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| HCI - COMP 171 |
| Assignment 1 |
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**Self Service Kiosk**

1. **Product description**

This system enables passengers to check-in, select seat, print boarding pass, and check-in baggage from a common environment without approaching the front desk. It is a column type and counter type work station with built-in Automated Boarding pass and Baggage tag printer. Before this product passengers had no other option to check in and get their boarding pass without approaching the check in counter. This traditional method was very time consuming, people need to stand in line to enter the counter and if there are lot of people in the line then passenger need to wait in the line for a long time. Self Service Kiosks introduction solved a lot of these problems. Passengers can now print their boarding pass and check in their baggage without needing any assistance. This system also reduces the cost in terms of staff, time and effort.



1. **User analysis**

Primary User: Airline Passenger

Age: Between 16 to 90

Manual Skills: Basic Reading and Typing capability

Computer Skills: Novice to Expert

The target user of this product is an airline passenger with the age range between 16 to 90. The minimum requirements for a user is reading and typing capability. Interface of this product is very simple so a person with very low computer knowledge can easily operate it.

Facilitating: Airline Representative

1. **Task analysis**

***User goal***

The user main task of this product is for check-in, printing boarding pass, baggage check-in and seat selection without depending on service desk and also saving time at the same time.

User task:

* When the passenger reaches the kiosk first they need to select a particular airline.
* Then insert credit card, frequent flyer card, scan the passport, enter the e-ticket number or booking code for identification purposes. If the entries are correct the booking details will appear on the screen.
* Select seat on the seating map. You can buy seat in comfort zone (a seat with extra legroom, or a seat in a particular row).
* If the passenger checks-in any baggage, they can add the number of baggage they are checking-in.

System task:

* Once the passenger scans the passport/credit card or enters the confirmation number in the Kiosk, the system will match the number from the airline database. If the passenger details match the system will show the passenger details on the screen.
* If the passenger selects seat allocation button the system will show seat map of the particular aircraft where the passenger can select the seat they want.
* If the passenger selects the check-in button then system will ask how many bags you want to check-in.
* Once all the details are filled the system will print the boarding pass.
* If the passenger has checked-in any bag, the system will also print the baggage tag.

Passenger check-in process

1. Touch Screen
2. Select an airline
3. Go to the identification screen
   1. Show different methods to prove identification
   2. User selects one method of identification
4. User scans or types identification material
   1. System matches the details from the database
   2. Display the details on screen
5. User selects seat selection
   1. System displays seat map
   2. User selects seat
6. User selects check-in baggage
   1. System goes to the baggage check-in screen
   2. User adds the number of the bags to check-in
7. User selects to confirm the check- in
8. Print boarding pass
9. Print the baggage tag
10. **Context, Situations, Environment**

The main users of the kiosk are frequent flyers. Standing in a line to get your boarding pass is the worst part of travelling. Introduction of self service kiosks solved this problem to a large extent allowing the passengers to save their time. But still some users have some anxiety on how to use the kiosk. Basically its interface is very simple; a person who has very little knowledge about computer can easily use a Self Service Kiosk. Self service kiosks are normally placed in the front area of an airport near the airline counter because of three factors:

* Easy visibility to the passenger
* Comfort and privacy of the passenger
* Accessibility and movement of passenger traffic.

The purpose of this system is to help passenger in check-in, seat allocation, printing boarding pass and baggage check-in without approaching check-in counter.

1. **Conceptual design**

**Conceptual Model**

**Objects:** Machine screen, Passport, Credit Card, Frequent flyer card, E-ticket, Conformation Email, Paper (boarding pass /baggage tag), and seat map.

**Object Attributes:** Passport/credit card/frequent flyer number, seat selection.

**Object Relationships:** User has a passport/credit card/frequent flyer card/confirmation number. User has a frequent flyer account. The built-in printer in kiosk has appropriate paper.

**Actions on Objects:** Check-in, printing boarding pass, printing baggage tag, adding mile on the frequent flyer account, choosing the seat.

**Actions on Object Attributes:** Passport/credit card/frequent flyer/confirmation numbers are used to identify the users booking details, selecting the seat type and seat location.

**Actions on Object Relationships:** When the user scans his passport/credit card/frequent flyer card or confirmation number the system will check the details from the airline database if it matches, then the system will show the user details on the screen. If the passenger selects the passenger details label then the user can add their flying details to their account, then the built-in kiosk printer will print the boarding pass and baggage tag.

**Concept Art**

**Welcome screen: A welcome screen shows customer the airlines in the Self Service Kiosk**

**American** Airlines

**Air Canada**

**United**

**Touch the Airline to continue…**

**Swiss Air**

**US Airways**

**Lufthansa**

**Continental**

**Delta**

**British Airways**

**Identification Screen: Identification screen shows methods to identify the user**

**Confirmation number**

**Frequent Flyer Card**

**Passport**

**Credit Card**

**Guidance Screen: This screen gives information on how to scan identity card**

**Information Display Screen: This screen will show the information from the airline data base**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Airline** | **Flight No** | | **Date** | **Origin** | | **Destination** |
| **LH** | **129** | | **24 may 2012** | **BO** | | **LA** |
|  | | **Name** | | | **Seat** | |
|  | | **Assdj Sjjkk** | | |  | |

**Continue**

**Baggage Check-in**

**Baggage Check-in Screen: This Screen shows and allows user to add the check-in bag**

**Continue**

**Number of Bags**

**6. Design Metaphors**

**Attributes:** Simple, Easy to use, Personal preference, Satisfying experience.

**Distant domain:** Assembling table kit, using an iPod, buying a shoe from eBay.

**Concepts:**

Using Self-Service Kiosk is like:

1. Assembling a table kit - If you have a table kit, you just need to follow the steps on the instruction manual. Similarly in Self service kiosk process also you just need to follow the on-screen display. Any person with basic computer knowledge can easily follow the **simple** process.
2. Selecting music on an iPod - iPod has only few function similarly self service kiosk keeps the functions to bare minimum providing customers an **easy to use** product.

Selecting seat using Self-Service Kiosk is like:

1. Buying a shoe from the eBay – eBay provides customer options to set their attributes (Ex: size, color, etc.) similarly Self service kiosk also provides choice of **personal preferences** (Ex: seats with more legroom, window/aisle seats).

Printing Boarding Pass using Self-Service Kiosk is like:

1. Clearing levels in Angry Birds – Angry Birds is a very engrossing game winning which provides a satisfaction. Similarly getting boarding passing using Self service without anyone’s assistance gives a similar **satisfaction**.

**7. Design critique**

I feel that the current system is well designed and helps the customer in many ways. But I feel the system lacks below fundamental needs:

* Normally one can check-in using a kiosk 6 hours before the flight departure. But most airlines allow online check-in 24/30 hours before the flight departure thus people using online check-in can get better seats than those who check-in through kiosk.
* No customer service help: At the traditional check-in counter, if a customer has any question about the flight the airline representative can easily answer the question but a customer using self service kiosk needs to either approach counter or wait for assistance.
* Cannot use cash: Self service kiosks don’t allow travelers to pay for upgrade or baggage fees using cash. They need to either use credit card or go to counter.
* Self services Kiosks don’t have options for people with disabilities.

**8. Design improvements**

* **Allow for immediate customer query resolution**

Proposed system is capable of answering user’s question without approaching for assistance or front desk

* **Add option for paying by cash**

One of the drawback of current system is there is no option to pay for extra baggage or seat by cash. Proposed system will have the option for customer to pay extra fees by cash

* **Add option for checking baggage weight**

Proposed system has a built-in weighing machine for customers to know their check-in baggage weight without going to the counter.

* **Add speech recognition technology**

Speech recognition technology will help to reduce the user processing time, also a customer with any disability can easily use the proposed system.

* **Change layout of date selection screen**

In the current interface users have some confusion regarding date selection since there are two columns of numbers for date and year selection. Proposed system will contain only single column for selecting numbers for date and year.

* **Add graphical information popup for customer to easily find Confirmation number/Frequent flyer number etc in email**

Currently most users face difficulty in identifying their confirmation/frequent flyer number from the e-mail confirmation. The proposed system will add a graphical information popup to guide customer find their confirmation and frequent flyer numbers easily**.**

**9: Future testing**

After changes are incorporated in the proposed system, I will go about verifying that the changes did not break any functionality. Then I would make sure all the different scenarios Ex: Printing a boarding pass without baggage check-in, Printing a boarding pass with baggage check-in, Printing a boarding pass without baggage check-in and seat selection, Printing a boarding pass with baggage check-in and seat selection, Performing a Seat Upgrade, Paying by cash, using Speech recognition to print boarding pass all produce the expected outputs. Also I would perform some negative tests like entering special characters in Identification screen, entering less than 16 digits in credit card fields and entering more than permitted number of bags in Baggage entry screen to make sure user is promoted to make corrections in order to navigate to next screen. I will also test the product from a usability perspective to understand how easy is the product to use to a customer or if any menu or options need to be changed. I will also do a comparative study with the current system to know if there are any savings in terms of time and ease of use.

Besides this I intend to allow users to use both the systems and get their feedback. Based on user’s feedback I intend to improve the system further. I also intend to do a statistical analysis of time savings between the two for similar tasks. Over a period time I will check if there in an increase in the numbers of users using the system.