Design Research Seminar
Challenges of packaging design with respect to
people who are visually impaired

Packaging Design and Visual Impairment

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>> Abstract:
From the point of view of packaging design, there is very little we know from literature about how blind people relate with packaging of everyday consumer products in India (Mumbai). As part of a design research project at IDC, we attempt to get answers and insights to how visually impaired people access various products (especially FMCG) on the daily basis. Are there any standards set up the government or the food industry to aid people? If not, how are people currently accessing products? These are some of the key questions to which we tried to look for answers. There are also issues like how visually impaired people currently identify, locate and find information about the products and the shopping stores. In most cases people are accompanied by a family member or a friend but if a person lives alone and is independent for most of the daily chores what are the problems faced by them (if any) and what are the workaround solutions they have devised to tackle these daily problems.

>>Transcripts
https://docs.google.com/spreadsheets/d/1crOfByQ1D9rmrFQPXi3QBx4OWR1A73J7Wv5uZ3Gl8nI/edit#gid=0

>> Introduction

Clear and accessible information on FMCG products is a necessity for all consumers. For someone who is visually impaired, clear and accessible information is critical to ensure that at least the most important information like ingredients and nutritional value and should be made accessible. At present, a lot of the products are largely inaccessible to people who are blind or visually impaired. The vast majority of people who experience blindness or visual impairment may have some vision but find it difficult to independently access the products and the information they need.

>> Context and Background

When we talk about accessible packaging for the visually impaired we have to take in account the experience of how the product was discovered and bought by the consumer too. It is safe to say that to have a 'universal' accessible packaging we need to have certain guidelines from the authority and correct implementations. A lot of countries and various organisations are trying different methods to come up with a system and guidelines which may help to make lives easier.

In 2006 the European Commission (EC) had issued a directive requiring pharmaceutical suppliers to incorporate braille labels and produce information leaflets in alternative formats with the pharmaceuticals. They look into different types of partial and complete visual impairments and addressed the issues by giving out a set of guidelines and as well as instructions for designing the labels and packages.

In 2012 President Obama signed into law the *Food and Drug Administration Safety and Innovation Act*. **As part of this law, Section 904 outlines best practices for making information on prescription drug container labels accessible to people who are blind or visually-impaired or who are elderly. Then in Feb. 2015 the group made a best practice recommendations which consisted of steps to not only make drug and prescriptions accessible to the vision impaired but also help them to bridge the communication gap with their pharmacists.**

Horizons for the Blind is a longstanding Illinois, US based not-for-profit organization that is dedicated to improving quality of life for people who are blind or visually impaired by increasing accessibility to consumer products and services, education, recreation, and the cultural arts.
Their service Directions for me, is a one-stop source for accessible packaging information that provides a consistent, quality source of complete packaging information for everything from preparation instructions to ingredient lists to "nutrition facts" labels in a simple online format for anyone who has trouble reading the small print including people who are blind or visually impaired for many common grocery, health, and beauty products.

Apart from the examples mentioned the design community too attempted at times to tackle the problem and the one thing that was common among all the cases for trying to solve for the medication and pharmaceutical circle. The importance to accessibility and urgency comes to huge importance when it comes to the medical field. A person can seriously harm his/her health just by taking the wrong medication. So it make a lot of sense to start with the pharmaceutical industry in order to make rules and regulations.

In India he Packaging Laws and Regulations for food products are mainly covered under:

- **The Standards of Weights and Measures Act, 1976 and the Standards of Weights and Measures (Packaged Commodities) Rules, 1977 (SWMA).**
- **The Prevention of Food Adulteration Act, 1954 and the Prevention of Food Adulteration Rules, 1955 and its first amendment, 2003 (PFA).**

- **The Fruit Products Order, 1955 (FPO)**
- **The Meat Food Products Order, 1973 (MFPO)**
- **The Edible Oil Packaging Order, 1998**
- **The Agmark Rules.**

But it is sad to say that none of the rules and acts carter to serve for the partially or fully visually impaired population.

>> Objective

From the point of view of packaging design, there is very little we know from literature about how blind people relate with packaging of everyday consumer products in India (Mumbai). As part of a design research project at IDC, we attempt to get answers to the following questions:

1. **How do blind people shop for consumer products, clothes, etc?**
2. **How do they identify, locate and find information about products at the store, and later at home or work?**
3. **How much of their everyday tasks are delegated vs how much are they able to perform independently?**
4. **What are the challenges faced in handling/reading packaging?**
5. **What are the existing methods, technologies that address these problems?**

>> Method:

We seek to conduct structured interviews (in context where possible) with 10 users- 5 male and 5 female, to find answers to these questions. Findings will be reported in the form of a paper / article.
There are two major context from which we try to dig out as many insights. The goal is not to design a solution but to help document all the problems faced (or not) by the visually impaired community and to look at the way how they adapted (or not) to the environment and products in their context.

1. **How does a visually impaired person buy/get access to daily household products?**
2. **What is their interaction from**
   opening up the pack to actually using it?

The interview* session can be started off by asking about how the person uses the (// ///) markings on the Indian currency notes in their daily life.

Some of the questions that may trigger a chain of conversation:
-What monthly household products do you buy yourself.
-Do you know about the nutritional values on the pack of eatables that you consume.
-What is your favourite ready to eat snack and how do you identify the particular type/flavor.
-What are the products that you have a really hard time interacting (unpacking).

*It is best to let the interview flow in an organic way and avoid making it too structured and formal as this would make the person get a little resistive.

>> Findings

Statements from the interviews were analysed and the findings are presented below:

1. **Discovery**

The process of discovery of new products in the market is usually through conversation with the shopkeeper, through friends, or through online advertisements. In one case, a user stated that he finds new/alternate products when the shop runs out of stock of the usual product.

2. **Location**

When users go to super markets, it is usually accompanied by a friend/relative. If they shop alone, it is found that they have a preference for kirana stores, or any over the counter store, where they can speak to a shopkeeper and get the products they need.

Only one user stated that they shop at a supermarket alone. This user takes the help of store staff and asks them to tell him the contents of each aisle, after which he is comfortable walking down the aisles to find the products he wants. He identifies products by their shape, size, texture: felt through the packaging- like murukku, or on the packaging- like Colgate embossed box.

3. **Information Access**

None of the users we spoke to were concerned with nutritional information. About expiry date, one user stated that even though he would like to know the expiry date, he's reluctant to ask the shopkeepers lest he comes across as overly suspicious, or annoys the shopkeeper. For electronics, hardware, etc, user access extensive details, reviews and ratings online before making a purchase decision. Such information is not readily available for everyday groceries.

4. **Handling**

While speaking about handling the product, we covered issues regarding ease of opening, identification, storage, and other functional issues. Users have a clear preference for well packaged products that are easy to use, even if they have to compromise of other requirements. For example, a user prefers milk cartons of brand X because it has a resealable cap. All

other considerations - price (slightly more expensive) or nutrition (such as low fat, slimming, etc) took a backseat, and product choice is based purely on convenience.

Many food packets carry a 'tear here' mark. This is completely missed by blind people unless accompanied by a cut or incision. This cut also makes it physically easy to tear for all users. In take away or home delivered food, it was found that gravy packaging, which is likely to spill, needs to be packed carefully, in a deep container and not in such a way that it might overflow or spill on opening. Distinction between gravy and dry food is also necessary so that they can handle the package appropriately.

5. Other Problems

Commonly confused products due to lack of accessibility considerations:

-Toiletries: toothpaste and shaving cream. Since both have similar form factor. One user learned to distinguish the two (after mixing them up once) by the size of the cap.

-Toothpaste and ointments: A user stated that he learnt to distinguish between the two by the texture of tube material. Toothpaste is usually in a plastic tube, doesn't 'wrinkle' with usage, while a few medical ointment tubes come in metallic tubes which develop folds and edges. If the ointment tube is made of plastic, he said he would place them in different places in order to easily differentiate between them.

- sugar sachets are the same size and texture, just like the different types of teabags kept in pantries at the workplace of one user. He finds it difficult to make tea independently because he mixes them up. One user reported that the coffee machine at his workplaces came with the tag 'accessible' but does not find it accessible as there are no indicators or instructions about refilling milk, water and coffee powder when it gets over.

7. Coping techniques:

Marks- Body wash bottles are all of the same size and shape, whether it's conditioner or shampoo or body wash. A user who is particular about this brand makes scratch marks on the bottles with the help of scissors to distinguish them. The flavour/fragrance of the product also helps in identification.

<u>Medical</u>

By shape- Most pills are easy to distinguish by shape and texture. In case of ayurvedic medicines, the strong smells are useful in distinguishing between tablets.

By packaging- blister packaging and plastic packaging act as identifiers as well. Despite these differences, oftentimes medicines are similar in these respects and can be mixed up.
Other methods: One user has developed a system of using cellophane tape to tell the salt shaker from the pepper shaker.
A younger, college going user needs to take medicines on a daily basis. He keeps different pill in different pockets when he leaves the house in the morning, so he knows which ones to take at different prescribed times.
One user has a helpful medical shop stated that his medical shopkeeper put all his medicines in different sized paper bags/pouches.
In case of clinics where tablets are dispensed by the doctor/nurse, a user requested the doctor to help with tablet identification. The doctor put the medicines by dosage into multiple small pouches- so the user only needed to take the contents of one pouch along with every meal.
<u>Clothes</u>
Clothes are identified by texture, softness, size, etc. In case of T-shirts with an embossed print, the shape of print also helps identify the shirt. Millenial users have a clear preference for neutral colors in T-shirts. Shopping for clothes is almost always with friends/family.
One user organises clothes in his wardrobe himself, and does not permit anybody to touch/change anything. They are organised by type of wear - formal, casual, home wear, etc. Another user stated that his wife takes the laundered (and ironed) clothes and puts them in hangers in sets- a shirt and pants. He trusts his wife to put together colors that go well together.

<u>Summarising findings:</u> There are many aspects of current packaging practices which make products easy to identify and access, but it is only a bare minimum level of usability. There are several challenges as well, with respect to accessing information and safety precautions.
It is observed that good quality of packaging is equated with good quality of product. Tactile cues are used extensively to identify products by touch, but users are not ignorant of visual cues either. Users often ask friends, family, and shopkeepers for visual description of product so that they can refer to the same product later when they are in new places by themselves.
Most of the tactile identification techniques used are limited to type of food, but do not distinguish between brands effectively. Example- Amul, Nestle curd packaging is not very different. For any additional information or clarification, users are highly reliant on companions' and shopkeeper' assistance.

We did not come across any use of image recognition applications for identifying products.

>> Impact

The findings of this study provide clarity about the practical needs of people with visual impairment when it comes to packaging. This understanding can be the basis for formulating guidelines and mandatory requirements for all FMCG products.

Currently, packaging for most products is commercially driven, where any design decision with a cost implication is scrutinised for return on investments. It may or may not be possible to economically justify any additional cost in making product packaging accessible. This is where government regulations can help securing access to information and product safety for people with vision loss.

Over and above regulations, this information will also inform the design process and enable designers to further raise the standards in packaging.

>> Conclusions

It is found that people with visual impairment have their own systems of identification and operation with regards to packaging of consumer products. Most of these behaviours are adaptive in nature and are hacks or workarounds, rather than designed solutions. It is also found that many lifestyle habits are shaped by the ease of use or difficulty of use of different products. Access to information is not found to be a high priority in young, healthy individuals, but is found to be a hindrance to health-conscious people. The findings from this study can be used as a starting point in universal packaging design and in formulating packaging guidelines and regulations.