Prototype implementation

Idea: Retroreflective Garments

Submitted by: Suzanne Kirkpatrick

Proposed implementor:

I am looking to partner with a global development organization that understands the value of user-centered design methodologies (e.g., ethnographic research, contextual inquiry, participatory design, and co-creation) in acquiring an explicit understanding of customer needs, behaviors, tasks and environments. Such a partner would be ideally suited for implementing this proposal in 2 - 4 pilot cities.

Nari Uddug Kendra (NUK) would be a great partner in Bangladesh.

Retroreflective scarf, such as dupatta or chaadar, and ankle and wrist bands can be tested in India, Pakistan, and Bangladesh.

Retroreflective hijab or burqa can be tested in Afghanistan and Pakistan, parts of Bangladesh and Somalia.

Activities would include:

1) conduct focus groups with women, men, grassroots women’s organizations and cultural & religious affairs leaders in target areas to understand local needs and concerns related to roadside injuries and fatalities,

2) implement user-centered design workshops to gather culture- and context-specific design requirements for reflective outer garments,

3) develop business partnerships with local garment manufacturers for sourcing affordable materials and production orders in neighboring regions,

4) test prototypes and refining requirements and garment solutions,

5) work with ministries of health and the World Health Organization (who recently launched new tools to support the development of strong road safety mass media campaigns around the world) to create national road safety media campaigns featuring retroreflective garments,

6) engage local women’s grassroots organizations to promote the retroreflective garments in community groups and target neighborhoods.

What work has already been done on this idea?
One prototype, the Retroreflective Burqa, has already been created and is ready for limited production and user testing in Kabul, as well as in the provinces across at least two or three provincial capital cities such as Jalalabad and Mazar-e-Sharif. Following the same design approach to concep ting and prototyping, it would be easy to create a Retroreflective Dupatta prototype, for example, to test in India and Bangladesh.

For prototyping, create a list of different reflective garments that could be prototyped at different cost points. For example:

**Type of Garment and Cost of Reflective Enhancement**

- Ankle and wrist garment bands--cost level 1
- Short scarf--cost level 2
- Long Scarf / dupatta / chaadar--cost level 3
- Head and face veil / hijab--cost level 4
- Full body covering / cape / long coat--cost level 5

Identify initial number and types of garments for market trials using lowest price point the market will bear. Once demand rises, explore opportunities for larger-scale manufacturing in China or India which could reduce the cost of fabrication x2 or x3.

Ideas for prototyping are further inspired by conversations about bicycle riding skills training courses offered to girls and young women in Bangladesh at a center called Nari Uddug Kendra (NUK) which supports sustainable social enterprise programs to improve girl’s safety and mobility. At Chartaki Girl's High Schools, Pakundia, Kishorgonj district, NUK trained 500 girls, and today 100% of the girls from Chartaki Girls High School are cycling to and from school. The plan would be to interview these girls and their parents to find out whether they are interested in wearing reflective clothing for roadside safety and then conduct user testing for a few different types of clothing designs.

<table>
<thead>
<tr>
<th>Step</th>
<th>Activities</th>
<th>Proposed timing</th>
</tr>
</thead>
</table>
| 1    | - Identify implementing partner(s), for example Nari Uddug Kendra (NUK) in Bangladesh  
    - Learn different cost points for different types of context-specific garments | Month 1 |
| 2    | - Conduct focus groups with women, men, grassroots women’s organizations and cultural & religious affairs | Month 2 |
leaders in target areas to understand local needs and concerns related to roadside injuries and fatalities

- Select two groups of 10-12 women (and parents, if users are students) for focus groups and associated community members and cultural leaders
- Gather culture- and context-specific design requirements for a few different types of reflective outer garments

<table>
<thead>
<tr>
<th>Month</th>
<th>Activities</th>
</tr>
</thead>
</table>
| 3     | - Introduce concept of retroreflective garments to ministries of health and the World Health Organization to create national road safety media campaigns featuring retroreflective garments  
      - Identify new tools to support the development of strong road safety mass media campaigns in country, e.g. “Visible Women” reflective stickers that truck drivers, shops, taxi drivers could display to show their support for the mission behind retroreflective garments  
      - Gather prototyping materials for garments  
      - Order “Visible Women” stickers |
| 4     | - Host user-centered design workshops with pilot participants to co-design prototypes  
      - Build prototypes  
      - Confirm cost points for | Month 4 - 5 |
<table>
<thead>
<tr>
<th>Month</th>
<th>Activities</th>
</tr>
</thead>
</table>
| 5     | - Women wear and test prototypes and gather user feedback  
       - Develop materials for the national road safety media campaigns featuring retroreflective garments and involve government and local stakeholders  
       - Adjust (if needed) the prototype development based on the needs expressed in the design workshops  
       - Identify local businesses and local garment manufacturers for sourcing affordable materials and production orders in neighboring regions |
| 6     | - Host second round of user-centered design workshops with pilot participants to co-design prototypes  
       - Build additional prototypes (if needed)  
       - Partner with local garment manufacturer(s) to build limited production order based on working prototypes and adjust cost points if needed  
       - Post flyers and awareness |

- different types of context-specific garments
- Create a bulletin board in the workshop center and in a couple of places in the community about the retroreflective garments campaign
- Distribute “Visible Women” stickers and campaign materials to workshop participants and target communities
| 7 | Monitors who purchases reflective garments and how they heard about the idea (ongoing) and track KPIs  
  - Gather customer feedback (ongoing)  
  - Distribute “Visible Women” stickers and campaign materials to workshop participants and target communities (ongoing) and recruit volunteers for distribution  
  - Prepare materials for the national road safety media campaigns featuring retroreflective garments  
  - Present concept to World Health Organization and UN Women for production in additional countries | Month 9 - 10 |
|---|---|---|
| 8 | Launch additional garment style(s) based on second-round prototypes (if existing) and incorporate customer feedback from first launch into designs  
  - Conduct interviews with members of the community and cultural leaders to see what they think about the reflective garments and plans for the national media campaign | Month 11 |
| 9 | Launch road safety media campaign(s) with government and local stakeholders  
  - Monitor perceptions of | Month 12 |
<table>
<thead>
<tr>
<th></th>
<th>media campaign(s) and collect community feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Conduct first-year analysis and report of product development and launch based on metrics and KPIs, and record lessons learned for bringing product to other countries and communities</td>
</tr>
<tr>
<td></td>
<td>• Develop product roadmap that is scalable across other countries / markets</td>
</tr>
<tr>
<td>10</td>
<td>• Monitor who purchases reflective garments and how they heard about the idea (ongoing) and track KPIs</td>
</tr>
<tr>
<td></td>
<td>• Gather customer feedback (ongoing)</td>
</tr>
<tr>
<td></td>
<td>• Distribute “Visible Women” stickers and campaign materials to workshop participants and target communities (ongoing)</td>
</tr>
<tr>
<td></td>
<td>• Develop plans with the World Health Organization and UN Women to produce garments on a larger scale</td>
</tr>
<tr>
<td>11</td>
<td>• Refine garment production and distribution methods based on customer feedback</td>
</tr>
<tr>
<td></td>
<td>• Refine product roadmap and success metrics and KPIs</td>
</tr>
<tr>
<td></td>
<td>• Once demand rises, explore opportunities for larger-scale manufacturing in China or India to reduce the cost of fabrication</td>
</tr>
<tr>
<td></td>
<td>Month 12 – 18 and Ongoing</td>
</tr>
<tr>
<td></td>
<td>End of 18 months</td>
</tr>
</tbody>
</table>