Arcade Mania

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I. Abstract

CLIENT: Arcade Mania

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PROBLEM: Long wait lines at central station to purchase tokens

GOALS:
- Reduce wait time to purchase tokens
- Improve customer service

SOLUTION: Mobile Application/QR Code enabled identification system

RULED-OUT SOLUTIONS:
- Chip enabled game cards
- Barcode enabled bracelets

SUMMARY:

In order to solve the problem of long wait lines to buy tokens, each individual player at the arcade will be assigned a QR Code, accessed via a mobile app. The QR Code will be connected to their profile information, payment methods, membership status as well as a database of past violators. In order to receive the code, a new account needs to be set up using the Arcade Mania mobile app, web browser or in-person at central station.

By scanning their code at *Automatic Token Dispensing Kiosks* (AtDK) situated throughout the arcade or central station counter, players can purchase tokens or return tokens for in-house credit. Additionally, players can update their profile info, add payment methods, add money to their arcade account and reserve tokens in advance.

The success of the solution can be measured by comparing the average wait time of players in line to buy purchase at the central station versus those who use the app/QR code to obtain tokens via AtDK for quantitative results. Furthermore, interviews and surveys can provide us with more qualitative data to see how players feel about the new system. Assumptions are made in the case study about research data, players (or parent) have access to mobile phone, and Arcade Mania does have the budget for AtDK system.

II. User Research

Based on previous experiences at arcade venues, such as Dave & Buster's and Main Event, the data to the following study is assumed and only provided as placeholder. In order to obtain [real] accurate results of the target audience and learn more about the users, data from surveys, questioners, observation and possibly, mobile app registration database should be considered. Here is a list of questions that I would want to find out the answers to with respect to the players at Arcade Mania:

- Are you at the arcade for yourself or accompanying your child?
- What age group are you/your child in?
- How long do you wait in line to purchase tokens?
- How would you rate the wait time at the lines?
- What is the highest wait time you are comfortable with waiting in the line?
- How would you rate the customer service at the central station?
- How often do you purchase tokens during each visit?
- Do you have access to a mobile phone during your visit?
- How comfortable are you with using your mobile phone?
- Have you ever used your phone for online shopping?
- Have you ever used your phone to reserve an item, such as DVD, to pick up later?
- Have you used self-checkout stations at grocery stores before?
- How comfortable are you with using the self-checkout stations?
- Do you ever dine-in or buy food at the arcade?
- Have you ever had additional tokens leftover during a visit?
- How often do you visit the arcade?

III. Research Results - *based on assumption*

Age Group

- < 12 yr
- 13 - 19 yr
- 20 - 29 yr
- 30 - 39 yr
- 40 - 49 yr
- >50 yr

Number of arcade players accompanied by parents vs self
(based on a sample size of 100)

Wait time for players in the line (in minutes) to purchase token

90% higher than 7 min expectancy
Average: 13 min
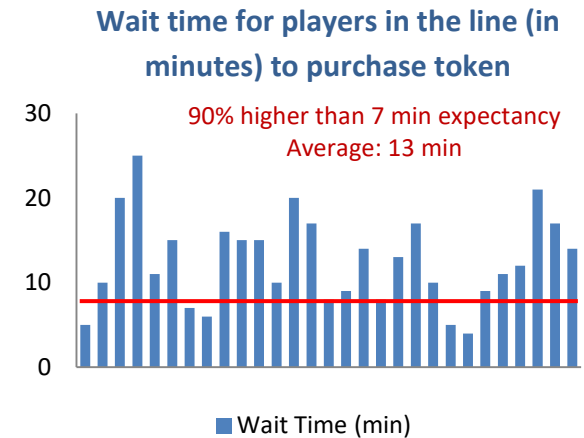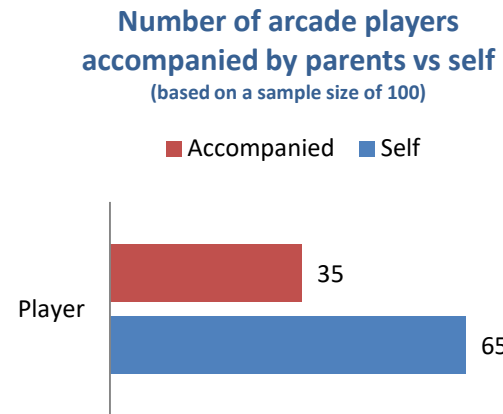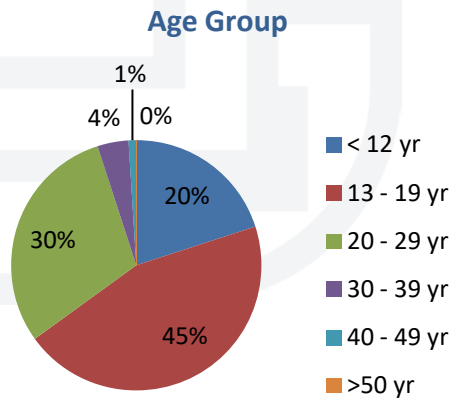
Wait Time (min)

Result summary (not actual/placeholder data):

- 75% of players are between 13 - 29 years old
- Target audience: Player/Not Accompanied (65%) vs Accompanying Parent (35%)
- Player expectation of maximum wait time: 7 minutes
- Average wait time: 13 minutes *(goal would be to reduce the wait time to 7 minutes or less)*
- Mobile phone access: 95%
- Online Shopping: 75%
- Self-checkout counters: 85%
- Dine-in/buy food at arcade: 50%

IV. Player Journey Map - The journey of purchasing tokens

STAGES	Pre-Token Purchase	Token Purchase	Post-Token Purchase
ACTIONS	Player stands in the line to buy tokens Player enters Arcade Mania Enter Arcade Player walks toward the central station to purchase tokens	Player shows Id Player pays for token Player collects tokens	Player heads towards the arcade games Player starts playing Player finishes tokens Exit Arcade Player heads towards exit to leave arcade or towards central station to re-purchase tokens
THINKING	- Alright, let's play some games - What do I need to do to play games? - Where do I purchase tokens? - That is a long wait line!!	- How long do I need to stand in the line? - This line is taking too long! - They need more employees to check people out	- Wow, that took way to long - I'm glad that's over - Do I need to go through that every time? - Time to play!
FEELING	Excited Thrilled Overjoyed	Frustrated Distressed Upset	Relieved Eager Happy
OPPORTUNITIES	-Provide option to create an account ahead of time -Provide a way to speed up play identification	-Provide different ways to purchase tokens -Accept different payment methods -Allow for token purchase/reserve ahead of time	-Provide an option for unused tokens -Ask for arcade visit feedback

V. Strategy & Ideation

In order to reduce the wait time and improve customer service, players should have access to creating an account remotely, the process of purchasing tokens should become automated, and player face-to-face interaction with the arcade employees should be limited only to priority situations, such as resolve account issues or need assistance with account set up/token purchase.

By giving players access to creating an account remotely, such as through a web browser or mobile app, players can pre-fill personal and optional payment info before even seeing an attendant. Storing player info on a secure server and on-demand access to the information over the internet via scanning a chip, barcode or QR code can speed up the player identification. Furthermore, adding automated machines (kiosk) that can look up player info, process payment and dispense tokens is hypothesized to decrease the wait time as well.

Giving that most players (accompanied or not) have access to a mobile phone and previous experience with online shopping/self-checkout counters, an app-kiosk route can present a plausible solution to solving the problem of long wait lines.

A mobile app with QR code is selected over a card enabled chip/barcode because of additional customization and features that mobile app can provide. It is assumed that Arcade Mania has the budget for the automated machines, which we shall call *Automatic Token Dispensing Kiosks* (AtDK). If not, scanning of QR code can be done at central station by employee. The arcade can access the player data to add, update, or even tag violator accounts. Membership can be purchased via app.

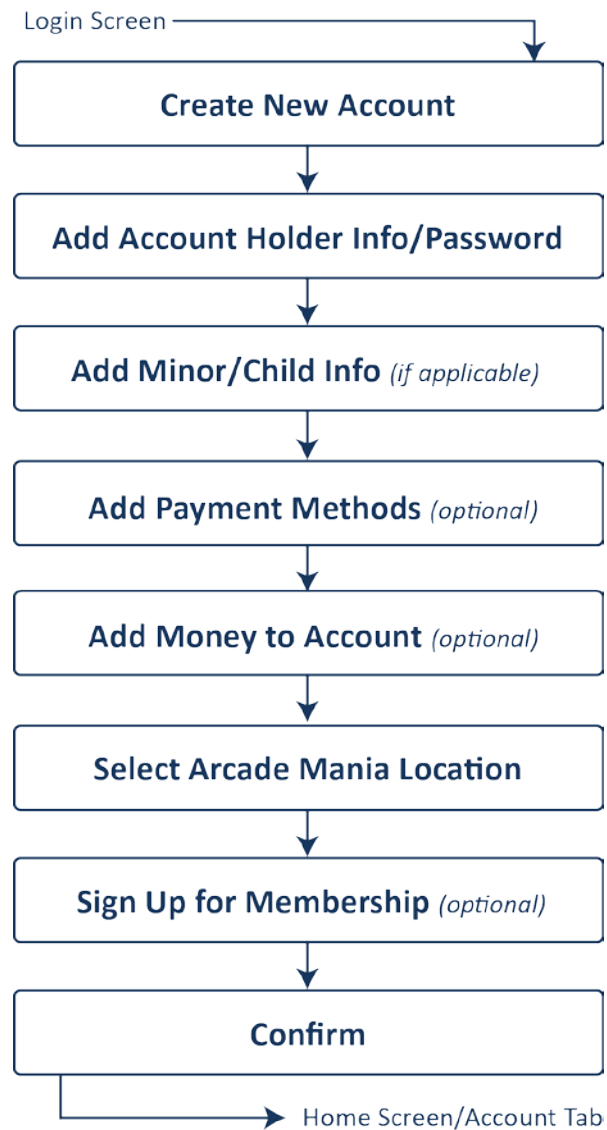PROBLEM: Long wait lines at central station to purchase tokens

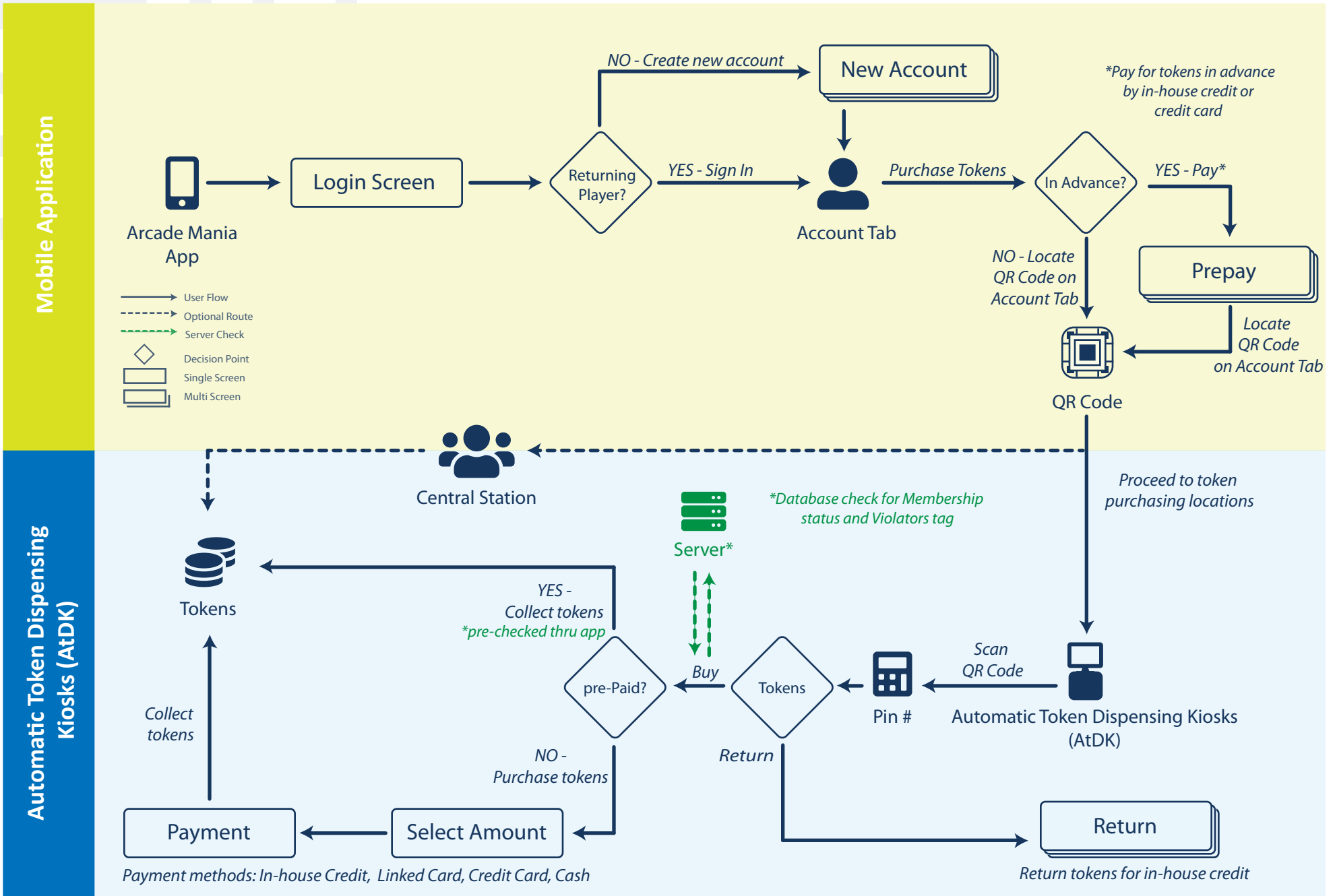SOLUTION: Mobile Application/QR Code enabled identification system

USER NEEDS:
- Arcade Mania account
- Personalized QR code
- Automated machines (kiosk)
- Payment options
- Option to Pre-purchase/reserve tokens
- Return tokens for in-house credit
- Membership sign up feature

VI. Task Flow - New Account (Mobile App)

Here is the task flow for creating a new player account using the mobile app. Player does have the option to register for a new account through the website and in-person at the central station as well.

Login Screen

Create New Account

↓

Add Account Holder Info/Password

↓

Add Minor/Child Info *(if applicable)*

↓

Add Payment Methods *(optional)*

↓

Add Money to Account *(optional)*

↓

Select Arcade Mania Location

↓

Sign Up for Membership *(optional)*

↓

Confirm

→ Home Screen/Account Tab

VII. User Flow - Token Purchase

Mobile Application

Arcade Mania App

Login Screen

Returning Player?

NO - Create new account

New Account

YES - Sign In

Account Tab

Purchase Tokens

In Advance?

YES - Pay*

*Pay for tokens in advance by in-house credit or credit card

Prepay

NO - Locate QR Code on Account Tab

Locate QR Code on Account Tab

QR Code

Legend:
- User Flow
- Optional Route
- Server Check
- Decision Point
- Single Screen
- Multi Screen

Automatic Token Dispensing Kiosks (AtDK)

Central Station

*Database check for Membership status and Violators tag

Server*

Proceed to token purchasing locations

Tokens

YES - Collect tokens *pre-checked thru app

Buy

pre-Paid?

Tokens

Scan QR Code

Pin #

Automatic Token Dispensing Kiosks (AtDK)

Return

Collect tokens

NO - Purchase tokens

Payment

Select Amount

Return

Payment methods: In-house Credit, Linked Card, Credit Card, Cash

Return tokens for in-house credit

VIII. Wireframes

Please visit the following link to take a closer look at the wireframes:

https://www.figma.com/file/XtttFzQYSUYNuFcpZR8naV/Arcade-Mania-Wireframes?node-id=0%3A1

Wireframes included:

- Creating New Account (Mobile)
- Tab Bar Screens (Mobile)
- Account Tab/QR Code Access & Prepay (Mobile)
- Account Tab/Account Settings (Mobile)
- Purchasing Tokens (Kiosk)
- Collecting Prepaid Tokens (Kiosk)
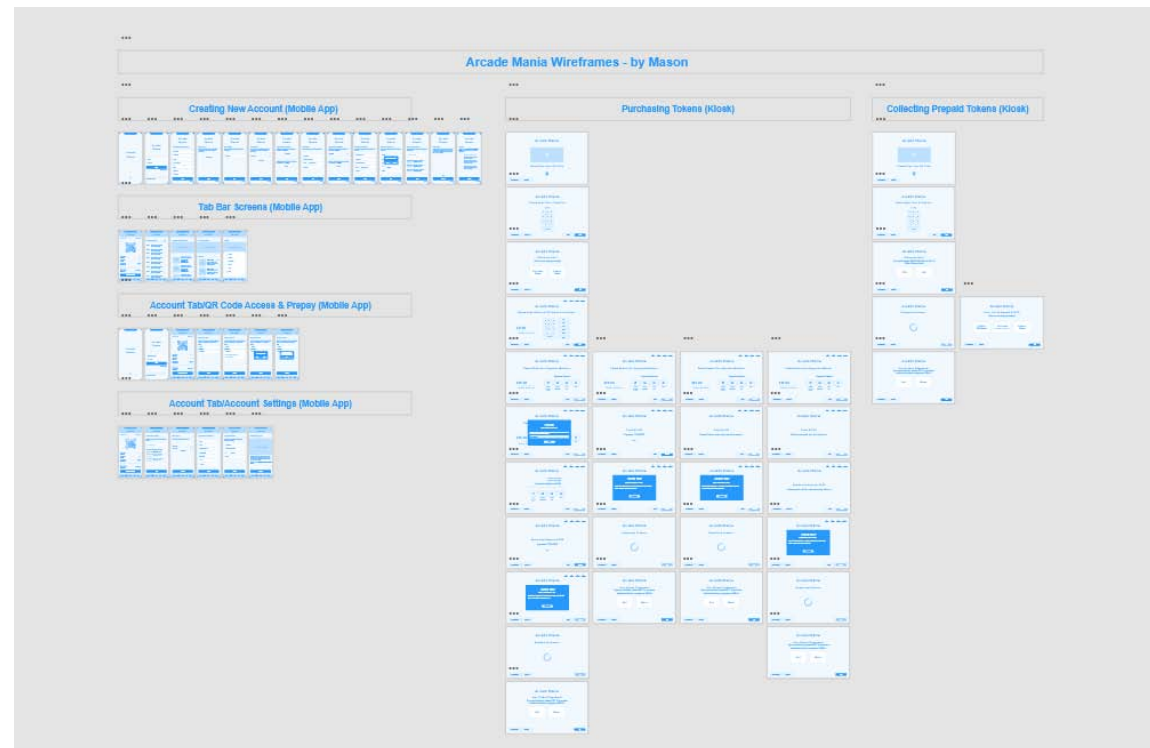
IX. Design Evaluation & User Testing

In order to measure the success of the design, we need to be able to identify that the solutions (QR Code/Kiosk) has made a significant impact on solving the problem (Long wait lines).

EVALUATION:

We can begin to evaluate the success of the solution by comparing the average wait time of players waiting in the line to buy tokens before and after implementing the new system. In order to obtain the wait times, we can observe and time each player as they enter the line and/or start a ticketing system with time stamps to give us quantitative data. Also, surveys and interviews can give us more of a qualitative data to see how players feel about the process of purchasing tokens.

USER TESTING:

A usability testing can give us the insight into how usable is the new QR Code/Kiosk system; a moderated study of players complete the following tasks:

On mobile -

- Creating a new account on the mobile application
- locating the QR Code
- Prepay for tokens
- Changing arcade location
- Adding new minor player to the account
- Adding money to the account
- Updating linked credit card

On kiosk -

- Signing into the kiosk using the QR Code
- Purchasing Tokens using in-house credit/account balance
- Collecting prepaid tokens

X. Final Statement

By implementing a player identification system, player control over account creation, automating token purchase process, and limiting player-employee face-to-face interaction, I feel strongly about reaching the design's goals. Based on the current technology trends, the solution seems to be plausible. However, a concrete conclusion cannot be made without conducting research and testing on real users. Lastly, there is room for improvement in the design in regards to dealing with players tagged as 'Violators'.