Example of Handcrafted Jewellery

Handcrafted jewellery refers to jewellery assembled by use of tools that are controlled by hand rather than the use of manufacturing machinery. Handcrafting is a composite and complex process that requires highly skilled labour. That is a lot of time and skill in designing and handcrafting unique pieces. Artisans generally go through years of apprenticeship to learn and perfect on their skills. The standard of a craftsman’s ability is shown by the artfulness and style of the designs in their jewellery, and this carries the unique story and personality of an artisan. As a result of their reputation being at stake, artisans mostly aim at producing high-quality jewellery by use of sustainable and ethically sourced materials.

Production of handcrafted jewellery happens mostly in small scale resulting in unique and very limited editions of the same product. In fact, most of the world’s finest and personalized jewellery is handmade. When consumers buy handmade jewellery, they end up not only acquiring unique products but also connecting with the artisans and supporting their trade. Provenance helps us identify who is the creator of a piece of jewellery, its origins and source of raw materials, processes it underwent and who claims its ownership or good title. Therefore, it can have a significant influence on the authenticity and value of jewellery, mostly when it is associated with a famous owner or renowned designer or craftsman, including its current ownership.

Case Study

Soko, Inc is a global women accessories global supply chain company with its production office in Nairobi, Kenya and sales office in San Francisco, USA. The company has specialised in bulk production to fulfil their fast fashion demand. Their business model is built around distributed manufacturing, which relies on business processes that put sparse entities together to achieve a net customer-driven goal. That is, they focus on fulfilling product and demand responsiveness through managing their distributed materials and production resources. Soko has connected over 200 independent workshops around Nairobi and its environs. Workshops are owned by artisans and are operated as a sole proprietorship, partnership or limited company. The size of a workshop is averagely 1-5 persons. Soko’s business operations are aligned towards ethically producing beautiful handcrafted jewellery. They manage this by ensuring that the materials artisans use is locally and eco-friendly sourced. Materials may include reclaimed cow horns and bones, recycled brass etc. In addition, they have developed training programs that guide the artisans to standardize on their quality and capacity.

1 This case is from a Master Thesis named “Blockchain-based Provenance Solution for Handcrafted Jewelry” by Antony Oroko Orenge
Soko has also developed a cloud-based software system that centrally manages sales orders (SO) and issues purchase orders (PO) to artisans. In addition, they have developed a mobile app that allows artisans to accept purchase orders, manage their inventories, and get paid through a mobile payment platform – *mpesa*. The orders contain design specifications which the artisan infuses with their own minimal aesthetics as a brand signature. Once a purchase order is due, artisans deliver their quantities in small batches which are then validated by a quality and assurance (QA) staff from Soko. Deliveries are normally done through Field officers (FO), however, artisans can opt to deliver by themselves. Once validated, the products go through a Work in Progress (WIP) phase, where they improve their value through electroplating, modification or assembly process. Thereafter, the products are batched up as per sales order requests and shipped to their distribution centres or directly to customers. Figure below shows Soko’s handcrafted jewellery value chain.

**As-Is Process Flow**

Soko’s handcrafting jewellery process starts with the design making process. This is where a designer collaborates with a skilled artisan to transform a concept into a real handcrafted jewellery. The design concepts are ideas sketched on paper or by a computer-aided design (CAD) software, including their dimensions and specifications. Design making process is a creative and iterative process. New designs normally go through a prototyping process, where the original design is transformed into a prototype to be tested by consumers. However, already approved designs skip the prototyping process and go to the next phase of production.
The production phase involves a number of processes that rely on techniques such as casting, shaping, distortion, crimping, carving, punching, gluing, studding, flattening etc. Depending on an items’ specification, they can go through a custom sequence of processes. For instance, to produce a cast piece item, the main process is casting. This is where liquefied metal is poured into cavities of a mold with the shape or form of articles to be produced. Lost wax is the commonly used casting technique where wax is turned into a mold and lost during the actual casting process. The result is a cast piece with excess metal on the surface. Filing technique is used to even out the surface or to shape the form. Most items from the custom process go through the polishing process so as to achieve the highest degree of smoothness. But specific items made out of horn or leather go through grinding and buffing processes respectively.

Once production is done, the artisan delivers the items to the nearest collection centre, where field officers from the organization forward them to the headquarters. Received items are first validated by a quality and assurance (QA) staff member against some quality control measures. Items approved are taken into the work in progress (WIP) phase, which involves electroplating, modification or assembly process. Electroplating is the coating of a metal with another metal such as copper or chromium through an electrodeposition process. However, items which require readjustment or tweaking go through the modification process. In case of an assembled product, the components go through the assembly process where they are fitted together to form the final product. Thereafter,
finishing is applied for a soft and smooth touch. Quality checking is performed again, and the approved items are forwarded to the inventory for storage. All rejected items are returned to the previous issuing process to be reworked on or discarded. Finally, all items from different purchase orders are aggregated per product type to be stored in the inventory.

In the event of a sales order being almost due, items are pulled from the inventory to satisfy the sales order. Personnel from the fulfilment department receives the items and carefully packages them into respective boxes in order to avoid any sort of damages. A final validation and auditing process is done to ensure packaged items meet customers specifications. If they do, they are packaged, labelled and shipped to distribution centres or directly to customers. Figure below shows the As-Is business process flow described above.
Issues

The handcrafted jewellery global supply chain demands transparency and traceability so as to validate quality and assess ethical compliance. Transparency refers to visibility into the materials and labour practices used across the supply chain while traceability allows a product to be traced across the supply chain. Provenance forms the basis of guaranteeing transparency and traceability. However, the current Soko implementation fails to guarantee provenance for its handcrafted jewellery. For instance, consumers have to rely only on the labels attached to the jewellery, which don’t have much information about the history of the product such as the source of raw materials, the processes it underwent or labour practices. Thus, they cannot verify if what they are paying for is genuine or as to whether they are supporting a legitimate course. On the other hand, artisans don’t have the visibility of who owns their jewellery let alone where it is on the planet. The reasons for lack of provenance can be summarised as follows:

- Lack of documentation to the sources of raw materials and their origins
- Designers who create the product design specifications are not credited
• There is no way of identifying a piece of jewellery with a specific artisan due to aggregation at the inventory check in process
• The processes a product undergoes through are not captured and presented in a way visible to the consumers
• Tagging is not applied at all stages in the value chain thus hindering traceability
• The available provenance data is centrally managed in the company’s database. This raises questions of trustworthiness of data due to the possibility of data manipulation