Craft Stories

an augmented reality animated interactive documentary
on craft artists from South Asia

by
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Abstract

The project envisions, designs, and develops four augmented reality animated documentaries embedded on the packaging of four different craft articles from Sindh. On being scanned by a mobile device, a framed space on the surface of the packaging displays animated contents narrating the historical and cultural details of the craft articles and the mastery of the artisans and their social situations, to the consumers. This will help the consumer appreciate their purchases better and, eventually, grow into patrons. The project prototype hopes to develop a positive impact on the handicrafts market and enhance the influence and appreciation of artisans.

The products to be packaged in this specific case are traditional Blue Potteries, Tie Dyed & *Ajrakh* Printed Textiles and Lac Jewelleries. The visual aesthetic of the animated documentary, and most specifically, its core narrative style, is derived from a regional folk-form of audio-visual storytelling called *Phad*. While *Phad* traditionally tells the story of local deities and heroes, it is used as a visual and aesthetic medium to tell the stories of four craft-artisans practicing four different craft-forms (viz. Blue Pottery, *Ajrakh* Printing, Lac Bangle Making and Tie Dyeing) from Sindh.

This animated content documents the craft, the work, and the life of each craftsperson in the form of an innovative design intervention aimed towards influencing the consumer awareness about the historical and cultural significance associated with these craft-practices and their practitioners. It also critiques the culture of appropriation and lack of appreciations as perpetrated by the big brands and corporations towards the handicraft industry of South Asia overall. The discursive nature of the project may help improve the social status of the artisans, revive the craft-ecosystems and make it relevant again for the contemporary market and thereby ensure a long term future for the crafts and their sustainable ways.

This specific design prototype can be extrapolated to create different packaging paradigms for different handicrafts, across the South Asian subcontinent.

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I would like to express my deepest love and appreciation to my family and friends in India for their continuous and unconditional support. It is more than one could ever ask to receive. Thank you for supporting my dreams, caring for me, and for providing a sweet home no matter how far I go.

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Dedicated to my uncle and mentor Gautam Chakraborty

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1 Introduction

1.1 Background

My thesis and research were inspired by the numerous craft traditions found across the South Asian peninsula and the fascinating narratives behind their existence. Being a digital artist and illustrator of Indian origin, I have always been intrigued by the intricate practises and the varied histories of the myriad expressions of traditional South Asian art and craft.

1.2 Unifying influence of Craft and Craftspeople

Though the geographical region of South Asia (the Sindh region in particular) has gone through (and is still going through) tremendous socio-economic, religious, and political strife, a strong sense of fellowship and harmony prevails within the communities of craft practitioners.[1] This has helped the craft communities to transcend ethnic, religious and other constructed boundaries over the time and region. Crafts have served as the agency for resistance against oppression and discrimination against the power elites, while promoting the ethos of inclusivity and harmony within.[2]

However, both the significant contributions of the craft communities as unifier in an otherwise socio-culturally fragile subcontinent as well as their primary role as creator of timeless-useful-wonderful crafts still continue to be grossly undervalued and underappreciated by the craft market.[3] This apathy perhaps originated from the longstanding disregard for *dignity of labour* (a social attitude created and further aggravated by practice of casteism[4], as crafts-people are usually from the so-called lower-caste communities) ingrained in the feudal- Brahminical[5] tradition that has prevailed and still prevailing in the region.[6] Moreover, craft objects often lack the prestige of 'art', owing to the prejudiced distinction of *Classical* or *High* art and *Folk* or *Low* art. Therefore, *Classical-art*, which included music, written literature and court paintings, became a prerogative of the elite upper-caste, while folk music, folk or oral literature, theatre, craft practices and folk forms of visual arts were practiced by the lower-caste communities.[7]

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[1] Steven Kossak and Edith W. Watts, *The Art of South and Southeast Asia: A Resource for Educators* (New York: Metropolitan Museum of Art, 2001).

[2] "Crafting Resistance: How Contemporary Craftivists Are Using Their Handiwork to Voice Dissent," accessed March 26, 2022, http://thebaksaproject.in/crafting-resistance-how-contemporary-craftivists-are-using-their-handiwork-to-voice-dissent/.

[3] Samiksha Jain, "Making India's Craft Industry Stay Alive," Entrepreneur, accessed March 27, 2022, https://www.entrepreneur.com/article/253323.

[4] Casteism is a practice of social stratification characterised by hereditary transmission of wealth, occupation, social status in a hierarchy. It is based on cultural notions of purity of the upper castes and pollution of the lower castes.

[5] Brahminical — refers to the tradition and characteristics of a Brahmin, the highest and most privileged caste in the hierarchy of the caste system. Brahminical societies are shaped by the hierarchy of caste, gender, and economic relationships, which in turn shape the people's decisions, thought processes and actions.

[6] AJAY GUDAVARTHY, "Brahmanism, Liberalism and the Postcolonial Theory," *Economic and Political Weekly* 51, no. 24 (2016): 15–17.

[7] André Béteille, *Caste, Class and Power: Changing Patterns of Stratification in a Tanjore Village* (Oxford University Press, 2012), https://doi.org/10.1093/acprof:oso/9780198077435.001.0001.

Thus, in spite of many changes (like the government imposed prohibition on caste based discrimination[8], and Dalit art movements[9]) that have happened in the last few decades, the essential social status of the practitioners of folk crafts and their (lower-caste) communities remained largely unaltered.

This existing apathy and disregard for craftworks by subaltern communities has its roots in the lack of proper appreciation and understanding of the history, tradition, materials, techno-aesthetic and other cultural details of the craft and the craft person[10]. In my study, I have explored documentaries (like *Tanko Bole Cche* [11] by Indian Animator Nina Sabnani) which indicate that the craft person is often inseparable from their practice, and each of their product is a unique labour of love. The consumer is often unaware of the crafter's identity, approaches, styles or schools (*gharana*), behind their practices, and their unique relation to each and every object that they craft. This project explores ways to develop the same understanding and appreciation of four craft forms practiced from Sindh region in India and Pakistan (viz., Blue pottery, *Ajrakh* Printing, and Bandhani Dyeing, and Lac Bangle making), all of which are practiced in both India and Pakistan, despite the international border, and growing political tensions. The project is conceived through an animated documentary using a visual styling of a folk artform that is native to the region of the craft practice. For, a story that is told is a story not forgotten.

While choosing a particular storytelling form to define the formal idiom of multimedia content, on the 'framed space' on the packaging, I decided to select a traditional folk form of proto-multimedia storytelling form called *Phad*. Because *Phad* has certain inherent multimedia attributes that can be appropriated, calibrated and executed to create the desired content in this particular case. But the point is how to optimize these attributes. And, this brings us to our central research questions & hypothesis.

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[8] C. S. Dwarakanath, "Can Caste Be Banned from Indian Politics?," accessed March 27, 2022, https://www.aljazeera.com/opinions/2017/1/28/can-caste-be-banned-from-indian-politics.

[9] "Art & Voices Matter: Bakeryprasad a.k.a. Siddhesh Gautam on the Dalit Movement," accessed March 27, 2022, https://www.stirworld.com/see-features-art-voices-matter-bakeryprasad-a-k-a-siddhesh-gautam-on-the-dalit-movement.

[10] Anurag Minus Verma, "Time to Destroy the Stereotypes about Dalit Occupations," *Medium* (blog), April 15, 2020, https://anuragminusverma.medium.com/time-to-destroy-the-stereotypes-about-dalit-occupations-d87e7a1d6cd0.

[11] Nina Sabnani, *Tanko Bole Cche (The Stitches Speak)*, DVD, Animated Documentary (Kala Raksha Trust, 2009), https://store.der.org/the-stitches-speak-p316.aspx.

2   Research Questions & Hypothesis

What can we learn from traditional-folk forms of multimedia storytelling practices like Phad, that we can integrate into new media driven narratives?

Traditional folk forms of storytelling like *Phad*[1], has inherent multimedia aspects which can be applied to develop a variety of animated media contents. The essential graphic and cinematic attributes of this folk-art-form makes it a suitable narrative paradigm applicable for new media storytelling that can be applied to sensitizing the patron-customers. Usually, the patron customers of craft objects are educated urban middle-class and upper middle-class people, with sensitivity towards wider appreciation of these craft and folk-artforms.[2] However, the very same consumers are often deprived of the access to the historical, cultural and techno-aesthetic contexts of these art and craft forms.

This project intends to explore the possibilities of designing a discursive object (AR embedded packaging) to foster a deeper connection between the artisan and the consumer in a commercial setting, with a goal of cultural preservation. The story behind the traditional folk-crafts (narrated by the artisans) provides access to the contexts of the craft articles, which is represented through an Augmented Reality (AR) documentary, embedded with a marker on the packaging of the craft items.

The underlying concept behind this project originated from the visual quality of the physical performance of *Phad*, where the *Bhopi* (a secondary performer, usually the wife of the primary performer, *Bhopa)* would hold a lamp illuminating certain segments on the scroll, while the *Bhopa* would sing and recite about the image depicted on that section of the giant scroll. This activity bears substantial resemblance to a mobile device-scannable AR experience. Primarily conceptualized as a form of expanded cinema[3], this project is an effort to develop an immersive narrative experience, beyond the realm of mass media, using a tangible object, through the medium of AR.

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[1] *Phad* is a traditional folk form of storytelling, native to western India. A *Phad* performance comprises of both visual depiction (through painted scrolls) and oral narration about the lives of the local Hero-Gods. The *Phad* scrolls are painted on long cotton cloth and depict a complex and a folk epic, about the life the Gods. It has a very characteristic visual style of representing figures & pictorial incidents, which provide a dramatic backdrop to oral narrative performances. The relevance of *Phad* is discussed in detail in Chapter 3.7

[2] Anirban Dasgupta and Bibhas Chandra, "Indian Consumers of Handicrafts Shaped by Globalization: A Profiling Based on Materialism, Consumer Ethnocentrism, and World-Mindedness," *Indian Journal of Science and Technology* 9, no. 1 (January 1, 2016), https://doi.org/10.17485/ijst/2016/v9i1/78563.

[3] Expanded Cinema in the context of this thesis refers to a projecting media in an immersive environment (AR) that pushes the boundaries of generic cinema, by introducing new surfaces and mediums through which it can be viewed.

How might AR embedded packaging, optimized within a commercial context, serve as a discursive object?

Material objects can serve as modes or arguments which can project a purpose or convey ideas higher than its bare functionality, utility, or aesthetics. Such objects or material products can be called 'discursive' in nature since they promote and inspire reflection within its user and audience.[4] A discursive object has the ability to inform the user about the material object and open a dialogue about it. In the context of this project, the material packaging of the craft articles which is adorned with an AR embedded image, can be scanned to view an animated documentary about the people and process behind the craft object. Hence the packaging becomes the discursive object that can educate the consumer and help them develop a personal connection and understanding of the rich history and culture of the craft article. Also, since, the packaging is placed within a commercial setting, it helps develop the missing link between the craft person and his creation, in the eyes of the consumer.

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[4] Bruce M Tharp and Stephanie Tharp, *Discursive Design Critical, Speculative, and Alternative Things* (Cambridge : The MIT Press, 2018), https://doi.org/10.7551/mitpress/11192.001.0001.

3 The Craft culture Of South Asia

3.1 Overview

The role of education, and information about the crafts communities becomes especially important in the traditional South Asian craft context because of the undervalued and underappreciated status of artisans. A consumer's awareness about the craft person, can not only empower them socially but can also help them garner respect as creative persons and get appropriate remuneration, which is often forgotten and not provided. The reason behind the continual underappreciation is because of several historical and contemporary factors.

Craft culture is deeply rooted in the caste system. The caste system is a division of society into hereditary classes, called castes and subcastes. Each caste and subcaste has a specific trade associated with it. While upper castes often have the privilege of practicing classical art, which is highly regarded in the society, lower castes resort to practicing folk arts and crafts. This distinction has played a significant role in creating differentiation between the high art and craft between factors (social marginal subaltern entities) and other structural systems of hierarchical practices – leading to wilful, naturalised subjugation laced with wilful acceptance of inferior status. [1] Due to the wilful, naturalised subjugation among craft persons, there is a consistent lack of awareness of their own importance, cyclically created by the immutable subjugation. Having belonged to lower caste communities, there is also a generational lack of formal education like literacy among craft communities in South Asia.[2]

Crafts persons also lack capital for producing and marketing their craft objects, and consequently depend on moneylenders, for barely making ends meet, which leads to stagnant financial conditions without any room for growth in an economy of persistent inflation. There is also a lack of equal access to markets of all sorts, which prevents crafts persons from entering and selling their creations to an interested niche consumer group, who would appreciate and value their production.[3]

Lastly, there is the effect of colonialism on the craft production processes in South Asia, which resulted in a nearly complete demolition of the handmade craft industries. Exquisite indigenous handcrafted practices like the *Muslin Textile*, from Bengal was obliterated from the face of earth by the mid 19th century owing to extremely repressive measures by the British *East India Company*, in colonial India.[4]

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[1] Verma, "Time to Destroy the Stereotypes about Dalit Occupations."

[2] Historically, education was only a prerogative of the upper caste families. Lower caste communities were barred from receiving any education, and were induced to learn their caste or family trade.

[3] Asha Shukla Choubey, *Crafts and Craftsmen in Pre-Colonial Eastern India: Technology and Culture* (Routledge, 2021).

[4] Shariful Alam, "The Myth of Muslin: Epic Journey of Muslin in 2022 - Muslin Dhaka," June 16, 2021, http://muslindhaka.com/the-myth-of-muslin/.

Most of the contemporary factors are comparative in nature, one of them being tough and uneven competition originating from industrially mass manufactured products.[5] A beautiful representation of differences between industrially mass manufactured and the skilfully handcrafted craftworks can be seen in Bert Haanstra's documentary film *Glas*[6] which creates an evocative visualisation of the 'vocational nature of craft' and 'alienation of labour' in a quintessential run-of-the-mill mass manufacture production process. The film was also a great inspiration for this project, because of its unique montage and overall delivery of the topic. Like it is visualised in *Glas*, a modern industrial worker is not concerned with the production process since they only work to serve a small section of it. In a mass manufacture setting, no one person owns their creation, while, in a handmade craft production setting, a craft person's identity, is almost inseparable from their practice. This fundamental difference shows a stark contrast between the alienation of labour and the labour of love. One of the interview participants[7] mentions that "every master craftsman or *Ustad,* has their own *bakta* (style) that is intrinsic to them, which is like their artistic signature. A connoisseur of the craft can identify a craftsperson/their region/ or G*aharana* (guild/school of *formal/*methodological tradition) by simply viewing their creation".

A mass-market product often sells because of its *brand-value* which is not the case with handcrafted materials. A close equivalent of *brand-value or* trademark for a handcrafted product could be a Geographical Indication (GI) tag[8] or something more traditional and similar. The difference is that unlike the owners of the brand-value or trademark, the craft-persons are almost never in a position to benefit from their association with the GI or similar. Moreover, a handcrafted item is mostly categorized as an object with niche value, which only appeals to a very niche consumer base. In order for the craft item to reach the niche consumer market, the product has to pass through several middlemen nexus, where each person drastically takes a huge cut of the profit. This results in the crafts-persons never receiving proper remuneration for their produce, while craft items sell at extremely expensive prices. Sometimes, craft items are also sold simply because of their aesthetic qualities, and association with big brands. This leads to devastating effects like theft of artistic legacy and improper cultural appropriation.

Lastly, a lack of understanding and access to institutional finance, streamlined production methodologies, or modern marketing methods and facilities, all leading to a staggering production-distribution process, which in turn leads to discouraged and demoralised craft persons, who do not want to pass on the exploitative trade to their successors.

While a lot of these are factors can only be addressed by long-term institutional intervention, some of the factors like the lack of direct connection between the Craft culture and the consumer can be improved by re-establishing this missing link by educating consumers about the story behind the craft product they are purchasing. As mentioned earlier, a story that is told is a story not forgotten, and perhaps this process of storytelling

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[5] Detailed explanation in Appendix C.

[6] Bert Haanstra, *GLAS*, Documentary, 1958, https://www.loc.gov/item/jots.200028134/.

[7] Muhammad Wajid Kashigar mentions this during his interview about his Blue Pottery artistry. Interview transcript can be found in the Appendix section.

[8] GIs identify a 'good' as originating from a particular place. By contrast, a trademark identifies a good or service as originating from a particular company.

might help document, and educate people about the fascinating stories and the culture of craft in South Asia in general, and Sindh in particular.

3.2 Colonialism And Its Effect On South Asian Craft

British Colonialism in India has played a very important role in determining the condition of craft practices as well as the identity of crafts persons. Historically, the handmade sector in India was characterized by local demand, interdependence of communities, the use of local raw materials and most importantly, patronage.[9] Craft clusters making pottery, glasswork, textiles, prints, wood carvings, masonry, metal works, and paintings were exclusively encouraged and funded by the regional kingdoms as well as the Mughal Court. However, with the advent of colonialism and the ensuing era of industrial mass production, handmade crafts and textiles passed to the British (East India Trading Company). This resulted in a massive suspension of the handmade craft trade, since goods produced by the East India Company were primarily sold in the market, and traditionally handcrafted items were heavily taxed, pushing them out of production. Many handicraft traditions were eventually forgotten since craft persons changed their occupation completely.

A very heart-breaking instance of a craft practice being completely obliterated by a lack of generational knowledge and colonial oppression was the Muslin Textile from Dhaka, Bangladesh. By the early 20th century, Dhaka Muslin, which was globally famous for its feather light weight, and softest gauzy texture, had disappeared from every corner of the globe, with the only surviving examples stashed safely in valuable private collections and museums. The convoluted technique for making the textile, which involved a total of sixteen steps, was first banned, then forgotten. Specialised techniques where rogue threads were tamed with a series of ingenious techniques developed over millennia were eventually demotivated and forgotten[10]. The only type of cotton that could be used, *Gossypium arboreum var. neglecta* – locally known as *Phuti karpas* – also abruptly went extinct. However, the same weaving process continues in the region to this day, using lower-quality Muslin from ordinary cotton threads instead of *Phuti karpas*. In 2013, the traditional art of Jamdani weaving was protected by UNESCO as a form of intangible cultural heritage.[11] The example illustrates that the potential loss of material cultural heritage is very real.

3.3 Caste And Craft In South Asia

Traditional craftsmanship is perhaps the most tangible embodiment of intangible cultural heritage.[10] The skill and knowledge involved in craftsmanship is passed generally down from generation to generation within the craft community. However, this tradition of generational craft practice in South Asia is deeply rooted in the caste system which is further adjusted within a more complicated sub-caste system. Essentially, the caste system is a hierarchical arrangement of segregation of society into hereditary classes, distinguished by relative degrees of ritual purity or pollution and of social status. Though this system

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[9] "Handicrafts – Real Treasure of India | Desihandcrafts," accessed March 1, 2022, https://desihandcrafts.wordpress.com/2015/10/14/handicrafts-real-treasure-of-india/.

[10] Zaria Gorvett, "The Ancient Fabric That No One Knows How to Make," accessed March 1, 2022, https://www.bbc.com/future/article/20210316-the-legendary-fabric-that-no-one-knows-how-to-make.

[11] Gorvett.

principally belongs to the Hindu religion, long coexistence has allowed certain components of the system to spill into other religions too. The caste system is enormously complex, with thousands of sub-castes grouped into four basic vertical categories. At the top of the hierarchy are the *Brahmins* (priests, interpreters of scriptures), then the *Kshatriyas* (warriors, kings, administrators), at number three are the *Vaishyas* (agriculturalists, traders landowning farmers) and finally, at the bottom, are the *Shudras* (workers, labourers, artisans). Each of these caste communities is generally identifiable by a combination of their surnames and *Gotras* (lineage).

These broad caste categories consist of numerous sub-castes. Though there are various dynamics of formation and socio-cultural implications of sub-castes, one thing can said with certainty that the sub-castes are less about hierarchy and more about, geography, ethnic background, occupation, vocational-tradition (*Gharanas*) etc. For example, all the various s*miths* (artisans) are Shudras but may belong to different sub-castes. People from *Karmakar* sub-caste (also a surname) are blacksmiths; people from *Tamarmakar* sub-caste (also a surname) are coppersmiths while the *Malakar*s are gold/silver/jewellery-smiths, with the suffix '*kar*' standing for worker or artisan. However, in certain places, like in Maharashtra province of India, '*kar*' suffix may mean of/from (preceded by the name of the region that a clan/sub-caste is from).

So, in our particular cases, people belonging to the caste of *Soomro's* are *Ajrakh* printers, while *Kashigars* are blue pottery artisans, *Manihars* belong to the bangle making community, Khatris belong to the Bandhani making community, and so on. A majority of the community of artisans currently belong to the disadvantaged sections of the society, OBCs (Other Backwards Castes- a section of reserved priorities by the Indian Government) because of several socio-political-economic factors, beyond the scope of this thesis but discussed in Appendix A.

3.4 Design Intervention

If a craft-community can be demotivated through systemic and systematic persecution causing a total extinction of the craft-practice itself then perhaps the opposite is also possible. Perhaps it is possible to revive some morbid or vanishing craft-practices by incentivising certain craft-communities through an innovative, discursive design intervention, like, in this particular case, an AR (Augmented Reality) animated documentary embedded on the surface of the packaging of folk crafts and artifacts. This is not a systemic intervention from above (institutional, governmental, legislative), but could be formulated and executed as a combination of systemic and systematic intervention from below, i.e., by creating, nurturing and expanding groups of aware-patron-consumers that would work as pressure groups (through their purchase preferences) towards fulfilling the agenda-hypothesis of this project. The aware-patron-consumers would assert their appreciation and understanding of the craft-ecosystem and its historical and cultural aspects. This would result in proper recognition of the intellectual (skill, talent, creativity) and material (price, remuneration, patent rights) contributions of the craft persons by the craft business and other business where craft-making plays significant role (i.e., fashion, lifestyle, etc.) .

It is quite probable that the craft itself might die out with the loss or death of the craftspeople die[12]. The death of the craft person here refers to them leaving the practice of their craft and shifting to some other profession which stops them from motivating and transferring the centuries old traditional skill-sets to the next generation. The transferring of knowledge is most crucial for the wholesome survival of Craft cultures, practices and the whole extended ecosystem. So to preserve the craft traditions and practices we have to appreciate, recognise and incentivise the craft person.

3.5 The Global Handicraft Market And South Asia
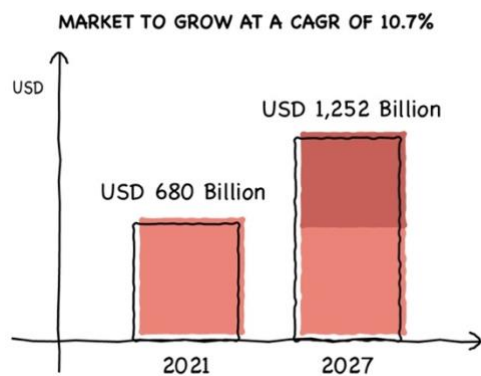
Figure 1: Global Handicrafts Market according to EPCH reports

Over the last couple of decades, owing to several factors, the global demand for handcrafted products has been steadily increasing. According to a recent report, the global handicrafts market was USD 647.57 billion in 2020. The handicrafts market is projected to witness a CAGR(compound annual growth rate) of 10.9% over the forecast period of 2022-2027. It is expected to reach USD 1,204.7 billion by 2026. [13] According to EPCH reports[14] the handicrafts sector plays a vital role in the Indian economy, contributing significantly to employment (2nd largest employment generator) and foreign exchange. The number of people employed (directly and indirectly) in this sector is estimated to be around 10 million (20 million unofficially). Moreover, the Handicrafts sector is characterized by low-capital investment and high value-addition, reflecting its high potential for contribution to the Indian economy.[15]

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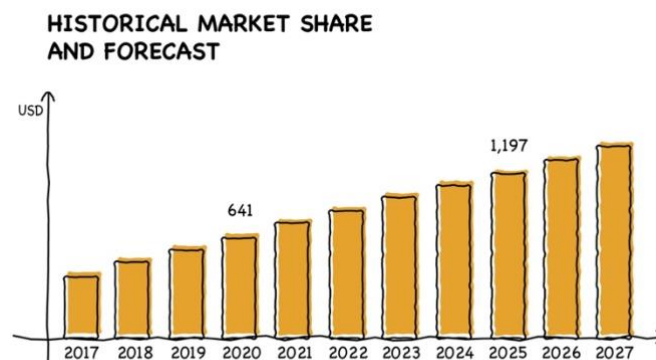
[12] "Dying Wisdom of Artisans," Deccan Herald, March 15, 2017,
https://www.deccanherald.com/content/601406/dying-wisdom-artisans.html.
[13] "Studies & Reports," accessed March 25, 2022,
https://epch.in/index.php?option=com_content&view=article&id=189&Itemid=260.
[14] "Studies & Reports."
[15] "Studies & Reports."

GLOBAL MARKET SHARE BY USER

40%

60%

○ Residential
○ Commercial
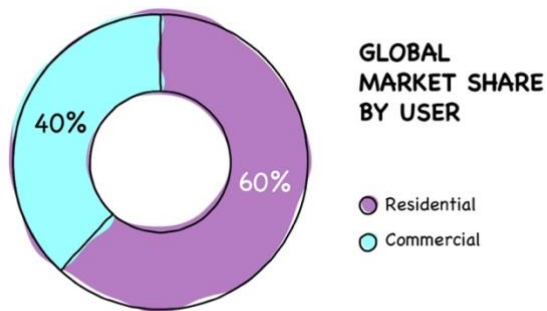
One of the important factors responsible for this phenomenal growth of the handicraft market is increasing travel and tourism activities and the associated marketing of handicrafts as souvenirs to tourists. Handicrafts are commonly used represent the culture and tradition of a region or community. Each handcrafted product is unique and exhibits distinctive qualities and is perceived as a symbol of status for consumers as it often reflects their ability to appreciate the cultures of the other/s. When gifted, it encourages the receiver to emulate the same practice, and in the process increases the awareness about handicrafts, and eventually, its demand.

In post-industrial societies, within certain sections of end-users/consumers, a fatigue and aversion towards mass-produced, factory-made products are setting-in, driving them more and more towards handicrafts, especially for niche products. A handmade product is much more personal; it's a prized possession, it carries history in its shape, colour, texture and has a unique earthy character. Most importantly no two handmade craft articles look identical. Some customers also opt for handicrafts because their production process which is more environmentally sustainable and empowers small businesses, poor marginalised artisans and help preserve centuries-old traditions. There are also a growing number of dedicated gift shops selling only handcrafted gift items in upmarket shopping malls and market complexes.

But the artisans are not getting a good share of this increasingly expanding pie, especially in South Asia. Even within a favourable environment like this, the life of the artisan is not thriving and many crafts are declining and even disappearing too. The official explanation (as stated by the website of Ministry of Textiles, Government of India) is, ''due to its very nature of being unorganized, lack of education, with the additional constraints of low capital, poor exposure to new technologies, absence of market intelligence, and a poor institutional framework.18'' However, with in-depth analysis, we can conclude several factors that lead to the depletion of the craft market. These comprise of problems like procuring raw materials, aggregation and mediator use, production, market, demand, big brands and middlemen nexus. These factors are explained in detail in the Appendix A.

These are well known structural factors that would require governmental or/and other long-term institutional intervention, and are beyond the scope of influence of the project. As a designer, a possible area to apply design intervention could be the aspects related to shaping consumer preferences, by designing a discursive packaging which can inform the consumer and develop a discussion around the craft practices. The message behind the discursive packaging is that "Behind every handcrafted product, there is a story of the

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18 "About Us | Official Website of Development Commissioner (Handicrafts), Ministry of Textiles, Government of India," accessed February 25, 2022,
http://www.handicrafts.nic.in/Page.aspx?MID=BOII5FUynjpl5RZJJ8nW1g==#.

artisan and the product itself". [19] Some more related aspects are discussed in [Design Intervention](#) Section.

Here is where an innovative AR embedded packaging to create awareness and build customer appreciation of the history and cultural identity associated with craft products can make an impact it aims to explore ways of integrating the story and history behind 4 craft practices of the Sindh Region– viz. Blue Pottery, Lac Jewellery, Block Printing, and Tie Dyeing, with the physical packaging of the respective craft articles. This will be done by initiating a discursive dialogue around identifiable connections across the extant socio-cultural contexts of the craft-traditions, craft persons, their craft, the patrons, and the market. All these dimensions will be articulated, finally, in the form of an animated documentary.

While the project will be principally dealing with the above-mentioned craft practices, the narrative and visual style of the documentary will be based on the *Phad* Painting style of Western India. Using this art style is an attempt to congregate my growing fascination for myriad new media expressions with my cultural gratitude and passion for traditional forms of storytelling in South Asia.

3.6 Relevance Of The Craft Practices Covered In This Thesis

The Indian subcontinent, which includes India, Pakistan, and Bangladesh, share extremely similar craft forms with identifiably different stories. Prior to the Indo-Pak partition in 1947, when people lived in harmony without any distinguishable physical borders art and craftsmanship flourished uniformly. The only distinction remained in caste and religious biases. The *Craft culture* across the Sindh region (western India and eastern Pakistan) was predominantly influenced by the Persian and Turkish craft traditions. Incentivised by the *then* governing Mughal court, Islamic art and craft practices became the basis of most craft traditions. **Blue pottery** inspired by the Turkish glazed pottery techniques, Mughal miniature inspired by Persian miniature paintings, **Lacquer crafts** inspired by Persian and Afghan lacquering techniques, and textile printing inspired by **Persian block printing** became common practices across the western part of the subcontinent. As described by Swarup Shanti, "Indian crafts have emerged out of the basic intentions of human life. This has endowed it with the strength that has enabled it to survive the fury of time through some of the darkest periods of Indian history and the collusion of widely divergent cultures and beliefs." [20]The association of aesthetics and utility has helped craft forms survive for hundreds of years despite invasion, colonialism and political turmoil.

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[19] "Rural Handmade - Redefine Supply to Build Sustainable Brands.," accessed February 25, 2022, https://ruralhandmade.com/.

[20] Shanti Swarup, *5000 Years of Arts and Crafts in India and Pakistan* (Bombay: D. B. Taraporevala, 1968).

Figure 4: 1Illustrated Craft Map of India, Pakistan and Bangladesh

While only four practices are covered in this project, the technique of AR-embedded packaging can be applied to other craft practices across the peninsula as well. The craft practices covered in this project were primarily selected since they belong to the same region – the Sindh region of India and Pakistan. They were further selected because, all 4 of these crafts are practiced in both the countries, demonstrating that despite a physical border lying in between these two countries, the crafts practiced in the region are very similar yet vastly different (based on the artists personal technique).

3.6.1   Blue Pottery:

One of the most unique yet prevalent craft objects in both India and Pakistan is Blue pottery. Its shiny white porcelain like surface is adorned with handcrafted intricate patterns having a range of blue tints. Blue Pottery, originally known as *Kashigari*, was initially introduced in Sindh by artisans who accompanied Muhammad Ibn Qasim, from Kashan in Persia, in 750 AD when he conquered the land.[21] While the patterns used in Blue pottery of Sindh, reflect a strong Persian influence, the crafts persons of the region eventually improvised the designs according to

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[21] "Blue Pottery - Pakistan," Arraish, accessed March 27, 2022, https://www.arraish.com/blogs/news/blue-pottery-pakistan.

the flora and fauna of the region. Religion, and social situations also influenced the pattern on the pottery (example: Crafts persons who are Muslims, often depict floral and geometric patterns on their pottery, while those belonging to the Hindu faith often depict animals and human figurines in their designs).[22] Despite having a very similar approach to crafting blue pottery, every community has craft traditions which slightly differ from one another, resulting in a unique *gharana* (family owned style) for each practicing family, or crafts person.[23] The artisan interviewed for blue pottery - Md. Wajid *Kashigar*, beautifully explains how each crafts person has their own *bakta,* that can be identified as their artistic signature; this *bakta*, can never be found in the perfect, machine-made blue pottery renditions. Blue pottery was selected for this project, since it has a unique history, very closely related to the region, and despite its immense popularity, the craft practice is greatly endangered owing to the huge influx of factory manufactured, less expensive alternatives. The animated documentary explores ways to reconnecting the missing link between the craft person, Md. *Kashigar*, with his physical craft, in the eyes of the consumers.

3.6.2   Bandhani Dyeing:

Figure 6: Illustrated Bandhani print on fabric

Bandhani is a type of tie-dye textile decorated by plucking the cloth with the fingernails into many tiny bindings that form a figurative design. The term Bandhani is derived from the Sanskrit verbal root *Bandh* ("to bind, to tie"). Bandhani is made by Resist-dyeing, where certain areas of the fabric are tied to protect them from getting dyed, maintaining the original colour of the fabric. Today most Bandhani dyeing centres are located in the Western Indian provinces of Gujarat, Rajasthan, Punjab, and the Pakistani province of Sindh, Earliest evidence of Bandhani dates back to Indus Valley Civilization where dyeing was done as early as 4000 B.C.[24] The *Kachchhi* Bandhani, traditionally practiced by the Khatri community, is renowned for its extremely fine dots and sophisticated sense of composition. Bandhani is highly popular amongst the *Dalit*, *Meman* and *Rabari* communities, who are also patrons of the *Phad* Painting practice discussed later in subsection 12.3 *Phad* – a multimedia folk-form of storytelling. The task of tying of motifs (*bandh*) is predominantly carried out by the women of the Khatri community, who manage to do this tedious and laborious task, along with the rest of the household chores. Interestingly the Bandhani designs have peculiar names such as *Khombi, 'Ghar Chola', 'Chandrakhani', 'Shikari', 'Chowkidaar'.*[25]

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[22] Muhammad Wajid Kashigar, personal discussion, 23 December 2021

[23] eAnushka Mukherjee, "Delhi Sculpts the Blues," Deccan Chronicle, November 9, 2019, https://www.deccanchronicle.com/lifestyle/viral-and-trending/091119/delhi-sculpts-the-blues.html.

[24] Direct Create Community, "Bandhani Dyeing from Gujarat," *Direct Create* (blog), January 17, 2020, https://medium.com/direct-create/bandhani-dyeing-from-gujarat-381bec78cb2a.

[25] "D'source Design Resource on Bandhani - Traditional Tie and Dye Technique| D'source Digital Online Learning Environment for Design: Courses, Resources, Case Studies, Galleries, Videos," accessed March 27, 2022, https://dsource.in/resource/bandhani.

While, Bandhani is nowhere close to going to out of market because of its immense popularity among the South Asian population, the crafts person conducting the laborious process behind the product is often unknown. The animated documentary on Bandhani explores the people behind the dyeing process, and various style of Bandhani, and the reasons behind their peculiar names, that have lasted for centuries.

3.6.3 Lac Bangles

Figure 7: Illustrated Lac Bangles

Lac Bangles also referred to as lacquer bangles originated in West Rajasthan and Sindh, under the reign of the king of Jaipur Jay Singh.[26] It has since gained immense popularity across India. Derived from the Hindi word '*Bungri*', bangles have great popularity Rajasthani women. It's easy to find Lac jewellery in the local markets & old streets of Jaipur, Jodhpur, Udaipur etc. in versatile designs, which adds uniqueness to its beauty. Lac bangles in particular are considered auspicious for the newly married brides to the extent that it has become a ubiquitous accessory for the newly married.

Lac is a viscous and sticky, resin discharged by an insect named *Kerria Lacca*. This insect lives on the branches of The Pipal or Kusum trees. While feeding on the leaves, the insect deposits a red-coloured sticky substances on them. The resin-coated tree branches are cut and the red viscous deposits are extracted. The sticky extract is then cleaned to remove all the unwanted impurities. The seed from this is lac is in its purest form., which is melted and fashioned into small circular discs, and consistently hammered, shaped, and kneaded until the final design is attained. While making a Lac bangle, the dough-like lac expands, gives shape and diameter and solidifies after it takes the desired shape.[27] The laborious and complicated art of making Lac Bangles needs a lot of accuracy and meticulous efforts from the artisan.

However, the Lac reserves of India are greatly affected by continual deforestation leading to increasing cost of raw materials, rendering them extremely very difficult to produce. Like all the other crafts mentioned before, traditionally handcrafted Lac bangles are facing the threat of going out of production, because of the intense competition posed by fake metal or plastic counterparts. These factors have already forced several skilled artisans to seek alternate occupations.

This project documents the intricate process of Lac Bangle making, to inform and educate the consumer, about the convoluted and complicated process behind the making of the craft.

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[26] WorldArtCommunity.com, "Lac Jewellery. The History behind It | Blog," accessed March 20, 2022, https://www.worldartcommunity.com/blog/2018/11/love-for-lac/.
[27] "The Art of Lac Work - Rajasthan Studio," accessed March 20, 2022, https://rajasthanstudio.com/the-art-of-lac-work/.

3.6.4 *Ajrakh* Printing

Figure 8: Illustrated Ajrakh Textile

These shawls display special designs and patterns made using block printing by stamps. Common colours used while making these patterns may include but are not limited to blue, red, black, yellow and green. Over the years, *Ajrakh* have become a symbol of the Sindhi culture and traditions.[28]

The process of *Ajrakh* block printing takes time, collaboration and exceptional skills. The three primary instruments required for block printing are - a relief printed block, the textile, and dyes. It can require five carvers as long as three days to make an intricate pattern in a square of teak wood block, for printing. The printers use roughly 30 squares to finish a 2 meter design[29]. Separate squares are expected for every colour and it is typical to have four or five colours in professionally designed *Ajrakh* piece. It can take twenty artisans, each doing individual tasks, as long as eight hours to complete a fully printed *Ajrakh* piece. This laborious process makes every *Ajrakh* garment very special, hence this printing process was selected to be covered through the AR embedded documentary.

The documentary on *Ajrakh* Printing tells the story of Imran Soomro and his father Hajan Soomro, from Bhit Shah's artisan town. Imran, a young artisan having faced much difficulty trying to sell *Ajrakh* printed shawls, found great success in advertising through social media to directly sell to his customers.

While social media has helped young artisans find success in advertising and selling their craft objects, it has also opened possibilities for identity theft and fake handicraft sellers. In her paper 'Patronage, Commodification, and the Dissemination of Performance Art: The Shared Benefits of Web Archiving'[30] Wickett, examined the ethics and dimensions of documenting oral performance like *Phad* through cinema. In the increasing universe of the Internet and digital technology where sounds and images are sold for the benefit of some (but not others), issues of copyright, intellectual property rights and the commercialization and marketing of expressive culture on the web have become the norm of the day. Wickett, questions and urges filmmakers and scholars to agree on an appropriate performance context with the performers and artists prior to recording, so that both approve the final product. Wickett's work has[32], helped me understand the importance as well as a process of engaging with artisans, while documenting their craft so that, they are equally involved and

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[28] "D'source Design Resource on Ajrakh Printing - Traditional Craft of Block Printing and Dyeing| D'source Digital Online Learning Environment for Design: Courses, Resources, Case Studies, Galleries, Videos," accessed March 27, 2022, https://dsource.in/resource/ajrakh-printing.

[29] "Ajrak - Indus Crafts," accessed March 27, 2022, https://www.indus-crafts.com/ajrak.html.

[30] Elizabeth Wickett, "Patronage, Commodification, and the Dissemination of Performance Art: The Shared Benefits of Web Archiving," *Oral Tradition* 27, no. 2 (2012), https://doi.org/10.1353/ort.2012.0014.

[32] Wickett, "Patronage, Commodification, and the Dissemination of Performance Art."

respected in the documentation process, and so that the research process itself is discursive, and can give a voice to all participating artists.

3.7 *Phad* – A Multimedia Folk-Form Of Storytelling

Most South Asian narrative art is an immediate expression of the society as a whole[33]. As described by Swarup Shanti "it represents beliefs and philosophies, ideals and outlooks, the material vitality of the society and its spiritual endeavours in its varying stages of development." [34] In a subcontinent riddled with numerous ancient customs and traditions, like the ever-prevalent caste system and resulting religious biases, the oral narrative culture is not limited to the directives and representation of the *bourgeoisie*. *Phad*, a visually aided oral narrative practice, belonging to the western Indian region of Rajasthan, is saturated with the theme of the rural desert tribes and their various concerns. *Phad* scrolls traditionally narrate the stories of *Pabuji* and *Devnarayan*, who are tribal deities of Rajasthan, the narratives are primarily centred around the heroic deeds of the ruler and deity – *Pabuji*. The narrating performer often improvises and alludes to the daily lives of the audience's community to make the story more relatable and socially relevant. This practice has helped maintain the popularity of the artform among the desert tribes and other rural audiences in Rajasthan.

Figure 9: A concept Sketch of a Bhopa and Bhopi performing a Phad recital

Though the tales deal with stories of various tribes and communities, the practice of recitation and painting are restricted to only two communities. The *Phad* scroll is painted by the Joshi community and sung and recited by the Bhopa tribe members. It is traditionally painted on a 20 Feet long cotton canvas and is treated as a movable temple. This form of make-shift temple was created to bring the place of worship to nomadic lower caste communities, who are prohibited from visiting upper caste Hindu shrines in Rural parts of

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[33] Swarup, *5000 Years of Arts and Crafts in India and Pakistan*.

[34] Swarup.

Western India. Culturally, these communities also do not make their own temple since they are nomadic in nature. The painted scroll is carried from across settlements in the Thar desert by Bhopa tribe members, who set it up, upon request, near the nomadic settlements, where audiences (belonging to the mostly Rabari community), gather around them to listen to recitations of the stories of the *Phad*. The *Phad* performances subtly echoes the nomadic life stories of the Rabari community, carefully hidden behind metaphors and idioms, Gods and Goddesses, local heroes, and deities. It traditionally takes place at night, preferably a moonlit one, as the desert inferno dissipates, the performing artist, holds up a lamp in front of the scroll and sings, chants and recites the story, while moving along the scroll, almost like an illuminated graphic narrative.[35]

'*Pabuji Ki Phad*'[36], a notable film on the history and practice of *Phad* art by Shammi Nanda, vividly documents the art of *Phad* from the stage of production to performance. The film captures the artform most evocatively and observes it in context to lives of the painters, performers and all associated with them. Directed mostly as an observational documentary, the film poetically narrates the routine of these tribal communities and their survival and adaptations in times of globalization and tourism, in a series of graphic montages.

Elizabeth Wickett's 'The Epic of *Pabuji* Ki Par Performance'[37] explores the aesthetic, religious and historical roots to this pictorial narrative tradition, and how the *Phad* functions as a sacred temple to its devotees for healing rituals. The main patrons of *Phad*, the nomadic herder tribe called *Rabaris*, still believe in *Pabuji's* divine ability to cure animals and bring rain to Thar desert dwellers. But in the last few decades the encroachment of pasture and water sources have left them in jeopardy. The paper reveals how the performance of *Phad* has become a vehicle for social critique by the disempowered, lower caste performers as well as the rural and tribal audiences of Thar. This paper helped setup a context for using of *Phad* as a visual style for the documentary, since it has gained a new voice in the western Indian subaltern community, as an artistic form of expression against societal oppression.

During my research process in India, I was able to work with renowned *Phad* artist Shri Kalyan Joshi of Bhilwara who is a pioneer of the craft in recent times. While it is undeniable that the primary narrative of *Phad* is steeped in casteism, patriarchal values, misogyny and brutal traditions like Sati, modern day *Phad* artists like Kalyan Joshi, who is my mentor for this project, is breaking away from these traditional narratives to contemporize *Phad* by focusing on social and community issues, while maintaining the characters, style, and visual aesthetics of the artform.

Figure 10: A sketch of Kalyan Joshi

Along with its rich narrative background, *Phad* has a remarkably interesting mode of delivery. Unlike, most orally narrated performances, *Phad* performances are aided with a visual prop – the 20 ft. long painted scroll, which is adorned with images of characters and

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[35] "People Associated with PHAD Paintings – Royal Art," accessed June 28, 2021, https://royalartphadhunt.wordpress.com/2017/02/13/people-associated-with-phad-paintings/.

[36] Shammi Nanda, *Pabuji Ki Phad*, Blu ray (Films Division of India, 2005), https://www.youtube.com/watch?v=f4EiAdeKi_E&t=897s.

[37] Elizabeth Wickett, "The Epic of *Pabuji* Ki Par in Performance.," 2010.

locations. The experience of the performance itself is multimedia and involves both visual and auditory modes of storytelling. Furthermore, the aspect of illuminating sections of the scroll, while narrating the respective part of the story adds to the multisensory nature of the performance. This multimodal characteristic of *Phad* art, influenced the AR production concept behind this project. While *Phad* involves visually augmenting the auditory experience of the narrative, AR cinema is meant to digitally enhance the printed visual with audio-visual content.

3.8 Rekindling A Vanishing Medieval Media Craft With An Emerging Technology

A mediaval craft-form like *Phad* can be rekindled as a visual tool to deliver animated new media content using Augmented Reality. *Phad* is re-envisioned through the lens of expanded cinema.

The term "expanded cinema" describes a film, video, multi-media performance or an immersive environment that pushes the boundaries of cinema and rejects the traditional one-way relationship between the audience and the screen – Tate[38]. The word was coined by US director Stan Van Der Beek in the mid-1960s when artists and filmmakers began to challenge the conventions of spectatorship, establishing more engaging roles for the audience.

Craft Stories is about developing a direct connection, and recreating the missing link between the crafter and their craft, in the eyes of the consumer, through an animated documentary, located on the packaging of the craft item. The Augmented Reality (AR) technology has opened up the possibility for any surface, with an image marker to convert into a screen, to deliver media content. This in turn has helped contextualise the media content with the artifact, since the media can be located on the packaging of the craft. Since, *Craft Stories* develops a more engaging role with the spectator, and opens a discourse on the craft article and its creator, it is similar to 'expanded cinema'. Specifically, the expanded cinema experience created for *Craft Stories* consists of an animated documentary located on a physical object, in an immersive narrative space (AR).

3.9 The Role Of Animated Documentary In Building An Immersive AR Narrative

As explained by Annabelle Honess Roe in her book, Animated Documentary, animation is used as a representational strategy in nonfiction film and television. It explores the ways animation expands the range and depth of what documentary can show us about the world[39]. An animated mode of delivery was selected for *Craft Stories*, since it allowed for a better representation of the crafts person and their story, in a very short 1-2 minute time

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[38] Tate, "Expanded Cinema – Art Term," Tate, accessed June 28, 2021, https://www.tate.org.uk/art/art-terms/e/expanded-cinema.

[39] Annabelle Honess Roe, *Animated Documentary*, Softcover reprint of the hardcover 1st edition (Houndmills, Basingstoke, Hampshire New York: Palgrave Macmillan, 2013), https://doi.org/10.1057/9781137017468.

span. The visualisation of the animated media, was borrowed from another local multimedia folk artform – *Phad*, which made the process of delivering the narrative, visually, even more interesting and allowed for various ways of representing a documentary narrative without the use of live action footage.

A stunning example of an Indian animated documentary, is Nina Sabnani's film *Tanko Bole Cche*[40]. Much like the story of this project, *Tanko Bole Cche* is a vivid representation of the narrative art of applique in the western Indian Province of Gujarat. Sabnani, skilfully documents the life and passion of the Kutch Artisans practicing this unique form of applique, while working in a collaborative environment with them. The film articulates their response to life by visualising traumatic events like migration, and earthquake, and joyful events like flying a kite, through their own art of appliqué and embroideries. The film evocatively captures the conversations and memories of the crafts persons and their involvement in the evolution of a craft tradition, by animating the appliques, and creating interesting visuals.

With the development and accessibility of animation tools and techniques, filmmakers are blurring the boundaries between documentary filmmaking and animation.[41] The intimacy, imperfection and unique charm of the animated form, provided this project with a sentimental and evocative visual style, of an already practiced folk artform within the local region (*Phad*), which in turn humanized the documentary, and conveyed information that could not be easily adapted with live-action media. Hence, it can be argued that developing interesting visualisation, is a very necessary aspect of animated documentaries. While most media is situated on television, computers, or mobile devices, immersive media like Augmented Reality (AR) [42] allows for content to be directly connected to locations or objects.

Immersive narrative media like Augmented Reality can give additional context to our real world. The Augmented Reality medium has the potential to create a hyper-real, evocative, immersive environment, in the real world, through the digital lens[43]. Instead of carrying the audience/viewer off to a different storyworld, away from reality; the storyworld is brought to the viewer, which breaks all boundaries between the virtual and the real[44]. Augmented Reality as a medium of storytelling, pushes the audience/viewer a step closer to complete suspension of disbelief[45] with its immersive nature.

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[40] Sabnani, *Tanko Bole Cche (The Stitches Speak)*.
[41] Judith Kriger, *Animated Realism: A behind the Scenes Look at the Animated Documentary Genre* (Waltham, MA: Focal, 2012).
[42] Augmented reality (AR) is an interactive/immersive digital experience of a real-world environment where the objects that reside in the real world are augmented by computer-generated perceptual information (in this case an animated documentary). It can be achieved multiple sensory modalities, like visual, auditory and haptic.
[43] "'AR Is Where the Real Metaverse Is Going to Happen' | WIRED," accessed December 20, 2021, https://www.wired.com/story/john-hanke-niantic-augmented-reality-real-metaverse/.
[44] "What Is Augmented Reality (AR)? A Practical Overview," accessed August 20, 2021, https://www.threekit.com/blog/what-is-augmented-reality.
[45] Adam Roberts, ed., "Occasion of the Lyrical Ballads, and the Objects Originally Proposed—Preface to the Second Edition—The Ensuing Controversy, Its Causes and Acrimony—Philosophic Definitions of a Poem and Poetry with Scholia.," in *Biographia Literaria by Samuel Taylor Coleridge* (Edinburgh University Press, 2014), 207–14, http://www.jstor.org/stable/10.3366/j.ctt14brwk4.18.

When almost every physical form and space can be assigned its own meaning through virtual content in this augmented multiverse [46], mundane and inert objects, suddenly come to life. This opens up the possibility of adding additional context to already existing physical objects, which can initiate further conversation and add more meaning to them. In the context of this Thesis project, the packaging of the respective craft articles becomes a physical screen, which shows the process behind the making of the craft as well as the story of the artisan creating the object. This brings forth the obscure story of craft traditions and artisans, to tackle the often inevitable alienation of labour, that is associated with most craft industries.

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[46] Augmented Multiverse refers to an immersive digital environment, where the real world is enhanced with media contents.

4   Methodology

Design methodology is the comprehensive study of the principles, practices and procedures of design, that coincides with the research objectives of the design project. As a design researcher, the primary focus for curating a methodology is to develop a deep and practical understanding of the design process and how this process can be modified, made more effective and transparent and be managed to achieve suitable design outcomes. This project was developed with a combination of 3 primary design methodologies: Discursive Design, Craft Documentation, and Research Creation. The process and rationale behind these methodologies are discussed below.

4.1   Discursive Design

The discursive design methodology was described by Bruce M. and Stephanie Tharp, in the form of a reference book for designers. The authors conceived the concept of discursive design as a methodology that initiates conversation, and prods the user / audience to see and understand more than the basic form and utility of the designed object.[1] Discursive design as a methodology aims to open conversations about experiences through evocatively designed objects. It explores how design can be used to do good by promoting – self-reflection, igniting imagination, and affecting positive social change. Discursive design's primary objective is to convey ideas, more than the bare functionality of the product.

For implementing and integrating the discursive design approach in this project, the four fold approach to discursive design was followed. Originally borrowed from the 7 traditions of communication theory by Robert Craig, these approaches invite users to generate ideas and promote conversation about the physical object. This process becomes extremely important for the research objective of this thesis project which involves the design and development of packaging as a 'discursive object' that can promote conversation about its content.

4.1.1   The Four-Fold Approach To Discursive Design

The authors of Discursive Design draw a generous comparison between the traditional approaches of communication theory to the approaches that can be implemented in a discursive design project. Drawing from the seven traditions of Robert Craig's Communication Theory[2], The discursive design methodology incorporates a : rhetorical communication/design approach, semiotic communication/design approach, sociocultural communication/design approach, and critical design approach. I used blend of these approaches to design the research process and the final outcome of this Thesis. The table below, is a quick overview of the Four-Fold approach and how it was utilised in the design process.

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[1] Tharp and Tharp, *Discursive Design Critical, Speculative, and Alternative Things*.
[2] Robert T. Craig, "Traditions of Communication Theory," in *The International Encyclopedia of Communication Theory and Philosophy* (John Wiley & Sons, Ltd, 2016), 1–10, https://doi.org/10.1002/9781118766804.wbiect119.

	Steps	Description	Application
1	**Rhetoric Design**	Design acts as a mediating agency of influence between designers and their intended audience	The project mediates a conversation about the artistic identity of the craftsperson associated with the craft article, in the eyes of the viewer
2	**Semiotic**	A visual signifier in contemporary design language, where, signs construct their users	The symbolic representation of the artisan and the craft process, and the visual style of *Phad* on the packaging of the craft article, plays a significant role in developing an instant connection between the audience and the artisan
3	**Socio-Cultural design**	Sociocultural theory cultivates communicative practices that acknowledge cultural diversity and relativity, value tolerance and understanding, and emphasize collective more than individual responsibility	Identification of cultural unifiers of craft practices across Sindh, irrespective of political and religious boundaries, and promote conversation, ignite ideas and appreciation for craft practitioners and their legacy.
4	**Critical Design**	The presumed aim of critical design is to use object-mediated discourse as the means through which the designer's audience can achieve liberating reflection	An object mediated discourse is developed around the craft practice and the artisan, it opens a larger conversation about the craft practice as well as the practicing community and their socio-political situation

Table 1: Four fold approach to discursive design

4.1.2 Designing A Discursive Object

The first objective of designing a discursive object is to create an embodiment of discourse in the artifact or designed element[3] The goal of a discursive object is to create a reflection on the discourse (by the audience or user). The six steps involved in the design process and user flow are:

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[3] Tharp and Tharp, *Discursive Design Critical, Speculative, and Alternative Things*.

	Steps	Viewer Interaction Scenario	Deduction
1	**Encounter**	The viewer is most likely to view the discursive packaging in a market or online store setting, where they can physically or digitally purchase the item. However, the experience can only happen in a physical environment.	The object can be available in any commercial space, however, the packaging needs to be scanned and viewed to only those who experience the object physically. The documentary is closely linked to the material object.
2	**Inspection**	Upon closer inspection, the viewer can scan the QR code to play the animated documentary on the image marker.	The relationship between the QR code and the Markers are established through arrows and symbols of marker.
3	**Recognition**	The viewer can listen to the voice of the artisan, and see the animated documentary.	The viewer is also presented with subtitles, in English, but it can later be transcribed to more languages
4	**Discovery**	The viewer discovers the identity and story of the artisan, through the documentary.	The discovery can urge the viewer to watch the complete documentary, also since it is located in an Augmented Reality Space, which might strike interest in the viewer.
5	**Interpretation**	The viewer interprets the documentary, on their own volition, but, the directors intention is to strike a connection, between the viewer / consumer and the artist	The documentary solely represents the story of the artist, hence every viewer might understand the same content, but interpret them differently. And their relationship with the craft object might be based ont his interpretation.
6	**Reflection**	The viewer reflects on the animated documentary they just watched, and understands the larger picture behind their purchase.	The reflection part of the process is very important, since the viewer, might consider to use the packaging as a memento or keepsake. This might also result in the viewer sharing their new media object, with others and increase the patronage of the artisan.

Table 2: Six steps involved in designing a discursive object

4.2 Craft Documentation

Craft documentation, as described in the book 'Designers meet artisans: a practical guide'[4] is a way to study and experience a craft, along with the people or community practicing it, and the region it belongs to. The research and documentation is a source of knowledge and reference for other designers, researchers, practitioners as well as the creator communities. 'Handmade in India: An encyclopaedia of the handicrafts of India[5]' by M.P Ranjan and Aditi Ranjan, is the best example of in-depth craft documentation of a varying range of craft practices across the country. It is a tribute to all Indian crafts persons and is organized by the geographical distribution of the craft practices across all regions within the country. Craft documentation is an important methodology for this project, since it will be based on documenting the process and story of the craft and the community of artisans in the Sindh region.

As discussed in the prior sections, India and Pakistan both share a rich and diverse cultural legacy. The craft traditions are a tangible essence of the intangible cultural heritage. It is important to safeguard and document this, even beyond this project, to make the age-old, intricate, indigenous techniques accessible to the present and future generations. While crafts play a unique role in nurturing and unifying the Socio-culturally diverse fabric of South Asia, and at the same time aid in employment growth and income generation for India.

While documenting a craft, it is important to conduct detailed academic research on the subject and have a thorough background study before doing the field research. Published and unpublished literature in various journals, crafts documents by other organizations, survey, reports from local government bodies, also help to contextualise the craft academically (Handmade in India by MP and Aditi Ranjan[6] and the D source online repository[7] are a few examples of craft documentation). The data available, is sometimes very scattered. Hence entering into partnerships with local people or organizations working in these geographic regions helps to quickly forging relationships that would make the documentation process efficient and effective. This knowledge attained aids the researcher in the process of developing an understanding of the below mentioned points essential for any collaborative documentation process[8].

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[4] India) Craft Revival Trust (New Delhi Artesan??as de Colombia S.A., Unesco., *Designers Meet Artisans : A Practical Guide.* (New Delhi; Bogota, Colombia; Paris: Craft Revival Trust ; Artesan??as de Colombia S.A. ; UNESCO, 2005).

[5] Aditi Ranjan and M. P. Ranjan, eds., *Handmade in India: A Geographic Encyclopedia of Indian Handicrafts*, 1st ed (New York: Abbeville Press, 2009).

[6] Ranjan and Ranjan.

[7] "Search | D'Source," accessed March 27, 2022, https://dsource.in/search/content/crafts.

[8] "Webinar: Best Practices for Documentation of Handicrafts in the Field • The Lakshmi Mittal and Family South Asia Institute," The Lakshmi Mittal and Family South Asia Institute, February 26, 2016, https://mittalsouthasiainstitute.harvard.edu/2016/02/webinar-best-practices-for-documentation-of-handicrafts-in-the-field/.

	Steps	Description	Application
1	**About the craft tradition**	Learning in detail about the craft practice and any traditional or social values associated with it, understanding where the craft practice originated from and decipher its current status.	In the context of this project, learning about the 5 craft traditions, all from the same or neighbouring regions, helped to build a cohesive socio-cultural structure, before doing field research.
2	**About the crafts community**	Learning about the lifestyle, the socio-economic and cultural background of the practicing community.	Since this project comprised of several audio-captured documentation of crafts persons, from a very socio-culturally volatile region, it was very crucial to learn about the local sentiment, and plan the discussion accordingly prior to conducting field research.
3	**Specific artisan**	If a prior relationship is developed between the researcher and the artisans before conducting field research, it can help in the collaborative process of craft documentation	A close relationship was developed with each artisan through a common source, which helped to carry out the interviews freely, in a collaborative manner.
4	**Region**	It is important to understand the social, economic, environmental and cultural norms of the region to fully understand and identify the craft practice, prior to documentation.	This project being based in a geo-politically volatile region – India, and Pakistan, it was very important to understand and consider the political sentiment of the practicing artisan and their community.
5	**Special requirements**	Language and dialects are another important factor, that helps to connect the researcher with the craft communities.	Since, this project was based around the Sindh region, which comprised both of India and Pakistan, Hindi, Urdu and Gujarati, were the primary languages used during the conversation.

Table 3: Steps for craft documentation process

4.3 Research Creation

Research creation projects can be described as integrating the creative process, and experimental aspects as an integral part of a study.[9] The explorations in *Craft Stories* are dual in nature with the documentary narrative seeking expression in the form of a new media creation and the articulation of a physical packaging. Technology, form and content are all deeply entangled throughout the making. As part of my research creation approach, I studied methods and methodologies that gave me insights on the process of experiment with the AR experiences, and narrative design for animated documentaries at the same time. My aim was to create a new media narrative experience on any flat packaging surface. Drawing from Helen Papagiannis' 2017 book 'The Augmented Human' [10]and the work of Asad J. Malik's evocative AR narrative 'Terminal 3[11]', I materialize AR as a medium to deliver a story, albeit with more immersivity and interactivity. AR has helped create a connection between the object and its story, precisely the story of the craft. Through this power of creating any physical surface into a working screen for delivering animated '*Craft Stories*' an creates audio/visual connections between the craft object and its maker.

4.3.1 Documentary Participation And Conducting Interviews

Recruiting and interviewing participants was the most important task for the animated documentary. It was the first step to understand, and record the story of the craft. The interview process was conducted over telephone with artisans that I share acquaintance with. This ensured a smooth interaction and documentation process. A lot of effort and importance was given to the consent and rights of the participating artists since, it was their personal stories and culture that was documented in the process. The editing and post production process was also shared with the artisans, to maintain the collaborative objective of any documentary making process.

A basic interview map was created to understand and direct the course of the conversation. However, the artist had the right to choose the purpose of sharing their story, as well the main topics they would be covering. For example, while Md. Wajid *Kashigar*, the Blue pottery artisan from Multan, shared his views on the differences between artisan made crafts factory made fake crafts; Imran Soomro, an *Ajrakh* artisan from Bhit Shah, shared his thoughts on how social media help revive his business.

Lastly, the interview process led to a serious question of what to include, and which parts to exclude. A lot of information and stories were told, during the lengthy interview process, some of which was personal, and some of which was political. While a lot of this information was extremely crucial, for the development of the narrative, the final edit was only made after consensually discussing with the participating artists, on what they would be comfortable disclosing, and which they wouldn't be comfortable disclosing.

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[9] Owen B. Chapman and Kim Sawchuk, "Research-Creation: Intervention, Analysis and 'Family Resemblances,'" *Canadian Journal of Communication* 37, no. 1 (April 13, 2012), https://doi.org/10.22230/cjc.2012v37n1a2489.

[10] Helen Papagiannis, *Augmented Human: How Technology Is Shaping the New Reality*, 2017.

[11] "Terminal 3 (AR)," Beggar Kings, accessed March 27, 2022, https://www.beggarkings.com/terminal3.

4.3.2 Studio Based Creation

The making of the *Craft Stories* animated documentary films involved an animation film design process as well as the product packaging design process. One primary artisan was interviewed for all the four crafts, along with any secondary practitioner if they were available. Both the animation film design as well as the packaging design was done simultaneously along with the Augmented Reality Integration to ensure an iterative process with continual testing. The process of studio based creation is described below:

ANIMATION FILM DESIGN PROCESS

The animated documentary was primarily started after the interview process of each artisan. The following steps were involved:

Steps	Description
Interview Analysis	The interview was analysed, and essential information was extracted to be included in the final narrative.
Sound Editing	It was then edited, and the edited version was discussed with the artisan to attain their final consent for inclusion in the project
Screenplay	A screenplay was developed after the audio editing to visualise the meaning of the audio. A transcript for the subtitles was also developed at this time.
Storyboarding	Concept sketches and camera angles were visualised for the animated documentary
Character Design	The characters and background were designed in high fidelity
Animation	The animation process involved developing the high fidelity visuals into micro animations, that were eventually stitched together.
Post Production	Lastly, the animated piece, was edited to reduce clutter, and time, and create a crisp and concise 1-2 minute audio-visual story.

Table 4: Steps of designing the animated documentary

Steps	Description
Ideation	The ideation process involved making concept sketches of the packaging design
Structural Prototyping	The structural prototype was created by making iterations of the sketches in a physical form. Paper prototypes as well as scalable prototypes were created to understand the feasibility of the packaging.
Marker Layout	Since the marker needed to be physically on the packaging, its layout and functionality (size, form, location, readability) was tested out before the final prototype.

Table 5: Packaging design steps

All the methodologies (Discursive Design, Craft Documentation, and Research Creation) helped in developing and strategizing the overall research and prototyping process for the *Craft Stories* Project. While discursive design helped to setup the context, story building and user experience part of the project; the craft documentation methodology was applied to the artisan interview and analysis part of the Project; finally, the research creation methodology helped to build, test and iterate the physical making of the packaging as well as the animation and Web AR implementation.

This leads to the next Chapter about the prototyping process and the integration and application of the various studio based creative approaches into the project.

5 Project Prototyping

The final prototyping process began after conducting the series of interviews with the crafts persons and their associates. An early prototype was developed as a proof of concept, to examine the working of the animations, scanning process of the AR Marker. A self-usability testing was conducted at this stage to understand the ergonomic necessities of the object surface (for the AR marker) as well as the length of the animated documentary, to ensure a short, comfortable viewing experience. The prototyping process for one craft packaging served as a form of research and learning for the development of the next. The process, thoughts and discussions about the prototyping stages is the following sections.

5.1 Early Prototypes

The early prototype of the concept was developed even before conducting the interviews to determine the affordances of the project, and the visual style of animated content. It also ensured that technology was functional and the animation was visible on a small device like a mobile phone.

5.1.1 Developing The Visual Style
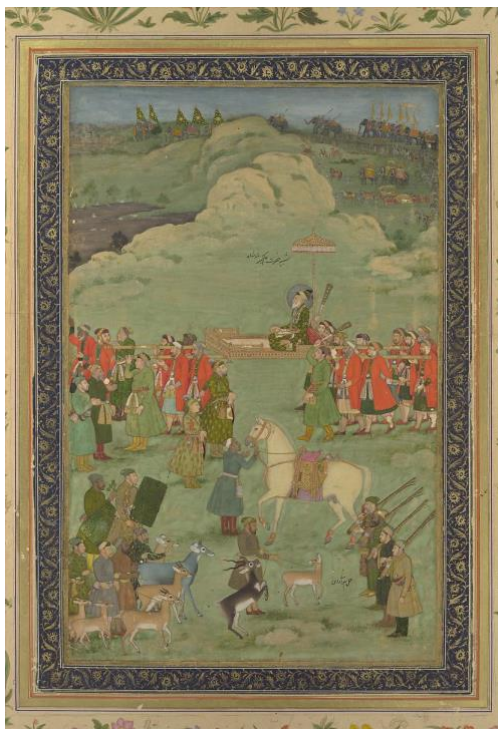
Figure 11: Mughal Miniature - The Emperor Aurangzeb Carried on a Palanquin. Only a Side profile representation of the emperor and his aides were painted. The emperor, being the primary subject is situated in the center of the frame. (The Metropolitan Museum of Art, source, Open Access Image CC0)

I attended workshops by my artist mentor – Kalyan Joshi, for this project to learn the visual style of *Phad* Paintings. Being intrinsically different from linear or dichotomous perspective painting / artworks (generally, found in western art), *Phad*'s closest relative in terms of visual representation are the Mughal miniatures. Mughal miniature is a style of South Asian, particularly North Indian painting (more specifically, modern day India and Pakistan). It was painted either as book illustrations or as single works to be kept as exhibits (*muraqqa*). Mughal miniatures, also known as Mughal paintings were small, brightly coloured, and highly detailed in its visual style. Although it had influences from western painting techniques, Mughal paintings were essentially perspective-less, visualising extensive sceneries by stacking them over one another. The scene is organised by placing important subjects in the centre of the frame, and the background objects/sceneries around it. *Phad* paintings take inspiration from the perspective-less form of Mughal Paintings, and the element of keeping the subject towards the centre of the frame. Another important visual factor that *Phad* borrows from Mughal paintings are the side profile faces. Most of the

characters in both the artforms paint any illustrated character on their side profile. A full frontal face is almost never seen in any of the paintings.

Apart from their perspective-less visual form, *Phad* paintings are also marked by their bright, bold colours, and thick strong outlines drawn precisely by hand using a point sized brush. Men and women are both characterised by their traditional Rajasthani headgear, and their garments sport '*Ajrakh*' like prints on them. The characters are also heavily accessorised with gold Rajasthani jewellery. The image below represents, the stylistic nature of *Phad* paintings and how men, women, priests, and musicians are depicted through ornate visual elements.

Figure 12: Phad Painting - A wedding ceremony. Each character is signified by their garment and headgear, which represents their gender, as well as role in the scene (Shri. Kalyan Joshi, used with permission).

My artist mentor for this project – Shri. Kalyan Joshi helped me understand these subtle elements intrinsic to the artform, and collaborated with me to develop the character design and backgrounds for the animated documentary, albeit digitally.

Paper sketches of the characters were primarily hand drawn, then digitised eventually to develop the animated content. One of the main characteristics of *Phad* art is its minute imperfection in individual brush strokes. These imperfections gives life to these paintings, and make each piece significantly different from the other. While a fully hand drawn, animated documentary, is beyond the scope of this project, one of the future possibilities of

the project is developing similar animated documentaries, about more craftsperson's, using hand drawn sketches by *Phad* Artists in a more collaborative and co-creative atmosphere.

CHARACTER AND BACKGROUND DESIGN

The character designs for the animated documentary was created based on the real life look of the individual crafts persons. The visual characteristic and stylistic elements of *Phad* paintings, like the bold outlines, consistency of stroke, earthy colour palette, the were maintained while designing the characters. While, most of the stylistic elements were designed and drawn like a traditional *Phad* painting, special signifiers of the subject like their complexion, hair, and accessories were added and altered accordingly. The character's clothing, was also modified according to the respective craftsperson's regular attire.

Figure 13: Character sketch of Md. Wajid Kashigar for the animated documentary on Blue Pottery
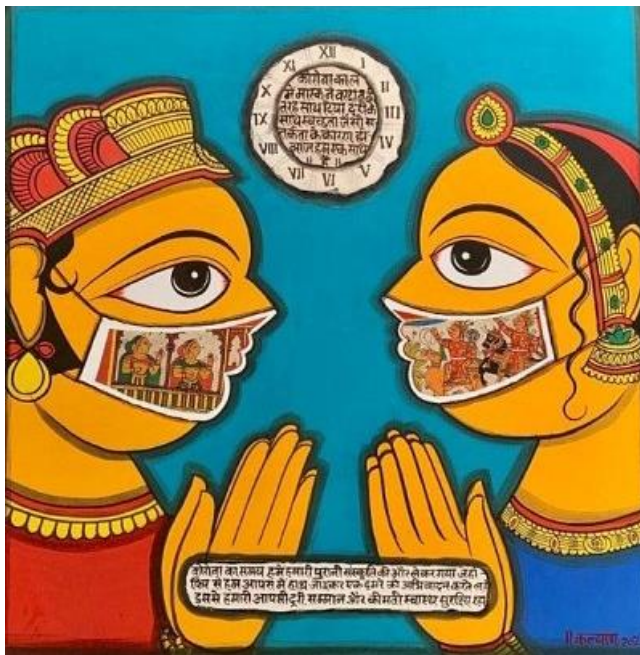
Figure 14: Kalyan Joshi's Painting on 'Mask Mandate Awareness', as a COVID-19 protocol (Shri. Kalyan Joshi, used with permission)

This practice of contemporising the content of *Phad* Paintings can be viewed in Mr. Joshi's work, where he represents modern contexts through his *Phad* paintings. Mr. Joshi deftly depicted the new norm of wearing masks in public spaces, in several of his paintings, after the COVID-19 outbreak in 2020, and created awareness both within his community, as well as throughout India. Several news-outlets, media houses, and Art curators across the world, celebrated his unique take on contemporising the painting technique by creating awareness about the COVID-19 protocols, within his local community, using the local language, and visual folk-form of storytelling, as a folk artist.

The image above, is a part of a larger series of Kalyan Joshi's artwork on COVID-19 awareness, which was acquired by the Glasgow Museums, as part of an effort to record and represent the pandemic for future generations.

All the character sketches and background artworks were initially developed as Hand Painted illustrations, before being digitised to create the animated documentary. Albeit, a hand drawn animation, using the visual style of *Phad*, would suit the context of creating the animated documentary, even better, but developing the animation using such a time consuming and intricate process, was beyond the scope of this project, hence a more simpler form of digital animation was selected to represent the same narrative, using the visual style of *Phad*.

The character and backgrounds were designed using Adobe's *Illustrator* Application, since it offers a wide array of digital illustration tools, and helps in maintaining the same visual language across multiple scenes, in the animation. Illustrator, also allows for individual vector object creation, which helped tremendously, during the animation process, which was created using Adobe's *After Effects* Software. Using different softwares from 'Adobe's Creative Cloud', helped in maintaining the cohesiveness and organisation across the libraries, in real time. This was especially helpful, since both *Illustrator* and *Aftereffects* were used simultaneously to design the objects and animate them.

5.1.2 Designing The AR Markers And The Packaging
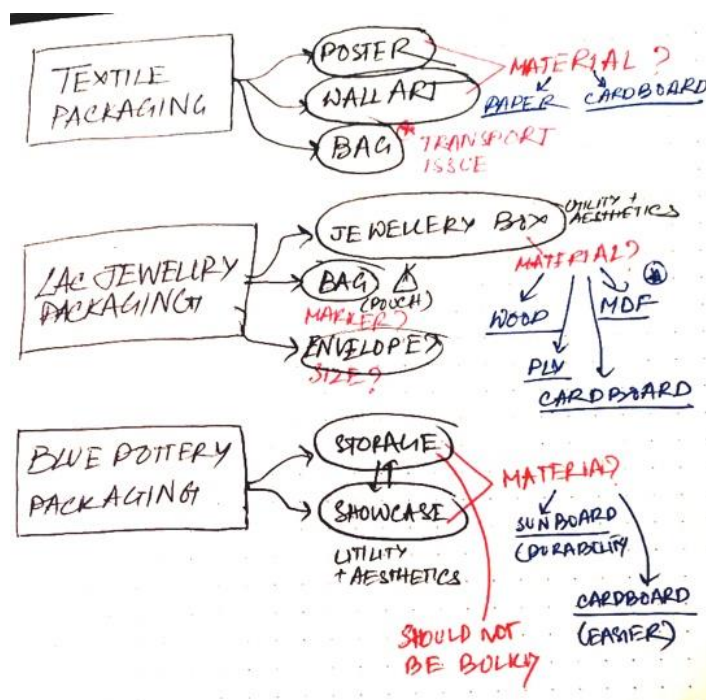
Figure 15: Mind Map of Packaging types and its potential usability

The animated content was designed to be viewed virtually, using a handheld mobile device (phone or tablet), by scanning a physical marker embedded on the surface of the product packaging. The size of the physical marker and the surface in which it will be located as well as the distance of the user(holding their camera) were taken into account before developing the physical marker. The early prototypes involved several iterations of the size of the marker and its possible location on the packaging.

An additional design consideration was the utility and functionality of the packaging after the craft product has been purchased, so that the story of the craftsperson, who has created this craft article remains with the customer, long after they have purchased the product. In order to do so, several secondary uses of the packaging were mapped out along with the material affordances and other factors that can affect the usability of the material packaging.

BLUE POTTERY PACKAGING

The primary concern for the pottery packaging was the durability and support of the fragile ceramic products inside without making the packaging bulky and unmanageable. Below are a few sketches and paper prototypes of the pottery packaging styles. These prototypes were made to test the surfaces and locking mechanisms, to be implemented in the final designs.

Iteration 1:
The first iteration for the Blue pottery Packaging design was created using paper, The concept was developed by creating rudimentary sketches (as shown in the image), to visualize the structure and calculate some basic angles for creating the structure.
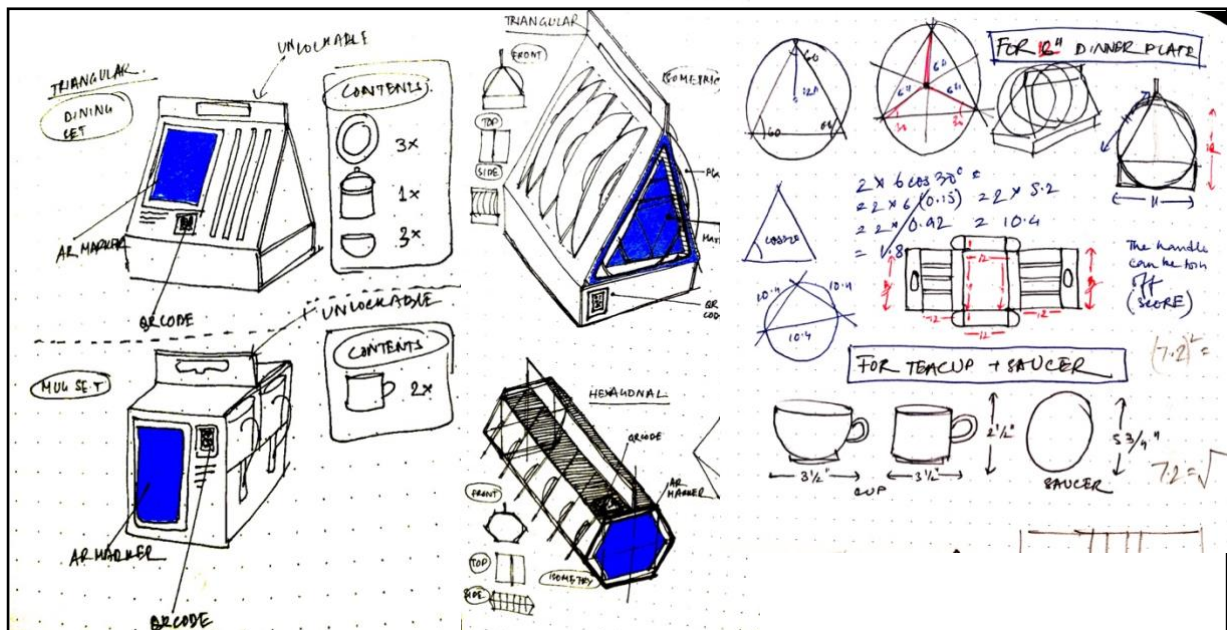
Figure 18: Sketches of the Pottery Packaging

Iteration 2

While the first iterations were built using GSM 150, thin printer papers, a more scalable version was developed to verify the durability and the strength of the packaging structure, as well as the size of the printed marker and visibility of the animated content. The second iteration pointed out the several flaws with both the construction and the design. The packaging itself was able to hold the weight of the utensils inside, but the ceramic pieces was colliding with each other, which made them more prone to breaks and cracks. The following issues were identified and fixed in iteration 3. A ridged bottom piece (of cardboard) was needed to increase the support for the ceramic objects. The length and width of the packaging was to be increased to accommodate the ridged bottom piece. The spacing inside the handle was needed to be increased. The AR sticker needed to be increased in size (Current size – 3.5 in x 6 in / Expected Size – 5 in x 7 in approx). The image shows the construction and problems of the second iteration. To achieve a more finessed look, third prototype was constructed with laser trimming, and manually sticking the flaps to create the form.

Iteration 3

Most of the form factor and structural flaws were fixed with this iteration. The overall size of the packaging was increased and angles were altered accordingly. The measurements were increased 2 inches in width, and 3 inch length. The new angle of elevation and attachment also resulted in better image capture with a mobile hand held device.

While the third iteration offered a proper solution to the packaging design problem, the steps of iterations itself was a research through creation process. A lot of the measurements

which were mathematically possible, was not practically achievable in the real world scenario, due to marginal errors. A trial and testing method, where each prototype was used, and reconstructed help understand the dynamic so the making process, which helped develop the final version of the package.

Iteration 1	Iteration 2	Iteration 3
Small Thin paper prototype	Scalable, actual size, cardboard prototype	Scalable, actual size, cardboard prototype and digital mockup
Demo marker size	Scalable marker size	Scalable colour printed marker
Support free bottom edge	Bottom support free edge	Ridged bottom support added, to tightly secure objects
Length and width not measured in proportion to actual size objects	Length, angle of slope and width changed according to mathematical calculation.	Length, angle of slope and width changed according to the objects inside.
Demo handle size	Scalable handle size	Scalable handle size

Table 6: Packaging Design iterations

Figure 21: CAD Model of the Blue Pottery Packaging

Figure 22: Blue Pottery packaging
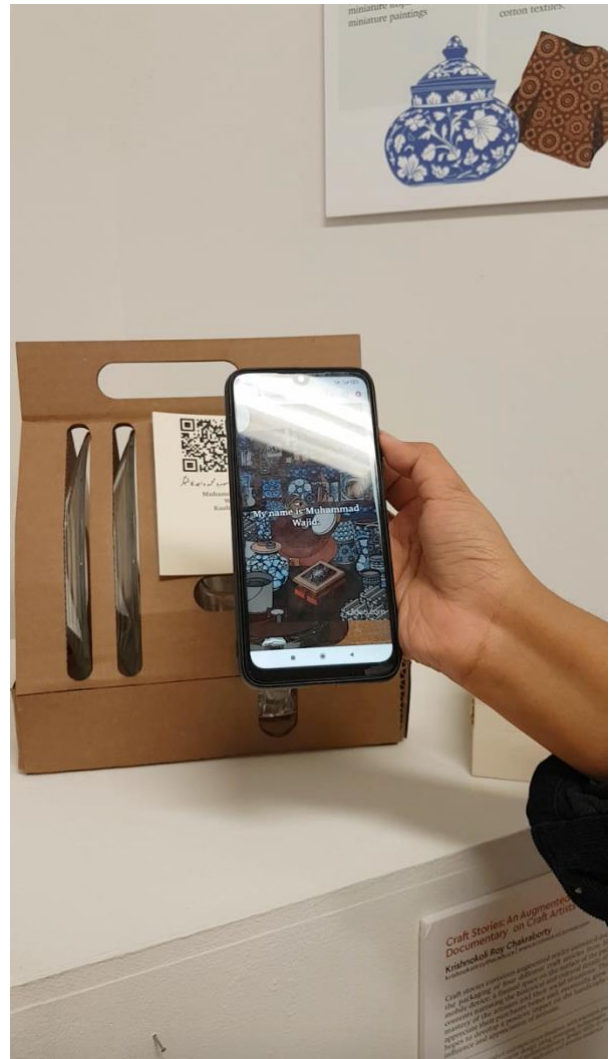
Figure 23: Blue Pottery packaging scanned by a smartphone

TEXTILE PACKAGING (*AJRAKH* & TIE DYE)

The textile packaging were conceptualised differently from the pottery and jewellery packaging design. Unlike, the brittle and delicate material of clay/ceramic or lac, textile artifacts are generally flowy, foldable and resilient. However, a textile piece can be prone too tearing, creasing and fraying. To prevent this from happening, textile and fabric stores across South Asia, traditionally sell textile garments as well as fabrics wrapped in a sheet of paper. The paper is folded into, and wrapped around the fabric, to prevent any creases or tears. The material of the paper varies from place to place, according to the price point of the product. Expensive fabrics like silk, and speciality handwoven cotton are wrapped with thin gauze like tissue wrapping paper, while cheaper fabrics are wrapped with newspapers and coarse brown paper.

Figure 24: A contemporary example of wrapping paper for fabric and garments, from Echilibra Design at Etsy (Echilibra Designs, permission pending)

Textile packaging with paper, served as an inspiration for developing the prototype of the *Ajrakh* printed and Tie dyed fabric packaging.

The paper, that is used for wrapping the fabric, can also be repurposed as a poster or wall art, that can be hung in an indoor space because of its aesthetic value and new media narrative qualities. However, since the paper used for wrapping fabrics will be considerable larger in size, using a single image screen to play the Animated documentary would essentially require the viewer to move farther away from the poster, which might result in poor marker visibility. Hence, shorter animated content was developed for the large marker with micro animations in each small section that can be zoomed in and viewed, in an interior environment.

The image on the right depicts a rudimentary sketch of the *Ajrakh* Printing Poster and Packaging. Each frame, inside the poster shows a particular part of the process, the centre frame, like a *Phad* painting, depicts the central characters, who in this case are Ustad Imran Somroo, and his father Ustad Hajan Somroo. The frames were animated individually, as micro animations, while the audio interview with Ustad Imran Somroo played in the background.
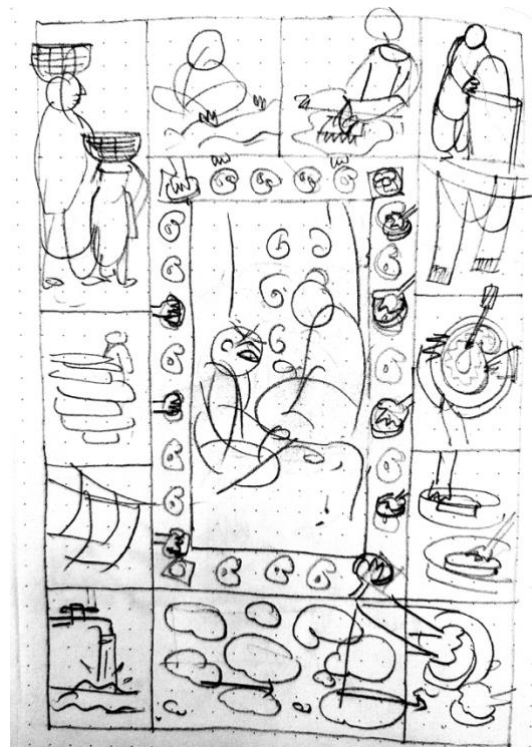
Figure 25: A rudimentary sketch of the Ajrakh Printing Packaging / Poster
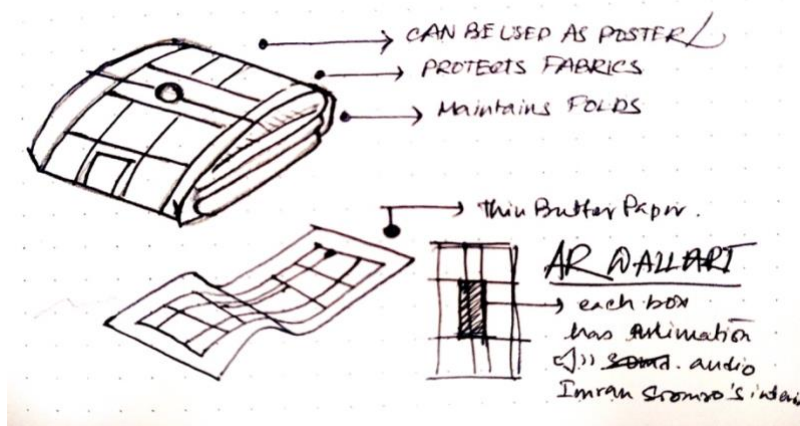
Figure 26: Concept sketch of the AR packing / Poster

The paper, wrapped around the fabric, was also not prone to heavy damage, considering that it is taken care of, and not disposed off after use. The concept behind reutilising the packaging material also came from my love for storing and repurposing wrapping paper from any type of gifts or purchases that I make. As a graphic designer, I was always interested in the colour and shapes in these papers, and kept them as posters for their aesthetic quality. This idea was conceived considering the consumer is willing to repurpose the packaging material for its aesthetic quality, and store it as a wall art or poster.

The animated content for the posters were conceptualised as a non-linear narrative. Since the process of crafting the fabrics is continuous as well as labour intensive, which requires more than one craftsperson to be actively involved in the making process, the visuals were structured as various individual components that work together to create the whole narrative.

The image on the right depicts the storyboard and individual boxes of the poster for the Ajrak printing process. The viewer can zoom In or scan any part of the image to understand the nuances within that frame, or scan from far to get a feel of the larger picture.
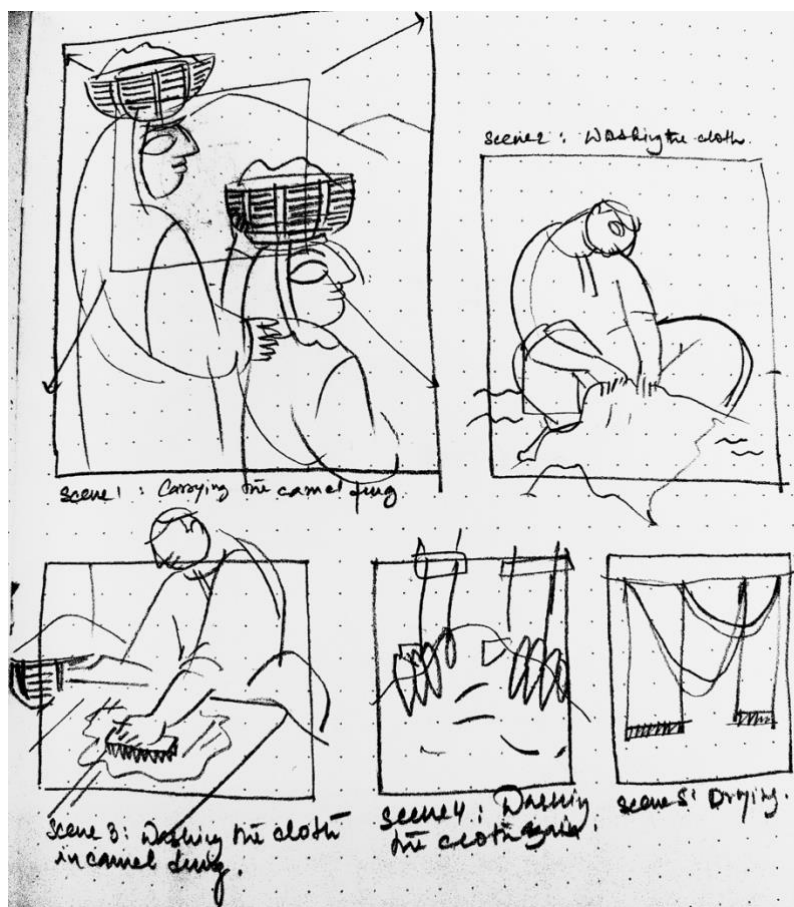
Figure 27: Storyboard of the micro animations

LAC JEWELLERY

Figure 28: Meenakari Jewellery Box

The lac jewellery mainly comprising of bangles and earrings traditionally came in ornate wooden boxes that women kept as prized possessions in their homes. These wooden boxes were often embossed with *minakari* or miniature art similar to Persian and Mughal Paintings. The patterns were often created with silver, copper or jewel dust, pasted on the most expensive ivory. However, after ivory extraction was outlawed, the boxes were generally made with wood, plastic, metal or silicates to reduce its price and make it affordable for the middle class. The ornate designs however, remained the same and added to the aesthetic quality of the jewellery boxes, which were often gifted to new brides as wedding presents.

For the packaging design of the lac jewellery, I used the form of these minakari jewellery boxes, in a simpler shape, that can hold the AR marker. Similar to the aesthetic utility of these boxes, the AR embedded packaging can also be used for its aesthetic quality and its discursive nature to create a dialogue about the creator of the craft article.
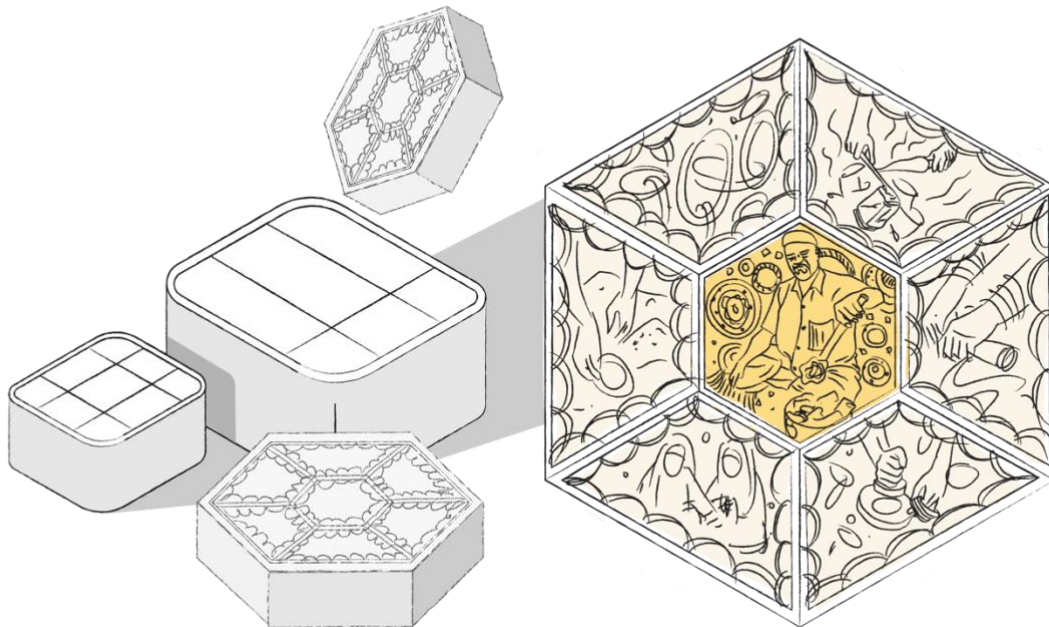
Figure 29: Shape Explorations for the Lac Bangle Packaging

5.1.3   Prototype With Animatics

A rudimentary storyboard was designed to test the affordances of the narrative structure, and the way in which the process could be integrated along with the narrative. However, this was done prior to the research ethics certification for conducting the real interviews. While the storyboards were later discarded, during the making of the actual documentary, the framework of creating the short narrative within 1 to 2 minutes helped in creating the narrative structure for the interviews and the final animation.

5.2   AR Technology explorations

5.2.1   Web AR

WebAR refers to augmented reality experiences that are accessed through a web browser rather than an app. All the user needs is a mobile phone or tablet and an internet connection, without having to download an app directly onto a phone.

Even though this native application AR experiences are fun and offer advanced technical nuances, attempting to get individuals to download an application can be tricky. That is the reason developers and designer working with immersive media have begun looking intensely into Web AR. While Web AR is still not quite as developed and powerful as application AR systems, it actually has a lot of potential for exploratory new media works.

5.2.2   AR.js

I primarily intended to develop the AR experience using the AR.js JavaScript Library. However, I finally resorted to use the My Web AR web application to develop the AR experience in a simpler and less time consuming way. The AR.js library is an augmented reality application library for the web, that can be implemented using any Web page, Git Hub Pages, or using Localhost. It helps in using the marker training, image tracking aspects of AR experiences.

5.2.3   My Web AR

My Web AR is an Online AR hosting platform. Since, this project was based on an image marker, which can be scanned to shown an animated documentary, the MyWeb AR platform was very easy and helpful.

5.3 Blue Pottery

5.3.1 Interview Process

The interview for Blue pottery was conducted with Muhammad Wajid *Kashigar*, an esteemed *Kashigari* (Blue Pottery) craftsman based in Multan, Pakistan. Md. Wajid *Kashigar* has been practicing the craft for 50 years, and has continued the heritage of the craft-form which has been in his family for 300 years. Md. Wajid *Kashigar* offered great insight into the process of how he creates a *Kashigari* craft, entirely by hand, and how each piece is significantly different from the other. The interview was greatly driven by his knowledge and love for *Kashigari.* Md. Wajid *Kashigar*, beautifully explained how the handcrafted is different from the machine made, and how each of his pottery was a unique labour of love. His interview offered a great deal of visual anecdotes, which later helped me to develop a visually compelling animation.

5.3.2 Storyboarding and Animatic

After the interview process, I started the editing process of the audio. This stage determined the final length of the video as well as the main points that would be covered during the documentary which would in turn affect the concept sketches and the storyboard. Post editing, a storyboard was developed to visualise the narrative flow as well as the camera.

Figure 30: Story Board for the Muhammad Wajid Kashigar's Blue Pottery Animated Documentary

5.3.3   Production And Post Production

After the rudimentary animatic was developed, the Character Design and background Design for the documentary was created. Below are images of the character design process from sketch to digitisation.

Figure 31: Character Design of Muhammad Wajid Kashigar

After the character design the backgrounds were created to match the actual surrounding of the artisan (inspiration derived from photos, sent by the artisan or their respective family or friends).
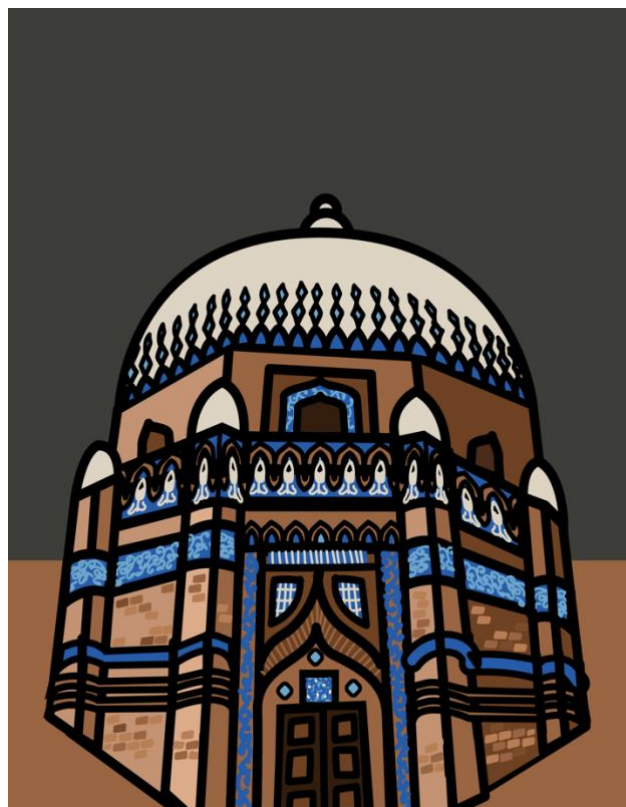
5.3.4   Implementation And Exhibition

Two separate versions of the documentary were created. One with the animations another with the transcription of the audio in English. This version was designed specifically for better understanding of the documentary content, by audiences who do not know Hindi or Urdu. The images below show two different modes of the documentary, while being scanned.
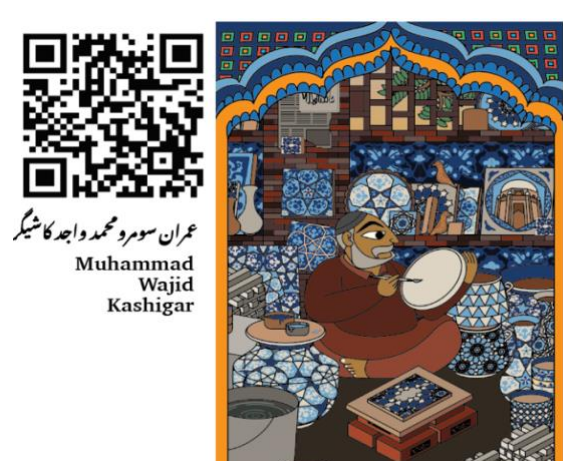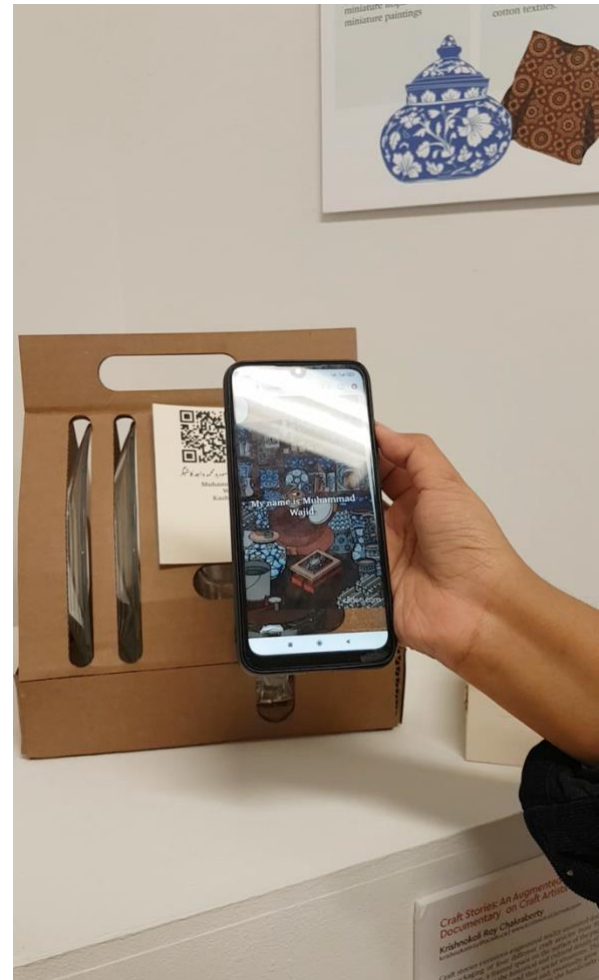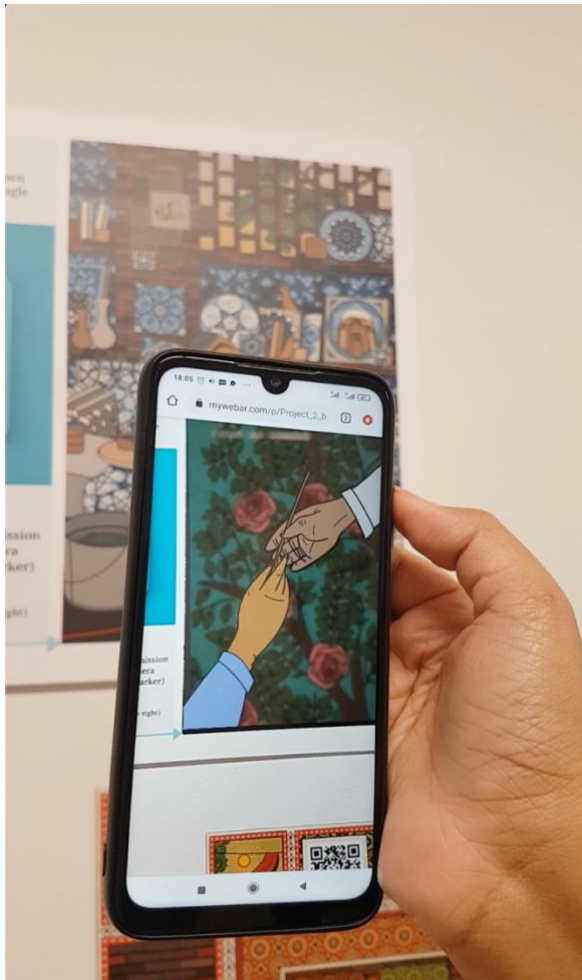
5.4 *Ajrakh* Printing

5.4.1 Interview Process

The interview for *Ajrakh* Printing was conducted with Imran Soomro, a young *Ajrakh* printer based in Bhit Shah district of the Hyderabad Province in Pakistan. Imran has learnt the craftsmanship of *Ajrakh* from his father *Ustad* Hajan Soomro, who is a prolific *Ajrakh* artisan practicing the craft for over 70 years. In his late 80s now, Ustad Hajan Soomro has retired to live with his family, while his son continues their family trade of *Ajrakh*. Imran Soomro, is a gifted artisan who has also learnt and used the medium of social media to boost his trade and draw immense international attention. In the interview Soomro revealed that, while the demand for especially hand crafted *Ajrakh* fabrics has gone down locally, and international niche customer base has formed, who buy *Ajrakh* printed fabrics from him regularly. Soomro adds that social media platforms like Facebook, and Instagram has helped him advertise the craft form for audiences across the globe, who have come to appreciate the intricate process of *Ajrakh* printing, with locally and sustainable sourced materials, with handcrafted precision. Imran's candid conversation about his work process during the interview, and his views on 'how the growing border tension between India and Pakistan' affect his trade' added a lot of depth and emotional value to the documentary. His interview offered a great deal of audio-visual anecdotes, which later helped me to develop a visually compelling animation.

5.4.2 Storyboarding And Animatic

After the interview, I started with the editing process of the audio. Having learned from the previous editing process, the length of this audio was limited to 2 minutes. Since the packaging for the *Ajrakh* fabric was a protective paper, which could be reused as a poster, the audio for the AR documentary was supposed to be playing in the background, alongside a series of micro animations on the Poster. Hence, the audio was linear, while the animated poster, was essentially non-linear, following the chronologic movement from frame to frame according to the viewer's perception.

The animation part of the project is yet to be completed and is a part of the future scope of the project.

Figure 38: Storyboard for micro animations - the Ajrakh printing process

5.4.3 Implementation And Exhibition
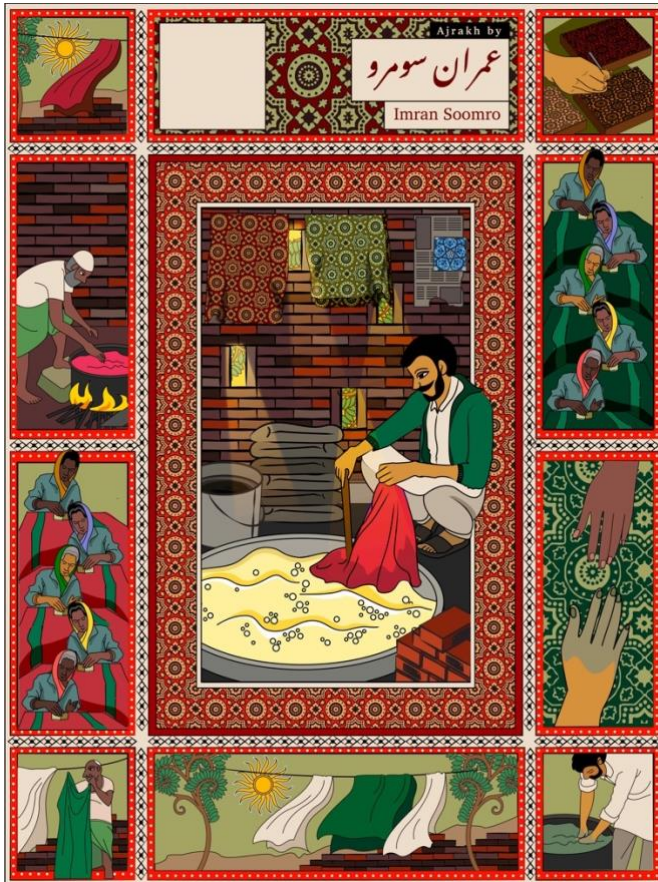
Figure 39: AR Marker Depicting the Ajrakh printing process
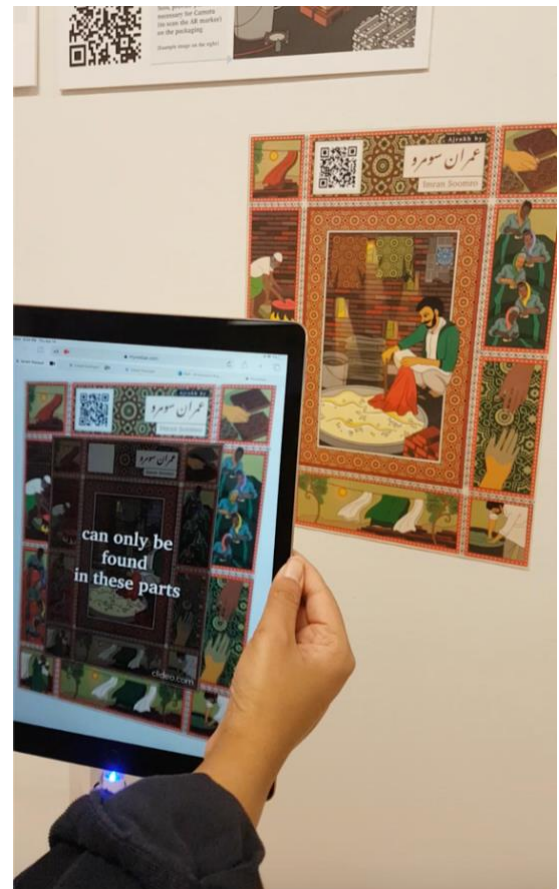
Figure 40: Scanning the AR Marker tp see the transcription of the audio

Figure 41: Textile wrapped in the Ajrakh packaging paper

5.5   Tie Dyeing

5.5.1   Interview Process

The interview for Tie Dyeing was conducted with Abdul Sattar Khatri, an award winning Tie-Dye printer, from the famous Khatri family known for making exquisite *Bandhej* work. He is based out of Kutch, Gujarat, in India. Abdul Bhai has learnt the craftsmanship of *Bandhani* from his father and colleagues, and has been practicing the craft for *50* years. Now in his late 80s, Abdul Bhai is nowhere close to retiring and explains how untying the Bandhani threads still helps him to unwind and relax after a tedious process of tying and dyeing each piece by hand. His interview offered a great deal of audio-visual anecdotes, which helped me develop the narrative structure for the documentary

5.5.2   Storyboarding And Animatic
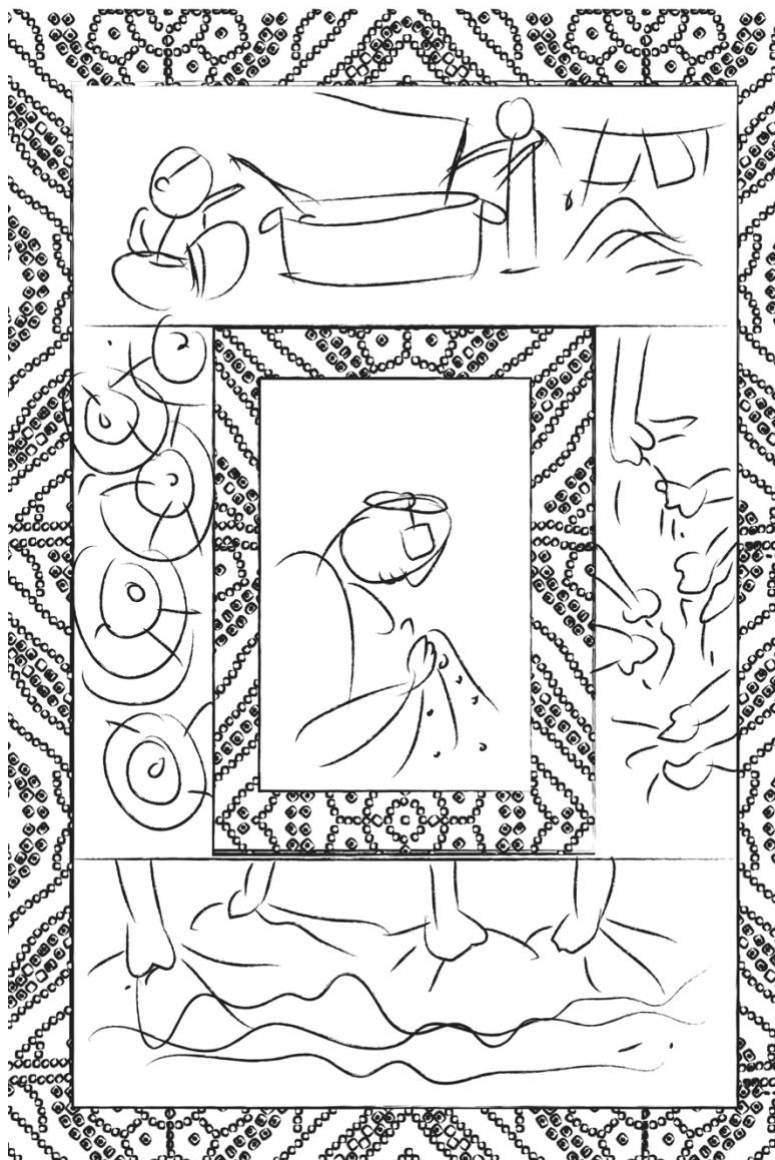
After the interview, I started with the editing process of the audio. The length of this audio was limited to 2 minutes. Since the packaging for the Bandhani fabric was also a protective paper, which could be reused as a poster, the audio for the AR documentary was supposed to be playing in the background, alongside a series of micro animations on the Poster. Hence, the audio was linear, while the animated poster, was essentially non-linear, following the chronologic movement from frame to frame according to the viewer's perception.

The animation process for the this interview is yet to be completed and is a part of the future scope of the project.

Figure 42: Storyboard of Bandhani Textile Printing by Ustad Abdul Sattar Khatri

5.6 Lac Jewellery

5.6.1 Interview Process

The interview for *Ajrakh* Printing was conducted with Avaz Mohammed, an octogenarian artisan based in Jaipur, India. Avaz Bhai has learnt the craftsmanship of Lac from his father and grandfather and works in his tiny 8x8 studio, in the heart of Sanganer, Jaipur. In his late 80s now, Ustad Muhammad has lives with his family, and his son continues their family trade of Lac jewellery making. His interview offered a great deal of audio-visual anecdotes, which later helped me to develop a visually compelling animation.

5.6.2 Storyboarding And Animatic

I started with the editing process of the audio, after completing the interview. The length of this audio was limited to 1 minute, since the marker was embedded on a small wooden box (jewellery box). Post editing, a storyboard was developed to visualise the micro -animations on the packaging. The final animation process is yet to be completed for the lac Jewellery process as well, and is a part of the future scope of the whole project.

Figure 43: Illustrated Character Design of Avaz Mohammed
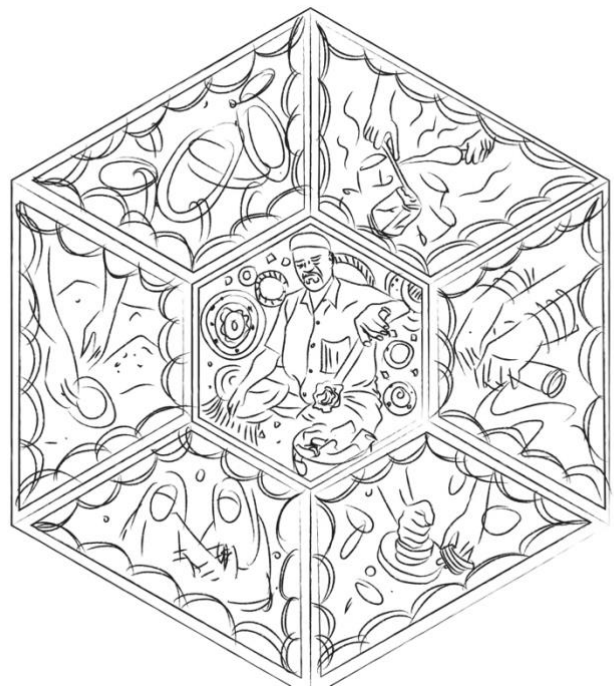
Figure 44: Storyboard of Lac Bangle Making by Avaz Mohammed

5.6.3 Implementation And Exhibition
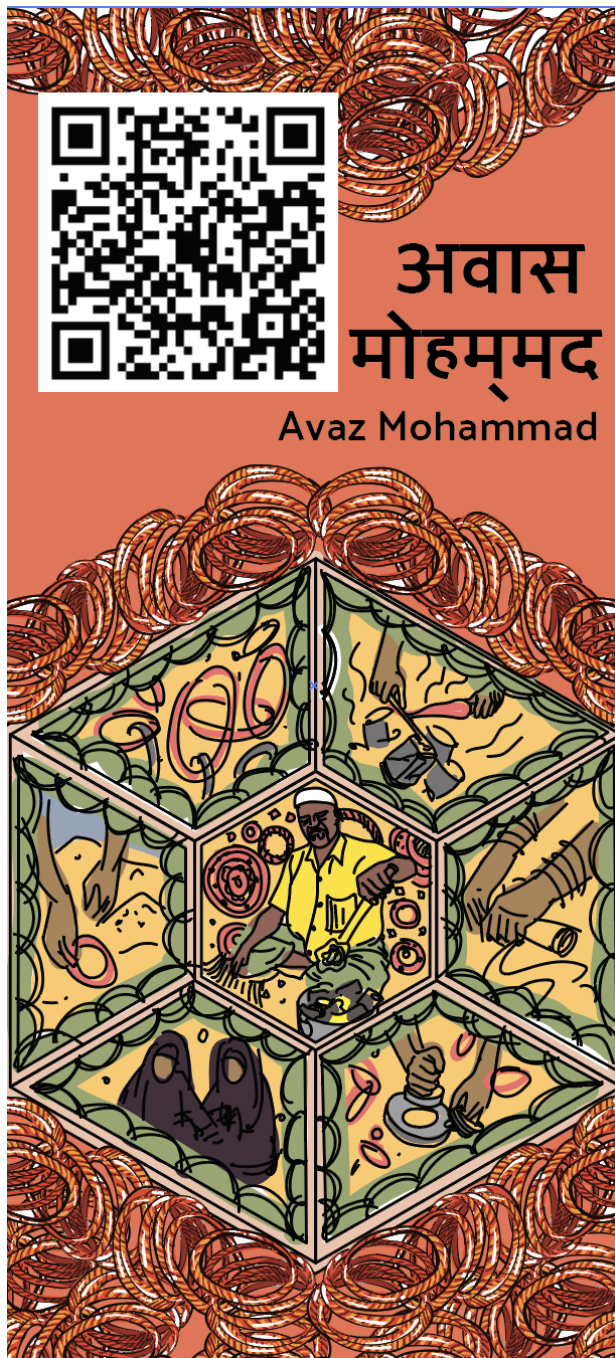
Figure 47: AR Marker for the Lac jewelry packaging

Figure 46: Lac Jewelry packaging depicting the AR marker on the top

Figure 45: Attaching the AR marker on the box

5.7 Transcription and Subtitling

The process of transcribing and translating the interviews with the participating artisans was initially started with the interviews itself. The unedited conversation was fully transcribed and was later cut according to the final edits made. However, there was a subsequent dilemma about whether to include the '*Urdu/Hindi* to English' subtitles and, how to meaningfully include the subtitles, if they are added at all.

There were multiple pros and cons of adding and not adding the subtitles for the animated documentary. One of the pros of adding an English subtitle being – readability and understanding of the content among Audiences who originally do not speak Hindi or Urdu. However, the primary cons of adding English subtitles was – distraction from the animated media and lack of legibility, where the audience is drawn towards emphasising the transcription instead of the animation and the audio. To answer to this question, a combination of the two was developed to gauge the audience's reaction, during the exhibition.

While one version was created with the animated documentary, the other version was created with the subtitles only. I also wanted to add a toggle button to switch between the two modes for easy accessibility, however, I was unable to add this feature in the live website due to technical constraints. A mock-up of the toggle switch was created, and is depicted in the image below.
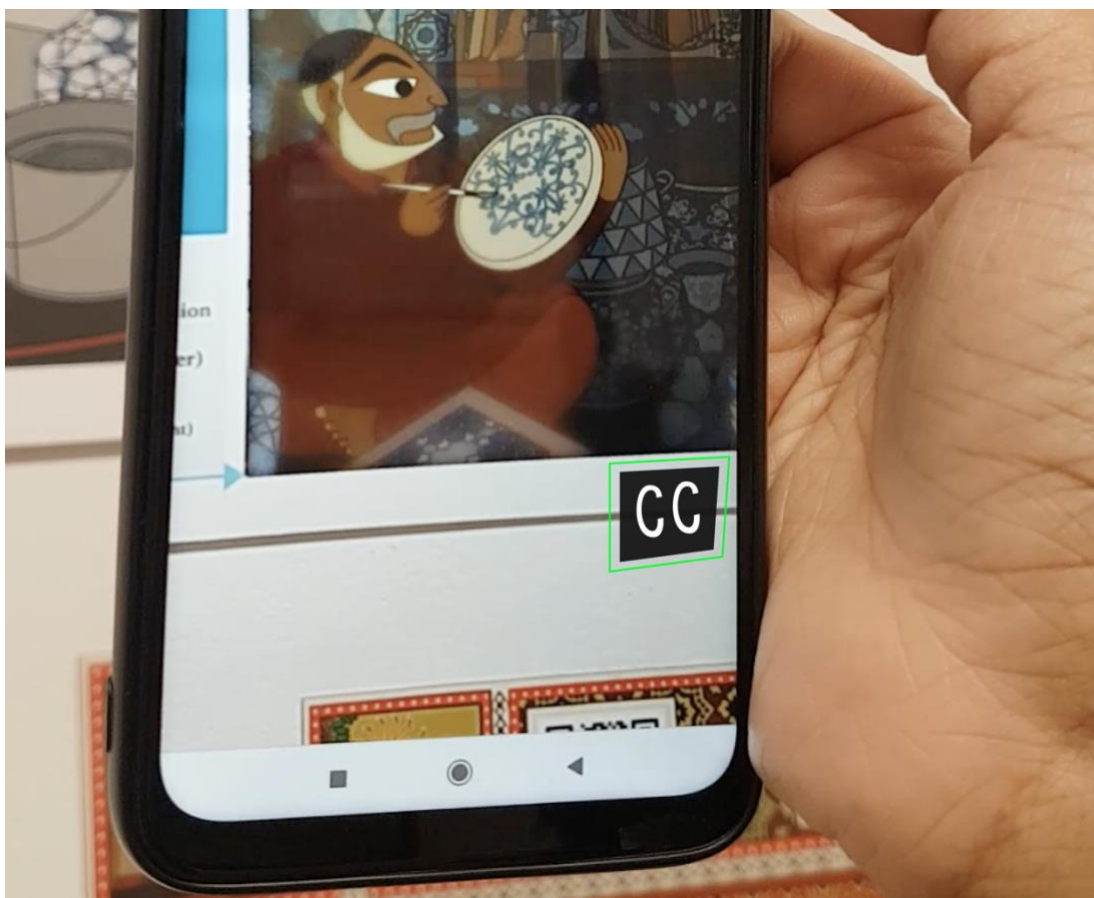
Figure 48: CC Button for transcription

6 Insights

The process of designing *Craft Stories*, leverages the audio documentation of the interviews, paired with animated content, which is embedded on the physical packaging using augmented reality. While developing the animated content was interesting, and required a lot of precision and creativity, it also posed a series of challenges. The primary challenge was the time constraint for developing animated content for all the four craft practices. Hence, only two of the craft forms – Blue Pottery and *Ajrakh* Printing were fully animated for the project. Concept art, along with the voice over recording (and transcription) was presented for the other two practices, which include – Lac Bangle making and Tie-Dyeing.

Craft Stories relies on both audio and visual qualities of an animated documentary to present a narrative experience to the viewer. The audio being the voice of the artisan, and the animation being its visual representation through the aesthetics of *Phad*. The visual is equally important in this scenario since, *Phad* is an existing multimedia narrative folk artform that is intrinsic to the region of Sindh, and its culture. Instead of proving a live-action footage for documentary, the visual styling *Phad*, creates a more unique, stylized and localized lens for understanding the craft practice.

Transcription and subtitles (in English) included in the second version of the documentary helped audiences who do not know Hindi or Urdu connect better with the pieces. However, on interacting with native speakers, during the exhibition, I was able to understand that adding the subtitles along with the animated documentary would be an overkill, and separating the two versions, helped them enjoy the documentary content, without the distraction of text at the bottom of the screen. This being said, I would like to include a toggle feature in the live website for future development of the project, since it would help the audience choose the version they would like to interact with, and view it without having to scan multiple QR codes.

The inspiration behind the *Craft Stories* project and the supporting documentation was my personal interest in the craft practices of South Asia, In particular Sindh. Having lived in the region for several years, as a student, and developing close relationships with the artisans, I learned to appreciate and treasure the various intricate craft forms across the region. My interest and career as an artist and designer also happened to flourish through these interactions over this time period. I wanted to showcase some of these wonderful timeless craft traditions, and tell the story about their makers, their history and their culture, so that people can truly appreciate its existence and understand the necessity for supporting and continuing the practice.

7   Chapter 8 – Future directions

This project is only a prototype of documenting and publicising a few craft practices across the Western Indian region, which can be implemented across various other craft practices in other parts of India, Bangladesh and Pakistan. The visual style and narrative experience can change along with the location of the craft practice. Since this project was based in and around the areas of Sindh and Rajasthan, the chosen mode of visual style. If the same project was developed in the eastern India, documenting the craft practices across Western Bangladesh (Jessore, Khulna, Faridpur, Dhaka) and Eastern India (West Bengal, Orissa) the chosen visual style, could be based on eastern South Asian narrative styles like *Patachitra* or Kalighat Paintings.

Craft Stories was conceptualised as a series of short animated documentaries about regional South Asian Crafts and Artisans using the visual aesthetics of a local folk artform. While this project was based on the craft practices of Sindh, the main concept can be applied to any craft practices located in any part of South Asia.

The physical objective aspect of the project reveals the history of the culture and creative behind the material of the craft. Hence the material aspect is very intertwined with its subjective history. In such circumstances involving the artist into the making of the documentary can make the process even more enriching and improve the quality of both the research and practice. Instead of being an extractive research process, the evenly co-created participatory approach can help give more voice and freedom of artistic expression to these crafts persons.

I also want to co-create and evenly collaborate with *Phad* Artists like Kalyan Joshi, and work with him in his studio, in Bhilwara, Rajasthan. I would want to also travel and meet the crafts persons who participated in this project and future participants, in order to document their craft in person, which equal involvement from their end.

I intend to take this narrative further ahead, perhaps, even without being tied to a material source (packaging) and create an online repository of short animated documentaries based on the region in South Asia. I would like to call this web repository – *Simantaheen* (Borderless), since it is an effort to revisit the cultural roots of South Asia, through its interconnected web of folk art and craft forms.

8 Conclusion

Figure 49: Scanning and demonstrating the usage of the AR animated documentary on the Ajrakh Poster and Packaging

This thesis project has been an exploration of how new media can be used to promote discussion around a material object, specifically handcrafted material objects. Through *Craft Stories*, I have been able to envision, design, and develop an Augmented Reality Animated Documentary embedded on the packaging of the folk artifacts. This Augmented Reality aspect, breathes life into an inanimate material object, by informing the viewer about its hi/story, culture and more. It can be argued that - it is possible to revive vanishing craft-practices by sharing the stories about its maker, culture and history, to the consumer. Since, a story that is told, is a story not forgotten.

While this project is only a design prototype, the thought process and research behind it, can help in creating, nurturing and expanding groups of aware-patron-consumers who would incentivise the craft trade by making informed choices. An aware-patron-consumer can assert their appreciation and understanding of the craft-ecosystem, as well as, its historical and cultural aspects. This recognition can contribute towards preservation of the craft-culture/s, and help bring proper remuneration, patent rights and greater appreciation towards the craft-person.

An important significance of the project lies with overall practice and unifying nature of craft across the South Asian subcontinent. The selected craft forms, viz., Blue Pottery, *Ajrakh* Printed Textiles, Lac Jewelleries, Bandhani, are equally practiced in the Sindh Region of both India and Pakistan. Despite the socio-political-international conflicts and growing tension between the two nations, artisan continue to practice the same craft, using the same source of water (River Indus), and the same ancestral land. This shows that the underlying historical and cultural significance of handicraft traditions are far more than transient, short-lived practices. It is a cultural identity, and heritage, that is deeply rooted in the population of the region. The animated documentary tries to capture this emotion and identity of the craftsperson associated with the craft.

In my research, I asked: '*How might a new media embedded object be used to enable discussion or setup discourse optimised within a commercial context?*' To address this question, an understanding of missing link between the craft product and the consumer, is necessary. While the craft person is inseparable from their practice (in the South Asian context), and each of their produce is a unique labour of love, the consumer is often unaware of the crafter's identity, approaches / styles / schools (gharana), behind their practices, and their unique relation to each and every object that they craft. This project explores ways to develop the same understanding and appreciation of four craft forms

practiced in Sindh region in India and Pakistan (viz., Blue pottery, *Ajrakh* Printing, and Bandhani Dyeing, and Lac Bangle making), all of which are practiced in both India and Pakistan, despite the international border, and growing political tensions. The project addresses the question through an animated documentary, depicting the story of the crafts person behind the craft. The animated documentary can be viewed by scanning a marker on the packing, which is located in a commercial environment (like a craft market). Hence, the AR animated documentary, on the packaging can provide a discursive context to the physical craft, even in a commercial setting. This system is visually articulated using the aesthetics and narrative styling of the folk artform, *Phad*, that is native to the region of the craft practice.

Figure 50: Installation at the 2022 DF Graduate Thesis Exhibition

The *Craft Stories* project was installed at the Graduate Gallery during the Digital Futures Thesis Exhibition 2022. The installation was conceptualised as a craft market. The AR embedded packaging of the objects were placed on eye level, so that it can be scanned in real time by viewers to experience the animated documentary. The process documentation which includes paper prototypes, sketches and other tangible research creations were exhibited to provide further context about the making of the project.

The installation, enriched the AR experience for the audience and myself, as an artist and designer. The presentation of the tangible research along with the final prototype helped to contextualize the project and develop a personal interaction experience with the viewer, which was crucial to the shared approach of presenting the AR experience. Installation, Interaction and discussion, together form a discursive object, which differentiates it from a stationary, inanimate object.

This thesis demonstrates and chronicles how emerging technologies like AR with illimitable media-communication dimensions and potentials can synergize with outmoded but relevant traditional media practises like *Phad*. The design intervention can preserve tangible cultural heritages like crafts for their social, historical and cultural significance. For the past and present are just the part of a continuum of the same human quest for innovation and creativity, and creativity is a great unifying agent.

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Appendix

Appendix A: In depth Analysis of Modern Day Problems in the Craft Industry

The following points are some of the main reasons discussed in detail, for why the craft industry is not helping the artisans and craft communities

- PROCESSING AND PROCURING RAW MATERIALS:

    Most of the raw materials, used by artisans, are steadily vanishing, or becoming otherwise inaccessible. Earlier, raw materials used by artisans were largely accessible due to the close links between the evolution of crafts and locally available materials. The *Jajmani* (raw material lending and brokerage) system, which mainly comprises artisanal caste and the village community to supply goods and services; offered artisans with access to community resources. Over the time, this traditional structure has been broken down along with competition from organized industry; artisans nowadays find it difficult to buy quality raw materials at a price they can afford to pay. In the absence of raw material banks, these local artisans are forced to rely on local traders who provide them raw materials against orders, at high prices, or switch to non-traditional raw materials, which hinders their process of production and prevents them getting sustainable profits.[1]

- AGGREGATION AND MEDIATOR TRADE:

    The process of aggregation involves bringing products from decentralized units with aim to enable economies of scale in transportation, storage, and retail. Due to the dull status of infrastructure and lack of communication in the country, aggregating the product is a difficult job to do. This, as a result, leads to many of the troubles in the chain of crafts supply. Buyers and retailers both lack incentives to rise above upstream, supply-side issues, which resulting in loss of opportunities for artisans to access markets.

- PRODUCTION:

    The techniques and the process of crafting vary from one craft to another; the production takes place in households, with all the family members get engaged in various aspects of the process. Even though there are organized artisans structures exist, those craftsmen typically produce within community settings. The production of handcrafted products is mostly seasonal, with crafts activity being balanced for the period of the harvest season, as most of the artisans is also engaged in agriculture to for their livelihood.

- MARKETS:

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[1] "5 Factors Depleting the Indian Handicraft Industry," accessed February 25, 2022, https://www.indianretailer.com/article/sector-watch/fashion/5-factors-depleting-the-Indian-handicraft-industry.a5382/.

The market for hand crafted products can be understood as local, retail shops – high-end as well as mainstream, exhibitions and exports. Out of all these, local markets are still the most common market for many artisans. The new age markets, national as well as international, have grown with an expanding demand for products that have a story linked to them. However, such products are low in supply due to inefficiencies in the supply chain.

- DEMAND:

  With the beginning of globalization and the availability of more affordable and varied products, the market is facing severe competition in the global market. These products are typically perceived as traditional, old-fashioned and antithetical to modern tastes. There have been lesser efforts made in order to reposition the image of handicrafts in India and **build customer appreciation of the history and cultural identity associated with these products**. Apart from that, there have been a few instances of traditional crafts being contemporized to fit with changing market patterns.

- BIG BRANDS, MIDDLEMEN NEXUS

  The treacherous role played by big brands, created by multinational corporations. Most lifestyle and luxury brands do recognize that handicraft is the lifeline of their industry. However, they fail to recognise the contribution of the people responsible for creation of this value. The industry is also infested by parasitic middlemen who are making more money but do not have the craft skills. The middlemen get contacts from overseas clients and give jobs to the artists. These men would be creating more money than the crafters, despite the fact that they did not have the crafting skills. They devalue the roles, skills, and even the existence of the artisan themselves, as if handicrafts are never handmade by humans, but fell from heaven. Well, heavenly as they are, handicrafts are handcrafted by human beings called artisans. Artisans will give themselves all the time they need to either match or surpass the expectation of their client. Artisans, of course need compensation in the form of money to survive, but they also need respect and recognition for their craft. This is something that the design community can challenge or disrupt. The AR packaging technique could be one such design intervention, which can help transform the culture of not recognising the creators themselves.

- FAKE HANDICRAFT :

  Most commercial crafts focus on on speedy standardised, low expense replication. This impersonates the factory model. The strength of the handmade, artistic quality are forgotten. The outcome is that, even when craftsman can make money by creating their craft works, most don't want for their kids to continue the tradition.[2]Fake handicrafts also create a fake awareness about the history of the craft, and instead of empowering it kills the craft traditions. This thesis project will also aim to educate the buyer about the fallacy of these fake crafts, and how it kills the authentic handicraft industry.

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[2] Rajiv Patel and Amisha Shah, "Problems and Challenges Faced by Handicraft Artisans," June 1, 2017.

Appendix B: The Global and South Asian handmade craft market

It is well known that Artisans are the backbone of the non-agricultural rural economy of South Asian countries like Bangladesh, India, Pakistan, etc. An estimated 7 million artisans, according to official figures (200 million according to other sources), are engaged in craft production to earn a living, in India. [3]However, they are gradually disappearing. According to a UN report, their number has decreased by 30%, over the past 30 years[4].

'*Crafting a Livelihood*'[5] report released by *Dasra*,[6] a leading philanthropic foundation states some findings as below:

- The global market for handicrafts is USD 400 billion with India's share below 2%, representing a tremendous growth opportunity.

- The crafts sector is highly unorganized and informal with 42% of artisans working out of their homes[7]. Crafts is a small-scale industry with 39% of artisans incurring production expenditure of less than INR 12,000/ USD 215 per year.

- 50% of household heads of craft producing families have no education with 90% of the women in these families being completely uneducated.[8]

- Craft is a family activity as 76% of them attribute their profession to traditions and legacy.[9]

- Propelled by loss of markets, declining skills, and difficulty catering to new markets, a large number of artisans have moved to urban centres in search of low, unskilled unemployment in the industry.

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[3] "A Threadbare Existence - The Hindu," accessed March 27, 2022, https://www.thehindu.com/news/cities/Delhi/a-threadbare-existence/article4382633.ece.

[4] "Handloom & Handicrafts Industry in India – Exporters & Opportu...," accessed March 27, 2022, https://www.investindia.gov.in/sector/textiles-apparel/handlooms-handicrafts.

[5] "The Declining Legacy of India – Rural Artisans: Report," *India CSR Network* (blog), May 22, 2013, https://indiacsr.in/the-declining-legacy-of-india-rural-artisans-report/.

[6] **Dasra-** is an Indian Organization that initiates to help both philanthropists and social entrepreneurs towards bringing about social change

[7] "The Declining Legacy of India – Rural Artisans."

[8] "The Declining Legacy of India – Rural Artisans."

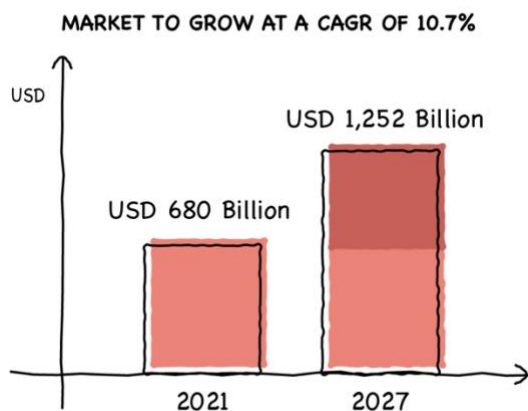[9] "The Declining Legacy of India – Rural Artisans."

MARKET TO GROW AT A CAGR OF 10.7%

USD 1,252 Billion

USD 680 Billion

2021   2027

Figure 51: Global Handicrafts Market

- The Indian government, private sector and non-profits are each involved in the sector but their roles have evolved in silos with little specialization and much duplication.[10]

Over the last couple of decades, owing to several factors, the global demand for handcrafted products has been increasing by leaps and bound, the trend is expected to continue and even become stronger. According to a recent report, "the global handicrafts market stood at a value of USD 647.57 billion in 2020. The handicrafts market is projected to witness a CAGR of 10.9% over the forecast period of 2022-2027. It is expected to reach USD 1,204.7 billion by 2026. And in the North America handicrafts market reached a value of around US$ 218 Billion in 2018. Looking forward, the market is projected to reach a value of US$ 402 Billion by 2024, registering a CAGR(compound annual growth rate) of nearly 11% during 2019-2024."[11]

Amongst the most important factors responsible for this phenomenal growth are: Increasing travel and tourism activities and associated marketing of handicrafts as souvenirs to tourists. The handicrafts represent the culture and tradition of a region or community. Each handcrafted product is unique and exhibits distinctive qualities and is perceived as a symbol of status for consumers as it often reflects their ability to appreciate the cultures of the other/s. A handicraft gift, rather than a factory-made one is bound make someone feel extra special. This, in turn, can encourage the receiver to emulate the same practice, and in the process can increase the awareness about handicrafts, and eventually, its demand.

HISTORICAL MARKET SHARE AND FORECAST

USD

1,197

641

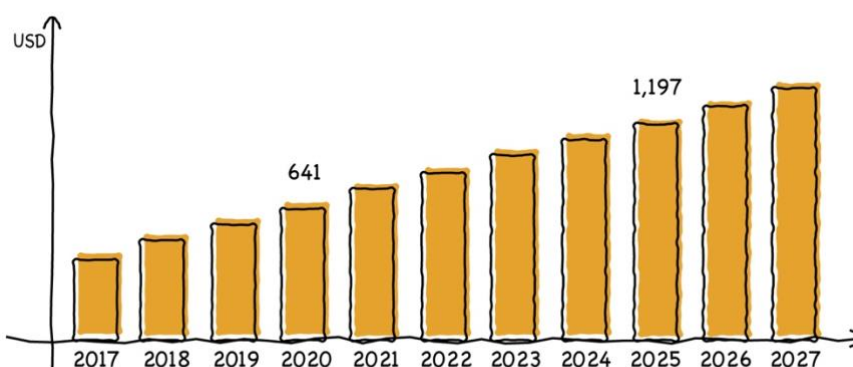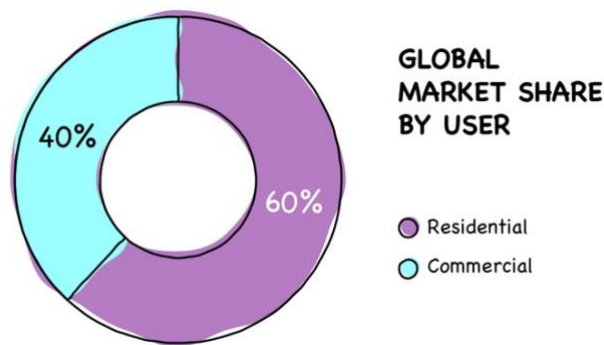2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027

Figure 52 Global Handicrafts Market, Historical Market and Forecast

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[10] "The Declining Legacy of India – Rural Artisans."
[11] "Global Handicrafts Market Report and Forecast 2022-2027," accessed February 25, 2022, https://www.expertmarketresearch.com/reports/handicrafts-market.

The market vs maker

In post-industrial societies, within certain sections of end-users/consumers, a fatigue and aversion towards mass-produced, factory-made products are setting-in, driving them more and more towards handicrafts, especially for niche products. A Handmade product is much more personal, it is something one can be proud to have, it carries history, its shape, colour, texture etc. will have a unique earthy character, and most importantly no two pieces will look identical with each other. Some, again, opt for handicrafts because their production process is more environmentally sustainable and empowers small businesses, poor marginalised artisans and help preserve centuries-old traditions.

GLOBAL MARKET SHARE BY USER

40%
60%

○ Residential
○ Commercial

There are also a growing number of dedicated gift shops selling only handcrafted gift items in upmarket shopping malls and market complexes. Online selling of handicrafts is creating a global market that is steadily increasing.

"But are the artisans getting a good share of this increasingly expanding pie?" The answer is 'no'.

Why even within a favourable environment like this the life of the artisans is not thriving and many crafts are declining and even disappearing too? The usual official explanation (as stated by the website of Ministry of Textiles, Government of India) is,
"due to its very nature of being unorganized, lack of education, with the additional constraints of low capital, poor exposure to new technologies, absence of market intelligence, and a poor institutional framework.[12]*"*

However, with in-depth analysis, we can conclude several factors that leads to the depletion of the craft market. These comprise of problems like procuring raw materials, aggregation and mediator use, production, market, demand, big brands and middlemen nexus. These factors are explained in detail in the Appendix A.

Bulk of these are well known structural factors that would require governmental or/and other long-term institutional intervention, and are beyond the scope of influence for lesser mortals like the designers. For the design community a possible area to exercise their influence could be the aspects related to demand, as they can affect the consumer through appropriate design interventions like, packaging which can reveal that "Behind every handcrafted product, there is a story of the artisan and the product itself"[13]

regarded as an example of an early medieval multimedia expression.

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[12] "About Us | Official Website of Development Commissioner (Handicrafts), Ministry of Textiles, Government of India."
[13] "Rural Handmade - Redefine Supply to Build Sustainable Brands."

Appendix C: The craft in the age of digital media:

Industrial Revolution/s & the *Decline and Decline* of the Craft-Ecosystem/s, But is There a Light at the End of the Tunnel? Craft production and Artisanship has experienced heavy decline since the beginning of the 1st Industrial Revolution (1770s onwards). But the 4th Industrial Revolution has created possibilities to reverse this trend.

Impact of the 1st industrial revolution of 1800s: Industrial Revolution (of 1800s) & the beginning of the decline of the craft-production and artisans

Artisans become workers as small workshops were replaced by large factories

The Industrial Revolution (of 1800s) transformed economies that had been based on agriculture and handicrafts into economies based on large-scale industry, mechanized manufacturing, and the factory system.

Positive impacts

While Industrial Revolution (of 1800s) had many positive effects on the economy and the society like; society's wealth, emergence of machines and mechanised production of goods, market systems, mechanization of agriculture, transportation, media/communication/messaging systems, formation/consolidation of the modern Nation-States and national economies, and, to a limited extent, in standard of living, access to healthier diets, housing, education, health care, gender-equations, etc. However, it had many negative consequences too, especially regarding the Craft-productions, artisans and the entire craft-ecosystem (craft-cantered way of life and business). These impacts were substantial, direct and immediate.

Negative impacts: decline of craft-culture

Before the Industrial Revolution, artisans with specialized skills produced most of the manufactured goods. Their work was governed by the traditions of their craft and the limits of available resources. Artisans worked at home or in small workshops, using their tools to make textiles, shoes, and other goods.

The industrial revolution of 1800s radically altered this *leisurely mode* and threatened the very existences of traditional Craft production practices and the artisans. Small craft workshops/clusters were replaced by large-scale, highly mechanized factory systems connected to wider market systems, both in terms of raw materials and finished goods. To increase productivity and cut down on the cost of production factory systems introduced specialized machinery, division of labour, increased managerial control, and strict working hours/shifts. Skilled tasks, previously performed by artisans, were divided and subcontracted out to less expensive unskilled labourers (Division of Labour). This created difficulties for the skilled artisans who spent years perfecting their skills and crafts now found it difficult to make a living. Unlike the craft products, industrial products were cheap but standardized. And, as their crafts, skills, and mode got obsolete, the artisans became workers, they were paid very little and their lives transformed irrevocably for the worse. Working conditions were harsh and unsafe in these early factories. The machines posed a significant threat to workers' lives. Owners of the factories had considerable control over the lives of workers who worked long hours for low pay.

In the factories and other workplaces, the hours were very long, and the conditions, generally, dismal and dangerous. The size and scope of manufacturing enterprises continued to increase throughout the 19th century as Europe, the United States, and other

parts of the world industrialized. Larger firms that could achieve economies of scale held an advantage in the competitive sphere of international trade. In the industrializing world, the new means of production meant the demise of earlier, slower modes of labour and life. In order for masters to maintain profits in a fast growing and changing economy based on trade, they used poorly trained and poorly paid apprentices to produce their goods. This division of labour ensured that neither the master (craftsman/artisan) nor the apprentices were true artisans. The masters became managers and the journeymen became workers. Moreover, the creation of new roads allowed for city goods to be sold in rural areas causing further damage to craft business and artisans within their heartland.

OTHER NEGATIVE IMPACTS: ENVIRONMENT

Amongst the other negative impacts of the Industrial Revolution (of 1800s) to follow was on environment. This is the 2nd most important negative impact of Industrial Revolution from our perspective, as it is directly related to the obliteration of the craft-mode. This widespread environmental degradation that was once ushered in by the factory-systems is still continuing today. The pollution of the environment steadily worsened, including urban environments where the majority of the population lived. Water in canals, which people used, was contaminated. Cities were overcrowded. Sanitary conditions were poor because they were unadapted to the massive rural exodus. A widening wealth gap emerged between the elites and common people. Crime rates increased exponentially. All these factors created irreconcilable raptures within a long existing social equilibrium, fomenting discontents within the populace, leading to massive social upheavals and other repercussions with long term implications that are still being felt.

REGIONAL VARIATIONS OF IMPACT: SOUTH ASIA

Of course, till early 20th century, all these were mainly confined to Europe, America and to some extent Japan. In the rest of the world, including South Asia, craft productions and artisans continued play some role, though with much reduced significance.
European Colonizers forced their factory made products on the colonized markets, while at the same time implemented protectionist policies like bans and high tariffs to restrict imports of craft-products. Raw materials like minerals, cotton, etc were imported without taxes or tariffs to the factories in Europe, which used them to manufacture finished goods, and then exported back. This led to destruction of the traditional-indigenous craft productions/products of the colonized countries such as the decline of the famous Muslin cloth in Bengal. These colonial policies not only destroyed some of the greatest achievements of human ingenuity for ever but also caused much sordid aftereffects like famines such as the Great Bengal famine of 1770, which killed a third of the population of Bengal.

REACTION & CRITIQUES

Critiques of industrial society like the proponents of The Arts and Crafts movement in mid-19th century Britain or *Mingei* movement of early 19th century Japan attacked the exploitative, modern factory, the use of machinery, capitalism, the division of labour, standardized products, and the loss of traditional craft methods. The influence of these movements continued among craft makers, designers, and even town-planners long afterwards and gave rise to many subsequent design movements like Art Nouveau, Art Deco

etc., all attempting reclaim, to a varying degree, the value and glory of the craft production and artisanship. The decline & decline of the *Craft culture* would continue across/over the subsequent versions of the Industrial Revolutions;

A timeline & brief outline/s of industrial revolutions:
The First Industrial Revolution, 1770s onwards: The first industrial revolution followed the proto-industrialization period. ...Steam power, Water, Mechanized Production, Factory System **The Second Industrial Revolution, 1870s onwards:** Science & Technology led innovations & patenting, Electricity, Mass-production for global markets, Assembly-Line production etc. **The Third Industrial Revolution, 1969 onwards:** Electronics, Information Technology/Internet of Things, Automated Production and the rise of Digital Technology. The third industrial revolution created the foundational infrastructure for an emerging, collaborative age. The fourth industrial revolution is built on the third. **The Fourth Industrial Revolution 1990s onwards**: Cyber-physical systems involving entirely new capabilities for people and machines, through fusion of robotics, artificial intelligence, nanotechnology, biotechnology, block chain technology, drones technology quantum computing, biotechnology, the Internet of Things (IoT), 3D printing, and autonomous vehicles. While these capabilities are reliant on the technologies and infrastructure of the Third Industrial Revolution, the Fourth Industrial Revolution represents entirely new ways in which technology becomes embedded within societies and even our human bodies.

The 4th industrial revolution can be moulded towards being inclusive and human-centered. This revolution can be looked at as an opportunity to unite global communities and to build sustainable economies.

Appendix D: Interviewee Consent Transcript

OCAD UNIVERSITY

Consent Form Transcript

Date:
Project Title: Craft Stories: an animated interactive documentary on craft artists from the South
                 Asian Sindh region.

Student Investigator: Faculty Supervisor:
Krishnokoli Roy Chakraborty,   Dr. Cindy Poremba,
Student, Digital Futures   Faculty Supervisor,
OCAD University   Faculty of Arts and Science,
krishnokoliroy@ocadu.ca (416) 887-3483   Digital Futures
                                                   cporemba@faculty.ocadu.ca (416) 977-6000

PURPOSE

About the Project: This project is an Augmented Reality interactive documentary on the Crafts, Handloom and Textile Printing practices of the Sindh Region, using the visual aesthetic of Phad paintings and performances, in the form of AR (marker) embedded packaging design (for the selected crafts).

Rationale: Craft objects, often lack the prestige of an artworks. Despite being made by hand, with intricate detail and hard labor, craft works are often devalued due to identical replications made with mechanized mass production. This creates a dissociation between craft objects and their makers. Consumers often purchase craft objects simply because of their aesthetic value or their trend factors. This lack of association leads to appropriation of the artistic legacy and affects the livelihood of the maker's communities.

Through this research, I would like to primarily work with 4 craft artisans of Blue pottery, lac jewellery, block printing and tie dyeing. Their families and associates will also be a part of the interview process since they are also actively involved in making the craft products. The interview will consist mainly of the process of creation of the craft, the artist's personal take on their craft and the history of their family's involvement with the craft.

This project is an exploration on recreating the connection between the craft object and its makers to educate the buyer about the people, processes, and heritage behind the creation of the product. The documentary narratives will also investigate the historical and socio political background of the craft forms and the effects of colonisation, Indo-Pak partition on the craft traditions and the practicing families. Lastly, the project will share insights on the various ways

Appendix E: Interview Question Structure

Interview Questions & Topics

Primary participants (the 4 artists of the respective craft forms) will be initially contacted through phone and will requested to hear a brief of the research. Then they will be asked for permission regarding their involvement with the project. If the primary participants agree, only then consent form will be presented to them, verbally, through phone call, since some of the participants might not be able to read and respond to consent text written in the English language. Prior permission will be asked to record the conversation and translate and transcribe the conversation thereafter.

The consent form will include all information on any potential benefits as well as risks of participation, a statement of confidentiality, information on how and when the interview data is stored and destroyed, the voluntary nature of the participation and disclosure of the outcome on conclusion of the project.

If the participants give their consent to proceed with the research, the following questions will be covered through the interview.

1. **The artist's personal background and people involved with them.**
   This question will cover the artist's background, and introduction to the craft. This will provide context and basis to the research. This question can also act as a conversation catalyst and project the researcher towards the direction the artist would like to converse about.

2. **The artist's approach to their craft and their own artistic interventions.**
   After an initial introduction, the artist will be asked about their approach towards the craft, keeping in mind that most artists develop their own intervention and improvise the craft accordingly. Their personal journey and improvisation will be thoroughly covered through this question.

3. **Their family history and its relation to the craft.**
   This question will cover and extend into the socio-political history, and the artist's or their ancestor's journey with the craft.

4. **Introduction to associates.**
   At this point, the artist would be asked if they would be comfortable to introduce the researcher with their associate / **adult** family members involved with the craft, if the artist agrees, his associate / family members will be interviewed briefly, about their involvement with the process.

5. **The process of the craft.**
   The artist will then be asked about their process. They may choose to not divulge any information if it is a trade secret.

6. **The current trajectory of the craft and its future.**
   This question will focus on the current situation of the craft practice and the artist's perception of what the future holds.

Appendix F: Participant Recruitment Material

Invitation Transcript

Date: _____

Dear _____,

You are invited to participate in a research study for Craft Stories. The purpose of this study is an Augmented Reality interactive documentary on the Crafts, Handloom and Textile Printing practices of the Sindh Region, using the visual aesthetic of Phad paintings and performances, in the form of AR (marker) embedded packaging design.

As a participant, you will be asked to share your insights and experiences as a craft artisan through an audio recorded interview. You will asked to share your personal background and others who are involved with the process of your craft, you can choose to introduce your associates or continue with the interview by yourself. You will then be asked for your approach to the craft and your artistic interventions. We would also ask you about your family history and its relation to the craft. Finally we would ask you about the current trajectory and the future you envision about the craft.

Participation will take approximately 40-50 minutes of your time.

Possible benefits of participation include generating discursive ideas around craft objects and the artists behind them, while educating the consumer about the heritage and cultural connections. It might also help connect you with artists across western India and south-eastern Pakistan and promote cultural unity.

Although the potential risk for this study is fairly low, there may be some risks associated with participation, which include the risk of identity theft and social stigma associated with religious bias.

If you have any questions about this study or require further information, please contact the Principal Investigator Krishnokoli Roy Chakraborty or the Faculty Supervisor Cindy Poremba using the contact information provided above. If you have any comments or concerns, please contact the Research Ethics Office through research@ocadu.ca.

Student Investigator
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Faculty Supervisor
Dr. Cindy Poremba,
Faculty Supervisor,
Faculty of Arts and Science,
Digital Futures
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Appendix G: Exhibit Explainer Posters

About the Crafts

The Indian subcontinent, which includes India, Pakistan, and Bangladesh, share extremely similar craft forms with identifiably different stories. Prior to the Indo-Pak partition in 1947, when people lived in harmony without any distinguishable physical borders art and craftsmanship flourished uniformly.

The Craft culture across the Sindh region (western India and eastern Pakistan) was predominantly influenced by the Persian and Turkish craft traditions. Incentivised by the then governing Mughal court, Islamic art and craft practices became the basis of most craft traditions.

Blue pottery

A handmade pottery technique from Jaipur (india) and Multan (Pakistan), inspired by the Turkish glazed pottery techniques, Mughal miniature inspired by Persian miniature paintings

Ajrakh Print

A handcrafted block printing technique made using sustainable natural dyes. Ajrakh prints depict intricate patterns, which are hand carved on wooden blocks that are relief printed on treated cotton textiles.

Lac Bangles

Lacquer crafts, which are inspired by Persian and Afghan lacquering techniques are used to make the ornate and ethnic Lac Bangles. The lac bangles and accesories are immensely popular in both the countries.

Bandhani Prints

Bandhani is a type of tie-dye textile decorated by plucking the cloth with the fingernails into many tiny bindings that form a figurative design. Bandhani is highly popular amongst the Dalit, Meman and Rabari communities in the Sindh, Rajasthan and Gujarat region

How to view the AR Experience

The animated documentaries can be viewed by scanning the QR code and capturing the marker image on the packaging. Follow the steps below, to experience the project.

You can use your own smart phone or scan them using the iPad provided below.

Step 1

Please scan the QR code below, to expeirence the documentary.

Step 2

After Scanning, open the website in Google Chrome Browser

Google Chrome Browser Only

Step 3

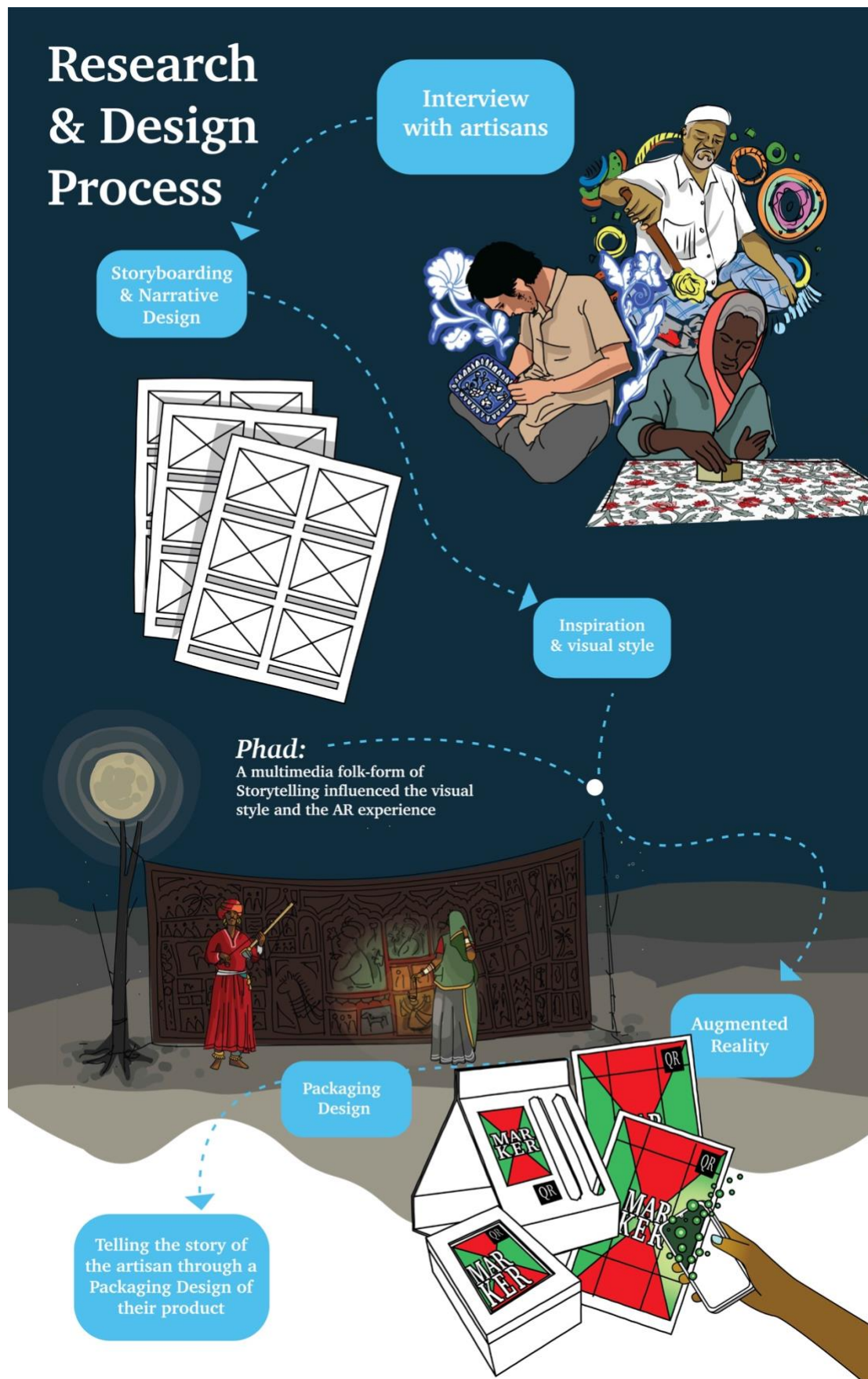Now, provide permission necessary for Camera (to scan the AR marker) on the packaging

(Example image on the right)

Figure 56: Picture depicting the research