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**ED/User Centered Design/Process**

Convergent - Divergent - Convergent
ED/User Centered Design/Process
Small/Medium Sized Manufacturer and Distributor of Bikes/Accessories

We were hired to help determine customer needs and possible concepts

RBW Mission Statement

- Our mission is to make things that wouldn't be made if we weren't here, to offer an alternative to racing-centric bikes and parts, and to espouse a different approach to riding. And to ressurrect and keep healthy many of the better ideas, designs, and styles of bicycles, clothing, and accessories that we personally like to use or wear. If you'd like to know more, just ask. It's not a secret business we have here.

http://www.rivbike.com/
Objective: Determine scope/domain of interest

Method: Discussion based selection with client (Professor) approval

Input: Rivendell Bicycle Works
http://www.rivbikes.com/

Output: Portland, Oregon
Casual Riders
Commuters

Learnings: There were poor weather conditions.
**Objective**
Observe and interact with customers to learn latent needs, build understanding of customer domain.

**Inputs**
- **Domain:** Urban Portland Oregon,
- **Conditions:** Any weather, indoor (storage)/outdoor, transportation
- **Customers:** Commuters, casual and serious

**Method**
1. Outline field strategy to optimize observation coverage
2. Make direct observations using recording devices (video, audio, photo, sketch, notes)
3. Interact if necessary for clarification (why questions) of customers in chosen domain made in pairs.

**Data Collected**
- Ad Hoc Security
- Bike Sharing
- Portland Bike Lane
- Long Tail Storage
- Ad Hoc Transport

**Learnings**
There were many more variants to explore for to mine for further ideas. Poor weather conditions, extreme traffic conditions, group bike rides, etc.

**Outputs**
- Casual Riders
- Commuters

**Noted Observations**
- Raw video

**Learnings**
- It's important to observe what happens.
- There are lessons to be learned wisely if they are observed.
3. Interact if necessary for clarification (why questions) of customers in chosen domain made in pairs.

**Data Collected**

- Ad Hoc Security
- Drink Holders
- Portland Bike Lane
- Long Term Storage
- Ad-Hoc Transport
- Common Urban Locking

**Learnings**

There were many more variants to explore for to mine for.

Poor weather conditions, extreme traffic conditions, group...
Walk in Customers Shoes

Objective
Build empathy through actual customer experience

Method
1. Select tasks observed in previous steps to experience.
2. Recreate customer experience by performing observed actions of customers
3. Record observations as they occur and immediately after events

Inputs
Videos, notes, and interactions w/ other team members of raw observations from previous phase

Data Collected
Raw videos & psychological understandings

Learnings
It's important to have someone else present at experiences to record what happens to partner.

There are many scenarios that can be experienced, its important to pick wisely if time is (as is usual) limited.
Objective
Determine motives behind observed patterns of behavior

Method
1. Design and test questionnaire to make sure answers are adequate
2. Administer, and record answers to questionnaire given to customers within target demographic

Inputs
Raw videos, notes, psychological understandings

Data Collected
Raw videos & notes

Learnings
1. Try out questions on each other
2. Try questions on sample before going out to a general group
3. Don't be afraid to ask follow-up or clarifying questions

Analysis of

Method
1. Write all notes
2. Group notes
3. Eliminate notes
4. Record final
5. Narrow down

* Record people to do to construct

Inputs
Raw input for

Data Generation

Noted Observations and Notes
Objective
Analysis of raw data to determine patterns, needs, and opportunities

Method
1. Write all needs statements or friction points on stickies from videos, notes, photographs
2. Group needs statements into using similar characteristics
3. Eliminate duplicates
4. Record Findings
5. Narrow area for Ideation

* Record personas would normally be another series of tasks, however, do to constraints these steps were not taken

Inputs
Raw input from customers, videos, drawings, notes audio recordings, etc.

Data Generated
Noted Observations and Needs
Grouping Activity
* Record personas would normally be another series of tasks, however, do to constraints these steps were not taken

**Inputs**
Raw input from customers, videos, drawings, notes, audio recordings, etc.

**Data Generated**

- Noted Observations and Needs
- De-duplication and labeling of needs

**Analysis**
We could have referred at this point to the current product offerings looking to match need clusters to obvious holes but, we purposefully kept the range as wide as possible to generate more interesting ideas.

**Outputs**
Characterized groups of needs

**Learnings**
1. Having the questions in form of needs statements is good
2. Items can fall between groups and are sometimes hard to characterize
3. De-Duplicating simplifies amount of statements
4. Labeling the groups helps for the next phase
**Objective**
Generate volume of concepts to solve latent or explicit customer needs

**Method**
1. Individual then team brainstorming session using sketchbooks/whiteboards(props)
2. Generate Medium quality sketches of most promising ideas
3. Hand sketches to potential customers to sort items of primary interest
4. Match ideas up against holes in clients' product
5. Review patents for existing works

**Inputs**
Characterized groups of needs

**Data Generated**
- Notebook Sketches of Ideas from Brainstorming
- Whiteboard Drawings for Storage
- Whiteboard Drawings for Comfort
- Whiteboard Drawings for Maintenance

**Objective**
Narrow

**Method**
1. Review
2. Validate
3. Create

**Inputs**
Sketches

**Data Generated**
- Notebook Sketches of Ideas from Brainstorming
- Adjust
- Always
- Production
Characterized groups of needs

Data Generated

*Notebook Sketches*

Deliverables
Low fidelity sketches, pictures of white boards

Learnings
1. It is hard to not move to solutions too quickly
2. It is harder getting started brainstorming than it appears
3. All ideas are good ideas does keep mood positive
4. Having every draw is positive

Outputs
High fidelity drawings looking to match the range as characterize
**Objective**
Narrow volume of ideas down to few solid concepts

**Method**
1. Review concepts with team
2. Validate filtered concepts w/ users to see which has traction
3. Create higher-fidelity concept drawings for final proposal

**Inputs**
Sketches * Notes of all ideas

**Data Generated**
- Adjustable Handlebars
- Chain Oil
- Self Sealing Coffee Cup
- Alway Present Tire Pressure Gauge
- Protectant Clothing
- Stirrup Pants Protector

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**Customer needs**
- Primary interest

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**Notebook Sketches of Ideas from Brainstorming**

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**Rivendel Designs**
- http://www.rivendeldesigns.com

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**Final Concept**
Outputs
High fidelity sketches/line articulated drawings

Learnings
1. We didn't limit our-selves to a specific missing part of the catalog so we had many options
2. Having customers review final sketches helps understand if we hit on a winner

Concept Narrowing
Preference
Learnings
1. We didn’t limit our-selves to a specific missing part of the catalog so we had many options
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Concept Narrowing

Preference

Technical Feasiblity

Portfolio Alignment

- Adjustable Handle Bars
- Tire Guage
- Coffee Mug
Rivendell Bicycle Works

http://www.rivbike.com/