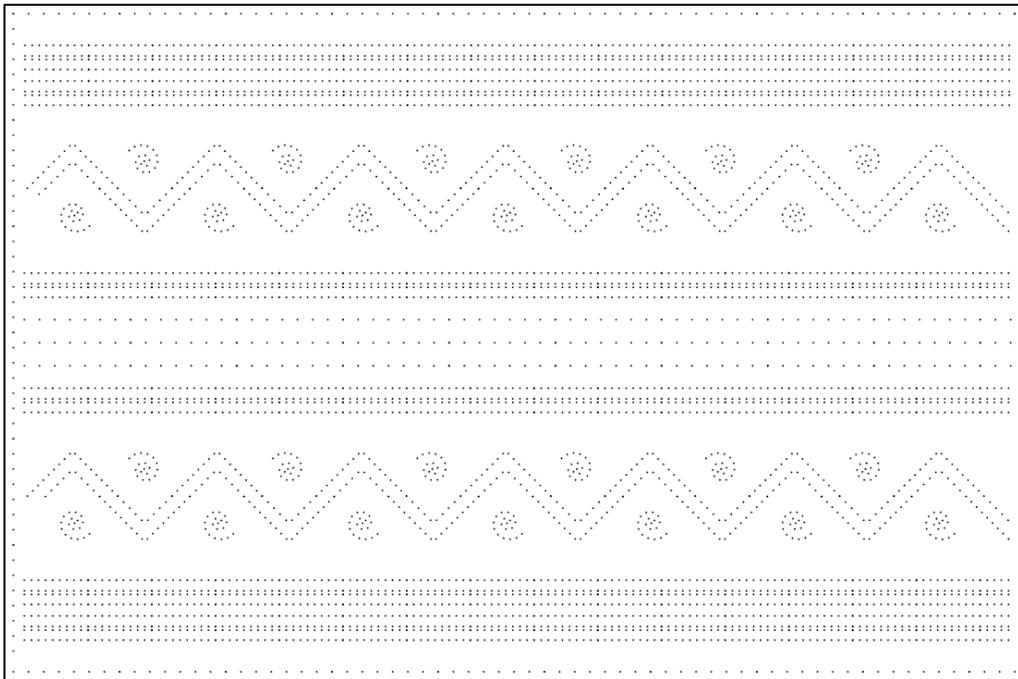


Figure 25. Pattern template II for leather or textile

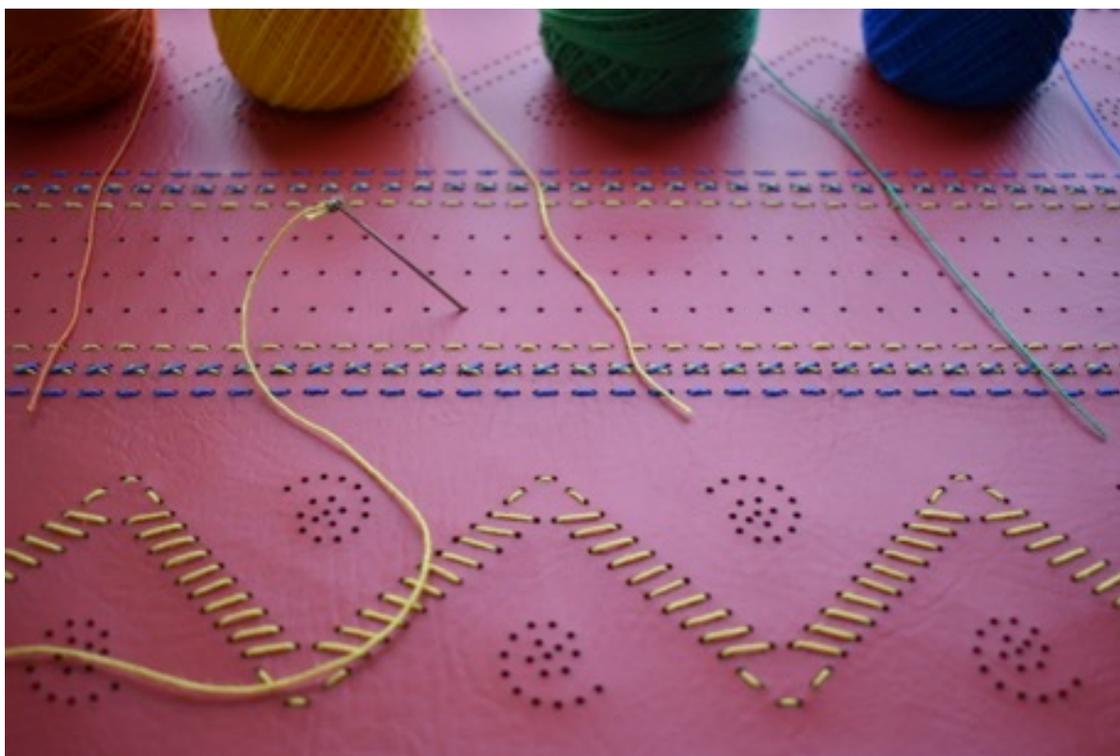


Figure 26. Needlework process

I punched the prototypes' textiles with the sample ABC templates I and II mentioned earlier. Then I embroidered the textiles with different coloured threads used for needlework. In the first textile piece I decided to use yellow as a primary colour for the background and red and blue threads for embroidery. In the second textile piece the background is red and I used yellow and blue threads for embroidery.

EXHIBIT

The final prototypes were displayed in the MFA 2018 exhibition along with a video showing the problem and the process. The two end table dimensions are 16 x 16 x 16 inches. The furniture prototypes were constructed using oak plywood. The prototypes had dark oil-based finishes and the intention was to provide a contrast between wood and textiles. For textiles, I used synthetic leather to provide a rich textured feeling. The textiles were embroidered using different colour yarns by hand. However, I ultimately decided to paint the exterior edges of the furniture in the same red and yellow colours as the textiles to provide more visual consistency.



Figure 27. MFA exhibition 2018

Conclusion

After completing the exhibition something unexpected happened. I took some pictures of the final prototypes and sent them to my friend for feedback. He printed and posted them on the walls of his shop to get feedback from the team. The next day a young couple visited their shop and saw the pictures hanging on the wall.

They forgot everything else and started interrogating him about the new products. It turns out they are in a search of good modern furniture and they were doing basic local research for the same reason. The couple liked the products and already placed an advance order for them. I decided to chat with them over phone to learn more about it. “I feel so happy to see this product and I just want to keep them in my living room” said Mrs. Sharma over the phone. I have no idea what happiness means to her but certainly these bright colours reminded her of college life. She used to be in a yellow house (student group council) in college. The yellow colour became her favourite ever since and now after looking at this product she felt rejuvenated. I felt a little relieved after seeing some customer traction but the work isn’t finished yet.

This cube prototype solves a lot of issues that I identified in the beginning of this project. First, following this approach (a simple form with an elaborate surface pattern made on textiles) can help small-batch producers make furniture faster and less expensively without losing cultural identity. The final prototype also supports artisans’ skills and jobs. It is important for small batch producers to save both time and jobs at the same time. Indian cultural identity is more than 2000 years old and it is important to respect it, as well as Indian consumers’ tastes both for contemporary forms and familiar forms of ornamentation. In order to finish what I started I wish to improve my solution

from a textile design point of view. Learning more about textiles' materials, construction, and durability could help me in scaling up solutions for larger pieces of furniture.

However, future iterations are needed for this end table. In order to produce this product as a whole (furniture + textile), I wish to collaborate with a textile batch producer and designers. I met two textile producers over the winter break and I hope to collaborate with them to produce suitable textiles. This collaboration⁶ could potentially become a partnership and both of the batch producers could promote each other's work.

Once I have the details of the production process worked out, I will be able to figure out how to price this product. It will be cheaper than a traditional hand-carved side table, but how much cheaper, I'm not sure yet. This project was an effort to make Indian small batch producers culturally and economically sustainable and my hope is that a small, appropriately priced product of this sort will help my friend and other producers to stay competitive, by diversifying their product line and creating an economic security net by producing less expensive items quickly on spec in between large projects for quick sale.

⁶ Best, Kathryn. *Design management: managing design strategy, process and implementation*. New York, NY : Distributed in the USA & Canada by Watson-Guptill Publications, 2006.

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