



Virginia Commonwealth University
VCU Scholars Compass

Theses and Dissertations

Graduate School

2015

Virsa: The Contemporary Value Chain

Samreen Zahra Mrs
zahras@mymail.vcu.edu

Follow this and additional works at: <http://scholarscompass.vcu.edu/etd>

 Part of the [Art and Materials Conservation Commons](#), [Industrial and Product Design Commons](#), [Interactive Arts Commons](#), and the [Interdisciplinary Arts and Media Commons](#)

© The Author

Downloaded from

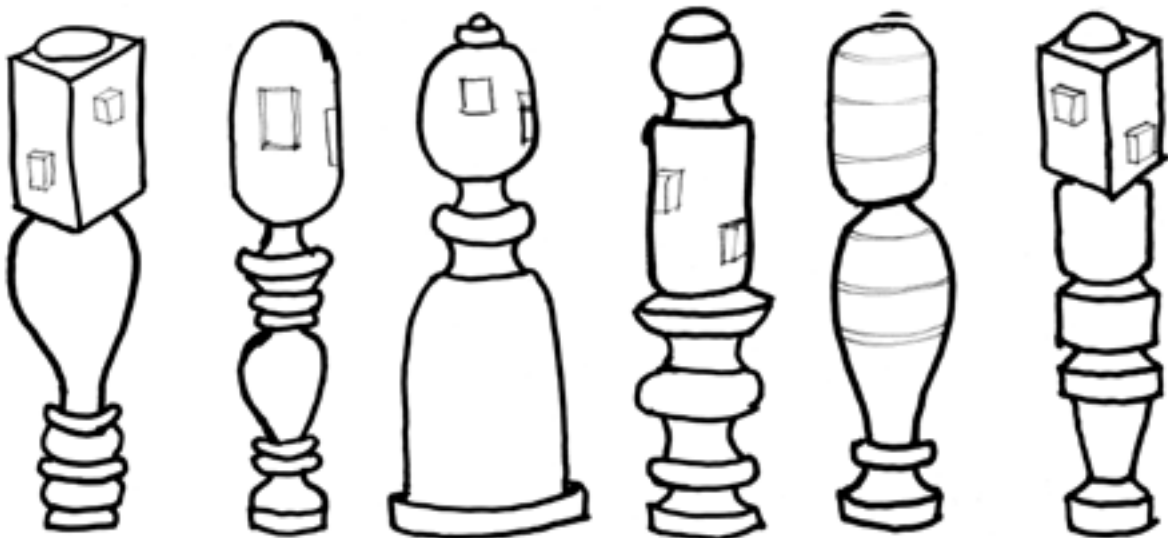
<http://scholarscompass.vcu.edu/etd/3833>

This Thesis is brought to you for free and open access by the Graduate School at VCU Scholars Compass. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of VCU Scholars Compass. For more information, please contact libcompass@vcu.edu.

VIRSA

THE CONTEMPORARY VALUE CHAIN

Samreen Zahra



To Dada Jaan and Nana Jaan, my grandfathers, who've been my inspiration for taking their passion and growing upon it

ACKNOWLEDGEMENTS

My Thesis journey would not have been possible without the love and support of my family and friends. I want to thank a number of people who've made it possible for me.

My Mother who has always been my inspiration; she has taught me to dream big and to work on realizing those dreams.

My Father who's been the driving force in my successes; he has helped me grow beyond my comfort zones.

My Husband for his constant support and encouragement, for his faith in me and for enduring the two years with patience regardless of the long distance. For driving me around cities finding bazaars and local crafts people.

My Siblings for being my support system and bearing me through times of stress, especially M. Jawad for being my university companion.

My Father and Mother in Law for their kindness and constant motivation.

I want to extend my special thanks to my group of artisans in Pakistan who worked day and night to deliver my work on time. I would also like to acknowledge the Resource Development Institute, Rawat for being open to interviews and letting me use their facilities for the execution of the projects.

My sincere gratitude and thanks to my committee members Richard Lombard, Law Alsobrook and Narita Mattock for enriching my thesis with their expertise

and knowledge. Without their constant guidance, I would not have managed to complete my thesis without; Michael Wirtz, my reader who helped me in finalizing the written document.

I want to thank all of my MFA professors; Paolo Cardini, Diane Derr, Marco Bruno, Bibi Baloyra, Thomas Modeen and Pornprapha Phatanateacha for introducing me to different design experiences including physical computing and the FabLab.

Last, but not least, I want to thank my MFA colleagues who, in their own ways, have contributed to my learning and have been great support.

TABLE OF CONTENTS

Abstract.....	07
Introduction.....	08
Problem statement.....	10
Justification.....	12
Delimitation.....	13
Personal Relevance.....	14
Field Relevance.....	15
Background.....	16
Pakistan Cottage Industry.....	17
Precedents.....	20
Craeft Review:Jandi.....	24
Charpai.....	27
Investigation.....	39
Research in Pakistan.....	40
National Heritage Museum.....	41
Local Bazars.....	43
Resourse Development Institue.....	45
Artisan Interviews.....	47
Methodology.....	48
The Modular System.....	49
Prototype 1	51
Prototype 2.....	53
Prototype 3.....	55
The Modular Charpai.....	57
Conclusion.....	62
Future Direction.....	64
References.....	66
Image Reference.....	68

ABSTRACT

“Handicraft” means a useful or decorative object made by a craftsman who has direct control over all stages of production. Handicrafts have always had a greater value, an identity of their own that is reflective of their place, culture and materials, as well as a sense of belonging to a particular place and time. With the ever-growing mass production that followed the Industrial Revolution, we lost those crafts to multiple reasons: one being cheaper, industrial-made products reducing the demand for handicrafts, and another being a shift in consumer tastes. Most craftspeople hardly earn enough to survive and fulfill their basic needs, and naturally seek greater economic stability. In hopes of making a better future for their children, they send them to schools to gain knowledge that could help them gain employment and be able to make better livings for themselves and their families, halting the passing of knowledge. Hence, the heritage of skills that had been passed for generations in a family comes to end. This risks the loss of a craft that once was a source of pride and joy for these artisans – and for the larger community.

There are a number of efforts going on around the globe to preserve the indigenous crafts of different cultures, and to allow that knowledge to be passed down to new generations. My focus in this paper is a specific object (the charpai) from the Jandi craft, and its preservation through innovation. My work seeks to advance and preserve the skills and traditions of the artisans, while designing a new set of products inspired by the craft that hope to reconnect more artisans to the craft and empower them in terms of knowledge and finance.

INTRODUCTION

Handicraft is a form of expression for the human race. Since the beginning of time, by making things with our hands, we have formed identities and values that in turn have shaped cultures and societies. Making is connecting; it's a link between the past and present, making way for the future. With time we have perfected our skills through various processes. Handicraft reflects our desire to attain excellence, its expression; and it embodies our pride. Richard Sennett mentions in his book, *The Craftsman*: "The emotional rewards craftsmanship holds out for attaining skill are twofold: people are anchored in tangible reality, and they can take pride in their work."¹ Every fingerprint weaves a memory and, with it, every object produced is timeless. Every object has its history.

These handicrafts are reflective of different cultures: cultures that are built upon different human activities and are expressed through various indigenous crafts specific to their region. These crafts then reflect a lifestyle of the individuals of a community. The handicrafts might be expressed in various forms of tangible products. The artifacts are part of a richer heritage, which used to be passed on to future generations as valuable assets of a family/tribe within the community.

Crafts and rituals that are unique to a region have played a major role in shaping the identities that make up every nation's heritage and culture. "What we know of customs, beliefs and culture of man throughout centuries, has come to us from surviving works of arts and crafts which lie scattered like crystal bowl thrown on marble. One has to collect particularly these stray pieces to study and to know how arts and crafts developed in a particular era."²

"Handicraft" means a useful or decorative object made by a craftsman who has direct control over all stages of production. Peter Dormer writes, "Making-

craft, skills, and the realization of an object through craft labor is not a trivial issue for crafts people. Making is the means through which the crafts person explores their obsession or an idea."³ In the past, handicrafts were also called "minor arts", perhaps for this very reason. David Gauntlett mentions in his book *Making is Connecting* that: "The separation of craft from art and design is one of the phenomena of late-twentieth-century western cultures. The consequences of this split have been quite startling. It has led to the separation of 'having ideas' from 'making objects'. The end product of any handicraft ought to reflect a combination of beauty and utility."⁴

The diversity of handicraft techniques and their products bring to our attention the variety of materials, trading practices and production organizations that have existed in various civilizations.

Handicrafts are characterized as products depicting a cultural trait of a specific region and time, and (of course) produced by hand. They can also be defined as products made with or without the use of tools. Simple implements operated directly by the craftsman's hand or foot, and as having traditional or artistic features driven from geographical cultural peculiarities of the craftsman, and generally produced by a small or cottage industry and not on a mass production basis.

The concept of intangible cultural heritage (ICH) emerged in the 1990s, as a counterpart to the World Heritage that focuses mainly on tangible aspects of culture. In 2001, UNESCO made a survey among States and NGOs to try to agree on a definition, and a Convention was adopted in 2003 for its protection. intangible culture is the counterpart of culture which is tangible or touchable, whereas intangible culture includes songs, music, drama and crafts, the other parts of culture that can be recorded but cannot

be touched and interacted with, without a vehicle or the culture. These cultural vehicles are called "Human Treasures" by the UN. It is defined as follows:

Intangible cultural heritage means the practices, representations, expressions, knowledge, skills-as well as the instruments, objects, artifacts and cultural spaces associated there with – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with natural and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity."⁵

These human treasures are of great value to countries and nations, and are held with pride within communities. It was valuable knowledge that was passed on to the generations, from fathers to sons. These treasures have been more than simply a source of livelihood and joy: these crafts created social interactions as, "making is connecting because acts of creativity usually involve, at same point, a social dimension and connect us with other people."⁶

PROBLEM STATEMENT

Crafts and rituals that are unique to a region have played a major role in shaping the identities that make up every nation's heritage and culture. Pakistan is a country rich with many such crafts and traditions, dating back to early 13th century of the sub-continental region, even before "Pakistan" came into existence. These crafts once were a source of pride and livelihood for the artisan community, and craft brought families together, encouraging social engagement during the process of making, tightening their communities.

Globally, however, most of these craftsmen now live below the poverty line, struggling to make ends meet, with no educational resources available, and are vulnerable to exploitation by middlemen. Displaced by mass production, over time there has been a decline in the production of some traditional crafts for many reasons; one of the main reasons being that artisans have been limited to the traditional processes and designs that have not evolved with time. The value chain has been infringed upon and the traditional sense of handicrafts has disappeared with the use of new materials with no attention to detail or craftsmanship. Many craftspeople have abandoned their crafts, as it is not financially rewarding considering the intensive labor that goes into production. These skills are in dire need of development in order to revive the culture of the crafts and Pakistani heritage.

There is much concern for these endangered traditional handicrafts. This concern has been reported and acknowledged many times through different means and media. The attention focused on traditional handicrafts today attests to the fact that we recognize that, over time, these crafts are declining. Artisans struggle to earn wages that may not even equal those of manual labor. A recent article in The Express Tribune, Pakistan, entitled, "A dying art: We

have no regard for our heritage", addressed a similar issue of how some of the intricately hand-carved wooden columns found in historic homes are of such little value that they have ended up being burned to keep poor families' homes warm.⁷

Another article in the Dawn News entitled, "Dying crafts", puts emphasis on the intense labor that goes into the production of these crafts, and the very little financial reward that is returned to the craftsmen. It states, "Let us also not forget the human cost inflicted in the closure of these manufacturing units means the loss of hundreds of individuals' livelihoods, and the resulting impact on families. The people who worked in this industry learned the skills from earlier generations of craftsmen, and are not trained for other work – they cannot simply 'go out and get another job'." It further mentions, "Not only is Pakistan not innovating in these fields, even traditional knowledge is being allowed to die out. What is needed is government intervention the institution of a system of subsidies and state support designed to promote traditional arts, crafts and professions. If they vanish, Pakistani culture will be dealt an irredeemable blow."⁸

There are several contributing factors to this decline in traditional handicrafts, such as lack of support, change in tastes, the impact of modern manufacturers, lack of raw materials, and a failure to encourage these traditional crafts to be explored further through different means of production. These crafts, and the traditional methodologies, must be preserved; but they also need to be innovated and experimented with using alternate techniques and methodologies.

"Family trade secrets may disappear if there is no one in the family to continue a craft and sharing the knowledge. Preserving intangible heritage in this domain, then, includes not just preserving relevant objects, and the associated knowledge, but also supporting the continuing transmission of knowledge and skills of traditional crafts, with adaptation and creativity, as a living heritage."⁹

The intent of this thesis will be to explore one craft, the charpai (woven daybed) from the Jandi region of Pakistan, in an effort to reinvigorate it. In so doing, I hope to grow the traditions embedded in charpai through contemporary design principles, methods of production, materials exploration, with the intent to design a new and unique form of charpai design. My designs could provide different aesthetic, and economic, opportunities for the artisans through the development of new skills. My ultimate ambition in this thesis is to give new hope to artisans and their communities to explore new possibilities through design and technology.

JUSTIFICATION

Charpai is one of the most common pieces of handcrafted furniture in Pakistan and has existed for centuries in this region of the world. It has certainly found its way to other countries, but it is strongly representative of the subcontinent culture. This simple yet humble piece of furniture serves many functions: from use as screens to tables to outdoor lounges, and even as beds. Easy to lift and carry around, the traditional wooden ones, paired with the beautiful lacquer artwork, have become a rarity with time.

A diagnostic study done in collaboration with AHAN (Aik Hunar Aik Nagar)/OVOP (One Village One Product) organization and UNIDO (United Nations Industrial Development Organization) focused on the specific lacquer art located in one the main cities where this craft still exists. From the list of problems the study identifies that have contributed to the decline of the craft, one is of design- and product-development related issue. It states, "Lacquer art products are beautifully made except that they need to make innovative designs."¹⁰ It also mentions other technical and marketing issues, in which AHAN has tried to make a difference by creating new market linkages and connections to larger audiences through collaborations in different exhibits. AHAN's collaboration in organizing a single crafts fair in Sharjah helped the artisans successfully generate orders worth Pakistani Rupees 2.26 million. This certainly proves there is a market for these products; and with the right channels, and by introducing contemporary designs; the Jandi crafted products have the potential to attract a larger audience. This, in turn, helps the handicraft industry achieve its goal of attracting a larger audience and creating more jobs, while at the same time strengthening the overall economy.

LIMITATIONS AND DELIMITATION

This study had its own limitations in terms of approachability and direct accessibility to the artisan community and the craft experts. With the study happening at VCU-Qatar, there were very limited opportunities to travel back and forth to study the craft in depth. The execution too had to take place in the limited available time during personal visits to Pakistan. Even within Pakistan further travel plans had to be organized to visit the craft cluster/hub.

Through this research I intend to attempt to understand a declining craft in Pakistan, and the causes of its decline; and to figure out a frame work that could help provide better business opportunities for these artisans by building on their existing skill sets to produce innovative products. I do not intend to design a complete business model, rather focusing on one element – design innovation – of the different causes of decline. My studies are limited to only the design feature and how these could be innovated through thorough research and design knowledge.

PERSONAL RELEVANCE

Born in a Pakistani family but raised in the Middle East, I have developed a curiosity for cultures and traditions from an early age. Coming from a family well known for generations of craftsmen, I regret that the art that was passed on for centuries has stopped at my grandparents. My grandfather was known well for his wooden furniture while my grandmother etched the intricate patterns in addition to hand-embroidering fabrics. Growing up in my grandparents' workshop, watching them give life to material through their skills fascinated me. To me this is when I developed a love for crafts and arts and that beginning has led me to be the designer I am today. Sitting in his workshop, seeing my grandfather chisel the wood and magically create those beautiful forms on a lathe was always captivating to me. The way he would mix colors and make his set of "crayons" to coat the wooden pieces with layers and layers of beautiful colors would always attract me. I remember sitting beside my grandmother trying my own set of etchings on those woods creations. All this process fascinated me, but as I grew up it vanished. My grandparents made me a few pieces as I was a little girl and these are all I am left with today.

FIELD RELEVANCE

"We can learn so much from the past that is useful to take forward, specially when thinking about a sustainable future."¹¹

Today we see a number of designer-artisan collaborations starting up: "[t]he recent mainstream interest in all things "handmade" has promoted a revival of global handicrafts. A growing number of designers are choosing to work with traditional artisans in some of the poorest parts of the world, to create exquisitely-made, contemporary designed products, which blur the boundaries between design and craft."¹²

British designer Sebastian Cox, one of a number of young designers that are championing the revival of traditional crafts in UK, mentions, "Neglected techniques represent a new set of opportunities."¹³

Recently, we are also seeing a movement that has started with a rise in handicrafts, again but with different methodologies. An entire new business market is emerging based on these home-based artisans/craftsmen that are using social media as a platform to promote their goods. Apart from this, the entire Do-It-Yourself (DIY) movement also involves ordinary individuals acquiring basic skills and crafting projects in simplest means.

"The balance is changing again. One reason is that the environmental damage caused by industrialization is so severe that it is impossible to ignore the consequences. Another is the backlash against globalization, which is making us critical of its blandness, and more amenable to the quiriness, sensuality and frailties of craftsmanship. There is also our immersion in digital technology, which, according to the American sociologist Richard Sennett in his 2008 book, *The Craftsman*, encourages us to favor things that seem intuitive and personal, over chilly uniformity."¹⁴

The Craftsman also called for the definition of "craftsmanship" to be broadened to include software design and computer programming as part of an intellectual reassessment of craft. This process had already started in industrial design, where Hella Jongerius and Jurgen Bey Dutch designers who have experimented for more than a decade using traditional craft motifs and techniques paired with contemporary wit and creativity to "humanize" mass manufacturing.

"But design's antipathy to rural culture is now being reassessed too. This is partly because, as the environmental crisis deepens, cities seem less appealing, and the country more so, at a time when digital technology is erasing many of the old constraints of living and working there. Li Edelkoort, the Dutch design theorist, has described the result as 'a new romantic yet also realistic' vision of rural life."¹⁵

There are many movements across the globe to preserve traditional handicrafts as industrialization, mass production and technology take over so many crafts that were once hand produced.

BACKGROUND

Modern Pakistan inherited its rich cultural heritage from the sub-continent region and its history, which dates back 7000-9000 years. The imprints left by successive civilizations have left a rich heritage of handicrafts. The different regions with their wide variety of tradition and culture, dialects, folklore, music, dress and costumes have much to offer to any connoisseur of handicrafts. In fact, the handicrafts are the most striking expressions of the individuality of Pakistan's regional identities. The color, the shape or style of a craft item instantly evokes its region.

Pakistan is divided into four provincial states; every province, state and city of Pakistan is blessed with specific handicrafts. The crafts become the regions' identity and the cities are known to specialize in certain crafts. Every city, even village, has its own handicrafts specialty ranging from fabric, materials, embroidery, jewelry, carving, mirror work or other handicraft items. Each color, style, design and motif carries with it a unique symbol portraying the culture of that particular area and builds on people's indigenous skills. Some well-known examples would be the Kashmiri Shawls, the Balochi and Sindhi embroidery work, the Peshawari chappals (an indigenous shoe) and carpets, camel skin lamps of Multan, and Gujrati pottery.

PAKISTAN COTTAGE INDUSTRY

Pakistan, as a young nation of 67 years, is going through the process of industrialization; and in the development of these industries, cottage industry is a value-add to the country's progress. "The role of handicrafts and small scale industries in the changing pattern of economic and social life is a subject of considerable importance especially to the countries that are still in the early phases in industrial development."¹⁶

Most of these cottage industries are formed in the outskirts of cities or in rural setups, where women who cannot engage in work outside of the home start small businesses like embroidery, carpet weaving, tailoring and other different crafts. These small-scale industries provide a number of benefits by providing additional employment and raising the standard of living for rural population, but also prevent migration towards cities. Through this, a balance in developing cities as well as the rural areas could be developed to benefit both localities.

Cottage industry has helped develop a nation and put the skills and values of craftsmen to their benefit through helping them make a living for themselves and their families. Pakistan is a land of culture and traditions and has unlimited handicrafts and craftsmen spread over the many cities and villages. There are many villages known/associated with the expertise of a specific craft and government has tried to help them through elevating their status to a small industrial village. Through this process the government recognizes the skills provides loans and funding for setting up required labor and equipment in growing the craft into a small industrial hub in return benefitting the village grow and it slows the migration towards cities. A good example of such a city would be Sialkot that has been producing export quality sports goods and is well known for it. It has become a major source of foreign exchange earnings of Pakistan.¹⁷

Much effort is going into the promotion and development of the cottage industries. Many organizations are springing up within Pakistan to help the handicraft industry: Sindh Small Industries Corporation (SSIC) and Aik Hunar aik Nagar (AHAN) are two of them. There are so many cities and villages that are directly identified by a specific craft they specialize in and are well known for it. If the government or different organizations elevate them to small industrial villages making them economic hubs that benefit the craftsmen community and on a larger scale bring benefit to the country. By providing them the means of production and promotion a lot could be achieved in terms of economic stability, job provisions, job securities and craft preservation and growth.

A good example of a similar organization would be Dasra from India. "Dasra" in Sanskrit means, "enlightened giving." It is an organization focusing on social change through bringing social entrepreneurs and philanthropists together and with collaborating with non-profits organizations to help create an impact a large number of people faster. It has executed many projects focusing on diverse social issues: one of the most recent looked at the empowerment of craftspeople in India and presented their communities as a valuable asset in the nation's non-farm financial backbone.

"There are many reasons for this dismal performance. It has been observed that with the passage of time the quality of craftsmanship has been diminishing. The value has been infringed and the traditional sense of handicrafts has almost disappeared. This sector is in dire need of development and promotion in order to revive the culture and art of Pakistani heritage. The biggest problem cited by the artisans in this respect is the access to credit to be able to expand and compete in the international markets. Skilled-craftsmanship is the principal feature of handicraft. However, for the

greater part trade in handicraft is in the hands of middlemen many of whom have been associated with handicrafts production for generations as a rule these middlemen work in small scale and work to orders.”¹⁸

PRECEDENTS

Ouma Production

Stephanie Simon, a designer heavily influenced by Indian culture, who makes her own contemporary interpretation of charpais, runs this French studio. She mentions, "Ouma has adapted the charpoys to fit into our houses, more elegant or "decorative" in style, and also more solid and comfortable."¹⁹ She still uses the basic skills of the artisans, simplifies the legs and creates very elegant, interesting weaves using different materials already existing in the traditional methodology. Her business looks into distributing her "charpoy" through different retailers, while also getting in direct contact with her customers through her website. She placed her production unit in India, where she is not only adding "heritage" value to her product, but also employs highly skilled artisans creating economic stability in their community.



Figure 01



Figure 02

Fabindia

Fabindia is a chain of stores selling clothing, furniture and handicrafts. It is also one of the largest Indian organizations that recognized the large pool of skilled artisans in India, and how an international market could bring value to them. They have not only engaged the artisans and designers to collaborate in the development of new products, but have also encouraged them to raise the quality of the final products. They "link over 55,000 craft based rural producers to modern urban markets, thereby by creating a base for skilled, sustainable rural employment, and preserving India's traditional handicrafts in the process."²⁰

Doshi Livien

Doshi-Livien studio, based in UK, developed their versions of "charpoy" by marrying the "skilled workmanship of Indian seamstress with Italian expertise in industrial production."²¹ They reinterpret their 'charpoy' using cotton and silk mattresses embroidered with the ancient Indian dice game of 'Chaupar'. Their version of a charpai, unlike Ouma Productions, uses a completely non-traditional methodology of work and the final product does not hold a direct resemblance to the traditional piece of furniture. The studio's wood production department is also based in Manzano, Italy and the mattresses are produced in Gujrat, India.



Figure 03

PRECEDENTS

Young Pakistani Start-Ups

In comparison to the above examples, there are relatively young businesses springing up in Pakistan that are targeting an international market. Many of these promote traditional handicrafts in a contemporary context. For instance, Popinjay, a women's handbag brand, uses traditional embroidery, usually done on shirts and dresses from a small village, in a new context of a handbag. Similarly, Inaayah, a fashion label, incorporates Sindh's traditional handicraft of rilli work, a craft similar to handcrafted quilts, which is usually used on bedcovers, and translated into contemporary designed dresses and shirts. Another recent brand that has emerged, and was successfully funded on Kickstater, is Markhor, which focuses on men's handcrafted shoes. Markhor is attempting to revive the culture of handcrafted shoes as well as growing the prominence of limited-production shoe artisans. All of the above-mentioned brands are encouraging handicrafts through contemporary means and successfully

appealing to a larger international audience. They have been successful in bringing value to local crafts while employing a group of artisans highly skilled and economically strengthening their communities.



Figure 04



Figure 05

CRAFT REVIEW : JANDI

Charpai is a craft on its own, but also strongly relates to the Jandi craft that specifically fuses wood-turning, weaving and lacquer art together. Different traditional furniture pieces are produced in this method, such as chairs and wooden sofas with woven base. The finer quality charpais, often presented as wedding presents or set in lounge areas for guests, would be produced using this method.



Figure 06

CHARPAI



Figure 07

CHARPAI

Charpai, a traditional woven bed, is the most iconic piece of furniture from the sub-continent region, and is a common piece of furniture found in most homes. Charpai basically translates into char, meaning “four”, and pai, meaning “legs”. It is a simple mechanism of four wooden legs and four posts joined together to create a frame. The center is then woven using different natural materials.

The earliest historic reference to the charpai is found in Hobson Jobson, a glossary of colloquial Anglo-Indian words and phrases that mentions:

“Charpoy, s, H.(Hindi) charpai, from P.(Persian) chihar-pai (i.e. four-feet), the common Indian bedstead, sometimes of very rude materials, but in other cases handsomely wrought and painted. It is correctly described in the quotation from Ibn Batuta.* c.1350.-*Ibn Batuta. Voyages d’Ibn Batoutah, Texte Arabe, (Societe Asiatique). 4 vols. Paris, 1853-58.”²²

These beds are very lightweight: a single man can carry one. The bed consists of four conical legs on which four rods are laid. Between the rods natural materials such as hemp, palm fronds, or cotton ribbons and ropes are woven to create the seating surface. In the past, one would buy an open wooden frame and pay an expert to weave the patterned surface for them. These decorative patterns, which vary by region and maker, are simultaneously strong and attractive. It takes great skill to weave the cord over and under and around the frame, though the job is not well paid.

‘Charpai’ makes economic sense, as it is the most affordable option comparative to other furniture pieces. The simplicity of form does not overpower in terms of physical design and styling. “While a charpai’s primary function may be for sleeping, it has a wide range of uses, serving as a seat, temporary fence, sunscreen, platform for drying and straining

food, hitching post for animals, carrier for goods, child’s play structure, scraper for food, sieve for grains, backdrop for puppet plays, stretcher for sick people, and is used in birth and death ceremonies.”²³

It is an object that is eco-friendly, cheap, simple and very apt for a country like Pakistan. Because of its open, porous surface, the charpai is ideal for hot, tropical climates. Particularly in villages, charpais are often used outdoors, where people conduct all sorts of daily activities and socialize. Like much behavior in Pakistan, the use of the charpai has a specific social etiquette. Those with higher status sit toward the head end; lower-ranking people sit on the opposite end. A standard charpai is 22 inches in height, 78 inches in length and 40 inches in width.

THE FRAME



Figure 08

THE FRAME

Traditionally, charpais were made of wood with four legs on which a rectangular frame would be laid that would be connected with mortise and tenon joints. With time, the legs took different shapes and were formed mainly on a lathe. The typical charpais found in the market today have frames made from iron or steel welded together in the traditional charpai form and later woven to form the top for sitting.

THE LEGS



Figure 08

THE LEGS

Charpai legs come in many different shapes and sizes. The standard height of the charpai leg is normally ranging from 20" to 28" in height. Mostly these legs would be produced on a lathe and lacquer finish would be applied including intricate etched designs for a higher quality of charpai, which would be placed in lounges and guest rooms. Charpai legs for regular use would only have color bands on them or just a plain varnish on them. These would be produced both on a lathe or be cubical forms with tapered tops for everyday use.

The metal charpai frames are made of 1.5" diameter metal tubes and have a standard height of 22", but slight variations in height and width of metal frames are available. Metal drums from construction sites are recycled to create the tubes. The drums are bought and put into a machine that cuts and molds the metal into a particular shape. Metal is molded into circular or rectangular tubes, after which the different pieces are welded together.



Figure 09

THE LACQUER ART



Figure 10

THE LACQUER ART

Lacquer art is the process of decorating the charpai legs using natural resins. The practice of lacquering objects originated 4000 years ago, and in Asia, Jandi work can be traced back to the dynastic periods of India and China



Figure 11

THE WEAVES



Figure 12

THE WEAVES

There are many kinds of weaves found on charpais. After prolonged use, the strings are no longer as taut as they should be, and need to be weaved again. "Essentially there are four kinds of charpais," explains Nisar. "The first type is made from nylon patti or ribbon, which costs about Rs220 per kilograms." Generally, however, only one kilogram is used in the charpai, which can be woven in as little as 15 minutes and then sold for Rs1,000.

"The second type is made out of packing patti," says Nisar. This is the same patti used for packing luggage, which is where the name comes from. Available at Rs90, its charpai is sold for Rs950 and takes just under an hour to weave.

"The third type is made out of nylon thread (doree)," says Nisar, and warns, "It is expensive. The thread costs around Rs200 per kilograms, and about three kilograms end up being used for one charpai. Building it involves a lot of time and effort, and only two are made a day."



Figure 13

The fourth type, made out of the leaves of coconut or date trees, is also expensive and time-consuming to make. Again, it is only possible to make two of these in one day. "All the same, it is supposed to be the best to sink in to when you are tired at the end of the day," says Nisar.²⁴



Figure 14

THE JOINERY

Traditionally, mortise and tenon joints have always been used in the production of wooden charpais and the practice carries on to this day. The wooden charpais use the mortise and tenon joint as it provided with the strength required for a long life. The frames would be produced using longer wooden rods shaped and smoothed on a lathe, or Jundi ka adha, and then hammered through mortise and tenon into each paya or leg. Traditionally a stock of leg would be produced and the connecting wood cut to the size required it would later be only means of putting it together using the traditional joint.

Over time, the wooden frames have been replaced with a new metal frame that uses welding techniques to join eight metallic rods together to create the frame. First a rectangular frame is welded flat, and later the four legs are welded vertically to create legs.



Figure 15

USES

Charpai's have found different uses in the rural and urban lifestyles of the region. They are one of the main furniture pieces existing in the rural areas where they act as a bed at night, a daybed during the day, or simply used to sit and carry on their daily work routines. People in the rural areas also use these as partitions or screens by putting them up sideways. Sometimes, they are also used to dry clothes.

The very decorative ones would be placed in lounge areas with elaborate covers for guests, or found in the elite homes of the region. Extras are sometimes stacked on top of one another to act as shelving unit. In the cities, they are more used as outdoor furniture or as a simple daybed or lounge chair that is easily moved around. Many people keep a few extras stacked for guest sleepovers.



Figure 16



Figure 17

PRICE RANGE

The price information was gathered by my research and visits to the charpai bazar in city Sadar bazar, Rawalpindi and to Sillanwali village. Much to my surprise, I did not find much difference in the prices of metal and wooden charpais. In Rawalpindi, the metal charpai prices started from Pakistani Rupees 2000 and went up to 6000, while the traditional wooden charpais started with the similar price for simple and plain ones, and went up to Rs. 6000 for the intricately etched patterned one. The prices for metal and wooden charpais were similarly aligned in the Sillanwali bazar too.

INVESTIGATION

The research investigation apart from publications was done at different location within Pakistan some of the areas visited are listed below:

- a. National Heritage Museum, Islamabad, Pakistan
- b. City Sadar Bazaar, Old Rawalpindi, Pakistan
- c. Resource Development Institute, Rawat, Pakistan
- d. Artisan Interviews at Islamabad and Sillanwali
- e. Sillanwali, Sargodha, Pakistan

RESEARCH IN PAKISTAN

I visited Pakistan to understand the craft from a first-hand perspective. My trip led me to different areas of the twin cities Islamabad and Rawalpindi. The visit gave me a first-hand perspective on how the craft is manufactured traditionally, what elements of the traditional craft are still relevant, and what form and kind of charpais are prevalent in the marketplace. I also visited a few organizations that are working on the promotion and preservation of the traditional techniques.

NATIONAL HERITAGE MUSEUM

The first stop was the National Heritage museum or Lok Virsa National Institute of folk and traditional heritage. Lok Virsa is an organization helping in the promotion and preservation of the Intangible Heritage of Pakistan, from handicrafts to folklore music. The location has a museum space, with a collection of traditional handicrafts sourced from different time periods from all the regions of Pakistan on display. It also has a small collection of handicraft shops where artisans across the country display their works for sale while also having live demonstrations of the craft process at the same time. They also have the main heritage library, consisting of published research as well as video and sound library. Here I came across a small shop that specialized in the lacquer art.

The artisan running that shop, Waseem, came from Sillanwali, one of the main towns of the Sargodha District in Punjab, where the craft still prevails. Waseem sells mostly small furniture items, but also souvenir pieces such as jars or decorative plates all decorated using lacquer on wood with intricately etched patterns. Waseem led us to another exhibition being held in the national conventional center, where he and other artisans of different handicrafts were exhibiting their work. In this exhibition, I came across a few other stalls all with the same handicraft. Interviews with the artisans revealed that there were two main areas of Pakistan representing the same craft. One was Sillanwali, while the other was Dera Ismail Khan.

While the crafts were similar, I noticed a difference in the patterns and the products too. Dera Ismail Khan (DI Khan) products used flat surfaces like rectangular jewelry boxes with the etched work and focused on decorative and souvenir items, but Sillanwali artisans only worked with turned wood objects. There was also a significantly visible difference in the patterns etched on the surface.

These artisans also revealed that these are some of the skills they inherited from their fathers and grandfathers, and craft has existed in their families for as long as they could recall. All the production of the pieces takes place in their respective towns and the finished pieces are transported to these shops, with the exception of few that the artisans would etch for a live performance/demonstration.

The artisans at Lok Virsa and the exhibition stated that their main customers are either the small number of tourists visiting the country, the foreigners residing in the country, or the small number of the local population that is economically stronger.



Figure 18

LOCAL BAZAARS



Figure 19

LOCAL BAZAARS

With limited time, a trip to Sillanwali was not possible: instead I looked for artisans within the Islamabad/Rawalpindi area to help me do some experimental studies.

My first stop was at Murree Road, a bazaar famous for wooden furniture, home accessories and interior products. Despite this heritage, the traditional charpais were difficult to locate. I finally managed to find them at the old Sadar Bazaar located in old City Sadar road, Rawalpindi. The charpai bazaar consisted a row of 15-20 shops selling charpais only. But these are the 'new' metal-frame charpais woven with plastic ropes of bright colors located at the City Sadar road Old Bazar. The frames are brought in pre-welded, and stored on the open rooftops of these shops, while the weaving process takes place on site.

In amongst these metal charpais, there was a single shop at the end that sold wooden charpais. From interviewing the shopkeepers, I found out there was not a significant difference in price, as both of them started from Rs. 1500 and went up to Rs. 5000. The shopkeepers were hesitant to share how were they doing financially, except to mention they were happy with how the business was running – mostly for the metal charpais. They did mention their business got better during summer time when charpais are highly in demand.

RESOURCE DEVELOPMENT INSTITUTE, RAWAT, ISLAMABAD



Figure 20

RESOURCE DEVELOPMENT INSTITUTE, RAWAT, ISLAMABAD

I learned about RDI through a friend, and paid a visit to learn how they were involved in preservation and promotion of Jandi laquerware. It is a vocational training school that offers a wide variety of short-term courses, as well as diplomas in architectural technology. The school had recently invested in employing two artisans from Sillanwali to promote the Jandi craft. The Principal, Mian Muhammad Riaz, was kind enough to take time out to sit for an interview and show us around the facilities. The Principal mentioned of the Institute mentioned they have introduced the handicraft courses in order to create awareness of this cultural heritage as well as promote and encourage younger minds to learn and build on these crafts. The principal artisan mentioned the craft requires more support from the government, and these small craft clusters need to be developed into small industrial zones that would not only encourage crafts but also help these small towns to develop. This will also encourage people to not move to cities, but rather to develop their own towns further and bring facilities to them. Mr Riaz also mentioned there is a lack of product innovation that has led to decline the crafts. He hoped, through offering the courses, he might be able to create awareness. He mentioned that there is more value for these crafts beyond the boundaries of the nation, and he stressed that business ties should be created to market them internationally.

I was introduced to the handicraft studio, where I met the artisans who walked me through the craft process step by step, introducing the raw materials and the process of application and etching of the patterns. Most of the pieces produced were small decorative jars or plates and candle stands.

ARTISAN INTERVIEWS



Figure 21



Figure 22



Figure 23

ARTISAN INTERVIEWS

Through interacting with the artisans, located in Sillanwali and RDI, I gathered that most of them learned the craft either from their father, grandfathers or by training from an early age with an artisan in the neighborhood. They would be assigned simple tasks in the beginning, followed by learning more complicated skills, and each would be trained in a specific area. If one artisan were a naqshi (etching) expert he would only learn naqshi, and not train on the Jundi adaa or the lathe machine, and vice versa. Another theme that came across was their hesitancy to try newer designs or move away from the traditional method of what they had been taught. I felt the hesitation, and on further inquiry found that there is a lack of trust as they are paid per order and to try something new or unusual would not only take away their time, but also not guarantee payment. Though there exists some governmental organization to help support them and grow the craft beyond their small clusters, they are hesitant to trust government organizations due to political instability of the country. Hence, they exist in their villages alone, do not move away from and expand capacity or business beyond their villages, and wait for business orders to reach them.

METHADODOLOGY

The investigation study started with research data gathered through personal visits and interviews. From these initial studies I started working with building small-scale model of a charpai to understand the process and major elements involved in a single charpai. My entire process was based on hands on experience as compared to having virtual plans. As the problems encountered are faster and easily recognized and alternative solutions figured. There have been elements of the process that had to be monitored and worked through direct supervision of artisans; and there have been moments where I personally worked and built necessary requirements. The investigations and study led me to development of the concept of modularity, a new system where one could create and modify different constructions using various aspects of charpai.

From the many problems identified in the decline of the craft one of the major facts was lack of innovation in designs. As times have progressed, the designs failed to address current needs and necessities, and look beyond what the charpai was designed for centuries ago. Those problems lead to the idea creation of a modular charpai system: a charpai system that could be customized to the user's needs and requirements, have an easy assembly system, and that can be flat packed again for easy transportation. This would be a contemporary, modular system that celebrates the centuries-old tradition of charpai making and, inspired by the charpai, creates an innovative design that aims to bring back the lost appeal of the most iconic furniture piece of Pakistan.

THE SYSTEM MODULARITY

The modular system is based on a simple study of the tradition daybed size, which is 22 x 40 x 78 inches. The goal was to experiment with different prototypes of a mechanism that would be developed for the formalization of the system and produce a number of pieces with different styles and shapes of legs.

For my very first experimental studies, I started making small-scale mock up of a traditional charpai to understand the elements that go into its construction at a smaller scale.

PROTOTYPE 1



Figure 24



Figure 26



Figure 25

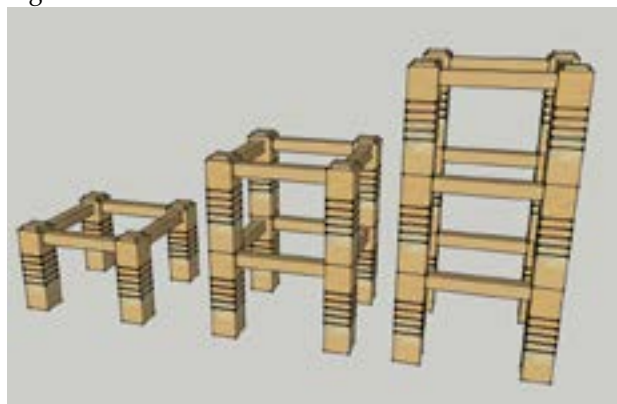


Figure 27

PROTOTYPE 1

The first prototype study looked into a modular charpai using the tradition mortise and tenon joint. The initial design was based on four legs per charpai configuration and four connecting rods, all of them made in solid wood. The legs were specially designed with a half-inch niche at the base and an equally extended top surface to help stack units one on top of the other. These pieces were prototyped in a workshop in Wakra, Qatar, and due to the limited facilities and the kind of wood available, the design was very limited and restricted in what could be executed.

This system incorporated a mechanism of a stackable leg that fits perfectly on top of another unit, along with two different sizes of connecting rods meant to be joined with mortise tenon joints. The sizes were as follows; each leg was 11 inches tall, and 3 x 3 inches in width and depth, with five grooves equally distributed in between. The connecting units/rods were 9 inches and 18 inches long.

Working with the first two sizes to see possible configurations and setup.

One of my very first pieces was a small stool, and the finished sizes forms an 11 x 11 x 11 inch cube formed using the smaller connecting unit.

The second configuration based on the first small stool was a chair with a simple addition of two legs and addition connecting rod in between, providing required back support.

Third configuration based on the first small stool was made by stacking an identical stool on top to create a shelving cabinet for storage. Or, the same could be viewed as a high stool with storage space beneath.

Similarly, a bench could be created using shorter connecting units on sides and adding the longer connecting units lengthwise. Or, a square coffee table

if the longer connecting units are installed on all four sides.

The system had potential in its many configurations and easy installment method that did not require glue or screws, but it also created two main challenges: weaving the frames created a permanent installment where dis-assembling would not be easy, and the design of the joining system was impacted by temperature changes, making assembly and disassembly a difficult task. This system did not have much potential after the considerations of the drawbacks.

Figures 24, 25, 26, 27 demonstrates a few initial experiments. All of the above experiments led me to my second prototype study.

PROTOTYPE 2



Figure 28

PROTOTYPE 2

The second system was based on the first study but made in refined rosewood. I experimented with the use of screws for connecting points instead of the traditional mortise and tenon joint. The legs were more refined in shape, reflecting traditional aesthetics, and were formed on the wood lathe machine. Tabs were added on the inside of the connecting rods for woven frames to fit on.

This prototype was produced in Sadar Bazar, Rawalpindi, Pakistan, as a result much more refined wood was used, and the craftsmen created traditional shapes on the lathe machine.

This system also did not turn out very successfully in terms of the elements involved. The screws that were added on to both end of each connecting rod instead of the traditional mortise and tenon joint would not always screw in perfectly, and fitting the fourth rod on each piece would become challenging as it would have two ends that had to be rotated together, so one hole had to be drilled and final screw added from outside of the leg to secure all the four connecting rods in place



Figure 29

PROTOTYPE 3



Figure 30



Figure 32



Figure 31



Figure 33

PROTOTYPE 3

After the first two studies, some common issues emerged: the system needed to be compact, and I somehow needed to incorporate the weave within the system instead of it having as an extra element. I decided that the frames should be prefabricated, and have the weaves incorporated in them, and the legs should be separate units of different sizes that could be easily adjusted and put together in a matter of minutes. To put this system together, many considerations went into the early experiments.

Firstly, many experiments were carried out to find the perfect division of the frames that would form a system and be modular in terms of stack-ability and sizes. After careful consideration, the traditional daybed was equally divided into standard sizes so that they become a system and are easy to stack on top of each other. Legs of different heights were introduced to give the user the variety to choose from and configure and customize to their needs.

For the locking mechanism, special screws were used that I came across during my visit to Sillanwalli, where the group of artisans produced these single legged tables with a welded screw into a threaded washer. The welded screw easily tightened using another threaded washer on the base of the tabletop. I used the same mechanism but expanded and modified it as my project shaped up.

The standard frame sizes were divided based on the traditional charpai size that is 40 x 78 inches, and this largest piece was kept as the main initial size to start from. This was divided into half 40 x 40 inch frame, making it half a charpai that could probably become a coffee table. The next size was 40 x 20 inch frame a size of a bench to fit two persons. The smallest size defined was 20 x 20 inches as the smallest stool size. The frames were made using Kale wood, a popular wood found in Pakistan.

Each single connecting rod was 2" in width and 1.5" in height. The two-inch width was maintained to give enough contact surface between the leg and frame, in order to be strong.

Different leg profiles were designed and three main lengths were finalized for varying heights. The shortest leg height is 7" high and the others are 16" and 19" respectively. The legs were made using sheesham (rosewood) wood, a great quality hardwood found in the subcontinent region. The wood was cut into 3 x 3 width and length varying upon the size selected. These rectangular logs were chiseled and shaped on a traditional lathe machine also known as Jundi/Jandi ka adaa to get the desired leg shapes.

The traditional charpai legs inspired the leg shapes. Some of these were simplified to a basic form, while the others were more experimental and moved away from what a typical leg shape would look like.

The next process involved the application of natural resins or staining the wood. For this I included a variety of techniques to provide a multiple options for a user to choose from the modular system. A set of legs has a clear natural lacquer applied with no stain to keep the natural wood grains visible and add natural aesthetics to the legs.

Another set was stained with a natural wood stain and final layer of clear lacquer was applied to give the legs a gloss finish.

The final stain finish included the traditional colored lacquer application, in different layers, followed by the application of the traditional etching technique. Naqshi was applied to create intricate patterns.

The next step was the installation of the modular joinery mechanism, the screws and the washers were placed in the legs and holes were drilled in the frame corners. Holes were drilled at both the base and the top of the legs to install the locking mechanism into place. Since the traditionally-produced piece did not work for us and we required a longer screw we replaced those with longer 3" screws at the top of the legs and secured the threaded washers at the base of each leg.

These screws would pass through drilled holes at the corners of each frame and a cap would on top of each to complete and secure a single piece in place.

During this process, and on my last visit to the RDI workshop in Pakistan, I was greeted by this structure that one of the artisans had put together without any guidelines. It seemed to be their interpretation of how they visualized the system working.

All the above-mentioned process took place in the RDI workshop in Pakistan where the team of three artisans worked endlessly to finish on time. Due to lack of time in Pakistan, the pieces in progress were shipped to Doha for further progress.

The next process involved sanding and smoothing the frames and applying different stains and varnishes to provide a range of options for users to choose from. Three stains were finalized: one was dark oak, the second walnut gloss stain, and the final was clear gloss varnish.

The last and the final element of the prototype was the weave. It was a challenge to find professional charpai weavers in Doha since, due to a time shortage; I could not manage to have this finished while in Pakistan. Through different references, I came across a private, home based-business that imported the charpai legs from Pakistan and assembled the frame

here in Doha, and they managed to weave them too. Trusting the sample work provided, I gave them the job to finish the weaves in materials I had brought with me from Pakistan. After two weeks, much to my dismay, the work presented was of very inferior quality.

That challenge had to be taken up by me, and instead of using the traditional weaving method; I used woven cotton ribbons and filled the frames with the plain weave. To secure the ribbons in place and tighten them I used a staple gun.

These are the final woven frames and the different configurations possible from one system proving its modularity.

THE MODULAR CHARPAI



Figure 34



Figure 35



Figure 36



Figure 37

THE MODULAR CHARPAI



Figure 38



Figure 39



Figure 40



Figure 41

THE MODULAR CHARPAI



Figure 42

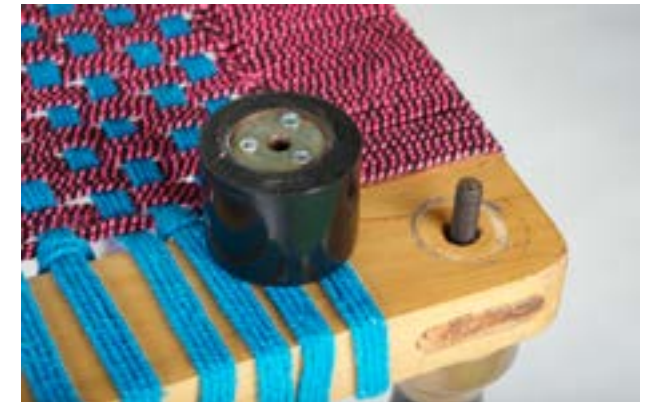


Figure 43



Figure 44



Figure 45

THE MODULAR CHARPAI



Figure 46



Figure 47



Figure 48



Figure 49

THE MODULAR CHARPAI



Figure 50



Figure 51

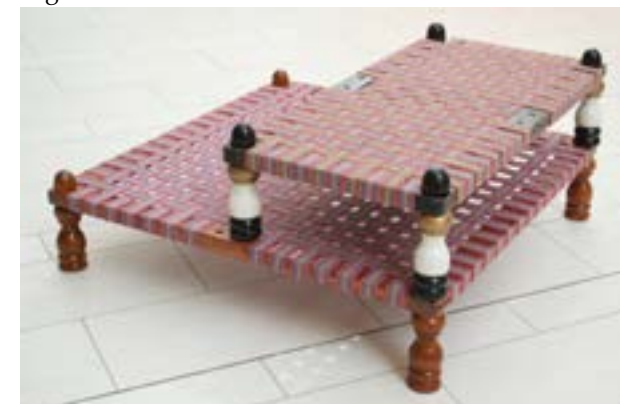


Figure 52



Figure 53

CONCLUSION

Virsa is the inheritance of tangible and intangible culture that has been passed down generations after generations. These traditions become values of a society and define its culture, giving it an identity. Of the many tangible and intangible cultures, one of the most important is the handicraft.

Over time, these inherited crafts have declined due to many reasons, one of them being a lack of innovation in design. The decline led to the families of craftspeople losing work and moving to different occupations in search of a living.

My study focused on finding means of preserving and promoting these handicrafts through design knowledge and innovative technology. The emphasis was to continue to use the existing artisan skills, but to come up with a much more contemporary outcome. Through this process, the artisans have secure means of making a living, while using their existing skill sets to meet current market taste: to produce products that react to current necessities.

From the vast variety of handicrafts on the brink of loss, many share a common thread of lack of innovation in design, lack of forming market connections, and underpaid artisans. This study focused on design innovation and took the iconic daybed, the charpai, as a case study. Researching the charpai, its history and current production, and market demand and availability, allowed me to formulate my own ideas to improve the design and experiment with what today's charpai could look like, and what it could mean to the user.

The study had its own set of challenges and limitations as it was set in specific country and village. Gathering the data required and working with the artisans on a limited time schedule was challenging. Travelling back to Doha with a half-done project and finding professionals to do the weave was a challenge

on its own. Coming up with on-the-spot solutions and alternatives, without compromising the traditional craft, was beneficial with exciting outcomes.

The concept I developed was a fusion of the past and present and one that put together very traditional skills with the contemporary concept of modularity. The final design was developed through many experiments and challenges.

The first challenge was to convince the artisans to experiment and produce a new system, something they were not used to producing. The very first group refused the job on concerns of the concept's acceptability and guarantee of payment. After convincing another group of artisans, who never worked with charpai legs but were familiar with Jandi work, to help me develop my pieces – they had to be closely monitored. It was a give and take situation: I taught them something new with their craft, and they taught me about the details of their craft.

The project ended on a positive note with the artisans happy about this 'new' system they developed. One particular moment I remember is when one artisan pointed at the other to take a mental note of the new connecting mechanism for future use. This was a moment of acceptance that proved to me that, if craftspeople were walked through the process, there is hope in reinvigorating traditional handicrafts through a contemporary approach.

The outcomes create a sustainable cycle of providing the local artisan community with well-paid work, while promoting a local craft and preserving the skills and reaching out to a larger audience creating market connections. This system helps strengthen not just a community, village but rather could grow into a bigger business with the number of benefits on larger scale.

Having taken the charpai as a case study, similar methodology could be developed and applied to different crafts suffering similar circumstances, which could reap the benefits of a larger perspective. This study has taught me about the details, the intricacies, the stories, and the challenges that go beyond these objects of Virsa. They are iconic in their own way, they are a means of celebrating our past and rejoicing our future, and serve to connect our younger generation to our past.

FUTURE DIRECTIONS

This study has opened up new opportunities for me in terms of design, research and a possibility of setting up my own workshop to produce and probably start my own line of Jandi inspired furniture and other items.

As Jandi craft has not been documented or studied much in depth it gives me an opportunity to dive in and start further research in other crafts under the umbrella of Jandi handicrafts that have yet to be explored and documented and experimented on for a new outcome.

The charpai study alone has so much to explore. The paya's or legs from different cities and regions how the shape differ from the other, the finishes, and colors and patterns that adorn the legs. Current charpai weave patterns and documenting those for further exploration. This is just the beginning that could lead possibly many other ideas and concepts.

REFERENCES

1. Sennett, Richard, *The Craftsman*. New Haven: Yale University Press, 2008.
2. Khan, Farah Deeba, *Preserving the heritage: A Case Study of Handicrafts of Sindh (Pakistan)*. Venice: Universita Ca'Foscari Venezia, 2011.
3. Gauntlett, David, *Making is Connecting: The Social Meaning of Creativity, from DIY and Knitting to Youtube and Web 2.0*. Cambridge, UK; Malden, MA: Polity Press. 2011
4. Gauntlett, David, *Making is Connecting: The Social Meaning of Creativity, from DIY and Knitting to Youtube and Web 2.0*. Cambridge, UK; Malden, MA: Polity Press. 2011.
5. Khan, Farah Deeba, *Preserving the heritage: A Case Study of Handicrafts of Sindh (Pakistan)*. Venice: Universita Ca'Foscari Venezia, 2011.
6. Gauntlett, David, *Making is Connecting: The Social Meaning of Creativity, from DIY and Knitting to Youtube and Web 2.0*. Cambridge, UK; Malden, MA: Polity Press. 2011
7. Mussadaq, Maha, "A dying art: 'We have no regard for our heritage'." *The Express Tribune with the International New York Times*, August 25, 2013. Accessed April 5, 2014. <http://tribune.com.pk/story/594860/a-dying-art-we-have-no-regard-for-our-heritage/>
8. "Dying Crafts". *DAWN News*, March 01, 2010. Accessed April 01, 2014. <http://www.dawn.com/news/846360/dying-crafts>
9. Khan, Farah Deeba, *Preserving the heritage: A Case Study of Handicrafts of Sindh (Pakistan)*. Venice: Universita Ca'Foscari Venezia, 2011.
10. Sheikh, Naveed. " 'Diagnostic Study: Laquer Artwork in Sillanwali Pakistan.' Paper developed under UNIDO Cluster Development Program Pakistan in Partnership with OVOP Pakistan, Pakistan, April, 2008.
11. Winston, Anna, "Using traditional crafts in design is not "sentimental" says Sebastian Cox". *deZeen Magazine*, October 30, 2014. Accessed November 2014. <http://www.dezeen.com/2014/10/30/sebastian-cox-interview-british-craft-industry-coppicing-wood/>
12. Shimali. Karen Sear, "All things handmade." *SBID*. December 19, 2013. Accessed April 20, 2014. <http://www.sbid.org/2013/12/all-things-handmade/>

13. Winston, Anna, "Using traditional crafts in design is not "sentimental" says Sebastian Cox". *deZeen Magazine*, October 30, 2014. Accessed November 2014. <http://www.dezeen.com/2014/10/30/sebastian-cox-interview-british-craft-industry-coppicing-wood/>
14. Rawsthorn, Alice. " A revival of Rural Craft, With a Modern Twist." *The New York Times*, July 25, 2010. Accessed October 15, 2014. <http://www.nytimes.com/2010/07/26/arts/26iht-DESIGN26.html?pagewanted=all>
15. Rawsthorn, Alice. " A revival of Rural Craft, With a Modern Twist." *The New York Times*, July 25, 2010. Accessed October 15, 2014. <http://www.nytimes.com/2010/07/26/arts/26iht-DESIGN26.html?pagewanted=all>
16. Nizamani, Rauf. "The Role of cottage and small industry in economic development." *Value Chain Magazine*, December 08, 2012. Accessed October 12, 2014. <http://valuechainmagazine.com/?p=2523>
17. Memon, Dr. Noor Ahmed. "Sports goods industry in Pakistan." *Jang News*, August, 1999. Accessed August 12, 2015. <http://jang.com.pk/thenews/investors/aug99/if.htm>
18. Khan, Farah Deeba, *Preserving the heritage: A Case Study of Handicrafts of Sindh (Pakistan)*. Venice: Universita Ca'Foscari Venezia, 2011.
19. Ouma Productions. "Story: Manufacturing Process." Accessed December 2014. http://www.oumaproductions.com/story_process1ENG.html
20. Fabindia. "About the company". Last modified 2015. Accessed December 2014. <http://www.fabindia.com/company/>
21. Doshi Levien. "Charpoy." Accessed December 2014. <http://www.doshilevien.com/projects/charpoy/>
22. Stringbedco charpoys. "A brief history of charpoys." Accessed December 2014. <http://www.stringbedco.com/history.html>
23. Phoebea. Hearts Museum of Anthropology. "Portraits of India: Markets, Merchants and Artisans." Accessed December 2014. http://hearstmuseum.berkeley.edu/exhibitions/lerner/gallery1_3.html
24. Ahmed, Yusuf. " Working so the poor can sleep well." *Jang News*, Feb 01, 2009. Accessed October 15, 2014. <http://jang.com.pk/thenews/feb2009-weekly/nos-01-02-2009/kol.htm>

IMAGE REFERENCES

All images by Author except:

Figure 01

Ouma Productions. Accessed December 2014. http://www.oumaproductions.com/story_process1ENG.html

Figure 02

Ouma Productions. Accessed December 2014. http://www.oumaproductions.com/story_process1ENG.html

Figure 03

Doshi Levien. "Charpoy." Accessed December 2014. <http://www.doshilevien.com/projects/charpoy/>

Figure 04

Zareen Muzaffar. "Meet Your Maker: Popinjay, Pakistan." April 23, 2014. Accessed September 2014. <http://fashionrevolution.org/meet-your-maker-popinjay-pakistan/>

Figure 05

Inaayah. Accessed October 2014 <https://www.facebook.com/inaayaonline/photos/pb.356485184387803.-2207520000.1431088735./728474917188826/?type=3&theater>

Figure 07

Shahid Saifi. *Charpai*. October 8, 2009. Accessed September 2014. <https://www.flickr.com/photos/shahidsaifi/4258866589>

Figure 12

"Town of Hala". Besal. Virtual Tourist. Accessed January 2015. <http://members.virtualtourist.com/m/p/m/1d62cf/>

Figure 15

Khalto. *Kaushal*. February 18, 2008. Accessed JAnuary 2015. <https://www.flickr.com/photos/kaushalparekh/2395691712/>

Figure 16

Anwar Khan. *Journey Through Pakistan: Eight Months After the Floods, How is the Country Faring?*. April 20, 2011. Accessed November 2014. <http://islamicreliefusa.blogspot.com/2011/04/journey-through-pakistan-eight-months.htmlw>

Figure 17

Carol Mitchel. *The Conversation*. August 11, 2007. Accessed October 2014. <https://www.flickr.com/photos/99366248@N00/1257035928>