**A problem definition that describes this entire e-services type of system and details**

**specifically what problems the Xtra-Vision software system will solve.**

Xtra-Vision software system is a video rental kiosk which allows customers to rent any movies from Xtra-vision express machines located in Ireland. Customers can return the movies either to the same machine or another one in the network. Each disc has an electronic tag, which is used to scan them, and thus to track all the information about the rentals.

Firstly, The working prototype must allow customers to rent a movie using only a debit/creadit card. In case, the customers wants to get the receipts and details about new movies releases, they must provide the email address. In the first transaction, customers can get one disc for free using the code FREE123, and the first transaction is limited to two discs. Then, up to four movies can be rented at one time using the machines. There are special offers when we rent DVD & Blu-rays, for example:

1. Unlimited movies service: No more late fees, we can rent two movies at any time and rent them as many times as we like, for 8.99 euros. To rent other two movies, they must bring back the movies rented

2. Rent one movie for 2.99 euros for 1 night

3. Rent two movies for 2.99 euros each for 2 nights

4. Rent three movies for 2.99 euros each for 3 nights

Secondly, the cost rental is charged immediately after the customer rents a movie, but if there is an additional because of late disc returns the customer must pay the delay when he/she returns the movie. On the xtra-vision website, we can see the following charge penalty fees:

“Will I be charged if I am late returning a disc?

If you want to hold onto your disc for longer there is no problem. For each additional day you keep it past 8pm, you’ll be charged €1.50. If you hold onto your disc for the maximum rental period – 10 days, you will be charged a maximum fee of €15 and the disc is yours to keep.”

Thirdly, as I have already said Xtra-vision Xpress vending machines is certified as a PCI DSS Level 1 Service Provider, the highest level of assessment available. This system is listed on both the Visa Global Registry of Service Providers and the Mastercard Compliant Service Provider List.

Fourthly, X-tra-Vision software will solve the following problems:

1. Customers can rent a movie on their own. Not employees from the company are required to be present at that moment.

2. Xtra-Vission company does not need to rent/own a storefront where customers can rent movies

3. There are many Xpress machine locations where customers can rent/return discs. This gives more flexibility for the customers

4. The system allows customers to rent a disc quickly, only with a debit/credit card. We do not need to log into the system (no membership is required)

5. Same system could be used to rent other products.

Fifthly, objectives of the new system:

1. To provide a rapid rental process

2. Simplify the rental process

3. To improve customer satisfaction

4. To promote our business, we can use direct email to advertise the new releases movies and thus to attract more customers

And scope the new system:

1. Rent procedures

2. Return procedures

3. Allow customers to view machine locations

4. Allow customers to open and closed unlimited movies account

5. Allow customers to view the movie catalog

6. Provide special offers to customers

**Lastly, as a drawback, I can say:**

**1. Machines need maintenance**

**2. The disc technology provided to the customer is older than other alternatives such as netflix.**

**A full list of requirements regarding what the system.**

The list below is a short set of requirements for Xtray-vision software system collected after reading the assignment and the company webpage. We also discuss the requirements between us.

R1. Work out how much the customer owes for late rental returning

R2. System must provide special offers to customers

R3. Print receipts is optional, it depends on every customer. Customer must provide an email address

R4. We must track all the information, including when discs was rented, returned and sold

R5. Keep a record of all the machine locations (Eircode, Address, Town and County)

R6. We must allow customers to open and close an unlimited account to rent movies

R7. Customers needs to see all the movies to rent in one machine. Keep a complete list of all the movies and their details (title, description, linkvideo, type, genre)

R8. System must allow customers to pay using a debit/credit card.

R9. Customers use cards as login credentials.

R10. Record details of a rental transaccion (start date, return date, number of days)

**Four Use Case diagrams that fully describe four different scenarios in which a user**

**will use the Xtra-Vision movie kiosk. Include at least one ‘failure’ scenario along with**

**the traditional ‘successful’ scenarios.**

USE CASE DIAGRAM.PDF file contains use case diagram

**Use case descriptions**

Id: 1

Use Case: **View Locations Machine**

Precondition: The locations list is up to date

Actor: Customer (User)

Goal: Customer wants to know where the X-press rental machines are located to rent/return a disc

Overview: Customer starts to operate the machine and then (s)he views all the locations where machines are. Customer also can see details about every location

Cross-reference: R5

Typical course of events:

Actor action System response

1. The customer clicks on Locations button

2. Displays all the locations where the machines are

3. Customer types values to search for a specific location to see

its details (Address, Eircode, Town and County)

4. Use case ends

Priority: High

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id: 2

Use Case: **Open Unlimited Movies account**

Precondition:Customerdid not have this service

Actor: Customer (User)

Goal: Customer wants to get an Unlimited movies account to rent as many times as (s)he likes

Overview: Customer starts to operate the machine, then starts the Unlimited movies service

Cross-reference: R2, R3, R6, R8, R9

Typical course of events:

Actor action System response

1. The customer taps on Unlimited Movie button

2. Displays the options to start/cancel/rent the Unlimited Movies service

3. Customer starts the service clicking on the

Start your Unlimited Movies button

4. Asks the customer to insert the card all the way into the reader

5. The Customer inserts the debit/credit card into the

chip and pin reader

6. Verifies card and asks the customer to insert her/his pin number

7. Customer inserts the pin number

8. Verifies pin number, register customer details (personal details to pay monthly)

9. Processes the payment (8.99 euros)

10. Customer removes the card from the reader

11. (Extension Point: **Send receipt by email (id 5)**)

12. Use case ends

Priority: High

Alternative courses

Step 6. Card can not be read. Customer removes the card from the reader. The use case resumes at main ‘success’ scenario step 12

Step 6. Card is not enabled to use by the bank. Customer removes the card from the reader. Use case resumes at main ‘success’ scenario step 12

Step 8. Customer already exists in database, so system gets customer details from database and changes her/his account to unlimited movies. Use case resumes at main ‘success’ scenario step 9

Step 8. Pin entered is incorrect. Customer removes the card from the reader. Use case resumes at main ‘success’ scenario step 12

Step 9. Payment processing fails, Use case resumes at main ‘success’ scenario step 12

Step 11. **Send receipt by email** fails, use case resumes at main ‘success’ scenario step 12. The systems lets customer knows about this issue.

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id: 3

Use Case: **Rent movies**

Actor: Customer (User)

Goal: Customer wants to rent movie(s)

Overview: Customer starts to operate the machine, then (s)he chooses movies from the list displayed by the computer. Finally, customer pays, and then leaves with the disc(s).

Cross-reference: R2, R3, R4, R7, R8, R9, R10

Typical course of events:

Actor action System response

1. The customer taps on Rent button

2. Initiate **View Movies (id 4)**

3. Customer chooses a movies to rent

4. Verifies there is a disc for the movie selected

5. The use case resumes at main ‘success’ scenario step 2,

if customer wants to select another movie. A customer

can not rent more than four movies simultaneously

6. Display the movies selected with the most important info (title, genre, availability)

7. Customer clicks on checkout button to see details about the rental

8. Shows details about the rental , for example how many movies were selected to rent, cost per disc, total cost, rent date, return date, etc.

9. Customer taps on Checkout button to proceed to payment

10. Asks customer to insert the card all the way into the reader

11. Customer inserts the debit/credit card into the

chip and pin reader

12. Verfies card and Asks customer to insert her/his pin number

13. Customer inserts the pin number

14. Verifies pin number, gets the customer details from database and checks customer is allowed to rent the movies (selected quantity is allowed)

15. Processes the payment with the total amount

16. Customer removes the card from the reader

17. (Extension Point: **Send receipt by email (id 5)**)

18. The disc is despensed by the machine

19. Use case ends

Alternative courses

Step 1. Customer clicks on rent with unlimited Movies button. The use case resumes at main ‘success’ scenario step 2.

Step 4. There is no disc for the movie selected. Use case resumes at main ‘success’ scenario step 2.

Step 5. Customer has an unlimited account, the total of selected movies is less or equal than two

Step 8. System allows customers to enter a FREECODE to get a movie for free, if it is their first transaccion. Use case resumes at main ‘success’ scenario step 9.

Step 12. Card can not be read. Customer removes the card from the reader. Use case resumes at main ‘success’ scenario step 19

Step 12. Card is not enabled to use by the bank. Customer removes the card from the reader. Use case resumes at main ‘success’ scenario step 19

Step 14. Pin entered is incorrect. Customer removes the card from the reader. Use case resumes at main ‘success’ scenario step 19

Step 14. Customer does not exist in the database, a new user is created. Use case resumes at main ‘success’ scenario step 15

Step 15. Payment processing fails, use case resumes at main ‘success’ scenario step 19

Step 17. **Send receipt by email** fails, use case resumes at main ‘success’ scenario step 18. Systems let customer knows about this issue.

Step 18. The machine is broken, the movies was not dispensed, an email is sent to the Xtra-Vision customer service. Customer is also informed about this issue. Contacts are shown to the user. Use case resumes at main ‘success’ scenario step 19.

Priority: High

id: 4

Use Case: **View Movies**

Precondition: The list of movies need to be up to date

Actor: Customer (User)

Goal: Customer wants to see all the movies to rent

Overview: Customer starts to operate the machine, then click on rent button to see all the movies

Cross-reference: R7

Typical course of events:

Actor action System response

1. The customer taps on rent button

2. Displays all the movies with the most important information about the movie

3. Use case ends

Alternative courses

Step 3. Click on a movie to displays details about the movie such as description, trailer, genre, availability or how many discs are in the machine. Use case resumes at main ‘success’ scenario step 2

Priority: High

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id: 5

Use Case: **Send receipt by email**

Precondition: The payment was processed successfully

Actor: Customer (User)

Goal: Customer wants to get the receipt by email

Input: Receipt and customer details

Overview: After customer pays, (s)he is prompted to type an email address, as a result, the receipt is sent to the customer

Cross-reference: R3

Typical course of events:

Actor action System response

1. Asks the customer to type an email to send the receipt

2. The customer keys her/his email address

3. Asks customer for confirmation, in other words, if the email address entered is correct

4. Customer confirms the email

5. Registers the email in the database for this customer and sends the receipt to that email address

6. Use case ends

Alternative courses

Step 1. The system have an email address for this user/customer in the database. Use case resumes at main ‘success’ scenario step 3

Step 2. Email typed is not valid. Use case resumes at main success scenario step 2.

Step 5. System fail to send the email, retries step 5 or informs user/customer about this issue and use case resumes at main ‘success’ scenario step 6

Priority: High

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id: 6

Use Case: **Checkout**

Precondition: The rental machine works with the type of card inserted by the client

Actor: Customer (User)

Goal: The total cost is paid with a credit/debit card by a customer

Input: Total cost

Overview: Customer pays the total cost using a credit/debit card

Cross-reference: R3, R8, R10

Typical course of events:

Actor action System response

1. Asks the customer to insert the card all the way into the reader

2. The Customer inserts the debit/credit card into the

chip and pin reader

3. Verify card and asks the customer to insert her/his pin number

4. Customer inserts the pin number

5. Verifies pin number

6. Processes the payment with the final total cost.

7. Customer removes the card from the reader

8. (Extension Point: **Send receipt by email (id 5)**)

9. Use case ends

Alternative courses

Step 3. Card can not be read. The use case resumes at main ‘success’ scenario step 9

Step 3. Card is not enabled to use by the bank. Use case resumes at main ‘success’ scenario step 9

Step 5. Pin entered is incorrect. Use case resumes at main ‘success’ scenario step 9

Step 6. Payment processing fails, use case resumes at main ‘success’ scenario step 9

Step 8. **Send receipt by email** fails, use case resumes at main ‘success’ scenario step 9. Systems lets customer knows about this issue.

Priority: High

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id: 7

Use Case: **Return movies**

Precondition: The cases are properly closed, and disc/cases belong to Xtra-vision.

Actor: Customer (User)

Goal: Customer wants to return movie(s)

Overview: Customer starts to operate the machine, and (s)he inserts the case into the return slot. Then, if the customer is late returning the disc, (s)he must pay the difference. Finally, customer pays, and then leaves.

Cross-reference: R1, R4, R10

Typical course of events:

Actor action System response

1. The customer taps on Return button

2. Opens return slot

3. customer inserts the disc into the slot

4. The use case resumes at main ‘success’ scenario step 2, if

there are more discs to return

5. Gets customer details and checks customer returns the disc on time. There are no late fees

6. Use case ends

Alternative courses

Step 4. Customer is late returning the disc(s), system lets customer knows about it. The system show details about the late rental return. Then Initiate **Checkout (id 6)**. The use case resumes at main ‘success’ scenario step 6.

Priority: High