Handicrafts Under Blockchain (HUB)

Blockchain enabled Traceability and Marketability of Indigenous Art Products

Identification of Problem Statement and Approach

India has a rich cultural heritage and ethnic traditions. It is also one of the major hubs of **handicraft products** owing to its cultural diversity. The handicraft sector is the **second largest source of employment** after agriculture especially in the **rural areas** and plays a key role in providing a livelihood to the rural population. However, the industry is currently facing various challenges and the individuals involved are moving towards other sources of livelihood. The total value of India's handicrafts **exports** was **Rs.34394.30 crores in 2016-2017**, which is **less than 2% share** of the total world handicraft exports. This is primarily because the sector has not yet been sincerely explored.

250
million dollar export industry

35
unique products

1.5%
India's Market Share

23
million dollar export industry

One such example is the **Bell-Metal handicraft industry in Assam**. It is one of the most important handicrafts of Assam, centered in the districts of **Sarthebari and Hajo.** The bell metal handicraft community in Assam consists of around **1500 artisans/entrepreneurs**. The alloy used in making the bell metal handicrafts has distinctive proportions **unique to Assam**. These metals have been in use since ancient times and have received patronage from various kings in the region. However, with presence of duplicates, competitive markets and various other factors, the bell-metal industry as well as the artisans are **struggling** to earn a livelihood and a decent standard of living.

Similar issues are also faced by other handicraft industries, including bell metal industry in other regions, such as Bakhira, Uttar Pradesh and Bankura, West Bengal. These issues establish that the industry suffers from a lack of awareness and marketability, which is making it difficult for it to survive. An effective solution to the problem needs to tackle these issues to generate ample revenue and better market opportunities for the rural entrepreneurs/artisans.

TABLE: SPECIFIC PROBLEMS WHICH PLAGUE THIS INDUSTRY AND THE RURAL ENTREPRENEURS INVOLVED IN THE BELL METAL INDUSTRY

Market Factors	Stagnant Market	Demand is limited to northeastern states, Bhutan, Nepal and some South-East Asian countries.
	Duplicates in Market	Abundance of cheap replicas leads to loss of market value and tarnishes reputation.
	Marketability	Low promotion and lack of awareness has led to low marketability for these products, hindering opportunities for expansion.
	Lack of Geographical Indication	Lack of a geographical indication tag(GI tag) has made it more difficult to market the product, despite its rich and unique history.
Human Resource Factors	Decreasing workforce	A lack of opportunities in the sector has caused a shrinking workforce, from around 5000 artisans in 2007, to 1700 artisans in 2014 and 1500 artisans in 2020. (approx.)
Social Factors	Poor Returns on Effort	Despite 12-hour long shifts in unclean environments, low returns (merely 10-15 thousand Rs. Per month) have made it hard for the artisans to make ends meet.

Implementation and people competence required for the solution

Proposed Solution:

Using the secure architecture of **Blockchain technology**, we propose introducing traceability to the handicraft production process, ensuring **authenticity** and thus adding genuinity and **marketability** value to the product, while also providing a **geographical identity** to the local artisan community via a **Unique Identifier**. We aim to upskill the Rural youth to not only help in operating the technical system built but also to develop a **business ecosystem** in the industry, aiding to shift the pricing power more towards the rural community in the value chain, improving the standard of living.
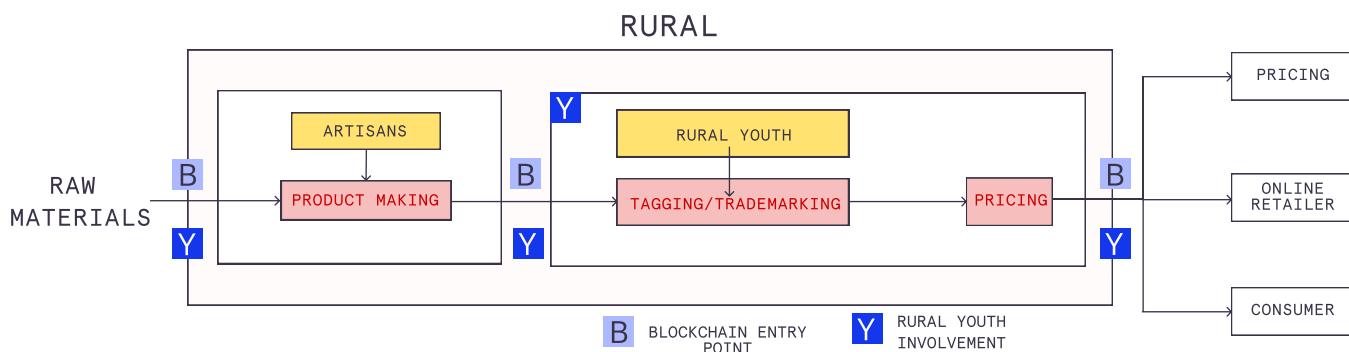

FIGURE: IMPLEMENTATION OF THE PROPOSED SOLUTION
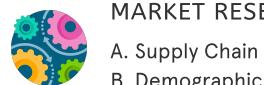
The product will involve tracking the artform (for example, bell metal) by use of **Unique Identification (QR Codes)** through all the steps of manufacture, packaging, storage and transit. This would enable us to store the **product history and journey** on our platform. **Anyone** owning the product could simply scan the Code and **verify the authenticity**. Confidential Information like monetery value would only be revealed to the concerned parties.

Role of People & Organizational Structure

Problem Identification and Solution Development Team
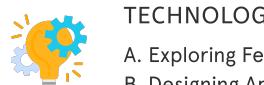
Role of people within our team
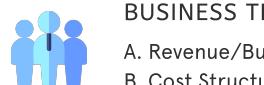
MARKET RESEARCH TEAM (3)
A. Supply Chain
B. Demographics
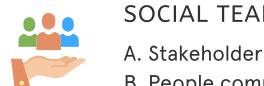
TECHNOLOGY TEAM(2)
A. Exploring Feasible Solutions
B. Designing Application architecture

BUSINESS TEAM (3)
A. Revenue/Business Model
B. Cost Structure

SOCIAL TEAM (2)
A. Stakeholder Analysis
B. People competency development requirements

Implementation team

PROCESS-OPERATING TEAM (RURAL YOUTH):
Carry out the essentials of the process like recording blockchain system entries, applying QR codes, Tagging, etc.

ACCOUNTING & FINANCE TEAM (RURAL YOUTH):
Maintain books of the raw materials & products flowing through the system and also pricing the products appropriately before the sale.

CONSUMER MARKETING TEAM(RURAL YOUTH)
A team of rural youth dedicated to market the industry by leveraging our branding and building an emotional connection with the consumers.

TRAINING & UPSKILLING TEAM (OUTSOURCING)

ARTISAN ONBOARDING TEAM - INITIAL REQUIREMENT
An initiating team of our company whose sole job is to show the artisans the benefits of the system on ground and encourage them to join hands.

TECH MAINTENANCE TEAM

The implementation of our solution involves **significant involvement of rural youth** as they are the operators of the system.

We plan to empower them by providing them necessary skills and giving them industry knowledge in the following manner:

Need

1. Only 4.69 percent of the workforce has formal vocational skills.
2. Upskilling rural youth requires solution with a custom course

Skill Delivery

1. Connect with the Govt, NGOs & Private Foundation having upskilling programmes
2. Using existing infrastructure like KVKs,NYKs, FTCs etc.
3. Focus on Soft Skills, Tech skills, Market Intelligence, Language.

Step 1	Step 2	Step 3	Step 4
Identifying target group (Student Unions, youth leaders)	Applications scrutiny by our team	Training Session	Segregation as per the final test and defining the roles as well.

Impact across society and environment as well as an overview of financial model of the proposal

Social & Environmental Impact

Reduce Risk and Fraud : Blockchain will lead to track each and every product and with a proof and record of the product being sold, increasing trust between artisan and trader.

Upskilling of the society: Our solution will upskill the youth in the community to be competent in business and operations, empowering the community as a whole to become financially strong, thus providing them accessibility to better healthcare and education
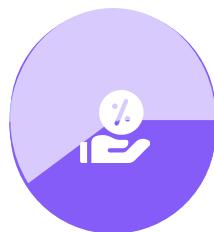
Reduce Wastage: Use of better practices to produce handicrafts would decrease the energy and material required.

Existing Solutions

Government initiatives like eNAM have been introduced with an aim to bring more visibility and traceability into the agriculture sector however, they are limited to APMC and more focus is on trading goods. No such initiative has been proposed for the handicraft sector as of now. Some companies like LAL10, WAC, TJORI etc are working hand-in-hand with artisans and provide an online marketplace to provide better value for the products. However, all such solutions lack a comprehensive view taking into account the pain points of the rural artisans/entrepreneurs.

Revenue Model
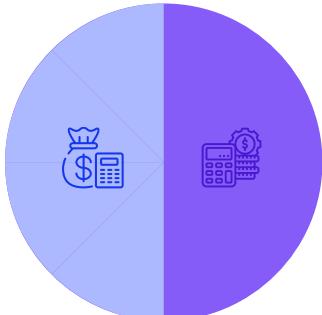
### Revenue Stream

Charge A Commission Over Sale Of Product Across The Supply Chain For Selling Goods Which Are Verifiably Authentic

Take Fees On Enabling Custom Orders Through Our Platform

Expected Costs

Capital Costs:
- Technical Infra
- Introductory concept marketing to the artisans

Operational Costs:
- Youth Upskilling and Training Costs
- Youth Incentive/Remuneration
- Consumer Marketing/Branding/Awareness costs
- Tech Maintenance
- Miscellaneous costs such as QR code prints, tags,e

Feasibility, Fitment & Flexibility

The feasibility of the business model presented can be explored on different fronts: Financial,Technology, Skill, Awareness and Adoption.

Financial & Technical Feasibility

1. Initial funds are required to set-up

2. Venture is self sustainable in the long run

3. Mobile Phones, Central PC, Printer

4. Use Open Source Technologies to drive licensing cost down

Awareness Feasibility

Awareness on Producer Side

Demonstrate the need by:

    a) How much they lose out on due to fake goods infiltrating the market

    b) The demand for genuine products and knowing the story behind them.

Awareness on Retail Side

1. Focus on how QR code and Packaging could convey the message and story

2. Many studies show how storytelling greatly improves the marketability

3. Retailer would more likely to shelf our product

Adoption Feasibility

1. Blockchain in different supply chain management would be a 3Bn$ industry by 2023.

2. Our main business proposition would help make the entrepreneur be the trusted alternative

3. A research study of 2009 found that artisans who have adopted new technologies and innovations earn more

Skill Feasibility

Skilling of Rural Youth / On-ground logistic employees

1. Sarthebari has an excellent literacy rate (90%)
2. Delivery in the local tongue is not an issue.

Skilling of Artisans

1. Directory of different methods, techniques and tricks needed
2. Practices from other artforms & feedback from customers

Flexibility & Future Aspects

Other Handicraft Industries

1. Major challenge is upskilling and generating awareness
2. Product Cycle different for different products
3. Extending to Perishables a different ballgame
4. Seasonality, finite shelf life, scattered producers

Feedback for Makers and Retailers

1. Help better quality products to persist
2. Upskill the Artisan with actionable feedback
3. Feedback system for customer

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Innovation with a Purpose: Improving Traceability in Food Value Chains through Technology Innovations

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