**Smart Art Proposal**

Prepared for:

Artisan Co-Op North System Request

Prepared by:

Erkin George, Systems Consultant

Salty Suite Inc

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**Executive Summary**

Ms. Weltz with Artisans Northwest has hired Salty Suite Inc (SSI) to design and implement an inventory application to handle the inventory and sales processing. This document explains the details of how the system, Smart Art, will be designed, implemented and managed by the relevant parties involved in the fairs and festivals that will use this festival.

Per initial analysis and feasibility studies, SSI has found that this project is feasible and has low risk overall. The findings show that Artisans Co-Op will benefit in multiple ways from this system that funnels sales through an electronic system, and SSI suggests improving and continuing the design as the Co-Op tests out the system upon delivery.

SSI suggests that this system be released in phased stages, so that the feasibility and customer satisfaction be continually monitored for continual feedback and improvement for the application. The initial parts will be delivered to the client much more quickly, so that she and the involved parties can get a hands-on experience with the product to cater the application to the rest of their needs. This is in accordance with the current use case diagrams and their corresponding descriptions that outline the first phase of the system that the Co-Op will use.

This document fully describes how SSI recommends details such as costs, benefits, requirements, and feasibility. A requirements model is also included to outline typical scenarios that users will encounter when using Smart Art. System evolution and recommendations are at the end of the document, to conclude how the system could progress and what the next steps would look like with SSI’s recommendations.

1. **Introduction and Overview**

Salty Suite Inc has engaged in an assessment and data gathering phase of the “Smart Art” project. This Introduction and Overview describes the findings of this phase, explained below in various subsections.

* 1. **Problem Statement**

Artisans Co-op, represented by Ms. Elaine Weltz, has hired Salty Suite Inc to design and develop a software program to facilitate inventory management for the various fairs and events that occur during the year. Currently, Ms. Weltz has to keep track of the various goods semi-manually, and she would like to increase automation for her convenience, as the number of members involved has been rapidly growing.

This product will be beneficial for the Co-op and Ms. Weltz, as it will smooth out the processes for the buyers, sellers and the managers of the events. SSI intends to design and build Smart Art because this product will benefit the community and encourage growth and creativity in Seattle, as we seek to benefit our local area.

* 1. **Project Vision and Scope**

The goal of Smart Art is to simplify the buying and selling roles of the customers and the sellers. This process will become a streamlined digital system, creating an easy way to post and buy the art with a preferred method of payment. The system should allow the various artists to track their object sales at their convenience, allowing automation to make the entire process more efficient for Ms. Weltz and the artists. Expected results would be greater satisfaction in shopping for art and in selling it, as the stakeholders spend less time managing sales and inventory, and the customers can shop with automation assisting them to greater affect. Managers will receive more time to manage administrative tasks, rather than assisting customers and artisans with buying and selling goods.

* 1. **Requirements Summary**

The following list includes what the system will need to satisfy Artisans Co-Op Northwest:

* Keep track of the objects by the type of art/craft with a description/name and name of artisan. It should do this via a computerized ledger that integrate Excel or some other data tracking program that the users are familiar with
* Store user data to sync across various computer and mobile platforms. This should create little to no need for system upgrades to prevent additional costs
* Privacy between inside parties and outside parties. This should be done via a login system, with different levels of access for relevant accounts
* Support various payment methods. This should be done via a standard method such as Secure Pay and other standard banking services, as well as a cash option
* Support sales tracking and calculation mechanisms, to automatically credit the correct accounts of artisans whose products were sold
* The system needs to be able to expand to manage more users, as the Co-Op grows
* The system could integrate a web camera to view the current items available in the store online. The system could allow web cameras to be controlled by either the customers, or automated with a tool such as robots
  1. **Stakeholders and Interests**

Below are the various stakeholders and parties involved or affected by Smart Art:

* Artisan members – these are artists who will use the system
* Ms. Weltz, Mr. Weltz and other business managers – the administrators who will use the system to support the rest of the stakeholders
* Customers of the Co-Op – various parties that will buy from and sell to the Co-Op
* City of Seattle – art events will grow and cause more artists in Seattle participate in the Co-Op and art events
  1. **Expected Costs and Benefits**

The following are the expected costs for this application:

* Maintenance costs of the system for the database, support hours, application troubleshooting
* Slowed sales from the initial learning curve of the new system
* Development costs of hiring developers and creating the application
* System upgrades and development phasing costs as the system evolves

The following are the expected benefits for this application:

* Improved product viewing and sales for customers and sellers
* Easier financial tracking for the sellers, buyers and middlemen
* Modern data storage and management to prevent misconceptions of artists being behind the times
* Increased profits for the artists through greater sales
* More time for the artists and Ms. Weltz to work on their relevant artwork
  1. **Constraints**

Possible constraints are listed below:

* Financial restraints prevent the most advanced development and time spent on this project, as the artisans have limited funds to use for this project
* Computer skills may restrict how quickly the new system is learned
* The system must be available for both Windows and Mac machines, thus making cross platform development necessary. This should also apply to smartphones and other mobile devices
* Time limit is the spring for fairs during that time, and potentially the summer if the schedule requires it
* Categorizing the products may be difficult for the application, as art is varied and subjective, rather that objective
* Logging into the system will need to have different levels of access. One for manager, one for the artisans and one for the customers
  1. **Recommendation**

This document serves to outline the system request from Ms. Weltz from Co-Op North, detailing the potential risks, benefits and other requirements for this project to move forward. SSI strongly recommends fully reading through this document to ensure that all points of interest are covered. Any revisions or additions needed should be sent to SSI as soon as possible for correction, so that stakeholder and developer expectations are the same.

* 1. **Document Overview**

The rest of this document contains the following sections:

* System Request: The original system request from Ms. Weltz, representing Co-Op
* Sales Letter: The sales letter from an SSI representative to the system request.
* Feasibility Assessment: An analysis of the risk and feasibility of the project, with a conclusion regarding the development of Smart Art.
* Requirements Definition: The functional, data and non-functional requirements of Smart Art in detail.
* Requirements Model: Various graphical models and use case diagrams of commons situations for Smart Art.
* System Evolution: The section outlining maintenance, upgrades, and potential future visions for the application.
* Conclusions and Recommendations: Summary of this document with recommendations for moving forward.
* Glossary: A list of all terms and acronyms used throughout the document.
* Bibliography: A list of the supporting resources used to create and design this document.

1. **System Initiation**
   1. **System Request**

November 24, 2017

# SYSTEM REQUEST – Artisan's Co-op North

## 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**

Elaine Weltz

Artisan’s Co-op North

241 Miller St.

Seattle, WA 98119

SYSTEM REQUEST FORMS NOW AVAILABLE ONLINE

Dear Ms. Weltz,

Thank you for considering the Salty Suite for your system request. We are proud to be named the first choice of software design in the Pacific Northwest for the last 20 years, by firms such Blue Moon Burgers or the City of Seattle. As such, we hope to produce a solution that is easy to use, cheap and efficient.

As you know, integrating an automated system for devices across multiple users is a challenging task that daunts most businesses, and we hope to be of assistance there. Our most recent updates should address your concerns about what devices users can use, as we now support Windows, Mac, Android, and iPhone. As such, we can certainly help you with receiving objects in a way that can be used anywhere. Checking in items could be easily done with QR codes, as the majority of shoppers these days own a smart phone. Combining this with an online pre-check-in system should be affordable as well, as we have created secure and private products for industries such as the Fremont Farmer’s Market.

Regarding your virtual display, we do have a sub-division that can assist you with that. They have not had experience setting up cameras before in the way you described it, but we are more than happy to scope out the space, so we can get that set up. We would recommend cameras that are secured to fixed ceiling locations, as this allows in house customers to freely move around without stumbling over robots or a similar alternative. If this is to your liking, please let us know and we’d be more than happy to provide a demonstration.

Finally, making a website that is catered towards browsing is the most difficult part of this request, but with input from you and with some past sales records, we can design a smart system that pushes products to the front of the website based on sale trends. This would of course accommodate the less technical and those who are, as we work with a large variety of customers.

Let us know if there is anything else we can do for you. I can be reached at [georgee1@spu.edu](mailto:georgee1@spu.edu), and my number is (206) 465-5769. If you need further information or help, please let me know and I’ll be more than happy to assist.



Erkin George

Systems Consultant

1. **Feasibility Initiation**
   1. **Introduction**

SSI’s feasibility analysis of this application can be broken down into 5 sections: Technical, Resource, Schedule, Organizational and Legal and Contractual. Feasibility is based on a scale with four different measurements: **Risky**, which means it is unlikely to succeed. **Poor**, which means that it is possible, but with some risk. **Feasible**, which means it is possible with little risk. **Excellent**, which means it is possible with insignificant to no amounts of risk.

SSI has measured this project to be generally feasible. The small risks should be managed with careful planning and failsafe measures.

* + 1. **Technical Feasibility**

SSI has evaluated the technical feasibility as **feasible** withlowrisk, as listed below:

* User Familiarity is **feasible**
  + The users are varied and not all technologically trained, but the majority of them use some form of technology
  + This type of application has not been presented before to this audience, causing the medium risk factor of unknown responses
  + Most users have experienced a search system and listing mechanisms on websites such as Google or Amazon
* Analyst familiarity is **feasible**
  + The analysts currently have various projects completed, showing team initiative and experience overall
  + These analysts have not worked on this project before, but this is better for the clients as this will result in a more responsive analyst team
* Development group is **feasible**
  + The resources of SSI are more than sufficient to develop this system
  + Technical expertise of the group has been tested and found to be sufficient for this project
* Project size is **excellent feasibility**
  + The project size is small and should require only a small team of developers to create and maintain the application
  + The scope of this application is a larger client base, but it should be identical for most users in how it is used
* Project structure
  + The core components are straightforward and not subject to sudden change
  + The potential components are varied, but not drastically changing currently as cameras and websites change relatively slowly
    1. **Resource Feasibility**

The resource feasibility has been measured to be **feasible**:

* SSI’s developers have not designed this type of system before, but have experience working for similar projects, as well as drastically different systems
* SSI’s work environment should allow for smooth development and deployment of this application, as this project falls within what the company can support with our expertise
* Hardware is well suited for this, as we have recently updated computers to build applications with
* Software is well suited, as we have built larger scale products for various other companies such as Blue Moon Burgers that supports all variety of software and systems
  + 1. **Schedule Feasibility**

The evaluation for schedule Feasibility has determined that it is **excellent feasibility**:

* Ms. Weltz has not maintained a hard deadline, nor is there a competitive reason to cause any sort of issues for the client
* The architecture for this system is not based on the technology that is subject to sudden and drastic changes, guaranteeing stability of the product
  + 1. **Organizational Feasibility**

The organizational feasibility is **poor/feasible** with medium risk:

* Non-technological firms tend to resist change, so convincing the users to switch to this system will take time and effort. In particular customers may not want to buy things in a new system immediately
* The profits expected should motivate the organization to continue using this system, once they have results of increased sales
* The organizational goals are not tightly defined, so this may cause some disagreement as to the viability and need for this new system. Artisans in particular may hesitate to pay a potential fee to use this system
* We have not worked with Ms. Weltz before, but we have worked with larger groups with higher demands, so communication should be straightforward via Ms. Weltz as a project champion
  + 1. **Legal and Contractual Feasibility**

**Excellent** **Feasibility**:

* This application does not present immediate difficulties for legislation, as it does not involve any dangerous products, topics or side effects that may cause harm
* User privacy is a concern that requires attention, as artist products, profits and financial details should remain private
* Ownership of the resources fall on Ms. Weltz and the Co-Op, with services for maintenance available via SSI per our standard contracting policies
  1. **Additional Comments**

We will need to provide a training guide for the Co-op and the involved members who are already in the organization, and this should also serve to train new members joining. This system should also accommodate how art changes from year to year, as new art pieces may be created that have not been classified before. Ms. Weltz should consider the amount of money each artisan will donate, so as to calculate whether new members should have to pay a one-time fee to help pay for Smart Art.

* 1. **Conclusion**

Salty Suite Inc (SSI) believes that Smart Art is **desirable** and **feasible** and fully recommend its development. The involved risks are generally low and manageable for developing Smart Art, and the project is a practical business idea that will benefit many people. The Co-Op’s benefits from this application are desirable and over time will prove to be an investment to the organization as a whole. Any potential concerns have been addressed before in similar projects and SSI encourages comments and feedback to improve the design of Smart Art, as well as the project time, so as to reduce costs.

1. **Requirements Definition**
   1. **Introduction**

This section details the requirements of Smart Art, and has been divided into three subsections: Functional, Data and Nonfunctional requirements. Functional requirements are operations, actions or services that the system must be able to provide. Data requirements are how the application will store and secure the information that is created or inputted. Nonfunctional requirements are characteristics that define what the system may need or be constrained by with its development phase or defined boundaries.

* 1. **Functional Requirements**
* **Account management**
  + Users should be able to login and manage their accounts without outside assistance, whether they are management, artisans or customers
  + Management should be able to maintain and manage the database of items
  + Account customization should be available for all users, as each user has specific needs based on who they are, their tastes and what they need from Smart Art
* **Support ordering and selling**
  + Customers must be able to use this system to buy what the artisans have put up for sale, and the artisans should receive the payments
  + Sellers should be able to take down and put up their items as they see fit, as they do not have to present an item they do not want to sell anymore
  + Management must be able to assist with any unwanted or incorrect sales that occur
* **Product presentation**
  + Sellers should be able to control how their products are presented via the application, allowing for artistic creativity
  + Manager must be able to control what the overall theme of the system is like, so that unrelated or unwanted design or item choices can be removed
* **Product check-in/checkout**
  + The objects being checked in must have a way to be checked in to the system by either Ms. Weltz or an artisan, via barcodes or some digitized system that is not just an email to Ms. Weltz
  + Customers should be able to take their purchases with minimal assistance from management
* **Inventory management**
  + Update inventory list and categorize items as they are checked in, as well as changing the item category, as how it is defined as an art piece may change
  + Track what items have been in the inventory, with sale history tied into this for analytics and business purposes
  + Look up a list of all items in inventory, or look up a specific item in inventory
  1. **Data Requirements**
* **Account information**
  + User login data and profile data should be stored securely in a database
  + Payment information must be delivered securely and for a variety of payment methods
* **Product information**
  + Creation date
  + Artist(s) who created/co-created this piece
  + Price
  + Description based on the creator
* **Data presentation**
  + The representation of the items as pictures or videos should maintain original quality of the artists choice, as how the information looks may be more important that the textual description
  1. **Nonfunctional Requirements**
* **Operational Requirements**
  + The system must run on varied user systems of unknown quality and power
  + The system must be compatible with different software systems such as Apple and Microsoft products, mobile Android and IOS phones and other applications
* **Performance Requirements**
  + The system must be able to handle sudden waves of customers, per each art fair or festival
  + The system should generally maintain the same levels of speed and efficiency for the majority of when it is running
* **Efficiency Requirements**
  + The system must be faster at managing the recording and inventory handling with a manually inputted system
  + The system should not slow down all other system applications that the user might need along side this, such as email clients
* **Security Requirements**
  + All user data should be controlled by the appropriate parties
  + Only the authorized parties should be able to view, use and otherwise interact with this application
  + All external payment methods used in this application must be modern and up to date per modern banking standards
* **Service Requirements**
  + The system should be intuitive and easy to learn, making it accessible to a varied audience
  + The system should dynamically change its look to suit whatever device it is being used on
* **Hardware Requirements**
  + There must be some form of server or computing system to store user data. This could be provided by an outside company or internally
  + This system should be able to run on older devices, dating back 10 years, so that users are not forced to upgrade immediately

1. **Requirements Model**
   1. **Introduction**

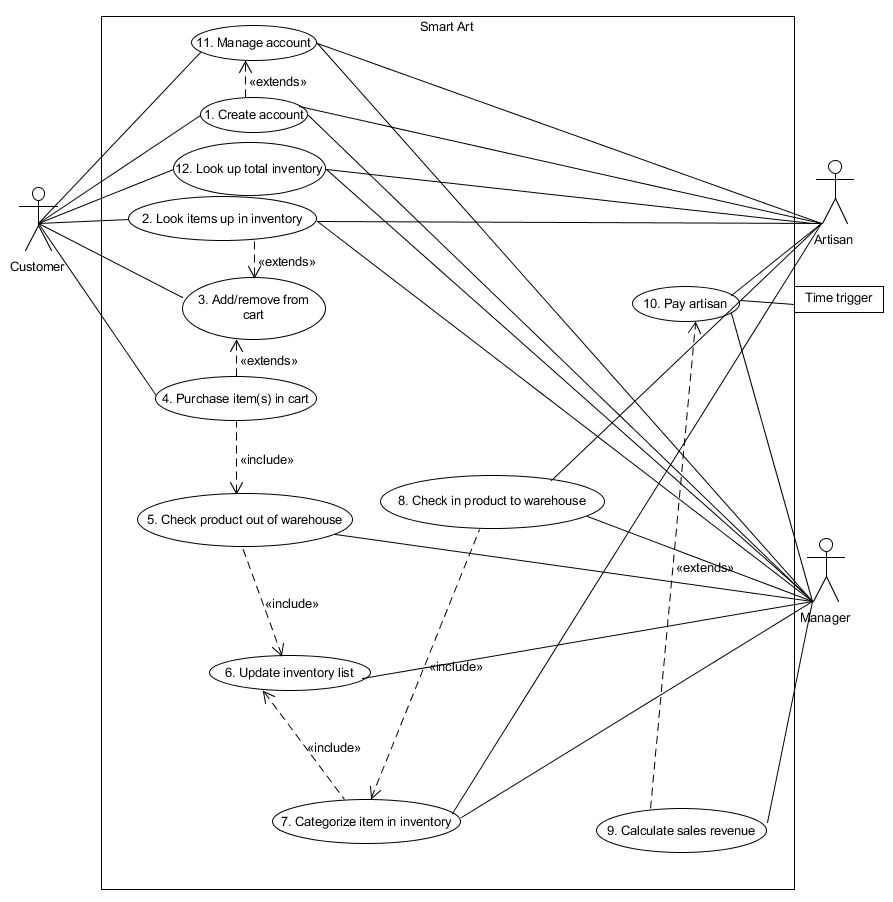
This section outlines the Use Case diagrams that outline graphically how the proposed system will look and function. This is to ensure an easy understanding of what the system does, and who is involved in using it.

The following terms will be used in the descriptions appended below the diagram:

|  |  |
| --- | --- |
|  | Users, or actors are represented with stick figures or a box for a nonhuman actor. Each actor represents a role that a user can play when they are using Smart Art. For an actor to be part of the design, they must be associated with at least one use case scenario. |
|  | Lines represent associations between the actors and use cases. Associations must cross the system boundary to an actor. |
|  | Extends is represented by the fragmented line labeled <<extends>> to show further functionality of a use case. This indicates that the functionality of the use case is extended. This can be optional or not, depending on the system configuration. |
|  | Includes is represented by the fragmented line labeled <<includes>> to show further requirements of a use case. This indicates that if the use case at the base of the arrow is carried out, so must the case at the point end. |
|  | Ovals with a number and name represent use cases. These are the process that the system carries out during the typical user experience. The numbering is 1 through n, and each has a correspondingly named description. |
|  | The system as a whole is represented by the large rectangle. This represents the system boundaries, indicating what is a part of Smart Art and what is not. |

* 1. **Use case diagram**

**Smart Art Use Case Diagram** Erkin George November 24, 2017

****

**Use Case Descriptions**

|  |  |  |  |
| --- | --- | --- | --- |
| **Use-Case name**: Login | | **ID**: 0 | **Importance**: High |
| **Primary actor**: Customer | **Use-Case type**: Essential, Detail | | |
| **Stakeholders and interests**:  *Managers, Artisans, Customers –* want a way to log into an account that is unique to them with the appropriate resources and options available. | | | |
| **Brief description**:  This use case describes logging into the Smart Art application. Username and password will be entered to authenticate the user. If incorrect information is entered, access will be denied and option to reset credentials will appear. | | | |
| **Trigger**: User opens the application and clicks “Login”  **Type** (circle one): External Temporal | | | |
| **Relationships**:  **Association**: Customer, Manager, Artisan  **Include**: N/A  **Extend**: N/A  **Generalization**: N/A | | | |
| **Normal flow of events**:   1. User opens the application and is directed to the Login screen 2. User types in login credentials and submits it to the application 3. Application authorizes the submitted credentials 4. The application displays the relevant information and features to the customer | | | |
| **Subflows**: N/A | | | |
| **Alternate / exceptional flows**:  2a. If the password is not recognized with the email or the email is not associated with an existing user account, the following occurs:   1. Inform the user that the email or password is incorrect. 2. Prompt the user to re-enter credentials 3. Below the login forms, show reset option and option to create new account | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use-Case name**: Create Account | | **ID**: 1 | **Importance**: High |
| **Primary actor**: Customer | **Use-Case type**: Detail, Essential | | |
| **Stakeholders and interests**:  Customer – wants to create their account to browse goods and add them to the cart for purchase or for later.  Manager – wants a way to manage other accounts and keep track of internal processes such as sales, payments and inventory.  Artisan – wants to keep track of their sales and what people are showing interest in. | | | |
| **Brief description**:  If the user does not have an account, they will create one in this use case. This will need name, email, password, address, language, and address. | | | |
| **Trigger**: User opens the application and clicks “Create an Account”  **Type** (circle one): External Temporal | | | |
| **Relationships**:  **Association**: Customer, Artisan, Manager  **Include**: N/A  **Extend:** N/A  **Generalization**: N/A | | | |
| **Normal flow of events**:   1. User opens the application and is at the login screen 2. User clicks on the “Create an Account” button, opening a registration window 3. User types in the relevant, required information 4. User’s information is validated via text/email 5. Confirmation email is sent to the validated email/phone number | | | |
| **Subflows**:  S4: Add user to the Smart Art database with all the relevant data | | | |
| **Alternate / exceptional flows**:  3a. Email/phone number given does not exist, or the password does not meet required standards of passwords for the application. User is prompted to try again with different credentials. | | | |

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| **Use-Case name**: Look items up in inventory | | **ID**: 2 | **Importance**: High |
| **Primary actor**: Customer | **Use-Case type**: Detail, Essential | | |
| **Stakeholders and interests**:  Customer – wants to be able to search for an item of interest that the Co-Op might have available for purchase  Manager – wants to be able to keep track of items in the inventory system so they know what is going in and out of the warehouse  Artisan – wants to see what items they have listed, and how it may appear in the general search engine built into the application | | | |
| **Brief description**:  The user will look up an item of their choice by name of the product or artist who created it. If no item is found, the program will give suggestions to increase the likelihood of finding the object | | | |
| **Trigger**: User types in the term into the search bar and presses “Enter”  **Type** (circle one): External Temporal | | | |
| **Relationships**:  **Association**: Customer, Artisan, Manager  **Include**: N/A  **Extend**: N/A  **Generalization**: N/A | | | |
| **Normal flow of events**:   1. User types out what they are looking for into the search bar built into the application and presses “Enter” to search 2. The program finds the item listed in inventory and similar items 3. Program lists out the item searched for and other related items | | | |
| **Subflows**: N/A | | | |
| **Alternate / exceptional flows**:  2a. The program does not find any items with the given search input and suggest the following:   1. Make sure your words are spelled correctly 2. Please try different keywords 3. Please try fewer keywords | | | |

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| **Use-Case name**: Add/remove from cart | | **ID**: 3 | **Importance**: High |
| **Primary actor**: Customer | **Use-Case type**: Detail, Essential | | |
| **Stakeholders and interests**:  Customer – wants to add and remove items from their shopping cart to keep track of potential purchases | | | |
| **Brief description**:  This use case allows the user to take items in and out of their cart. Items are added to the cart if they are available, and the cart will auto update every minute. | | | |
| **Trigger**: User clicks on the “Add to cart” or “Remove from cart” button  **Type** (circle one): External Temporal | | | |
| **Relationships**:  **Association**: Customer  **Include**: N/A  **Extend**: 2. Look up items in inventory when logged in, 4. Purchase items in cart  **Generalization**: N/A | | | |
| **Normal flow of events**:   1. User selects the item they have looked up or picked out from the available item list 2. User clicks add/remove item to/from cart 3. The application updates the database accordingly | | | |
| **Subflows**: N/A | | | |
| **Alternate / exceptional flows**:  3a. The application does not find the item, as is could be out of stock. If the item is in the cart and is now out of stock, it removes it from the cart while leaving a message for the user saying it is out of stock | | | |

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| **Use-Case name**: Purchase item(s) in cart | | **ID**: 4 | **Importance**: High |
| **Primary actor**: Customer | **Use-Case type**: Detail, Essential | | |
| **Stakeholders and interests**:  Customer – they want to be able to purchase the items that they want to buy  Artisan – they want a way to sell and advertise their products to the interested customers  Manager – wants the users to be able to sell and buy items to each other so that everyone benefits | | | |
| **Brief description**:  This use case purchases items through the built-in purchasing client in Smart Art, using a payment choice from a predefined list. Payment methods are verified and cart management is built into the application. | | | |
| **Trigger**: User clicks on the purchase items in cart button that is built into the application  **Type** (circle one): External Temporal | | | |
| **Relationships**:  **Association**: Customer  **Include**: 5. Check product out of warehouse  **Extend**: N/A  **Generalization**: N/A | | | |
| **Normal flow of events**:   1. User clicks on purchase item and is directed to a form for payment information 2. User fills out the forms for payment or chooses to pay in cash at pickup 3. User confirms the payment method 4. Payment is processed, and the user is sent a confirmation email of purchase 5. Performs use case 5. Check product out of warehouse | | | |
| **Subflows**: N/A | | | |
| **Alternate / exceptional flows**:  2a. User’s credit card is rejected. They are prompted to put in the PIN again, or to try another payment method  3a. User cancels payment. The item remains in the cart and the application returns to the look up items in inventory mode. | | | |

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| **Use-Case name**: Check product out of warehouse | | **ID**: 5 | **Importance**: High |
| **Primary actor**: Manager | **Use-Case type**: Detail, Essential | | |
| **Stakeholders and interests**:  Manager – wants to be able to remove items from stock as requested by artisans or as necessary | | | |
| **Brief description**:  This use case checks sold items out of the warehouse by them being sold to a customer, or by the manager checking out the item manually | | | |
| **Trigger**: Manager or system checks the item out  **Type** (circle one): External Temporal | | | |
| **Relationships**:  **Association**: Artisan, Manager  **Include**: 6. Update inventory list  **Extend**: N/A  **Generalization**: N/A | | | |
| **Normal flow of events**:   1. Application sends verification of payment to the database 2. The database ties the payment ID to the correct stored ID for a product 3. The database removes that entry, as it has been sold 4. Performs use case 6. Update inventory list   OR   1. Manager chooses an item in the database and removes it 2. The database updates the inventory accordingly 3. Performs use case 6. Update inventory list | | | |
| **Subflows**: N/A | | | |
| **Alternate / exceptional flows**: N/A | | | |

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| **Use-Case name**: Update inventory list | | **ID**: 6 | **Importance**: High |
| **Primary actor**: Manager | **Use-Case type**: Detail, Essential | | |
| **Stakeholders and interests**:  Manager – wants to ensure the inventory list is up to date manually in case the automation runs into issues, and also so that someone has control over the system. | | | |
| **Brief description**:  This use case updates the warehouse inventory list either manually if the system can’t automatically update the list. The manager is in charge of the manual entries and the application of the automatic ones. | | | |
| **Trigger**: Manager updates the inventory list manually or an item being checked in or out updates the inventory list accordingly.  **Type** (circle one): External Temporal | | | |
| **Relationships**:  **Association**: Manager  **Include:** N/A  **Extend**: N/A  **Generalization**: N/A | | | |
| **Normal flow of events**:   1. Manager manually enters an item into the inventory list, or manually removes one 2. This action updates the rest of the automatic tracking that continues even while the manager works | | | |
| **Subflows**: N/A | | | |
| **Alternate / exceptional flows**: N/A | | | |

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| **Use-Case name**: Categorize item in inventory | | **ID**: 7 | **Importance**: High |
| **Primary actor**: Manager | **Use-Case type**: Detail, Essential | | |
| **Stakeholders and interests**:  Manager – wants to be able to categorize items in the inventory for the customers to view  Artisan – wants to categorize items in the inventory for the customers to view according to the artists descriptions | | | |
| **Brief description**:  This use case categorizes the new item into discrete categories based on the data entered by the item check in from the artisan or the manager | | | |
| **Trigger**: Item is checked into the system by the user, or its description is update by the user  **Type** (circle one): External Temporal | | | |
| **Relationships**:  **Association**: Manager, Artisan  **Include**: 6. Update inventory list  **Extend**: N/A  **Generalization**: N/A | | | |
| **Normal flow of events**:   1. User chooses item in the inventory to categorize 2. Use chooses category to place the item in 3. The user confirms the category for the item 4. The application performs use case 6 | | | |
| **Subflows**: N/A | | | |
| **Alternate / exceptional flows**:  2a. Category does not exist for this item. User creates a new type of category that requires manager approval, as this updates the inventory list in the database. | | | |

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| **Use-Case name**: Check in product to warehouse | | **ID**: 8 | **Importance**: High |
| **Primary actor**: Artisan | **Use-Case type**: Detail, Essential | | |
| **Stakeholders and interests**:  Artisan – wants to check in items to the warehouse so they can be sold via the Co-Op  Manager – wants to have items check in automatically so manual entry of each item is no longer a tedious task. | | | |
| **Brief description**:  This use case checks in products to the warehouse via an automated process that can be manually overridden. | | | |
| **Trigger**: Artisan or Manager uses the “Check item in” form built into the first page of the application. This is accessible after logging in.  **Type** (circle one): External Temporal | | | |
| **Relationships**:  **Association**: Artisan, Manager  **Include**: 7. Categorize item in inventory  **Extend**: N/A  **Generalization**: N/A | | | |
| **Normal flow of events**:   1. Artisan is logged into the system and chooses the “Check Item in” option 2. The Artisan fills out the description of the item as provided by the system or creates a new one 3. The check in form is created and pending approval by the system or the manager 4. Manager or the application confirms the arrival of the item 5. Performs use case 6. Update inventory list | | | |
| **Subflows**: N/A | | | |
| **Alternate / exceptional flows**: N/A | | | |

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| **Use-Case name**: Calculate sales revenue | | **ID**: 9 | **Importance**: High |
| **Primary actor**: Manager | **Use-Case type**: Detail, Essential | | |
| **Stakeholders and interests**:  Manager – wants to know the numerical breakdown of profit and costs from the sales | | | |
| **Brief description**: This use case describes how the manager will calculate the revenue generate by sale of goods as tracked by the application. | | | |
| **Trigger**: Manager will log into the system and then navigate to the “Calculate sales revenue” button and clicks it  **Type** (circle one): External Temporal | | | |
| **Relationships**:  **Association**: N/A  **Include**: N/A  **Extend**: N/A  **Generalization**: | | | |
| **Normal flow of events**:   1. Manager logs into the application 2. Manager navigates to the calculate revenues button and clicks it, selecting preferred format of data 3. The application queries the database and adds up all the sales, plus tax and other costs involved in the process 4. The application returns the calculated value to the user in the given data format (Excel, Word, Notepad, etc) | | | |
| **Subflows**: N/A | | | |
| **Alternate / exceptional flows**: N/A | | | |

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| **Use-Case name**: Pay artisan | | **ID**: 10 | **Importance**: High |
| **Primary actor**: Manager | **Use-Case type**: Detail, Essential | | |
| **Stakeholders and interests**:  Manager – wants the payment to be automatically processed once they have calculated and approved the appropriate pay per artisan  Artisans – want to be paid for their work that is sold at via the Co-Op | | | |
| **Brief description**:  This use case pays the artisans the profits they are due for having sold items via Smart Art and the Co-Op. This is done automatically or done manually by the manager. | | | |
| **Trigger**: Manager presses pay artistans, or the application automatically sends out pay stubs  **Type** (circle one): External Temporal | | | |
| **Relationships**:  **Association**: Artisan, Time trigger, Manager  **Include**: N/A  **Extend**: 9. Calculate sales revenue  **Generalization**:N/A | | | |
| **Normal flow of events**:   1. Manager has approved the sales revenue records 2. The system accesses the database and retrieves the payments 3. The system sends the payment via an outside | | | |
| **Subflows**: N/A | | | |
| **Alternate / exceptional flows**:  1a. The manager has not approved the payments to the artists, but the automated day has arrived. The system will alert the manager via email and text, and will apologize via an automated email to the artisans who have not been approved | | | |

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| **Use-Case name**: Manage account | | **ID**: 11 | **Importance**: High |
| **Primary actor**: Artisan | **Use-Case type**: Detail, Essential | | |
| **Stakeholders and interests**:  Artisan – wants to manage their account so they can personalize the items for sale, and how they are displayed, as well as receive their payments  Manager – wants to manage accounts in general to make sure that everyone can use their accounts to get business done.  Customer – wants to login to purchase items with their account so they can keep their cart and list stored for later. | | | |
| **Brief description**:  This use case manages the user account to personalize settings and manage account features per user account, such as the shopping cart or payments. | | | |
| **Trigger**: Already logged in user clicks on the “Settings” in the application, opening a menu with options depending on the type of user  **Type** (circle one): External Temporal | | | |
| **Relationships**:  **Association**: Artisan, Manager, Customer  **Include**: N/A  **Extend**: 1. Manage account  **Generalization**: N/A | | | |
| **Normal flow of events**:   1. User clicks on the settings option once they are logged in 2. The user is redirected to a new page with account management features 3. User clicks on the appropriate settings and then clicks apply 4. The application applies the settings to the user profile | | | |
| **Subflows**: N/A | | | |
| **Alternate / exceptional flows**: N/A | | | |

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| **Use-Case name**: Look up total inventory | | **ID**: 12 | **Importance**: High |
| **Primary actor**: Customer | **Use-Case type**: Detail, Essential | | |
| **Stakeholders and interests**:  Customer – wants to view all the goods that are available in the inventory system that they might want to view.  Manager – wants a way to view the total inventory stock, as well as see what the customers see so that they can manage the system to suite needs based on performance and feedback.  Artisan – wants to keep track of what goods are presented, and what people are seeing so that they can produce goods as they see fit in the inventory. | | | |
| **Brief description**:  The user will enter click a “Show all items” button that will direct them to a page that shows all the goods in inventory, sorted as requested by the user. | | | |
| **Trigger**: User opens the application and clicks “Show all items”  **Type** (circle one): External Temporal | | | |
| **Relationships**:  **Association**: Customer, Artisan, Manager  **Include**: N/A  **Extend:** N/A  **Generalization**: N/A | | | |
| **Normal flow of events**:   1. User is already logged into the application, and navigates to the “Show all items” button 2. User clicks on the button, and is redirected to a new page that lists out all the products 3. User users the search tools to refine search by date, name, price and other options | | | |
| **Subflows**: N/A | | | |
| **Alternate / exceptional flows**:  3a. User’s refined search does not match any current inventory. User is prompted to change the search tools and is shown suggested items that are related to the current search | | | |

1. **System Evolution**
   1. **System Maintenance**

Maintenance for Smart Art will be provided by SSI, as defined by an annual contract that the Co-Op will need to renew each year. This will cover the following items:

* Changes to the look and design of the product, as contracted by the client. An external artist will need to be hired with this, as SSI does not develop User Interface or UI design.
* Management of the database will be managed by Ms. Weltz, as she is the main manager who tracks what goes in and out of the warehouse.
* Database maintenance on the server side will be contracted through SSI, as a yearly routine during the least busy time of year to reduce costs for the Co-Op.
  1. **Future Upgrades**

As Smart Art becomes more adopted by the Co-op, upgrading the capacity and speed of the system may become necessary as the Co-Op expects to grow and change, which is explored in the following points:

* Physical environment
  + Once the application is deployed, scaling it up to server more people will be highly important, as the Co-Op should expect to grow more with this technology assisting their business. This covers hardware, software and network upgrades as necessary. These will be evaluated by SSI to be integrated into future versions of the application.
  + The scope of the project is currently the United States and Canada. It will start with the United states and then will be expanded out to Canada. International reach should be discussed with the stakeholders before expanding outward.
* Environmental changes
  + The Co-Op may move into more markets with differing strength of technology with regards to reliability, security and types of systems.
  + Users will be working on various systems such as Android, Windows and IOS products. It will start on Windows products and will need to expand from there.
* Resource and management issues
  + Ms. Weltz, as the lead contact for this project will be given the first manager account to set up the other management accounts.
  + Per the contract between SSI and the Co-Op, resources will be managed by the Co-Op and supported annually by SSI.
  + Accounts can be created per verification from the managers of the Co-Op, as having anyone create an account is undesirable.
* Modifications expected
  + Different ways to log in besides creating a new online account, such as Facebook, Google, Twitter.
  + Share on social media, so that your product gets more views through the system. This could be integrated with the new ways to log on.
  + The website is expected to be a later part, as the main part of the system is the inventory and sales tracking to save Ms. Weltz and managers time.
  + The cameras to track inventory and goods should be designed later, once a working system is in place. SSI recommends speaking with a representative of a camera company such as Nikon or GoPro to explore hardware possibilities.

1. **Conclusions and Recommendations**
   1. **Conclusion**

Salty Suite Inc. believes that this project is feasible and should be implemented as the design above has suggested, so that the stakeholders involved in this project will benefit as soon as possible. The risk for this project is generally low, as the products being stored and managed can be stored in a storage closet without unusual hazards.

* 1. **Recommendations**

Having come to the conclusions above, please consider the following recommendations while implementing Smart Art:

* Ensure that an artist representing the Co-op is paired with the developers so that design of the system matches the artistic needs of customers, artists and Ms. Weltz.
* Create an online tutorial for the artisans to use, so that they can easily figure out Smart Art without having to contact Ms. Weltz each time someone new learns it.
* Meetings with Ms. Weltz should occur to ensure that the layout of the application match her expectations, as laid out in the requirements.
* Ms. Weltz should work with the developers to choose a set of virtual payment methods, such as PayPal, Visa and so forth

As a whole, this project is proceeding well, and the steps previously listed will ensure further success in completing the system on time and as desired. Any further questions or concerns should be sent to Salty Suite Inc, who can be contacted at help@ssi.net.

**Appendices**

***Questions asked of Ms. Weltz during interview:***

***Q: Do you have any preferences for the design of the interface for the program?***

***A: It should be simple and easy to use. The logo and fancy art can come later.***

***Q: Do you want a live feed of the room?***

***A: That would be nice. Not necessary right now, as the important thing is the inventory tracking and sales management.***

**Glossary**

**SSI**

Salty Suite Inc firm in charge of designing, developing and implementing the application.

**Artisans Co-Op**

A group of artists who sell various objects at venues. This is the party who is

**Feasibility**

Whether or not the system/application is possible, and the associated risk for the listed categories

**Requirement**

A requirement is something that the application must have or do to meet the organizational goals and needs.

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