Software Requirements Document For

McTickets

Version 1.0

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1.1. Background

With an ever-increasing number of platforms for selling tickets, it has become necessary to simplify the process of searching for tickets into a single multipurpose system. This proposed system would be able to interface with a variety of Event Organizer information and thereby present a wide variety of events to potential customers. Online ticket selling platforms also charge Event Organizers a fee to use their system, our System looks to eliminate that fee to incentivise as many Event Organizers to use our system as possible adding to customer convenience.

1.2. Business Opportunity

The McTickets System is designed to increase profit margins for Event Organizers by helping them reach more potential customers than they would have access to otherwise. The McTickets System also allows Event Organizers as well as other product Advertisers to promote their events and products to people using the McTickets system in order to look for unrelated events or information. McTickets Inc. does not take a portion of ticket sale prices, instead making a profit based on advertisements shown within the McTickets System.

1.3. Business Objectives

1.3.1. Increase ticket sales for participating venues by 25%.

1.3.2. Promote existing events to a larger audience in order to potentially sell more tickets. Our metrics show as much as a 50% increase in event awareness with those using the McTickets System.

1.3.3. Reduce operating costs of Event Organizers who use our system to sell tickets at their venues by 70% when used in place of staff.

1.4. Success Metrics

1.4.1. Each McTickets kiosk sells an average of 2 tickets a minute during peak hours, 6 pm to 9 pm on weekdays and 12 pm to 9 pm on weekends.

1.4.2. Ad campaigns placed by McTickets advertising partners reach 50% of customers, with a 10% engagement rate.

1.5. Vision Statement

For people who are curious about attending local events, McTickets is a kiosk-based ticket vending platform designed to aid customers in their ticket buying experience. McTickets is oriented around reaching a specific segment of

consumers: those who are already out and about. Kiosks are installed in public places such as shopping malls, city squares, and busy public transit stations. Consumers will come into contact with these kiosks while they are going about their day. They may want to find out what events are happening in their area, or they may be directly seeking an activity to take part in. McTickets informs potential customers of events that they can experience in their area and provides them with an easy-to-use interface to obtain tickets for those events. McTickets takes the confusion out of deciding what to do next.

1.6. Business Risks

1.6.1. Kiosks might be tampered with. (Probability = 0.2; Impact = 10)
1.6.2. Kiosks might be stolen. (Probability = 0.05; Impact = 10)
1.6.3. Not many Customers engage with the McTickets System. (Probability = 0.3; Impact = 8)
1.6.4. Advertisers could post controversial items on the kiosk. (Probability = 0.2; Impact = 3)
1.6.5. City permits would have to be acquired in certain areas. (Probability = 0.7; Impact = 2)

1.7. Business Assumptions and Dependencies

1.7.1. Assumptions
    1.7.1.1. A System will be available at dedicated locations for people to browse and purchase tickets
    1.7.1.2. Customers who are already out in public places are more likely to seek out event tickets.
1.7.2. Dependencies
    1.7.2.1. The System will need to communicate with the venues bidirectionally to update available tickets.
    1.7.2.2. The System relies on the accessibility of its location to potential customers.

2. Scope and Limitations

2.1. Major Features

2.1.1. Browsing available events in the area and viewing available tickets.
2.1.2. Purchasing tickets directly from the kiosk using card payments only.
2.1.3. Having venues list their events on the McTickets system.
2.1.4. Having Advertisers list their advertisements in a section of the kiosk.
2.1.5. Having customers access review information for events of their choosing.
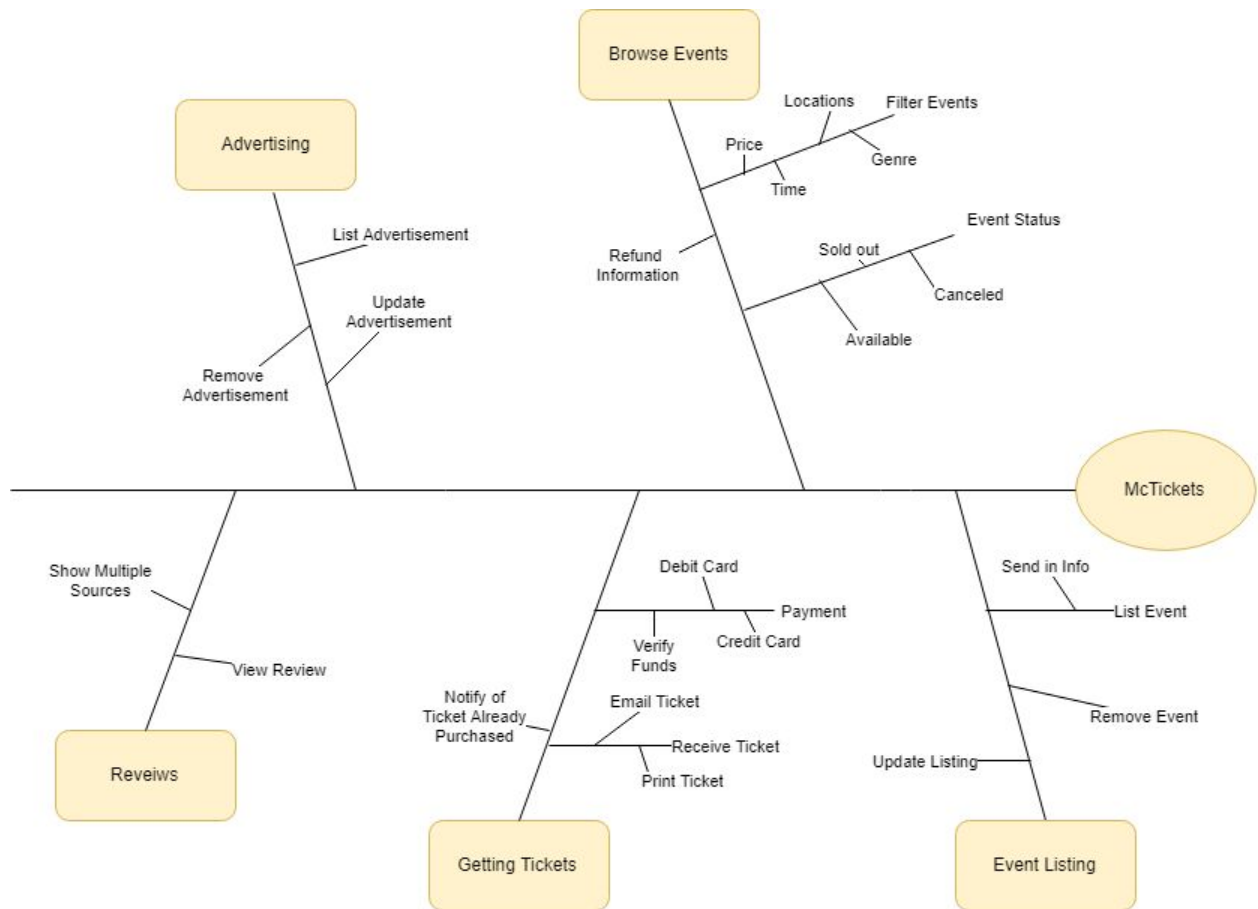
FIGURE C-1 Partial feature tree for McTickets.

2.2. Scope of Initial and Subsequent Releases

Feature	Release 1	Release 2	Release 3
2.1.1 Browse Events	Browsing Available venues in the area	Sorting venues by categories	Fully implemented
2.1.2 Getting Tickets	Processing ticket payments	Storing information for future records	Fully implemented
2.1.3 Advertising	Not implemented	Implemented if time permits	Fully implemented
2.1.4 Listing Event	Receiving info from the database and listing the info	Being able to update the event info	Fully implemented
2.1.5 Reviews	Not implemented	Implemented if time permits	Fully implemented

2.3. Limitations and Exclusions

2.3.1. Some venues might not have appropriate content to show on the kiosk screen, so we will have to have a secure system to censor those out.

2.3.2. Kiosks will not accept cash to guard against the theft of the system itself or the contents inside the kiosk.

2.3.3. Refunds will be directed to the venue owner but we will have some customers come to us first.

3. Business Context

3.1. Stakeholder Profiles

Stakeholder	Major Value	Attitudes	Major Interests	Constraints
Event Organizer	Improvement of sales as they partner with us	Strong enthusiasm for partnering with us	Local advertisement of their venue for a small fee	Terms of Service agreement
Customer	Easy Access to browsing local venues	Concern about payment info security event legitimacy	Ease of access	Kiosks are geographically based and might not be available to all people
Advertiser	Advertisement location for their product	Interested only in view metrics of their ads	View count	If controversy arises, advertising will pull out
Supervisor	Monitors Event Organizers and Advertisers for breaches of Terms of Service agreement	Strong desire to maintain a good public outlook on McTickets Inc.	Making Event Organizers and Advertisers abide by our Terms of Service	Advertisers are our sole source of income
Maintenance	Maintain kiosk ink and paper levels. Maintain functionality and performance of kiosks.	Interested in continuous operation of the System	That the System remains operational	Maintenance needs to be ready to react to unforeseen problems

3.2. Project Priorities

Dimension	Constraint	Driver	Degree of Freedom
Features	All features scheduled for release 1.0 must be fully operational		
Quality	95% of user acceptance tests must pass; all security tests must pass		
Schedule			Release 1 planned to be available by the end of Q1 of next year, release 2 by the end of Q2; overrun of up to 2 weeks acceptable without sponsor review
Cost			Budget overrun up to 15% acceptable without sponsor review
Staff		Team size is a part-time project manager, part-time BA, 10 developers, and 4 testers; additional developer and part-time tester available if necessary	

3.3. Deployment Considerations

The physical system will have to be secure enough to avoid weather damage and theft of the kiosk. The kiosk will have to have a regular maintenance team handling restocking and cleaning the kiosk along with handling any kiosk in an error state. Permissions will have to be granted from locations or the city based on where the kiosk is being placed.

Use Cases

1. Actor List

Primary Actor	Use Cases
Customer	1. Browse events 2. View event info 3. View available tickets 4. View Reviews 5. Purchase tickets 6. Payments
Event Organizer	1. List venue 2. View Sales reports 3. Update descriptions 4. Cancel venue
Maintenance	1. Clean kiosk 2. Refill paper 3. Refill Ink 4. Handle errors
Advertiser	1. List advertisements 2. Update advertisements 3. Remove advertisements 4. Access view reports
Supervisor	1. Manage maintenance in the area 2. Manage listings 3. Remove Listings 4. Upkeep communications

2. Use case Examples

ID and Name	UseCase-1: Purchasing a Ticket
Created by:	Tommy Avetisyan
Date Created:	11/7/2019
Primary Actor	Customer
Pre-Conditions	Customer is at a Kiosk
Post-Conditions	The customer gets a ticket The database gets notification of sale System updates available tickets
Normal Flow	1. A Customer walks up to a kiosk wanting to see what is going on in the local area. 2. The System goes to the main screen and shows all the available events sorted by location by default. 3. The Customer can sort events by price to view a cheap concert happening in the area. 4. The Customer finds a nice indie band playing 5 miles away on Friday night and clicks on the event. 5. The Customer views the event description to see any extra specifications. 6. The Customer goes to checkout and pulls out their card for payment. 7. The Customer pays for the ticket and decides to print the ticket AND enter their email for an emailed version just in case it is lost. 8. The database acquires the purchase info and updates available tickets. 9. The kiosk displays a "Thank You" message and goes back to default state.

ID and Name	UseCase-2: Listing an event
Created by:	Tommy Avetisyan
Date Created:	11/7/2019
Primary Actor	Event Organizer
Pre-Conditions	Event Organizer has Gained access to our system to list an event
Post-Conditions	The event will be listed Event Organizer will have future access to edit details Event Organizer will receive any updates on sales
Normal Flow	1. An Event Organizer sees the opportunity to list their event on the McTickets kiosk. 2. The Event Organizer contacts us directly to see how they can obtain a spot on the kiosk. 3. We send them terms of service contract that gives them an access token to list their venue on local kiosks. 4. The Event Organizer submits the details of their ticket information, which is then listed by the kiosk. 5. The venue will be displayed and any future communications will be handled if necessary.

Software Requirements Specification

1. Introduction

1.1. Purpose

This SRS document provides the functional and nonfunctional requirements for McTickets 1.0. McTickets will be a ticket kiosk distributed around the city that will allow the user to purchase tickets for local venues.

1.2. Document Conventions

No special typographical conventions are used in this SRS.

1.3. Project Scope

McTickets 1.0 will be located in popular areas around town, allowing anyone to purchase tickets to any event of their choosing, avoiding the expensive fees of online ticketing companies. Customers will be free to stop by a kiosk and purchase tickets to local sporting events, films, concerts, gallery exhibitions, and more.

1.4. References

1.4.1. "ISO 9001:2015." *ISO*, 1 Sept. 2015, https://www.iso.org/standard/62085.html.

1.4.2. "ISO/IEC 27018:2014." *ISO*, 15 Jan. 2019, https://www.iso.org/standard/61498.html.

1.4.3. Wiegers, Karl Eugene, and Joy Beatty. *Software Requirements*. Microsoft Press, 2015.

2. Overall Description

2.1. Product Perspective

McTickets 1.0 is a system to complement the online ticketing experience and connect Customers with their community, while allowing Event Organizers and Advertisers to partner with McTickets to display event information.
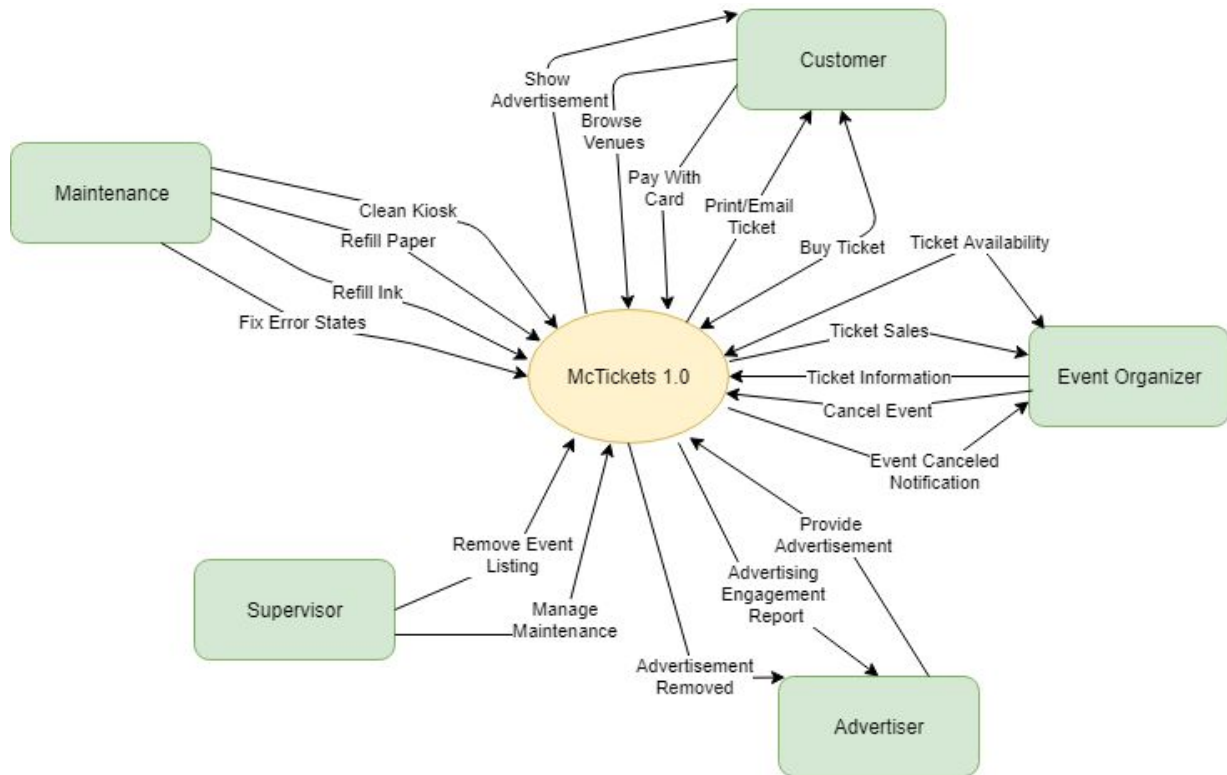
FIGURE C-1 Context diagram for McTickets 1.0.

2.2. User Classes and Characteristics

User Class	Description
Event Organizer	An Event Organizer is a venue owner that wants to sell his tickets on our kiosk. The Event Organizer would be responsible for sending the information of their venue to us to set up their display on the kiosk.
Maintenance	Maintenance staff will be upkeeping the kiosks to refill ink, refill paper, take care of error states, and clean the kiosk. Maintenance workers will need training and supervision on how to handle our Systems.
Customer	The Customer is the one who will be purchasing the tickets from our kiosk. They will be able to browse by their selected filter and only see events in a 50-mile radius.
Advertiser	An Advertiser is anyone who would want to advertise events or products on the System. Advertisers would need to contact supervisors to pay for advertising space on the System.
Supervisor	The supervisor will be handling the management of maintenance, advertising, and communications.

2.3. Operating Environment

2.3.1. The System is dependant on where the kiosks are located geographically

2.3.2. The System shall run on the current corporate-approved versions of Windows and Amazon Relational Database Service.

2.4. Design and Implementation Constraints

2.4.1. All customer data shall be stored and protected in accordance with ISO/IEC 27018:2014 standards.

2.4.2. The System's design, code, and maintenance documentation shall conform to global quality standards outlined under ISO 9001:2015.

2.5. Assumptions and Dependencies

2.5.1. Assumptions

2.5.1.1. The System will be in operation as many as 24 hours a day.

2.5.1.2. The System may be exposed to temperatures ranging from -40°F to 120°F.

2.5.1.3. The System may be exposed to extended to continuous rainfall.

2.5.2. Dependencies

2.5.2.1. The operation of the System relies on access to the Internet.

2.5.2.2. The System relies on the availability and functionality of the central database.

3. System Features

3.1. Browsing Events

3.1.1. Allows customers to browse through and select various events to view more information on them. Priority = High.

3.1.2. Functional Requirements

3.1.2.1. The System will only show events in 50 miles radius.

3.1.2.2. The customer shall be able to filter events by categories sorted; genre, location, time, price.

3.1.2.3. The customer shall be able to search for specific events.

3.1.2.4. The System shall display when an event is sold out.

3.1.2.5. The System shall display when an event is canceled.

3.1.2.6. The System shall display information on who to contact for a refund.

3.2. Getting Tickets

3.2.1. Allows the customers to purchase their desired ticket from the venue of the choice. Priority = High.

3.2.2. Functional Requirements

3.2.2.1. The Customer shall be able to pay with a credit or debit card.

3.2.2.2. The System shall verify sufficient funds from the customer's card payment from the corresponding bank.

3.2.2.3. The Customer shall receive tickets after payment is verified.

3.2.2.4. The System shall be able to print tickets purchased by the Customer.

3.2.2.5. The System shall print a ticket with a QR code that is recognized as a valid ticket at the respective venue.

3.2.2.6. The System shall be able to email purchased tickets to the Customer.

3.2.2.7. The system shall notify the customer when a ticket they are trying to purchase was already bought.

3.3. Advertising

3.3.1. Allows local businesses to have advertisements in the user interface. Priority = Medium.

3.3.2. Functional Requirements

3.3.2.1. The Event Organizer shall be able to promote their venue and set it on a higher priority that will show on the top of general lists.

3.3.2.2. The Advertiser shall be able to view current advertising listings.

3.3.2.3. The Advertiser shall be able to pay to list advertisements through the System.

3.3.2.4. The Supervisor shall be able to remove advertisement listings.

3.3.2.5. The Advertisers shall receive an email notification if their advertisement is removed.

3.3.2.6. The Advertisers shall receive a partial refund if their advertisement was removed by a Supervisor for violating terms of service.

3.4. Event Listing

3.4.1. Allows event planners to update event information. Priority = High.

3.4.2. Functional Requirements

3.4.2.1. The Event Organizer shall be able to change the time and date of an event.

3.4.2.2. The Event Organizer shall be able to change the price of a ticket.

3.4.2.3. The Event Organizer shall be able to cancel an event.

3.4.2.4. The Event Organizer shall be able to add new events to their venue(s).

3.4.2.5. The Event Organizer shall be able to remove event listings for their venue(s).

3.4.2.6. The Supervisor shall be able to remove event listings in case of breach of terms of service.

3.4.2.7. The Event Organizer shall receive an email notification if their event is canceled by a supervisor.

3.5. Reviews

3.5.1. Allow Customers to view review information. Priority = Low.

3.5.2. Functional Requirements

3.5.2.1. The Customer shall be able to view review information on any event they are currently viewing.

>3.5.2.2. The Customer shall be able to look at reviews from multiple review services.

>3.5.2.3. The Customer shall be able to see a brief review summary when browsing through events.

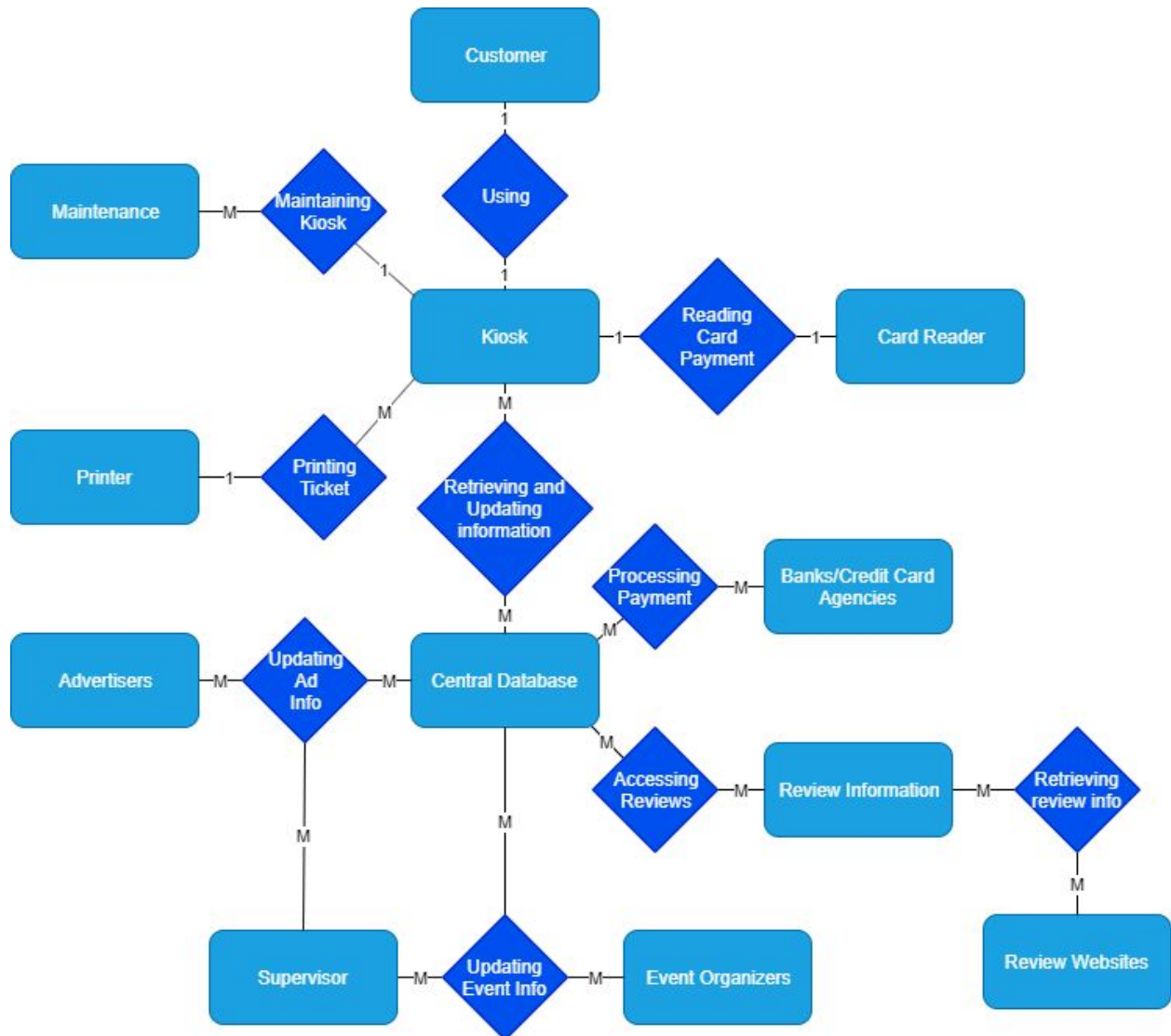# 4. Data Requirements

4.1. Logical Data Model

FIGURE C-2 Logical data model for McTickets 1.0.

4.2. Data Dictionary

Term	Definition	Composition or data type	Length	Values
Card	Card refers to either credit or debit cards used by customers to pay for tickets.	alphabetic	16	Credit card, debit card
Central Database	Central Database refers to the database where ticket and event information is stored. This database interacts with individual Systems and updates information about events and tickets.			
Event date	The date of the event	Date, MM/DD/YYYY	10	
McTickets Inc.	The company producing the McTickets System.			
Payment amount	The total price of an order in US dollars and cents.	Numeric, dollars and cents	dddd.cc	
Quantity ordered	The number of tickets that a customer is ordering	integer	4	default=1; maximum = quantity presented in inventory
System	The System refers to the software run on individual kiosks out in the field.			
Shall	Shall indicates a hard requirement needed in order for the System to function properly.			
Terms of Service	Terms of Service refers to the McTickets Inc. document that Event Organizers and Advertisers must agree to uphold in order to use our System.			ToS
Transaction number	A unique sequence number that the System assigns to each payment transaction	integer	12	
Will	Will indicates an external action that the System or a user performs.			

4.3. Reports

4.3.1. Sales Report

Report ID	SalesMetrics
Report Purpose	Report on the sales metrics made at individual kiosks.
Priority	High
Report Users	Event Organizers
Frequency and Disposition	Monthly reports generated with an on-demand option. The on-demand report shows information about sales made from the last monthly report.
Report Body	- Total sales made - Sales by event - Total Views - Views by event - Sales vs Views - Tax - Total number of tickets sold
Security Access Restrictions	Event Organizers may only receive information and sales metrics about events they have posted.

4.3.2. Advertising Metrics

Report ID	AdvertisingEngagement
Report Purpose	Report on advertising views and System engagement while advertisements are present.
Priority	High
Report Users	Advertisers
Frequency and Disposition	Monthly reports generated with an on-demand option. The on-demand report shows information about sales made from the last monthly report.
Report Body	- Advertisement views - Advertisement view time - Clicks - Engagement rate (Views vs Clicks)
Security Access Restrictions	An Advertiser may only receive information and metrics about advertisements they have posted.

4.4. Data acquisition, integrity, retention, and disposal

4.4.1. The System shall retain customer credit/debit card information until a transaction is completed or canceled.

4.4.2. The System shall retain customer email addresses until it is used to send requested information to customers.

4.4.3. The System shall retain Advertiser metrics and information on advertising campaigns for 12 months following the end of the advertisement campaign.

4.4.4. The System shall retain sales metrics and information on tickets sold by venues on specific events for 12 months following the end of the event.

5. External Interface Requirements

5.1. User interfaces

5.1.1. The System shall have a touch screen display used to display information to customers.

5.1.2. The System shall have a card reader to accept credit and debit payments.

5.1.3. The System shall conform to usability.gov guidelines for the colorblind.

5.2. Software Interfaces

5.2.1. The System shall verify the validity of card payments with credit card companies and banks.

5.2.2. The System shall communicate with the venues to check if the tickets are available to make sure no one seat is sold to two people.

5.2.3. The System shall communicate with the central database to update the available tickets bidirectionally.

5.2.4. The System shall communicate with the APIs of review services to fetch ratings of events and venues.

5.3. Hardware Interfaces

5.3.1. The System shall have a high-fidelity display for presenting trailers and text.

5.3.2. The System shall include an onboard printer for creating tickets.

5.3.3. The System shall have a credit and debit card scanner for taking payments.

5.3.4. The System shall contain a wifi adapter for accessing the internet.

5.3.5. The System shall have a keypad for entering debit pin numbers.

5.4. Communications Interfaces

5.4.1. The System shall confirm that the payment has gone through successfully.

5.4.2. The System shall send an email to the customer with confirmation and information about the purchased ticket.

5.4.3. The System shall have access to the Internet.

6. Quality Attributes

6.1. Usability

6.1.1.   95% of new customers shall be able to successfully purchase a ticket without errors on their first try.

6.1.2.   The System shall reboot when it detects a power supply.

6.1.3.   The System shall display when it is out of paper or ink.

6.1.4.   The System shall display when the card reader is malfunctioning.

6.1.5.   The System shall display language options when a customer first interacts with it.

6.2. Performance

6.2.1.   The System shall have a general response time of under half a second.

6.2.2.   The System shall prevent multiple customers from purchasing the same ticket.

6.3. Security

6.3.1.   The System shall have a camera for monitoring interactions.

6.3.2.   The System shall have holes for bolts to attach it to the floor.

6.3.3.   Only authorized maintenance workers shall be able to open up the machine.

6.3.4.   The System shall specifically have the card reader designed to prevent the possibility of illegal card skimming from third parties.

6.4. Safety

6.4.1.   The System shall not fall over.

6.4.2.   The System shall power down if tampering is detected.

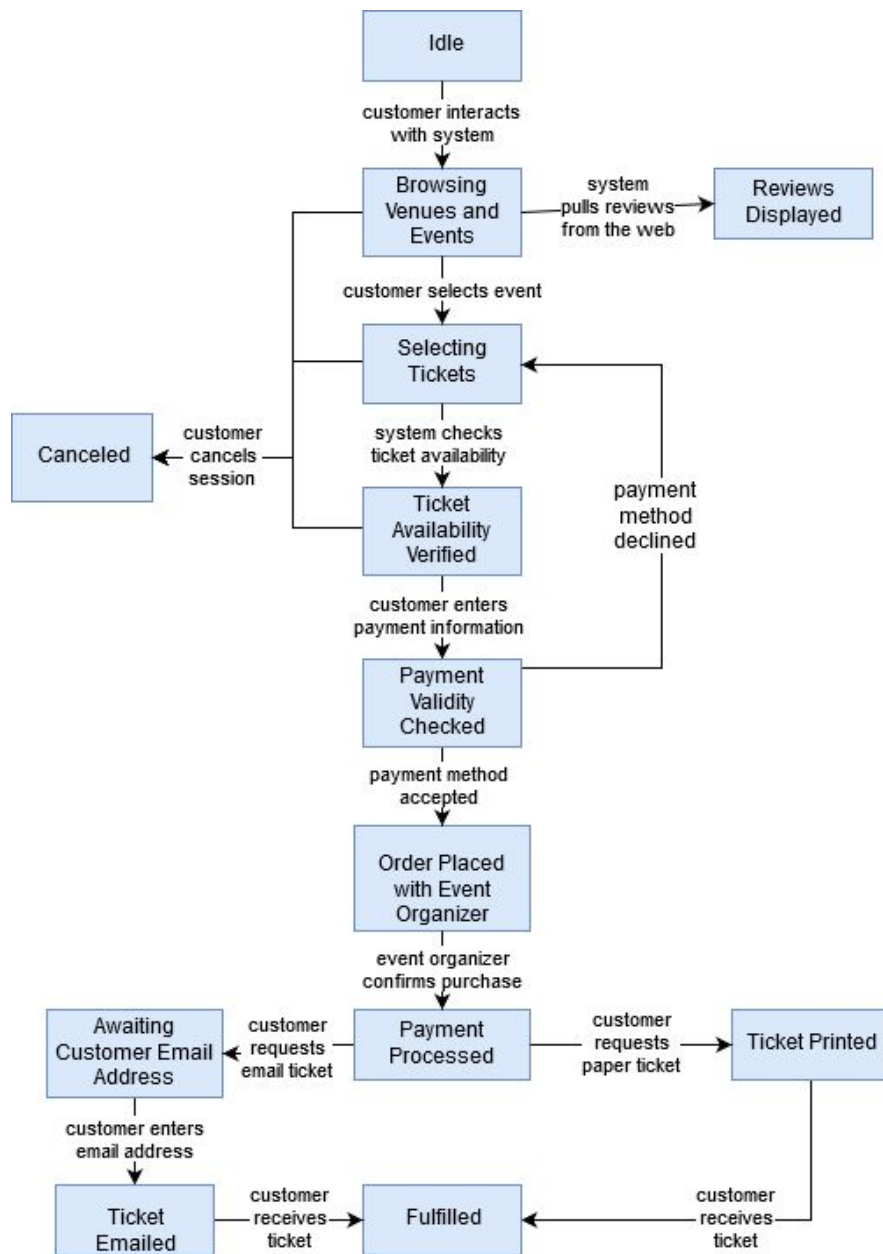6.4.3.   The System shall be weather resistant.

Appendix A: Analysis Model

FIGURE C-3 Analysis Model for McTickets 1.0.