

Artisan Thrive Technology (ATt) System Proposal



Prepared for:

Elaine Weltz, Coordinator

Artisan’s Co-op North

Proposed by:

Celena Flores, System Analyst

CAMR Incorporated

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# **Executive Summary**

Ms. Weltz from Artisan’s Co-op North has hired CAMR Incorporated to plan, implement, and maintain a new system for her company. This system will bring Artisan’s Co-op North to the twenty first century with its renovated way to take and track inventory, improve sales, and provide a more active role for the artisans.

CAMR Incorporated has examined the System Proposal Request by Ms. Weltz and has decided the proposed system is practicable and low risk. CAMR Incorporated recommends a phased development due to its complexity. The first version of the system will implement the main features and will build continue to add to the system until the final version is achieved.

This document highlights the unified vision of CAMR Incorporated and Artisan’s Co-op North to build a database system and contemporary website to modernize, expand, and simplify Artisan’s Co-op North. This document will highlight the project overview, system initiation, feasibility assessment, system requirements, and system evolution.

# **Introduction and Overview**

* 1. **Problem Statement**

Artisan’s Co-op North has hired CAMR Incorporated to design and implement a database system and a website to improve sales and move to the modern era. Artisan’s Co-op North notices the world is moving to an age of websites and wants to move their business to expand their target market.

Currently, Artisan’s Co-op North keeps track of their inventory through a simple Excel document and everything is done by hand. This current system is outdated and tedious for Ms. Weltz. Artisan’s Co-op North has contacted CAMR Incorporated to produce their product because CAMR Inc. has a reputable reputation in constructing simple and innovative database systems and websites. Additionally, CAMR Inc. specializes in advertisements and will be able to expand sales opportunities for Artisan’s Co-op North.

CAMR Incorporated intends to build ATT (Artisan Thrive Technology) because this is an opportunity to start a system made for artisans in mind. This system will begin with a small company, Artisan’s Co-op North, and will expand as more artisans see the need for a system like ATT. Our team at CAMR will build a database system and integrate it in a functional, interactive, and innovative website for customers, artisans, and staff members.

* 1. **Project Vision and Scope**

The vision for ATT (Artisan Thrive Technology) is to automate inventory, support craft fair sales, and reach a greater audience via the web. To achieve this vision, CAMR Incorporated plans to create a database system and website to meet the needs of Artisan’s Co-op office staff, artisans, and customers.

CAMR Inc. will develop the ATT system in phases instead of delivering a final system in one piece. First, CAMR Inc. will focus on automating Artisan’s Co-op North by delivering a database system that will track inventory, sales, and a payroll system for the artisans. As the company becomes automated, CAMR Inc. will develop a website to improve sales for art fairs and the online market.

ATT will not include an interactive website with a live stream of the “warehouse”, but instead, create an organized website with still images and descriptions of all items in stock. A second limitation, will be that only Ms. Weltz and authorized staff and the artisans will be the only members that will have access to the database. Each Artisan’s Co-op member will have a personalized account where they will be able to keep track of their individual work and information, while other artisan’s information will be hidden.

* 1. **Requirements Summary**

The following list includes the major business requirements for ATT:

* Artisan Co-op North members will be able to track inventory and sales.
* Artisan Co-op North manager or authorized member will have a payroll system to assist with paying artisan members.
* Artisans will have the ability to enter, remove, edit their inventory, and check their sales.
* Crafts fair workers will be able to give proper descriptions of the products at the fairs and have a way to automatically upload receipts to the database system.
* Customers will be able to interact with a categorized website with pictures, videos, and reviews of products currently in stock.
  1. **Stakeholders and Interests**

The following list identifies the stakeholders and interests affected directly and indirectly by ATT:

* **Artisan Members** - Members want to be more involved in the inventory and sales process.
* **Ms. Weltz and other managers, office staff and volunteers of Artisan’s Co-op North** - Staff wants to be automated to increase accuracy and efficiency for the company.
* **Customers** - Families, friends, and anyone who enjoys art will be able to buy new beautiful products.
* **Investors** - Artisan members have put money into a system to see it succeed and flourish. The bank that has provided Artisan’s Co-op North with the loan to create this system wants to be repaid in a timely manner.
* **CAMR Incorporated Developers** - CAMR has invested time to analyze, design, and develop a system that will meet all the requirements and remain within budget.
* **Prospective Artisan**s - Artisans are looking to expand their small business and a successful ATT system will draw them to use this system.
  1. **Expected Costs and Benefits**
     1. Expected Costs

Artisan’s Co-op North will acquire costs of updating the software and hardware to support ATT’s the database and website. To store the database system, Artisan’s Co-op North will need to purchase cloud storage. To support the website, Artisan’s Co-op North will need to purchase and pay for a domain website name and a web hosting service.

Additionally, there will be costs for any advertisements for the system. There are online advertisements that must be purchased to broaden the market. Also, any banners, business cards, or other physical component that could be used to display the information of the new website will need to be purchased.

* + 1. Expected Benefits

There are various expected benefits for a system like ATT (Artisan Thrive Technology). Artisan’s Co-op North office staff will benefit from having an automated system because it will be time-saving, simple, quick, and concise. With an automated system, there will be no need for paperwork including receipt handling, individual inventory input, and artisan member reports.

There will be a barcode system which will make placing an object in the database system simple. Using card technology and a computer system during craft fairs, will reduce receipt paperwork and automatic updates to the inventory stock. With all sales and inventory in a unified place, creating final income tax forms and reports for each artisan will be easier because there will be forms and templates in the ATT system ready to be generated with updated information.

Another benefit will be the interactive website which will improve the sales experience for the customers and Artisan’s Co-op North. A website with an organized layout will help customers search and find products in a timely manner. The website will include reviews of products and artisans, so customers have a better idea of the product they will be purchasing. Additionally, the information of the products will benefit both the customers online and at the crafts fairs, because representatives of Artisans Co-op North will be able quickly look up the product with the barcode number and give a detailed description of the product, instead of not knowing how to answer customer questions.

* 1. **Constraints**

The following list contains some potential constraints that may arise for ATT (Artisan Thrive Technology) and Artisan’s Co-op North:

* Funds for purchasing new equipment or programs is limited to a few hundred dollars from each member. CAMR Incorporated will ensure to set aside funds and will test the system to check for compatibility with existing equipment or programs. If there are any additional costs to be covered, Artisan’s Co-op North can gather donations or funds accumulated by increase in sales.
* Artisan’s Co-op North members and volunteers have a wide range of computer skills. CAMR Incorporated will work closely with any member or volunteer in need of assistance using CAMR Inc. customer service email and phone number, as well as, ATT Developers personal emails and phone numbers.
* Artisan’s Co-op North members and volunteers have a wide range of computer operating systems, from Windows to Macs. CAMR Incorporated, will ensure the new system is compatible with the current computers that will access it. Additionally, if there are any hardware problems, CAMR customer service and developers will be available by email or phone number to resolve any issues.
* The full system may not be up and running in time for upcoming craft fairs and festivals with ATT being a complex, multi- competent system. CAMR Incorporated, will ensure the basic requirements for the system are delivered in a timely manner for Artisan’s Co-op North. The rest of the system will be delivered in phases. This allows for the system’s key features to be useful to Artisan’s Co-op North, while the rest of the system is in progress.
  1. **Document Overview**

This report currently includes the following main sections:

* System Request: The initial system request from Artisan’s Co-op North to CAMR Incorporated.
* Sales Letter: The sales letter from CAMR Incorporated to Artisan’s Co-op North in response to the system request.
* Feasibility Assessment: An overview of feasibility analysis, comments, and conclusion associated with ATT.
* Requirements Definition: An overview of functional, data, and nonfunctional requirements of ATT.
* Requirements Model: A diagram overview of requirements and common scenarios the system will complete.
* System Evolution: A summary and list of future upgrades, maintainability, and functionality of ATT.
* Conclusion and Recommendations A summary of the system proposal and additional recommendations for ATT.
* Appendices: A list of questions and paraphrased answers provided by Ms. Weltz
* Glossary: A list of defined technical terms, business terms, and abbreviations used in this document.
* Bibliography: A list of references used to help define application domain and other resources.

# **System Initiation**

* 1. **System Request – Artisan’s Co-Op North**

October 10, 2017

**Project Sponsor**

Name: Elaine Weltz

Phone: x3639 E-mail: eweltz@spu.edu

**Opportunity Statement:**

I have been working with a talented group of part-time artists for a while now. They create amazing objects which are then sold at various venues. Currently they either bring or send their art to my home and I store this inventory in my basement between events. I also keep track of what is available – and what has sold – in a vaguely automated way. When there were only a couple of artists and we only exhibited at a few arts and crafts fairs, this worked just fine. However, we have a lot more members now and are taking part in a lot of fairs and shows…even talking about a weekend-open store front or market stall. We are going to need some technology to make *that* happen!

**Proposed Product:**

Background and Context:

Artisans’ Co-op North isn’t a “company” per se, but rather a group of part-time artists and craftspeople brought together by a shared desire to create and sell objects that are both beautiful and useful. They are homemakers, students, grandparents, and people with other fulltime day jobs. Their talents include woodworking, jewelry making, quilting and needlework, pottery, visual art…in other words the wide range of artistic items one finds at an arts fair, craft festival or even a county fair or farmer's market.

My (Ms. Weltz) role is as a type of business facilitator. The “warehouse” of objects is located in my basement. I coordinate fair booths, keep track of the inventory and make sure each artisan is paid for what is sold. Each member artisan pays annual dues, and a percentage of what is sold remains with the Co-op to cover expenses (including a small amount for my time and effort). Costs of participating in a given show are split among those wishing to be represented therein, and all members are expected to volunteer their time "manning the booth" at a few events each year.

Our record keeping and sales processing are SO last century. I hope you can build us a computer application that will bring us up to 2017!

Initial Vision and Scope:

* *Automating the Co-op*

I don’t see this as particularly revolutionary. We need to be able to keep track of objects by type of art/craft, description/name of the item, and name of artisan. Each piece has a current selling price. Right now, I use Excel as a kind of ledger to handle that; could that all become more computerized in some way? Similarly, I’d like to explore having inventory tracking, sales and paying artisans more automated. Maybe even introduce bar codes to our operation (?).

Another thing that we hope to gain by using a computer is the ability for each artisan to track their own object sales any time they want to. Currently they either need to call or email me and I have to send them a listing, or they wait until I send them a monthly update. Several have said they would like to be able to check in more often, thus being able to make more of the items that are currently most popular (and avoiding making more of things that are selling more slowly). Artisans don’t need to see each other’s sales and we obviously don’t want outsiders seeing our private business, but I know there are ways to handle that sort of thing on the Web.

* *Receiving Objects*

Right now, I do all of the inventory check-in. What I'd like to see is some kind of app that would allow others to easily record new objects as they arrive. Or even allow artists to enter via the web what they are sending (or bringing) to the warehouse ahead of time. That way when the objects actually arrive all we'd have to do is check them in. That would save SO much time!

* *"In-store" Point of Sale support*
* *Sales Support via Tablet (and/or phone?)*

We need to be able to handle cash or credit card sales at events more efficiently. It would be great to get away from writing paper receipts, and into a situation where we could use mobile computing devices to support sales transactions. It would also be helpful to have good descriptions of products available to people working in our booth. Sometimes all one can say when asked for details about someone else's art is "Gee, I really don't know!"

I know there are devices and apps available. Could something like this be integrated into our processes?

* *Virtual Arts and Crafts Fair* – We have a web site (ACoOpNorth.com), but it is currently minimal: information on who we are, what we do and where, and how to contact us via email. Oh yes, and a few pictures to introduce us and give people an idea of what we sell. We think now might be a good time to *really* move into the 21st Century with Internet shopping, but have a feeling that some of our needs (dreams?) might be a bit unusual.

Our shoppers are browsers. They might come to the booth hoping to see certain types of objects (“I’d love to pick up a wooden paper towel rack or some knitted dishcloths this year.”), but mostly are “just looking”. They want to look around the booth in a leisurely manner. If something catches their eye, well that’s a sale about to be made. The problem with a lot of typical Web shopping sites is that they are geared towards looking at a single product (or product type) at a time. It seems to me they even assume shoppers know pretty much what they want to buy before they ever visit the site. That is efficient shopping, to be sure, but is just not the way an arts and crafts show works. What we’re looking for is more the ability to move around the display area, view objects far away or close up, and then select what you want to buy.

What about the possibility of doing something with cameras that would allow an online customer to view the range of currently available items as if they were in the store? The room we currently use to warehouse objects can likely be used for this, although I realize things will have to be more “on display” than they are right now. (My husband and I can handle that end of things as long as we know what is important for the camera.) What I don’t know is exactly how the automation would be accomplished. Would it be multiple cameras that people would control with their mouse? One of our artisans suggested small robots that could move a camera around the room. I’m not familiar with that sort of thing, but thought I’d pass along his idea. I also don’t know how people would actually select an item, although I know that is done all the time with a simple mouse-click on typical Web shopping sites.

Stakeholders Identified:

* Artisan Members – who would like a more efficient and modern way to track inventory, make sales, and track sales.
* Myself and others who help out on the business end. We need to be more efficient (and accurate).
* Our customers – people who enjoy browsing through and buying beautiful things.

**Expected Benefits:**

* Opportunity 1 – preserve my sanity; reduce paperwork; provide better reporting to member artisans. Make it easier to reconcile inventory and payments with artists at the end of each year (for income tax purposes, for example).
* Opportunity 2 – improve our sales experience.
* Opportunity 3 – “seize the day”; widen the scope of our sales via Internet shopping.

**Special Issues or Constraints:**

We’re not made of money. Member artisans are willing to contribute to the cost of new equipment and programs, but we’re talking a few hundred (not thousand) dollars each from maybe 15 – 20 people. Similarly, I'm not sure everyone is going to be excited to run out and by a new phone or tablet computer just to manage sales or use this system. (Although maybe we could handle that with a few purchases "by the co-op".)

Also, our artisans represent a wide range of computer skills and types of computers they know and use. Some are really into their smartphones and others aren't. And some are Macs and others are Windows. Pretty typical people.

I don’t think we are on a particularly tight time schedule. We’ve missed the Christmas craft season already, so the goal for fairs and events is the Spring or Summer season. The sales-via-web piece could be more down the road if that would mean the rest could be finished sooner.

* 1. **Sales Letter**

October 10, 2017

Ms. Weltz, Business Facilitator

Artisan's Co-op North

241 Miller St.

Seattle, WA 98119

Here at CMR Organization we understand you have a vision and we would like to help get you there!

We acknowledge that you would like to move Artisan’s Co-op North to the twenty-first century. Based on your system request, I believe CMR Organizations can provide your company with an efficient and stable system build on your needs and specifications.

Upon reading the system request, we recognize you need a faster, efficient, and more organized arrangement. I noticed you have 3 expected benefits for your system: (1) to simplify inventory, (2) improve sales, and (3) widen sale opportunities via the internet.

The first expected benefit can be achieved by moving from Excel to a database system. The database will be able to handle inventory and payments to artists. It will be able to keep track of each artwork individually and provide details about how many have sold, most popular, stock value, price, and any other necessary information. Furthermore, we can have a payroll system to make income tax and other payments with artists more agile.

To improve the sales experience, we can use the database to hold the number of items you have in the warehouse along with a description. When it comes to sales representatives at booths, we can make an application which connects to the database to increase productivity. The application will allow the sales representatives to quickly look up a product and give an appropriate description when asked by a customer. Additionally, there are other applications and products that can assist with money handling that we can implement into the database.

A polished website with all products and their descriptions can and will help Artisan’s Co-op North improve their overall sales. The database will be integrated with the website to update information in real time rather than strain the job on an individual. We can discuss your vision for the website further to provide you with a website that will be both appealing to the eye and profitable.

Lastly, I understand there are special issues and constraints between the members of your company. Not too worry, we will be with you every step of the way and will help everyone understand how to use the system in the way they need.

I will call in the next few days to follow up on how CMR Organization can help you achieve your mission!

Celena Flores

CAMR Incorporated Representative

# **Feasibility Assessment**

* 1. **Introduction**

­­This section analyzes the feasibility and risk behind the development of the ATT (Artisan Thrive Technology) system. Specifically, the technical, resource, schedule, organizational, and legal and contractual feasibility. For the analysis of this system, we will use a four-level scale, described below:

* **Very Risky**: System element has many concerns and the ability to build this element is very slim. It is in CAMR Incorporated best interest to not continue the development in this area of the system. It would have to be heavily reevaluated before any further development proceed.
* **Risky**: System element has many concerns but the ability to build this element is possible if proceeded with caution. CAMR Inc., will reevaluate the risks before any further development proceed.
* **Feasible**: System element has some concerns, but the ability to build this element is still attainable. CAMR Inc., will take the precautionary measures when working on this area.
* **Excellent**: System element has little to no concerns involving the ability to build this area of the system. CAMR Inc., will encounter no problems and will move swiftly to develop this area of the system.
  1. **Feasibility Analysis** 
     1. Technical Feasibility - **Excellent**
* Users’ Familiarity with the Application Area: ATT will move Artisan’s Co-op North to the twenty first century by creating a system that will have a similar user interface to commonly used shopping websites and databases.
* Analysts’ and Development Group’s Familiarity with the Application Area: Developers and analysts at CAMR Inc. have worked on countless reputable online shopping websites and inventory database systems. Thus, will be able to create the proposed website and database system envisioned by Artisan’s Co-op North.
* Project Size: ATT’s compactible size is a good aspect of the system because it will not take up a lot of space on computers. Additionally, Artisan’s Co-op North is a currently a small company, so there is less complexity in the ATT system.
* Project Structure: Artisan’s Co-op North and CAMR Inc., have set out clear and concise design requirements.
  + 1. Resource Feasibility- **Feasible**

Artisan’s Co-op North has identified that artisan members all have different levels of computer skills. CAMR Inc. will work closely with members to answer any questions, comments, or concerns about the ATT system. With the help of CAMR Inc., members will be able to quickly adapt to the new system.

Additionally, members do not all have the same type of hardware components such as computers and cameras. Artisan’s Co-op North informed CAMR Inc. about members having PCs while others have Macs. CAMR Inc. will create a system that is compatible with all versions of PCs and Macs operating systems.

Lastly, CAMR Inc. will need to purchase database software and cloud storage for ATT database system. For the website, CAMR Inc. will need to purchase a web domain for the website. CAMR Inc. expects the gathering of hardware, hardware restrictions, cloud storage, a database system, and a web domain will be quickly attainable, and thus the risk is low.

* + 1. Schedule Feasibility- **Feasible**

Ms. Weltz of Artisan’s Co-op North did not stress a specific time line for the ATT system, however, Artisan’s Co-op North would prefer the system to be delivered by the summer time. Summer time is a key schedule conflict because summer farmer’s markets are held weekly. Having the system ready for the beginning of the summer farmer’s markets provides a time constraint, which makes it difficult to stay on track. To stay on track, CAMR plans to develop the ATT proposed system in phases and deliver a first version of the system with necessary functionality at the beginning of the summer.

In addition, when the website is up and running, when customers purchase items, there is the risk of shipping processing and delays. Artisan’s Co-op North has decided not to hire any staff specifically for shipping purposes. If there are a lot of orders coming in at one time, the members of Artisan’s Co-op North may not be able to fulfill orders in a timely manner. The consequences of order delays will be unhappy customers, so Artisan’s Co-op North will have to constantly check for orders and process them immediately.

* + 1. Organizational Feasibility- **Risky**

Organizational Feasibility is risky because the urgency of developing a new system is not pressing. Artisan’s Co-op North has been flexible with the development of the system, so it may cause for the system to be developed in a longer time span than desired. CAMR Inc. alongside Artisan’s Co-op North will need to come up with a constructive time schedule to keep the system development on track.

The acceptability of the new system depends on the personal preference to all current Artisan’s Co-op members. There are over 15 members, and with the new system, this number may quickly grow. If the users are not able to use the system as they had desired, they will not be happy with the system. Unfortunately, it is not possible to please all users. CAMR will work alongside users and be accessible throughout the day via email and phone number to resolve any issues and answer questions of new system.

* + 1. Legal and Contractual Feasibility- **Feasible**

Legal Feasibility is feasible because artisan’s can easily copyright and/or patent their objects to secure the validity of the products sold. There will be financial reporting in the database for any IRS and government regulations.

Contractual Feasibility is feasible because there will be a contract between CAMR Inc. and Artisan’s Co-op North to address the rights to the system and who it is owned by. As stated in Section 3.2.2, there will need to be a contact between the cloud storage, database system, and web hosting domain.

Additionally, there are security and privacy issues that arise with a system storing artisan’s personal information. CAMR Inc. will embed the system with an encryption software to keep any personal or private information secure from outside agents.

* 1. **Additional Comments**
* As the ATT system expands and reaches a broader audience of both customers and prospective artisans, ATT will need to be updated to support a larger market. This can include a larger cloud storage for the database and servers for the website for it to run without delays.
* To ensure ATT succeeds, advertising the website will be an important role in bringing in new customers.
* If the ATT websites, reaches a market outside the United States, Artisan’s Co-op North will need to figure out if it is worth providing shipping in other countries and provide translations of the website in different languages.
  1. **Conclusion**

From the analysis above, CAMR Incorporated acknowledges ATT to be a feasible system. The organizational attribute is the only risky feasibility to the development of the ATT system. The technical, resources, schedule, and legal and contractual feasibilities of the ATT system are all attainable. CAMR Incorporated has analyzed these risks and have chosen to implement and deliver a system in a scheduled, simple, and affordable manner to meet the scope provided by Ms. Weltz and Artisan’s Co-op North.

# **Requirements Definition**

* 1. **Introduction**

This section will cover the functional, data, and nonfunctional requirements for ATT (Artisan Thrive Technology). Functional requirements include what the system will do to add value for the stakeholders listed above (Artisan members, Ms. Weltz and other office staff and volunteers, customers, investors, CAMR Incorporated Developers, and prospective artisans). Additionally, functional requirements are the services the system will provide and the processes the system must accomplish. The data requirements refer to the data the system must have in order to do its job and the information it will produce. The nonfunctional requirements involve what the system will do as a whole to add value for stakeholders and any limitations developers may face when implementing the system.

* 1. **Functional Requirements**

1. Artisan Members Requirements
   1. Manage their account: Artisans will be able to update their inventory on the database and see their most purchased product.
   2. Create barcode: Artisans will be able to fill out a form, that will generate a barcode number and label for products and place the information into the database.
   3. Edit their page on the website: Artisans will have limited ability to customize their page of products on the website to make it their own.
2. Ms. Weltz and other office staff Requirements
   1. Create/ Delete Accounts: Office staff, like managers, will have the ability to create and delete accounts for artisan members, volunteers, and other staff.
   2. Generate and print reports: Office staff, like managers, will be able to generate and print reports including payroll and tax forms.
   3. Manage all artisans accounts: Office staff, like managers, will be able to update artisan’s inventory in the database.
   4. Manage system: Office staff, like managers, will be able to have full access to all parts of the database, including: viewing, maintaining, and modified all aspects.
3. Customers’ Requirements
   1. Sign-up for an account: Customers will be able to create an account using an email and password to login. The account will have the ability to save their payment and billing preferences, create a wish list, and write reviews.
   2. Create wish list: Customers will be able to save products that they have their eye on but do not plan to purchase yet.
   3. Write reviews: Customers will be able to write reviews for products they have purchased.
   4. Search website: Customers will be able to search the website for specific products or artisans.
   5. **Data Requirements**
4. For each artisan account, ATT must store artisan’s name, phone number, email address, home address, social security number, username, password, current inventory in stock, sale numbers, and hours worked.
5. For each customer, ATT must store customer’s name, phone number, email address, delivery and billing address, payment information, previous and current orders, history of products viewed (for them to browse through again and to help with advertising new products), and list of products in their wish list.
6. For tracking inventory, ATT must store product name, artisan’s name, barcode number, price, description, quantity, picture and related videos, and review for product.
7. Reports generated will include artisan name, sales of their products, to create reports for office use, payroll, and tax forms.
   1. **Nonfunctional Requirements**
8. Development Requirements
   1. ATT’s database will be ready for launch by May 2018.
   2. ATT’s website will be ready for launch by September 2018.
   3. ATT will be developed on budget and on schedule.
9. Operational Requirements
   1. ATT must allow multiple users to edit the database at the same time.
   2. ATT must run on both PCs and Macs, and different versions of each OS.
   3. ATT must take no more than 2 GBS of storage on any computer.
   4. ATT’s database information will be on the cloud while the software will be available on computers.
   5. ATT’s website will be on a website located on a web hosting service.
10. Performance Requirements
    1. ATT must load a webpage in less than 3 seconds.
    2. ATT must run in real-time and prioritize editing if multiple users are updating the database at the same time. When purchasing a limited stock item at the same time, it will prioritize who was at check out first.
    3. The user-interface of ATT must be similar to other software and simple to learn.
11. Efficiency Requirements
    1. ATT should save customer payment option and delivery address, so it does not have to constantly be re-entered in the software.
    2. ATT should not allow any artisan to add a product to the database that has already been added, instead, it should simply update the quantity of the product.
    3. ATT should automatically update the website to show out of stock items as unavailable and not allow customers to purchase out of stock items.
12. Security and Control Requirements
    1. Customer, artisan’s, office staff, and any other user password logging into the ATT database or website must be encrypted.
    2. Artisans can only view their own inventory and their most sold items, and not the information for other artisans.
    3. Only authorized staff and managers can view and change all aspects of the system.
    4. There will be required back-ups of ATT, every night at 11:59 PM.
13. Cultural, Political, and Legal Requirements
    1. ATT’s website will be available 24/7 to all users, except scheduled maintenance times.
    2. ATT’s database will be available 24/7 for all artisan members and office staff, except scheduled maintenance times.
    3. There must be copyright on all products before being stored, sold, and distributed by any ATT software.
14. Service Requirements
    1. ATT’s database will be available through an external link download.
    2. ATT’s website will be accessible through a URL.

# **Requirements Model**

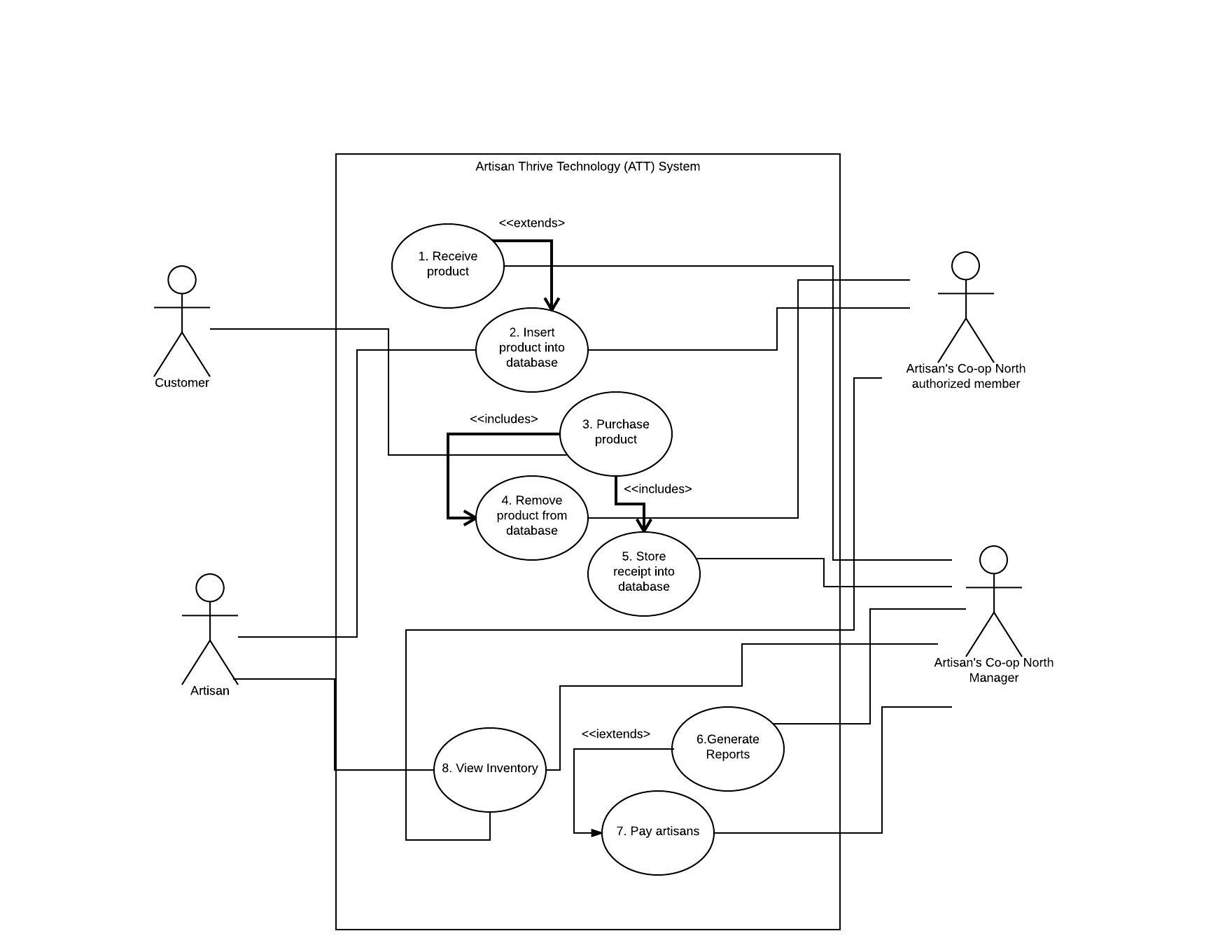
* 1. **Introduction**

This section will cover the notable processes the proposed system, Artisan Thrive Technology (ATT), will contain. In section 5.2, there will be a diagram called a use-case diagram that will visually represent the common scenarios of the system. These scenarios contain the relationships between the users during each process. In section 5.3, there will be use-case descriptions that extensively describe each individual process and its corresponding relation.

For reference, the table below will explain the symbols represented in the use-case diagram.

|  |  |
| --- | --- |
| Symbol: | Description: |
| https://documents.lucidchart.com/documents/d262e49c-d52a-4628-9a33-76717512ab0a/pages/0_0?a=89&x=54&y=49&w=132&h=242&store=1&accept=image%2F*&auth=LCA%208fb56acc9b165dec46ca1140b68651f01e89ad0e-ts%3D1510487504 | A stick figure, known as an actor, is any individual that will interact with the ATT system. |
| https://documents.lucidchart.com/documents/d262e49c-d52a-4628-9a33-76717512ab0a/pages/0_0?a=112&x=310&y=152&w=220&h=176&store=1&accept=image%2F*&auth=LCA%200ee263164f9b373e1d773a9453223833d674132c-ts%3D1510487504 | Ellipses with a number followed by a name represent a specific use-case. Each ellipse represents a specific process of the system. |
|  | An undirected line represents an association between an actor and a use-case. |
|  | A directed line with a “<<includes>>” label represents a special relationship between an actor and use-case. The line is drawn from the base-case to a use-case. The relationship represents required functionality. |
|  | A directed line with a “<<extends>>” label represents a special relationship between an actor and use-case. The line is drawn from the use-case to a base-case. The relationship represents optional functionality. |
|  | The system boundary is the large rectangular box. This represents what is in the and what is not in the scope of ATT. |

* 1. **Use-Case Diagram**

****

* 1. **Use-Case Descriptions**

|  |  |  |  |
| --- | --- | --- | --- |
| **Use-Case name**: Login to ATT | | **ID**: 0 | **Importance**: High |
| **Primary actor**: Artisan, Authorized Member, Manager | **Use-Case type**: Detail, Essential | | |
| **Stakeholders and interests**:  Artisan, Authorized Member, Manager- wants a secure log-in for ATT to ensure their personal information is protected | | | |
| **Brief description**:  All primary actors will be able to log into ATT and access parts of the system that are accessible to them. There will be different types of accounts for ATT, that will have separate features and functionality. | | | |
| **Trigger**: Actor clicks “Login” on ATT  **Type** (circle one): External | | | |
| **Relationships**:  **Association**: Artisan, Authorized Member, Manager  **Include**: --  **Extend**: 2. Insert product into database  **Generalization**: -- | | | |
| **Normal flow of events**:   1. Actor clicks on “Login” on ATT’s interface. 2. Actor enters email and password and presses enter to gain access to ATT. 3. ATT displays user account’s appropriate interface based on the email and password used during the log-in step. | | | |
| **Subflows**: None | | | |
| **Alternate / exceptional flows**:  2a. If email or password entered are not recognized by ATT.   1. Notify user that either the email or password is incorrect. 2. Allow user to re-enter credentials. 3. If user does not remember credentials, users can press “Forgot Email or Password” button. 4. Ask user to answer three security questions. 5. If all three answers correct, send an encrypted link to email to change the password.   3a. If user wants to change their password, email, or security questions and answers, allow them to change the information.   1. If user wants to change password, user clicks Change Password. 2. User enters current password and new password. 3. User clicks Save. 4. Password information is updated on the ATT database. 5. If user wants to change email, user clicks Change Email. 6. User enters current email and new email. 7. User clicks Save 8. Email information is updated on the ATT database. 9. If user wants to change security questions and answers, user clicks Change Security Questions. 10. User clicks from drop down list a new security question. 11. User enters desired response in a text box. 12. User clicks Save. 13. Repeat process a-c until all three security questions and answers are satisfactory to the user. 14. Security questions and answers are updated on the ATT database. | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use-Case name**: Receive Product | | **ID**: 1 | **Importance**: High |
| **Primary actor**: Manager | **Use-Case type**: Detail, Essential | | |
| **Stakeholders and interests**:  Manager- wants to receive the product to the warehouse to ensure artisan’s products are in stock and accounted for. | | | |
| **Brief description**:  This use-case describes the steps an artisan must take before bringing the product or products to the warehouse. | | | |
| **Trigger**: Artisan completes a product  **Type** (circle one): External | | | |
| **Relationships**:  **Association**: Manager  **Include**: 2. Insert Product into database  **Extend**: --  **Generalization**: -- | | | |
| **Normal flow of events**:   1. Artisan completes a product 2. Artisan logs into ATT 3. Artisan fills out form for a new product. 4. Perform 2. Insert Product into database. 5. Artisan prints out barcode and places it on product 6. Artisan takes product to the warehouse. 7. Authorized member places product in appropriate area. | | | |
| **Subflows**: None | | | |
| **Alternate / exceptional flows**: None | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use-Case name**: Insert Product into Database | | **ID**: 2 | **Importance**: High |
| **Primary actor**: Artisan, Authorized Member | **Use-Case type**: Detail, Essential | | |
| **Stakeholders and interests**:  Artisan and Authorized Member want to be able to easily insert products into the database. | | | |
| **Brief description**:  This use-case describes the actions performed once artisan has completed a product and is ready to fill out a form. There will be a form either the artisan or authorized member can fill out to enter credentials of the product into ATT. | | | |
| **Trigger**: Artisan logs into ATT to fill out form for product.  **Type** (circle one): External | | | |
| **Relationships**:  **Association**: Artisan, Authorized member  **Include**: --  **Extend**: --  **Generalization**: -- | | | |
| **Normal flow of events**:   1. Artisan logs into ATT, and presses “Insert Product”. 2. Artisan fills out Product Name. 3. Artisan fills out Product Description. 4. Artisan captures a professional picture(s) of the product. 5. Artisan uploads picture(s). 6. Authorized Members can repeat steps 1-5 | | | |
| **Subflows**:  S-1. If artisan has made multiple of the same product, there is no need to fill out the same information multiple times.   1. Simply enter the number of products, ATT will create unique barcodes for each of the products. | | | |
| **Alternate / exceptional flows**:  6a. Authorized Members have the ability to go back in and change all aspects of the product if it suitable. | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use-Case name**: Purchase Product | | **ID**: 3 | **Importance**: High |
| **Primary actor**: Customer | **Use-Case type**: Detail, Essential | | |
| **Stakeholders and interests**:  Customer wants to view products in stock, view descriptions of products, and place an order to purchase a product.  Artisan’s Co-op North wants customers to be able to purchase products at craft booths and online. | | | |
| **Brief description**:  This use-case describes the flow of events customers will go through when purchasing a product from ATT. | | | |
| **Trigger**: Customer views products at the craft booths.  **Type** (circle one): External | | | |
| **Relationships**:  **Association**: Customer  **Include**: 4. Remove product from database and 5. Store receipts into database  **Extend**: --  **Generalization**: -- | | | |
| **Normal flow of events**:   1. Customers will view products from craft booths. 2. Customers will ask Artisan’s Co-op North employees about product. 3. Employees will give customers detailed descriptions and perhaps other options of similar products. 4. Customer will decide whether or not to purchase product. | | | |
| **Subflows**:  S-4. If customer chooses to purchase product, fill out receipt form and remove product from the database. Do each operation only once per product.   1. Perform 4. Remove product from database 2. Perform 5. Store receipt into database | | | |
| **Alternate / exceptional flows**: None | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use-Case name**: Remove Product from Database | | **ID**: 4 | **Importance**: High |
| **Primary actor**: Authorized member | **Use-Case type**: Detail, Essential | | |
| **Stakeholders and interests**:  Authorized members want to remove products from the database to keep the database up to date with the products that are in stock. | | | |
| **Brief description**:  This use-case describes how an authorized member will be able to log into the ATT database and remove products that are no longer in stock. | | | |
| **Trigger**: Product has been purchased  **Type** (circle one): Temporal | | | |
| **Relationships**:  **Association**: Authorized member  **Include**: --  **Extend**: --  **Generalization**: -- | | | |
| **Normal flow of events**:   1. Product has been purchased at a craft fair. 2. Artisan’s Co-op Employee has fill out the receipt information. 3. Perform 5. Store receipts into database 4. ATT gathers information given from the receipt. 5. ATT removes the number of products from the database. 6. ATT updates the number of current available products. | | | |
| **Subflows**: None | | | |
| **Alternate / exceptional flows**: None | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use-Case name**: Store Receipt into Database | | **ID**: 5 | **Importance**: High |
| **Primary actor**: Manager | **Use-Case type**: Detail, Essential | | |
| **Stakeholders and interests**:  Artisan Co-op Employees want to fill out a simple form when performing transactions at fairs that will update the receipt database.  Manager want to make receipt handling more efficient and simpler so that can create reports and pay artisans on time. | | | |
| **Brief description**:  This use-case describes how Artisan’s Co-op North’s employees and managers will store, organize, and display receipts in ATT’s database. | | | |
| **Trigger**: Product has been purchased and employee has entered in receipt information  **Type** (circle one): Temporal | | | |
| **Relationships**:  **Association**: Manager  **Include**: --  **Extend**: --  **Generalization**: -- | | | |
| **Normal flow of events**:   1. Manager logs in ATT. 2. Manager clicks on Modify Receipts. 3. ATT displays a list of actions the manager can perform to modify receipts. 4. Manager selects one of the following: 5. Selects Add Receipt. Perform S4-1. 6. Selects Delete Receipt. Perform S4-2. 7. Selects Update Receipt. Perform S4-3. 8. Selects View Receipt. Perform S4-4. 9. Selects Organize Receipt. Perform S4-5. | | | |
| **Subflows**:  S4-1. Add Receipt   1. ATT displays receipt form. 2. Manager enters product name, product price, number of products. 3. Manager clicks Save, and receipt is added to database.   S4-2. Delete Receipt   1. ATT displays a “Are you sure you want to delete this receipt?” window. 2. If Manager presses yes, all copies of receipt are removed from database. Otherwise, receipt information is not removed from the database.   S4-3. Update Receipt   1. ATT displays receipt. 2. Manager presses Edit/Update Receipt. 3. Manager updates desired fields of the receipt and clicks Save. 4. ATT updates all necessary information on the database.   S4-4. View Receipt   1. Manager presses the View Receipt button. 2. ATT displays the selected receipt.   S4-5. Organize Receipt   1. Manager presses Organize Receipts. 2. Manager is now able to move receipts around in the order desired. 3. ATT updates all necessary information on the database. | | | |
| **Alternate / exceptional flows**: None | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use-Case name**: Generate Reports | | **ID**: 6 | **Importance**: High |
| **Primary actor**: Manager | **Use-Case type**: Detail, Essential | | |
| **Stakeholders and interests**:  Managers want to easily generate reports to perform payroll and report necessary information to government officials. | | | |
| **Brief description**:  This use-case describes the information needed to be filled out by managers to create reports. | | | |
| **Trigger**: Manager needs to generate a report every month to pay artisans and when tax season approaches.  **Type** (circle one): Temporal | | | |
| **Relationships**:  **Association**: Manager  **Include**: --  **Extend**: 7. Pay artisans (Type of Report)  **Generalization**: -- | | | |
| **Normal flow of events**:   1. Manager selects Generate Reports. 2. ATT displays a list of actions that can be performed. 3. Manager selects one of the actions listed: 4. Selects Pay Artisan. Perform 7. Pay artisans. 5. Selects Tax Form. Perform S3-1. | | | |
| **Subflows**:  S3-1. Tax Form   1. Manager selects one artisan. 2. ATT generates a tax form, filled with all the suitable information in the database. 3. Manager will be able to check the generated form before approving it. 4. Once approved, the form is ready to print. | | | |
| **Alternate / exceptional flows**: None | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use-Case name**: Pay Artisans | | **ID**: 7 | **Importance**: High |
| **Primary actor**: Manager | **Use-Case type**: Detail, Essential | | |
| **Stakeholders and interests**:  Manager wants to pay artisans for their contribution on the sales made on their products.  Artisans want to be paid so they can keep creating products. | | | |
| **Brief description**:  This use-case describes the steps taken by manager to pay artisans for their sales. | | | |
| **Trigger**: It is the fifth of the month, and artisan’s must be paid.  **Type** (circle one): Temporal | | | |
| **Relationships**:  **Association**: Manager  **Include**: --  **Extend**: --  **Generalization**: -- | | | |
| **Normal flow of events**:   1. Manager selects one artisan. 2. ATT calculates sales based on the number of the artisan’s products sold. 3. ATT will generate a form, filled with all the information in the database. 4. Manager will have a change to check the generated form before approving it. 5. Once approved, ATT will allow manager to pay the artisan. | | | |
| **Subflows**: None | | | |
| **Alternate / exceptional flows**: None | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use-Case name**: View Inventory | | **ID**: 8 | **Importance**: High |
| **Primary actor**: Artisan, Authorized Member, Manager | **Use-Case type**: Detail, Essential | | |
| **Stakeholders and interests**:  Artisans authorized members, and managers want to view to pay the current products listed in the database to know what items are in stock. | | | |
| **Brief description**:  This use-case describes the steps taken by artisans, authorized members, and managers to view inventory in the database. | | | |
| **Trigger**: Artisan, Authorized Member, or Manager log into ATT software to view current inventory.  **Type** (circle one): Temporal | | | |
| **Relationships**:  **Association**: Artisan, Authorized Member, Manager  **Include**: --  **Extend**: --  **Generalization**: -- | | | |
| **Normal flow of events**:   1. Artisan, authorized member, or manager logs in ATT. 2. ATT displays window with appropriate information based on the type of user logged in. 3. User clicks on “View Inventory” button 4. ATT displays a list of the current inventory in stock. | | | |
| **Subflows**: None | | | |
| **Alternate / exceptional flows**: None | | | |

# **System Evolution**

* 1. **Updates and Maintenance**

As Artisan Thrive Technology (ATT) is used by Artisan’s Co-op North’s members and as new members are introduced to the system, there will be necessary upgrades and maintenance that will need to be implemented to the system. Furthermore, CAMR Incorporated will handle any bug fixes and routine maintenance. As long as CAMR Incorporated and Artisan’s Co-op North are under contract, CAMR Incorporated will add, change, and maintain any needed or requested feature for ATT.

* 1. **Future Functionality**

At this time, CAMR Incorporated will not be able to fully implement all requests for Artisan Thrive Technology’s initial version. Thus, the following will be a list of the features that will be implemented in future versions of the system.

* Adopting Square technology at craft fairs. This would allow customers to either make credit card or cash transactions. Additionally, this would make the process of handling receipts into a database simpler.
* Implementing any additional design or functional requests made by the members. CAMR Incorporated will continue to work with Artisan’s Co-op North after the launch of Artisan Thrive Technology to handle any maintenance issues.
* Implementing an interactive website with a complete functionality including: images of all the products, descriptions of all the products, and a credit card processing system for customers to purchase goods.
* As the users for Artisan Thrive Technology expands, it may become necessary to purchase any additionally software or hardware elements to keep Artisan’s Co-op North in the direction of the twenty-first century.

# **Conclusions and Recommendations**

CAMR Incorporated has conducted a thorough analysis of the proposed system, Artisan Thrive Technology (ATT), and fully believes this system is highly feasible and low risk for all stakeholders. The organizational risk of not having a set schedule can easily be managed through discussions of a concrete schedule. Additionally, the requirements for the system are attainable and have been meticulously analyzed to guarantee the system is fully functional. Furthermore, the usage overview diagrams have been created to show the specific actions the system will implement. With CAMR Incorporated’s experience and Artisan’s Co-op North’s vision, Artisan Thrive Technology can become a revolutionary product for all artisans and art lovers alike.

With these conclusions in mind, CAMR Incorporated recommends the following actions for Artisan’s Co-op North to consider in the continuation of ATT’s development.

* Meet with current artisans to answer any questions or concerns about the new system. This is an area of high risk, if there are artisans that have yet to accept the new system.
* Set the budget during the analysis process for any hardware or software systems necessary for the ATT system.
* Continuously communicate with our team at CAMR Incorporated to ensure we develop the system Artisan’s Co-op North envisions.
* Begin development of Artisan Thrive Technology, to ensure CAMR Incorporated completes the first version of the system in time for the summer farmer’s markets.

CAMR Incorporated looks forward to working with Artisan’s Co-op North to begin the design and implementation process for Artisan Thrive Technology.

# **Appendices**

Questions and Answers with Ms. Weltz: (Some answers have been paraphrased)

1. **Would Artisan’s Co-op North want multi-language support for the system?**

The system can support just English for now, but that could change in the future.

1. **Would Artisan’s Co-op North want a barcode system, stickers, or what way would Artisan’s Co-op North prefer?**

We do not need any barcode system right away because we are currently selling things using a sticker with the price. I do not think we need it right now, but maybe down the road.

1. **What is Artisan’s Co-op North’s primary focus on the proposed system?**

I primary focus would be to support sales, so the website can be put on hold for now. The website does seem separate from the system but it is connected.

1. **I want to know how Ms. Weltz would prefer for the artisans to send the products to her?**

I would like to find a new way to store the items. As long as I receive the items in my warehouse, it would be great if the artisans could take pictures of the items themselves and have a way to post the pictures themselves.

1. **How would Artisan’s Co-op North prefer for the information for the system to be posted, on the cloud or a physical copy?**

I do not have a preference if it is on the cloud or not, as long as I have the physical artwork in the warehouse.

1. **What is Artisan’s Co-op North’s budget?**

We do not have a lot of money to spend, so we would prefer the cheaper option.

1. **How many products does Ms. Weltz receive at a time and would need to be updated into the system?**

I receive many different products at a time. So, I need a system that can be easily updatable.

1. **How would Ms. Weltz prefer to store receipts?**

I do not have a preference, but I would want anything that could happen right away at the craft booths, so I do not need to go home and have a stack of receipts to enter into the system.

1. **Does Artisan’s Co-op North anticipate for more artisans to want to join?**

Yes, we do anticipate for more artisans to join.

1. **Does Artisan’s Co-op North have a color scheme or a logo the system must match?**

We currently do not have a color scheme or logo so there is nothing that needs to match. In the future, it would be plausible that an artisan will create a logo for the system.

1. **Does Artisan’s Co-op North have a store front?**

No, we do not have a store front. We typically have booths during the summer time at fairs and farmer’s markers.

1. **How does Artisan’s Co-op North run the craft booths?**

We have a cash box with us and made receipts. One of the employees writes down that somebody has purchased and at the end of the day, I get all the receipts and put it into the spreadsheet.

At first, it was my husband, who is a woodworker, and I just had to keep track of what he was making. But now, we have a lot of artisans, so I have a stack of receipts and I have to spend a lot of time inputting the information into the spreadsheet. I would like to a simpler solution, so maybe a barcode system could help with this.

1. **How does Artisan’s Co-op North notify people about the booths?**

We do not notify people about the booths because there is a set schedule of all the possible booths. The artisans know when fairs are going to happen. However, it would be great to be able to send emails out to all the members to let them know what is coming up and for them to sign up for the craft booth.

1. **Does Artisan’s Co-op North have all of the products at the craft booths?**

We take what is available for sale. The craft booths are a “what you see, is what you can buy” type of set up, which would be different from the website because that would have all of the available products.

1. **How long does Artisan’s Co-op North employees have to prepare for the craft booths?**

It is important to remember, this is the artisan’s non-primary job. They have a schedule of all of the upcoming fairs and booths, so they have the opportunity to prepare for the ones that are a better fit for them.

The artisan’s make new products whenever they can, so what they get done in time for the craft booths, will be taken to the fairs.

1. **Are the artisans of Artisan’s Co-op North allowed to sell their work outside of the co-op?**

The artisans are allowed to sell their work outside of the co-op, but they need to keep track of all the necessary paperwork.

1. **Would Artisan’s Co-op North like for artisans to log-in and manage their own stuffy, and be able to see what other artisans are making?**

Artisans should only be able to see the details for their own products.

1. **I wanted to know how Ms. Weltz is planning to make payment to artisans. How often does she pay her artisans? Or Does she want to make payment whenever it is requested?**

“I pay the artisans on a monthly basis.  The checks go out around the first of the month.  Since our current operations are quite manual, I have to do a fair amount of end of the month calculating to make sure everyone is getting paid correctly.  So, my goal is to have payments ready to go out by the 5th of the month.  Obviously, having more of this be automated will make that a lot easier.

By the way, since the artisans aren't really "employees" of the co-op, we don't have to worry about things like health insurance, taxes, and other miscellaneous deductions.  Each artisan handles these sorts of things themselves.”

1. **Does Artisan’s Co-op North prefer the idea of a live feed for the website or still images?**

Artisan’s Co-op will be okay with either of the options, but if we do still images, we would need to find a way to take good pictures, which might require a better camera.

1. **How does Artisan’s Co-op North plan to send the products purchased off the website?**

We will not be hiring anybody new to work on the shipment of the products. We will be shipping through UPS, USPS, or the customer will be able to pick up in person.

# **Glossary**

*ATT*- Artisan Thrive Technology: this is the name of the proposed system

*CAMR Inc.*: CAMR Incorporated, responsible for designing and implementing proposed system

*Database*: A structured set of data held in a computer system

*Phased Development*: Methodology used to get at least some part of the system into the hands of the users early. Outline of methodology: (1) Establish requirements for system, (2) Build/deliver core functionality, (3) While not all functionality delivered, construct new functionality, integrate new pieces with existing ones, and deliver new release.

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