Co-op Pizza Systems (CPS)

System Proposal

Prepared For:

Mr. Park, Disciples' Pizza

shawn wilcox

INAAT

Executive Summary

Disciples'' Pizza is Co-op of thirty different pizza trucks and are looking to expand their brand and message of faith by adding deliveries and other services. Disciples' Pizza needs assistance in designing and implementing the appropriate technologies to fulfill this expansion.

Disciples' Pizza has approached I Need An A Technologies, INAAT, to build a system that will help create and manage delivery operations as well as pass on their message of faith. INAAT has expertise in designing and implementing integrated systems and technologies supporting a wide range of goals. INAAT realizes the benefit that Disciples' Pizza brings to the metro area. INAAT possesses the experience and capability that Disciples' Pizza will require to be successful.

1.0   Introduction and Overview

1.1. Problem Statement

Disciples' Pizza is the new brand of the co-op of Christian wood fired pizza trucks in the greater Seattle area. Their trucks move to many different places every day, so it has been challenging for them to provide their customers with a quality delivery service. However, they would like to start a delivery service by hiring food couriers (i.e. delivery persons). They need the help of technology system(s) to solve their complex setting to create the desired outcome. Disciples' Pizza would like help in designing a system that would enable them to utilize these couriers to enable the delivery of their pizza.

1.2. Project Vision and Scope

Disciples' Pizza is a co-op of thirty separate Pizza Trucks. They wish to start offering a delivery service for their customers. They believe that taking advantage of mobile platforms (e.g. mobile applications, and tablet styled device payment options) they can implement a delivery service for their customers and help them to be able to support their local church system(s). By creating such a system, they hope to be able to allow customers to order via app, couriers to deliver via app, and to accept payment via a tablet. This system, Co-op Pizza Systems (CPS) will provide will handle these services.

1.3. Requirements Summary

For CPS to be a success, numerous sub-systems and technologies will need to be developed and deployed. A phased implementation will be utilized to minimalize issues and to maximize adaptation. Phase 1 will be building and launching both the website and ordering app for the customer side of their business while concurrently launching the order notification and tracking app for the trucks. Phase 2 will include implementing

a delivery option to the online site and mobile customer app, while creating and launching a delivery app for the couriers to notify them of when the order is available for pickup and directions to the customer's address. Phase 3 will be for refinement adding potential additional requirements as needed.

- A menu and ordering system :: Phase 1
- Tracking systems for orders and order progress :: Phase 1
- A Point of Sale (POS) system that accepts debit, credit, and cash that runs on tablets and mobile devices :: Phase 1
- A website and a mobile app to place orders to the nearest truck :: Phase 1
- Launching a delivery option on both the website and customer app :: Phase 1
- Launching a courier app that notifies when an order is ready and directions to the customers address :: Phase 1
- Updating the tracking system from Phase 1 :: Phase 2
- Data analysis of sales and statistics from orders :: Phase 2
- Implementing a way to accept Food Vouchers handed out by the Co-op on the website and customer app :: Phase 2
- Create a way for the trucks to send sound files of recorded blessings to the customers, either through email or the app :: Phase 3

1.4. Stakeholders and Interests

There are many various groups that will be affected by the design and adoption of CPS. INAAT is planning on designing and developing the technologies, thus INAAT is a major stakeholder in the success of CPS. The Thirty Food Trucks that comprise the Disciples' Pizza Co-op have a huge stake in CPS, its success will grow their brand and individual businesses. The customers who are will be placing the orders have an interest in the success of CPS as it will allow them easier access to a product they enjoy and want to spend money on.

One of the main purposes of launching CPS is to allow the delivery of Co-ops pizza, this means that the couriers to be hired are not only a stakeholder but a key element of the success of the overall system. To ensure their success we will need to employ GPS and best-route algorithms. An "invisible" stakeholder would be the underprivileged to whom Disciples' Pizza hopes to serve through their food voucher program. Their interests aren't needed to determine success; however, it is a core tenement of the Co-op and will help show the dedication of the brand.

1.5. Expected Costs and Benefits

1.5.1. Benefits

CPS will provide Disciples' Pizza with the tools to connect with customers like never before. The customers will be able to get fresh pizza made in their local neighborhood and have it delivered quickly. This new connection will lead to an increase in traffic and thus an increase in revenue. Another benefit of this increase in customers will be the brands ability to share their belief(s) in God's Love and Blessings.

1.5.2. Costs

The Primary Costs of CPS involve the following:
- The creation and maintenance of Three different apps
    a) The app for customers to order from
    b) The app for Trucks to see and monitor orders
    c) The app for couriers to receive delivery notice and directions
- The various Tablets and mobile Computing devices that will run the Trucks apps and POS systems
- The creation and maintenance of the POS system
- Storage and bandwidth costs from a cloud service i.e. PaaS
- CPS will require development and implementation time

1.6. Constraints

Although there are financial constraints, the biggest constraint will be compatibility, specifically the wide range of android and apple phones and versions it will have to run on. Not only that it will have to be compatible with the various tablets in service amongst the various trucks of the Co-op. This need for compatibility should be mitigated by creating CPS to be communicative across various operating systems and platforms. Due to financial constraints as wells as time, the development and launch of CPS will be broken into three phases to allow for adjustment and utilization for increasing revenue of the Co-op in between phases.

Phase 1 will be building and launching customer ordering products, the trucks tracking/ order management and delivery systems, and POS system. Phase 2 will include updated order tracking, refining processes from phase 1, data analysis, and potentially implementation of the food vouchers program. Phase 3 will be for refinement adding potential additional requirements as needed such as the sound bites. An obstacle CPS faces is the individualistic nature of the Co-op's trucks. This can be mitigated by the creation of individual profiles where the trucks can change their menus and specials while the customer facing systems (i.e. the website and app) show the closest truck and its menu.

1.7. Recommendation

INAAT strongly advises that Mr. Park and the individual owners that constitute the Disciples' Pizza Co-op read the CPS system proposal. INAAT strongly suggests that

Disciples' Pizza consider the adoption of a universal technology template (i.e. the same operating systems or tablets etc.). Disciples' Pizza should respond to this with any concerns or alterations they wish to be made. This communication will allow INAAT to make adjustments before the development cycle begins. INAAT recommends that Disciple's create a tentative timeline for specific goals. To meet those goals and keep track of the project, INAAT recommends monthly meetings with the INAAT team. This will ensure open communication and ensures that both parties remain dedicated to any issues and the success of CPS. INAAT considers these actions pertinent in the creation of CPS and its success, as requested by Mr. Park.

1.8. Document Overview

The rest of this document will include six major sections:

1.8.1. System Initiation: This section will include a copy of the original system request and sales letter.

1.8.2. Feasibility Assessment: This section will include a review of the technical, resource, schedule, organizational, and legal/contractual feasibilities.

1.8.3. Requirements Definition: This section will serve as an outline of the requirements of both the functional and nonfunctional aspects of CPS.

1.8.4. Requirements Model: This section will include a UML depiction and support documents to explain the functionality of CPS.

1.8.5. Systems Evolution: This section will be an explanation of the future functions of CPS as well as what will be in both Phase 2 and Phase 3.

1.8.6. Conclusion and Recommendations: This section will summarize the proposal and offer suggestions as to the next steps for the development of CPS.

2.0   System Initiation

2.1. System Request

October 11, 2019

SYSTEM REQUEST – Disciples' Pizza

Project Sponsor

> Name: Mr. Taiwoo Park
> Representing: Wanderer's Tools
> Phone: x7258 E-mail: twp@spu.edu

Opportunity Statement:

Disciples' Pizza is the new brand of the co-op of Christian wood fired pizza trucks in the greater Seattle area. Our trucks have our own unique style and taste and thus been loved by local residents for years. Our trucks move to many different places every day, so it has been challenging for us to provide our customers with a quality delivery service. However, we would like to start a delivery service by hiring food couriers (i.e., delivery persons). It is a very interesting setting – our kitchens and food couriers both move! We are going to need some technology to make *this* happen!

Proposed Product:

Background and Context:

Disciples' Pizza isn't a "company" per se, but rather a group of food trucks and a group of food couriers to bake and deliver pizza to local customers. We have 30 pizza trucks in the greater Seattle area, mostly on the west side of Lake Washington, and will have 30-40 food couriers in the near future. Most of our trucks moves every day, or even in the middle of a day depending on neighborhood and/or sports events. For its brand and to support our upcoming mission of international missionary and local church support, we would like to have our own delivery system and mobile apps for online orders.

We would like to take a full advantage of mobile devices for trucks, food couriers, and customers. Specifically, most of trucks already have tablets for credit card transactions. Food couriers have smart phones, and of course, our customers do. Our dream is that once our customer is craving for pizza, s/he opens our app, and make an order, then the nearest pizza truck receives the order. Also, one of our food couriers nearby will receive a delivery request, and the courier will deliver the pizza to the customer. We hope that all these processes would work smoothly to find the best truck and courier so that we can be always cost-effective and maximizing customer satisfaction.

Initial Vision and Scope:

O *Online Order and Status Tracking*

Our customers need to be able to order pizza specifying its dough, size, base sauce, cheese, and toppings. We also offer a set of specialty pizzas with presets, as well as bread sticks, wings, and drinks. We think to support credit cards as main payment method, while supporting our own food voucher cards for ones who are in need. Once a customer makes an order from our app, it automatically dispatches the work to one of our trucks --- perhaps the closest one -- and one of our couriers. Our app needs to be able to show the current status of the order, among preparation / in oven / on its way, and the courier's location in case when the pizza is on its way. After delivery, our customers can hear a message of blessing from the truck owner who made the pizza.

O *Pizza Truck Order Handling*

The app in our food trucks is to notify our food truck owners of new orders, and show all ongoing and pending orders on the screen. Most of our food truck owners make multiple pizzas at the same time, while handling customers in-person, so the app needs to give the information as clear as possible. Our owners are supposed to change the current status of the orders, and it would be nice if they can record a voice message (to spread the love and blessing of God) for a customer when they hand the pizza to a courier. Also, our owners should be able to create a new order made in-person through the app.

O *Courier Support*

Our couriers will have a smartphone app for delivery information. It will show a list of delivery tasks, as well as the current destination. If a courier is with pizza, the destination is to be delivery address, or a pizza truck for the next delivery otherwise. Our couriers need navigation service for their pickup and delivery.

O *Menu change and administration support*

We may want to change ingredients and specialty pizza styles depending on availability and season, hopefully through web browsers. Also, we would like to handle the food voucher information.

O *Sales summary and statistics*

Stakeholders Identified:

O Pizza truck owners – who would like a more effective way to receive delivery orders and bless the customers.

O Food couriers – who would like make more efficient trips and easy 'where-to-go-next' information.

O Our customers – people who will enjoy our fresh pizza delivered quickly.

O You – as our partner.

Expected Benefits:

O Opportunity 1 – Fresh pizza, made in my neighborhood, delivered quickly.

O Opportunity 2 – Improve our sales experience and increased revenue.

o Opportunity 3 – Spread God's love and blessing.

Special Issues or Constraints:

We're not made of money. Members are willing to invest in the new equipment and programs, but we're talking a few hundred (not thousand) dollars each from maybe 30 owners. Similarly, I'm not sure everyone is going to be excited to run out and by a new phone or tablet to manage sales or use this system. (Although maybe we could handle that with a few purchases "by the co-op".)

Also, our members 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. Pretty typical people.

I don't think we are on a particularly tight time schedule. The core sales functionalities might be considered to be finished sooner, while others can be more down the road.

2.2. Sales Letter

October 20, 2019

Mr. Taiwoo Park
Disciples' Pizza
3469 3rd Ave W.
Seattle, WA 98119

PROPOSED PIZZA SYSTEM

Dear Mr. Park,

We here at INAAT appreciate your interest in our company to help build Discples' Pizza System. We recognize that we are not the only company competing for your business, however we would like to prove how we are different and that we understand your needs. Our company prides itself on delivering quick, quality, and comprehensive technologies that can be scaled to meet customers demands and needs. We are dedicated in working in cohesion with you to help create the right system to meet your needs.

Following a comprehensive review of your request and indicated needs we would like to start work right away. We possess the software capabilities and have both the experience and knowledge to create a system that can be deployed for your Co-op. We are uniquely suited to design and implement such technologies that can be adapted across multiple platforms e.g. tablets and smart phones of various operating systems.

By choosing INAAT you will be able to spread not only your product, but your message of faith and community through food. I will be in contact within the next week to answer any questions and to start on this unique partnership.

Shawn Wilcox
INAAT, I Need An A Technologies
(206) 281-2140
3307 3rd Ave W.
Seattle, WA 98119

3.0   Feasibility Assessment

3.1. Introduction

The objective of INAAT is to deliver CPS under budget all while keeping high standards, it is imperative to look at and expound on the feasibility and risks of CPS. Due to this, each facet of CPS will include an analysis of its feasibility. The scale to be used is as follows:

1. **Very Low**: The risk assumption with this facet is marginal at worst. Development and launch of CPS will not be delayed by this.
2. **Low**: The risk assumption with this facet is fair however minor changes may need to be taken into consideration for CPS to develop properly.
3. **Medium**: The risk assumption with this facet is slightly troubling. CPS will progress only with care.
4. **High**: The risk assumption with this facet is a hazard to the development of CPS and will require stoppage of the development cycle to exercise prudence in its continuation.

3.2. Feasibility Analysis

3.2.1.   Technical Feasibility

Risk: Medium

The many moving parts and lack of hardware standard will require CPS to span multiple generations of technologies and operating systems.

The issues of having a system that communicates between mobile app and tablet app is concerning. The mobile app is less troublesome because of established standards within both the Android™ and Apple® iOS™ platforms. The issue arises from the various operating systems that exist within the tablet umbrella. We will need to create an app that is compatible with Android™, iPadOS™, or Windows™ tablet platforms. This will inherently complicate the creation of a POS system as well, due to it not being scalable within the Co-op. This compatibility also creates issues with the functionality of notifying couriers of when the orders are available for pickup.

The other functionalities requested are common and standard technologies and shouldn't be too difficult to implement. A website as well as mobile apps, even those with GPS directions are ordinary in todays market.

Mitigation:

Ways to mitigate this increased level of assumed risk, are as follows:
- Implement in phases to diminish compatibility issues.
- Push for Disciples' Pizza's trucks to adopt a universal hardware standard

3.2.2. Resource Feasibility

Risk: Low

INAAT has the technology skillset to design CPS. We have a team of software engineers that are experienced in various platforms and know how plan, design, and implement CPS. The resources needed to run and maintain a website are minimal, however, the security of that website due to monetary transactions will be paramount and ongoing monitoring will be required. Furthermore, using a PaaS cloud service is simple and the costs are directly related to the amount of bandwidth used (The more business the more costs).

The main resource risk will be Disciples' Pizza underestimating the cost of CPS.

Mitigation:

Ways to mitigate the risks associated with Resource(s) are as follows:
- Fully explain the costs in short, medium, and long-term ranges of CPS.
- Ensure that Disciples' Pizza understand the costs and have enough capital.
- Ensure that any part of the system that touches customer data of any form is highly protected and encrypted.

3.2.3. Schedule Feasibility

Risk: Very Low

Mr. Park stated that they are not on a very tight time schedule and would like to have the core sales functionalities first while other aspects can be implemented later. Using a phased implementation, INAAT will ensure the goals and milestones are met in a timely manner. INAAT does have a myriad of other customers and projects so certain Hard Deadlines will be implemented to ensure that the phasing is completed.

Mitigation

Overall there is very low risk associated with the schedule of CPS. We are mitigating most of the risk by designing and implementing in phases.

3.2.4. Organizational Feasibility

Risk: Medium

The organization hierarchy of thirty separate Pizza Trucks forming a Co-op is troublesome at best. Care must be taken to ensure that optimal spots are rotated. Further, legal advice should be sought in order to protect INAAT from the possibility of individual members breaking with the Co-op and deciding against the use of CPS.

The rotating locations of the trucks also creates sub-optimal Organizational Feasibility by Couriers potentially being left out of the location of their assigned truck. Customers also face uncertainty as the truck they get one order could very well differ from the

next, and with each truck having their unique twists this could lead to disenfranchisement.

Mitigation

Due to the increased risks associated with the overall complexity of the organization and its stakeholders the following steps should be considered to lower the risks:
- Creating weekly schedules of truck locations
- Rotation of prime locations
- Consult with legal experts on dealing with Co-ops

3.2.5. Legal Feasibility

Risk: High

The very nature of this system and its stakeholders could leave INAAT open to substantial risk. Recent News has shown the general public and for that matter the courts don't react kindly to data breaches (i.e. the Experian breach). By taking data that is private and valuable to customers (e.g. name, address, phone number, email, credit/ bank account information) we must ensure every step is taken to protect and encrypt this information. Furthermore, the very nature of Disciples' Pizza being a Co-op of thirty separate individual pizza trucks is cause for pause and worry. Creating a contract with thirty separate members of a larger Co-op could pose troubles. Getting all thirty and the overall Co-op to terms could prove trying. Legal consultation must be sought to ensure that every member and the Co-op are bound to any contractual obligations.

Mitigation

The High risk associated with the legal aspects of CPS for INAAT could destroy the project. Significant thought and steps must be taken to lower this risk. The following steps are just the start of the actions that must be taken:
- Ensure that all date is encrypted, and that CPS is constantly monitored and updated for any new exploits in security.
- Ensure that all thirty pizza truck owners agree to and sign the terms of contract.
- Have a legal expert (i.e. Attorney) review every aspect of the contract and ensure that both parties fully understand its meanings.

3.3. Additional Comments

To ease adoption of CPS and its implementation, pushing for the Co-op to agree to a universal hardware setup would be beneficial. Also planning is paramount for the success of Disciples' Pizza and its adoption of CPS. Regardless of whether a universal hardware setup is approved and adopted, we should provide training on how the system operates and how to use it. Also, it should be restated that INAAT will require thorough legal advice on this project.

3.4. Conclusion

After analyzing and consideration of potential risks and struggles, INAAT finds that CPS is of moderate feasibility. The risks that CPS will face are manageable with careful thought, foresight and planning to minimize the risks associated with it. Organizational and Legal/Contractual Feasibility pose significant risks that steps will need to be taken to ensure their mitigation. The steps needed are listed above and should prove to minimize the risk that INAAT faces with the creation of CPS.

4.0   Requirements Definition

4.1. Introduction

This section will detail the system that is CPS and its various aspects and functionalities. This includes the various technologies that will be required for CPS to function. Also, to be found in this section are the nonfunctional requirements of CPS. The nonfunctional requirements depict the challenges that CPS faces and how CPS must deal with those challenges.

4.2. Functional Requirements

4.2.1.   Employee (Truck and Courier) Registration
- The food trucks and couriers must be able to create an account that includes inputting such data as email, username, and password. The creation of such accounts will also require the input of personal data such as phone-number.

4.2.2   Order Process
- The customer must be able to navigate to either the website or mobile app to place and order.
- The customer must be able to navigate the menu and choose from various pizza types, sides, and beverages.
- The system must then process the order and calculate the total to include tax and delivery fee.
- The customer must be able to choose the method of payment i.e. credit/debit card, cash, or food voucher (to be implemented in later iterations).
- The customer must be able to enter their information e.g. name, address, phone number etc.
- The system must be able to process the previous information and then store it in a secured method.

4.2.3   Customer Account Creation
- The system should prompt the customer to have the option of creating an account.
- This account would offer the storage of preferences such as menu favorites, address, phone number, email, and payment information for quicker ordering.

4.2.4 Order Update
- The system must send the order to the appropriate truck and then notify said truck there is an order.
- The system must notify a courier of the pending delivery.
- The system must notify the customer the order has been received.
- The truck must be able to update the process of the order to which the system will update the customer and the courier.
- The system must enable updates when the courier picks up and delivers the order.

4.3   Data Requirements

4.3.1.   Truck and Courier Registration
- The system must store the data collected when truck owners and couriers create accounts. The data includes name, phone-number, email address, username, and password.

4.3.2.   Customer Profile
- The system will offer the customer the option of storing their data in a profile that will include their preferred name, email, address, phone-number, and payment method.

4.3.3.   Store / Process Payment
- The system will need to record and store the payment information from the customer.
- If using a debit or credit card, the system will need to contact the financial institutes systems and process the transfer of funds to satisfy payment.
- If using the Co-ops food voucher service, the system will need to record this instance and process, so no payment is due.

4.3.4.   Courier Payment
- The system will need to record every delivery completed by individual couriers.
- It will need to record all non-cash tips for tax purposes.
- The system will also need to calculate wages.

4.3.5.   Analytics
- The system will need to analyze data from all the orders
- Valuable data stemming from this will be:
    a) the ability to analyze high-order areas
    b) the ability to analyze menu items popularity
    c) average order cost
    d) average order delivery time
    e) average order delivery distance
    f) most popular delivery times

4.4. Nonfunctional Requirements

4.4.1. Operational Requirements
- The application needs to be easy to understand and use, with minimum training required.
- CPS must be able to run on various mobile and tablet operating systems.

4.4.2. Performance Requirements
- The system must have storage that can quickly and easily be scaled up to store an appropriate amount of user accounts. E.g. the population of Seattle is roughly 725,000 people and if even a five percent market share is achieved that is over 36,000 accounts.
- The check out / payment processing should take no more than sixty seconds. Customers are used to quick and efficient online transactions and research shows that they will abandon an order if it takes too long to process.
- It should take no more than two minutes after the order processing is done for the truck to receive the order. Once again quickness and efficiency are key.

4.4.3. Security Requirements
- CPS must store all personal data in a secured cloud server. The server should be rented from a reliable provider e.g. Amazon Web Services, Google Cloud Platform, or Microsoft Azure.
- Account information must be encrypted.
- Data analysis must be secured.
- Only a small designated few e.g. Mr. Park etc., will have access to the information. (I.e. the most tech-savvy truck owners will be given access and the ability to print and disseminate the analysis)
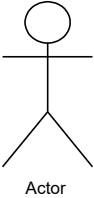
4.4.4. Cultural Requirements
- CPS should support multiple languages however INAAT does not think it practical to implement until a stable system has been built up. Thus, it will be implemented in Phase 3 or possibly later as a maintenance step.
- CPS will eventually support food vouchers handed out by the Co-op. The amount of food vouchers utilized should be recorded for tax purposes.

5.0   Requirements Model

5.1. Introduction

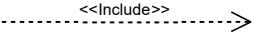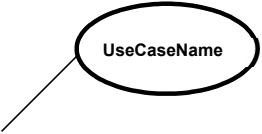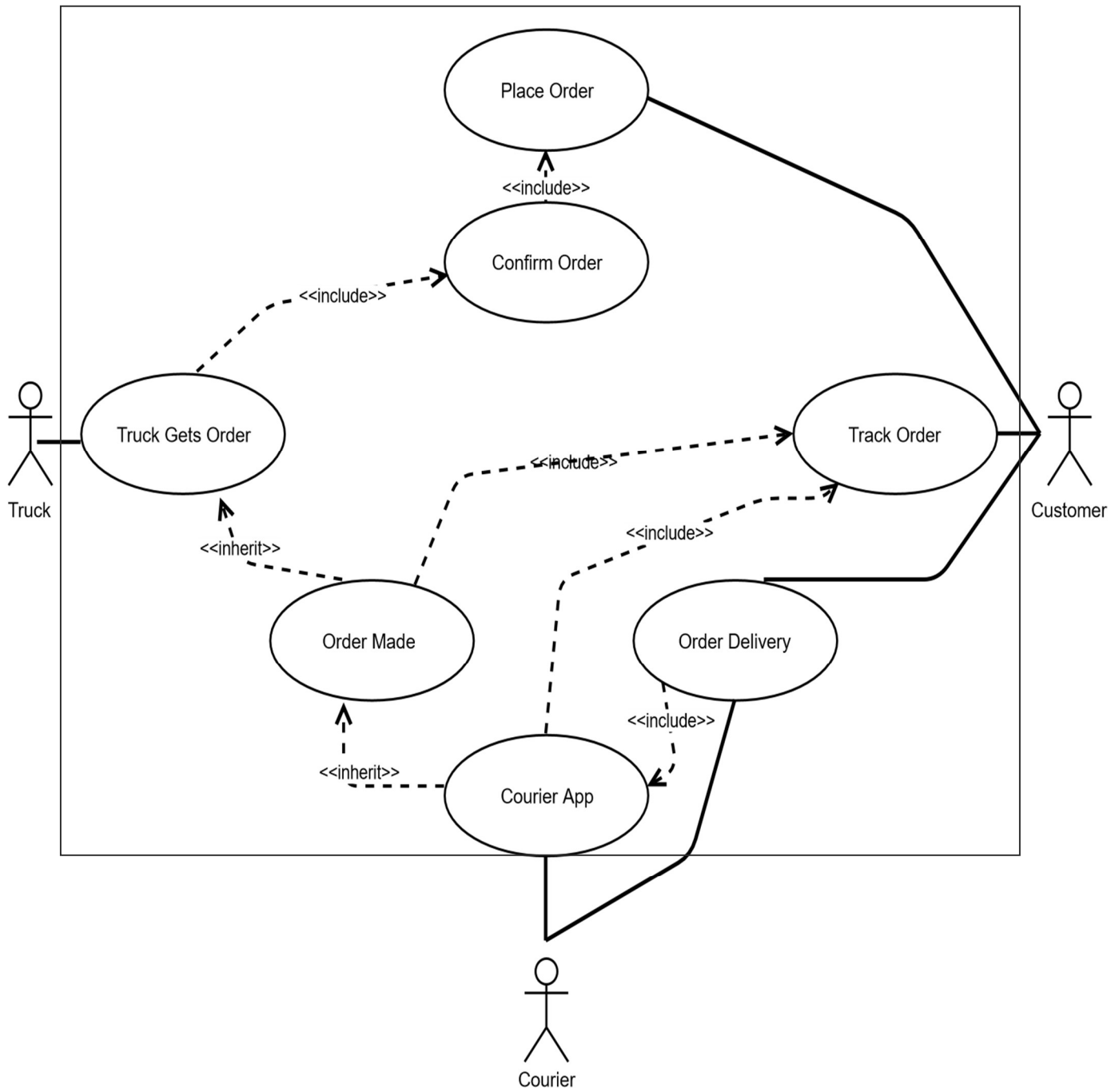This section shows the use-case diagram of CPS. It will also show a detailed depiction of each use-case. These are details of how the system operates. The use-case diagram illustrates the functional requirements and shows how people and things interact with CPS. Each use-case explains the association detailed in the use-case diagram. Below are the symbols and descriptions of their uses:

Actor	An actor is anyone that needs to interact with the system to transfer information. The actors are placed outside the boundary box because they are not a part of the system but interact with it.
————	The line represents the relationship that connects an actor to the use-case
‑‑‑‑‑‑‑‑<<Inherit>>‑‑‑‑‑‑‑‑▷	Inherit refers to the relationship between a general use-case and a more specific case. The arrow points from the more specific to the more general case.
<<Include>> ‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑‑▷	include is the relationship that is required for another use-case to function. Includes are drawn from the base case to the use -case that requires the base to function.
UseCaseName	The use-case bubble characterizes the different processes that CPS will effectuate.

5.2. Use-Case Diagram

5.3 Use-Case Descriptions

Use-Case name: Place Order		ID: 1	Importance: High
Primary actor: Customer		**Use-Case type:** Detail, Essential	

Stakeholders and interests:

Customer: Creates and places order

Truck: Gets order

Brief description:

This use-case shows how the customer can place their order in CPS.

Trigger: Customer creates and places order.

Type: External

Relationships:

    Association: Customer

    Include: Confirm Order

    Extend: N/A

    Generalization: N/A

Normal flow of events:

1. Customer selects their items for their order
2. Customer enters their delivery information
3. CPS saves the information

Subflows:

S1 CPS prompts the customer if they want to create a profile

S2 if yes customer fills out the profile and CPS saves it

S3 if no the order goes through

Use-Case name: Confirm Order		**ID:** 2	**Importance:** High
Primary actor: Customer		**Use-Case type:** Detail, Essential	
Stakeholders and interests: Customer: Receives confirmation their order has been placed			
Brief description: This use-case shows the customer their order has been placed and processed.			
Trigger: Customer creates and places order. **Type:** External			

Relationships:
 	
   Association: Customer
 	
   Include: Truck gets order
 	
   Extend: N/A
 	
   Generalization: N/A			

Normal flow of events: 1. CPS takes the customers order information and processes it 2. Once payment is confirmed and address is confirmed CPS confirms the order to customer			
Subflows: S1 CPS processes payment information S2 CPS verifies address as valid S3 CPS sends order to appropriate truck			

Use-Case name: Truck Gets Order	ID: 3	Importance: High
Primary actor: Truck		**Use-Case type:** Detail, Essential

Stakeholders and interests:

Truck: The owner of the truck receives order information to begin making order.

Customer: obviously they want their order.

Brief description:

This use-case shows the truck receiving the confirmed order.

Trigger: Confirmed order sends order information

Type: Internal

Relationships:

    Association: Truck

    Inherit: Order Made

    Extend: N/A

    Generalization: Food truck receives order and starts making it

Normal flow of events:

    1.   CPS sends the order information the appropriate truck to begin making it.

Subflows:

S1 CPS determines the appropriate food truck.

Use-Case name: Order Made	ID: 4	Importance: High
Primary actor: Truck	**Use-Case type:** Detail, Essential	

Stakeholders and interests:

Truck: The owner of the truck makes the food for the order.

Customer: Obviously they want their order.

Courier: They must receive notice in order to deliver.

Brief description:

This use-case shows the truck having made the order.

Trigger: Truck finishing the order and updating it.

Type: External.

Relationships:

    Association: Truck

    Inherit: Courier App

    Include: Track Order

    Generalization: Food truck makes order and updates it.

Normal flow of events:

1. Truck makes order.
2. Truck updates order to made.

Subflows:

S1 CPS notifies customer their order has been made.

S2 CPS notifies courier the order is ready for delivery.

Use-Case name: Courier App	**ID:** 5	**Importance:** High
Primary actor: Courier	**Use-Case type:** Detail, Essential	

Stakeholders and interests:

Truck: The owner of the truck wants their product delivered.

Customer: Obviously they want their order.

Courier: Wants to make money.

Brief description:

This use-case shows the courier receiving notice the order is ready and then picking it up.

Trigger: CPS notifies the courier the order is ready.

Type: Internal

Relationships:

    Association: Courier

    Include: Track Order

    Include: Order Delivery

    Generalization: Courier receives update the order is ready

Normal flow of events:

1. CPS notifies courier order is ready.
2. Courier picks up order.

Subflows:

S1 CPS notifies customer their order has been made.

S2 CPS notifies courier the order is ready for delivery.

S3 Courier picks up order.

S4 CPS notifies customer the order was picked up.

S5 CPS gives the courier directions to the address.

Use-Case name: Track Order		**ID:** 6	**Importance:** Medium
Primary actor: Customer		**Use-Case type:** Detail, Essential	
Stakeholders and interests: Truck: The owner of the truck wants to ensure the customer receives appropriate updates. Customer: Wants to know when to expect their food.			
Brief description: This use-case shows the customer receiving updates from CPS about their order.			
Trigger: CPS notifies the customer as to important updates. **Type:** Internal			

Relationships:
 	
    Association: Customer
 	
    Include: N/A
 	
    Include: N/A
 	
    Generalization: Customer receives updates from CPS			

Normal flow of events: 1. CPS notifies the customer as to pertinent updates			
Subflows: S1 CPS notifies customer the order has been made S2 CPS notifies customer the order has been picked up S3 CPS gives the customer an estimated time of arrival			

Use-Case name: Order Delivered		ID: 7	Importance: High
Primary actor: Courier		**Use-Case type:** Detail, Essential	
Stakeholders and interests: Truck: The owner of the truck wants to ensure the customer receives their food. Customer: Wants to know when to expect their food. Courier: Wants to ensure timely delivery and friendly service for a better tip.			
Brief description: This use-case shows the customer receiving their order.			
Trigger: Courier delivers food **Type:** External			
Relationships: **Association:** Courier **Include:** N/A **Include:** N/A **Generalization**: Courier delivers food.			
Normal flow of events: 1. Courier delivers food.			
Subflows: S1 CPS gives courier directions S2 CPS gives courier customer contact information in case it is needed			

6.0   System Evolution

6.1. Upgrade and System Maintenance

After initial launch, INAAT will continue to maintain and upgrade CPS. This continued enhancement is referenced as Phase 2 and Phase 3. These Phases are not needed for system use but are highly desired by Disciples' Pizza after the initial iteration.

CPS will require some minimal maintenance and management to ensure proper function and security. This will include weekly security reviews and quarterly updates to support changing technologies.

7.0   Conclusions and Recommendations

7.1. Conclusion

Based upon the requisite information disclosed above it is self-evident that CPS would be a significant tool for Disciples' Pizza that would enable its expansion and increased revenue. After analyzing the inherent and extrinsic risks involved in creating CPS, INAAT believes it is mildly feasible and can be successful with minor modifications and release in phases. CPS will benefit Disciples' Pizza and their customers immensely, as well as the community at large that Disciples' Pizza gives back to.

7.2. Recommendations

With these conclusions in mind, INAAT has the following recommendations:

- Disciples' Pizza would benefit from ongoing communication with INAAT.
- Disciples' Pizza should create a tentative time frame for specific goals.
- INAAT strongly advises phased development.
- Disciples' Pizza is strongly advised and encouraged to pay for a high-security database storage (see Equifax).

8.0   Appendix

Contributions of food inventory are based on the food's FMV(Fair Market Value) but reduced under a specific provision. For zero-basis inventory of a cash-method taxpayer not required to maintain inventories (e.g., a cash-method farmer), the charitable deduction under this provision is 50% of FMV. The PATH Act liberalized the deduction for cash-method taxpayers not required to account for inventories (e.g., farmers) by deeming the tax basis of the apparently wholesome food to be 25% of its FMV. In this manner, the deduction amount is FMV, reduced by one-half of the ordinary income that would have been recognized had the property been sold, and also reduced by an additional amount to the extent that the deduction would exceed twice the tax basis of the property (Secs. 170(e)(3)(B)(i) and (ii)). By deeming the tax basis to be 25% of the FMV of the food, this second clause (i.e., Sec. 170(e)(3)(B)(ii)) has no effect.

Note: This provision applies to tax years beginning after 2015. Before the addition of this special provision for contributions of food, a taxpayer holding zero-basis inventory received no deduction for the charitable contribution.

The use of the donated food

The charity must use the donated food inventory in furtherance of its purpose or function constituting the basis for its exemption as a charitable organization. The food inventory must be used by the organization solely for the care of the ill, needy, or infants. No goods or services may be received in exchange for the donation, and the taxpayer must receive from the donee a written statement representing that its use and disposition of the property will be in accordance with these provisions. The food must satisfy the requirements of the Federal Food, Drug, and Cosmetic Act (Sec. 170(e)(3)(A)).

9.0   Glossary

CPS: Co-op Pizza Systems

INAAT: I Need An A Technologies

Milestone: The date on which a given product is to be completed

POS: Point of Sale System

Stakeholder: Anyone who will be affected by the success or failure of the system

Requirements: What clients, users, and designers of a software product or computer

system must determine before the software or system is built

Client: Disciples' Pizza

10.0 Bibliography

Dennis, Alan, et al. *System analysis & design : an object-oriented approach with UML*. Hoboken, NJ: Wiley, 2015. Print.

Pfeiffer, William S. *Pocket guide to technical communication*. Upper Saddle River, N.J: Prentice Hall, 2011. Print.