Mallrats: Mirror Image

kathryn chinn
tania choi
jessica cohen
john wong

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Mallrats: The Problem

Project Setting and Audience: Identify potential problems that groups of 2-7 people may experience in a commercial shopping center. We define this as any place that people go for shopping as a leisure experience, not solely for purchasing. For example, a mall would be an ideal setting, whereas the grocery store would not fit our description. The demographics of the most common groups are: large families with small children or single parents with small children, young dating couples (aged 15-25) or older married couples (aged 40-60), and single-sex groups of teenagers (aged 13-20).
Mallrats: Interviews & Observations

Observations
• Stanford Shopping Center
• Valley Fair Mall
• Walgreen’s
• Stanford Bookstore
• Furniture stores

Interviews
• Information Desk
• Security Officers
• Store Clerks
• Shoppers
• Teenage boys
• Teenage girls in dressing room
• Middle age man
**Mallrats: Problems**

### Getting Separated from your Group
- Separated vs. Lost
- Both kids and adults can easily become distracted in malls.
- Kids can easily be confused when they identify their parents from the knees and down.

### Collaborating on a Purchase
- Husband needed wife’s permission before he could purchase anything.
- Couples who make big purchases would like a way to collaborate on the purchase or if a shopper identifies an item that another person might like will purchase it, only to return it later.
- People like to have a second opinion other than the sales person.
- People purchasing items, take them home, model the items, and then return the items.
**Mallrats: Point of View**

**User Group**
- Shoppers who are separated by space and possibly time.
- People who want or need a second opinion.
- Purchases with lasting value and impact to user.

**Goals**
- Allow separated shoppers to clearly talk about a product, and to receive emotional/facial response about a product.
- Facilitate recall of products already seen.
- Receive expert advice or approval from another party.
**Mallrats: Central Persona**

**Sandy**

- Age 34, married, lives in Menlo Park, with a 1 year old daughter.
- Shops for household items, gifts, and occasionally clothing for herself.
- Husband, Dan, works full-time as lawyer.
- Works part-time as receptionist in dentist office.
- Drives to the mall in her car, only goes when mall isn’t crowded so parking is easy.
- Goes to the mall several times during the week with daughter or best friends.
- Buys all of her husband’s clothes and brings it home for him to try on and returns the rest.
- Shops for a new couch for their three bedroom home during the day while husband is at work.
- Goes to optometrist during the day when husband is at work.
Mallrats: State of the Art

- PDA’s
- Cameras
- Cell phones
- Instant Messaging
- Virtual Dressing Room
- Amazon’s peer rating system
Mallrats: Ideation

Instant Communication
• Allow shoppers to collaborate real-time on a purchase.

Product Photo Archiving
• Allow shoppers to track products and where it was sold.

Photo Annotation
• Shoppers can communicate via annotated photos.

Digital Rendering
• Super-impose products onto shopper’s photo of gift recipient.

In-store Virtual Message Boards
• Leave messages for friends about products to look at.

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Mallrats: Prototype I

**Features**
- Buddy list of who is online
- Synchronous & asynchronous communication
- Voice communication
- Streaming video of speaker’s face
- Camera for pictures of product

**System Components**
- Wireless connection
- Two cameras (face & product)
- UPC scanner
- Computer/text input interface for remote shopper
- UPC scanner for product specs
Mallrats: User Testing

Users
• Young Mother - Architect
• Older Man - Innkeeper
• Two Construction Workers
• Young married Couple - Technical Professionals

Feedback
• Most functionality as a feature, but not as a device.
• Most prefer the watch because of its smaller size.
• “I have enough crap.” Already carries many communication devices (walkie-talkie, pager, Palm pilot and cell phone) so would not want to carry another.
• Innkeeper likes the device; can imagine himself using it with his wife.
• Would like to see the features incorporated into a cell phone, which is an existing ubiquitous device.
• Doesn’t want something expensive to lose

Conclusions
• Incorporate functionality of device into existing, ubiquitous hand-held device, or
• Market the device to retailers, not consumers
Mallrats: Prototype II

**Features**
- Synchronous & asynchronous communication
- Voice communication via user’s cell phone
- Streaming video of speaker’s face
- Camera for showing product on shopper
- Input of product specs from store database
- Web interface for remote shopper to see product and give feedback

**System Components**
- One-way mirror with hidden camera
- Wireless connection
- UPC scanner
- Jack to plug in cell phone
- Help screen, video receive screen, video send screen

**Attributes**
- Handheld, provided by store
Mallrats: User Testing

Users
- Surgeon and homemaker, mid-forties
- 11 and 12 year old boys, 14 year old girl
- Retired woman
- Two women professionals, friends, early thirties

Feedback
- Most wanted to be sure to be able to see what image of themselves they were sending
- Teenagers needed parents’ approval for purchases: “Let’s say my parents dropped me off and I needed to ask if I could buy something.”
- Teenager frequently gets her mom’s opinion for purchases
- Retired woman thought device would be useful for buying glasses.
- Surgeon thought UPC scanner and ability to email product pictures to remote shoppers was great.
- Homemaker said she ‘can decide what she wants to do with her own money’
Mallrats: Scenario

- Sandy goes to her optometrist on Monday afternoon.
- She looks for new frames after having her eyes checked.
- But she can’t see the frames on herself without prescription lenses.
- She doesn’t want to come back to the store.
- She uses the Mallrats Mirror to show her husband and her sister the frames she liked.
Mallrats: Scenario

• Sandy’s husband sees her trying on glasses on his work PC, his webcam sends video of his face.
• Sandy can tell from her husband’s face that he doesn’t like the first frames.
• He likes the second and third frames.
• Sandy’s sister sees the frames on her web-enabled phone and replies.
• Sandy checks the web interface to see her sister’s comments.
• Her sister loves the second frames.
• Sandy decides to buy the second set of frames.
Sandy picks up the phone and calls her mother who connects with her via video-conferencing over a desktop web-cam.

Sandy models the new glasses in real time and watches her mother’s face for expressions. She also hits a button to take a snapshot of her image.

Sandy scans the item using the UPC code scanner and uploads the image to a web site along with her photograph, her own notes and her mother’s comments.

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**Problem**

**Research**

**Point of View**

**Prototype 1**

**Prototype 2**

**Final Prototype**
Mallrats: Final Prototype

Refined Point of View
- The product is designed for optical and sunglass retailers, allowing consumers to shop together yet remotely for eyewear. Allows poorly-sighted customers to get an accurate image of themselves wearing new frames without corrective lenses.

Features
- Allows shoppers voice, video, or email communication
- Allows web uploading of product specs
- Streaming video of speaker’s face, and remote shopper’s face
- Display of what the remote shopper sees
- Shopper can take stills of him/herself wearing product

System Components
- One-way mirror with hidden camera
- Wireless voice connection
- Three screens: help/ web interface/ UPC, video send, video receive
- UPC scanner
- Keyboard for inputting questions for remote shoppers via email

Attributes
- Desktop, sold to retailers for consumer use
### Mallrats: User Testing

#### Users
- Male and female sales reps, 20’s
- Male engineer - Mid 50’s
- Female programmer - Mid 30’s
- Female homemaker with friend - 30’s
- Female single shopper - Late 20’s
- Married woman - Mid 50’s

#### Feedback
- “It’s pretty cool. Taking a picture is a great idea. It’s not enough to look into a mirror because it’s hard to tell when you look into one. A picture gives them an out of body look.”
- “I should be able to look into the mirror and have the sunglasses superimposed on my face. Then I can go through twenty of them and pick out the best three.”
- “It should show work flow”

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- Problem Research Point of View Prototype 1 Prototype 2 Final Prototype
More Feedback

• The keyboard’s purpose is not obvious until explained.

• “This would work great with the elderly! I buy stuff for my mom all of the time and she doesn’t go out much and I don’t know what she wants. This would allow me to show her and see if she likes it.”

• “Ooohhhhh” that’s really good.”

• “This works great for students because parents are not living in the same area.”

Conclusions

• Overall very enthusiastic consumer feedback

• Some confusion as to sequence of functions and meaning of each panel
Mallrats: Response Brainstorming

Interface Design

• Creating a visual display that
  • a) communicates purpose of product to users
  • b) is intuitive to use
Mallrats: Future Directions

**Hardware**
- Using mirror as LCD touch screen
- More visually obvious handheld phone unit
- Keyboard hidden by sliding panel

**Concept**
- Develop as tool for solitary shopper
- Utilize UPC database
- In dressing rooms
- Shopping for large, immobile items, such as cars or furniture
- Store-owned handheld
- Approach for teenage market in functionality and look