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Post Corona packaging for Health and Safety Kits

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The Abstract

We began this project to seek creative, innovative, out-of-the-box solutions for a Post-Covid'19 environment and attempt to turn this opportunity into a business enterprise. With this, as the first design brief, the team set out to figure out problems within the sphere, and possible interventions.

The Process

Mind Mapping - We began our process by chalking out a mind map to explore various different facets of the problem, and exploring different fields from education to the increase in domestic violence, to the lack of awareness of the severity of the disease.

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Affinity mapping - We then began to group similar problems together to come up with overarching idea clusters, and then ideating further in detail for each to come up with design interventions.
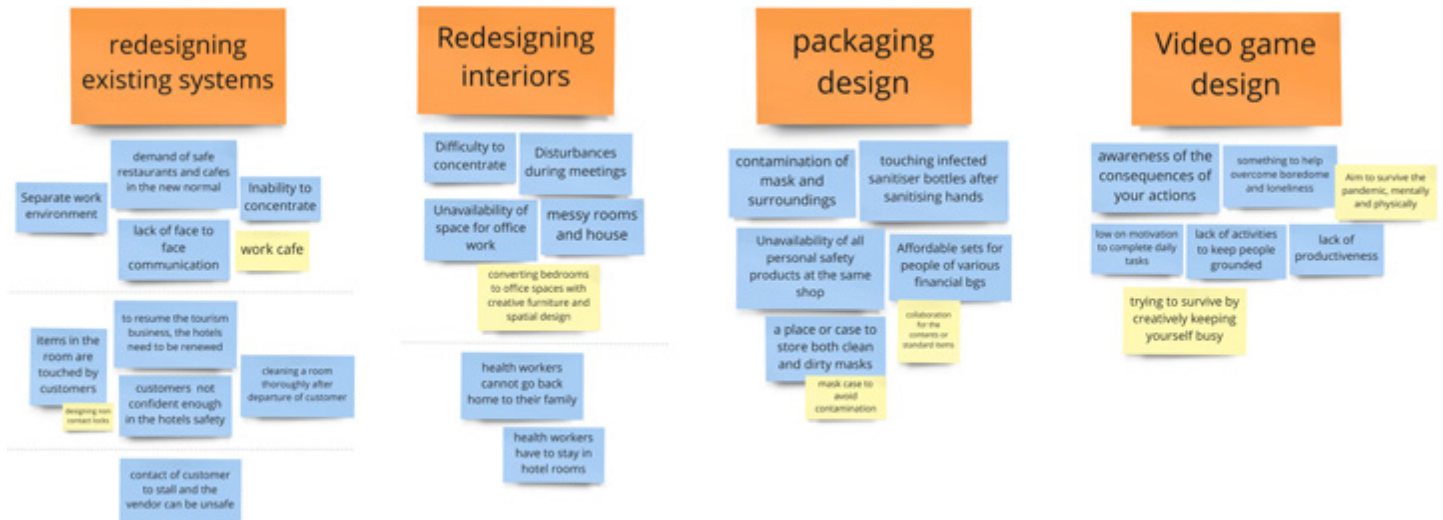
Redesigning existing systems
- A place to work and eat outside your home
- Redesigning hotel rooms entirely with new products for post covid
- To resume the tourism business, the hotels need to be renewed to suit the new normal
- A safe hotel that customers trust enough to return to
- A hygienic food stall

Redesigning interiors
- Converting a bedroom space into an office space whenever needed
- A living space for health workers working in corona treatment facilities

Video game
- Targeting loneliness, isolation and normalising the situation to survive easily
- Aim to survive the pandemic, mentally and physically
- Experimenting with Multiplayer modes
- Various tasks assigned daily, only limited could be choosen to be done per day. Each choice has a ripple effect on the future narrative of the game.
- Eg. Ignore mom's call for too long, and she would announce a funeral, considering you to be dead

Packaging design
- Solving the issue of carrying around sanitisers more easily
- Finding a way to get all products of protection in one place to provide to workers
- Increasing trust and perception of safety in organisations
- Improve storage and safety of masks

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Moving ahead

After weighing the pros and cons, where we allotted points to each idea with reference to our skillset, business feasibility, access to data, uniqueness and project scope, we decided to move ahead with packaging design. The following points were the major issues we were looking at in this idea:

- Protecting yourself does not only limit to wearing a mask in public, especially in close quarters. With people unaware of what exists in the market they are not able to protect themselves to the best of their abilities. Often while buying a mask, people do not think of looking for other products that might also help.
- There is rampant unawareness surrounding the disease and how important these products are, how they help and most importantly, how and why you should use them
- Then the issue of people returning to workspaces, how can organisations make their employees follow guidelines of safety around the office or factory
- Each of these products also tend to have flaws that can be improved on, for instance:
  Where do I place my dirty mask when I take it off in the house or in public (restaurants, cars, etc)
  Where do I store the clean masks, how do I keep myself from forgetting to carry my sanitiser, spray and gloves? How do I take off my gloves without infecting my hands? How do I use the sanitiser without touching the sanitiser, where can I store all such products together?, etc.
- And lastly as people have started buying bulk people often find themselves having to run to many different stores to collect all the protective gear (mask, gloves, sanitiser, etc)

From a business perspective, we chose to target offices and industries, who are opening up operations, as our bulk buyers, who'd distribute those kits to their employees to increase awareness and safety, rather than a direct consumer based market, which is already populated with various such products, and people would be reluctant to buy an antire kit, if they already have even one of the listed items

Research and Insights

We began to look into various different protective equipment, with these major aspects in mind

- Uses of the product
- Timeline of the product
- Guidelines provided by the government
- Market research
- Types that exist in the market
- Cost of each type
- Issues found

PPE Kits - Depending upon the nature of hazard, the PPE kits available in the market are broadly divided into the following two categories:
- Non-respiratory: those used for protection against injury from outside the body, i.e. for protecting the head, eye, face, hand, arm, foot, leg and other body parts
- Respiratory: those used for protection from harm due to inhalation of contaminated air.

Hospitals can charge Rs600 (maximum) per patient per day for PPE kit for stay in a ward, and Rs1,200 per patient per day for stay in ICU, as per the notification.Any charge more than this towards PPE kit need to be justified. However, there have been incidents where patients were charged for six PPE kits a day for a total of 54 over nine days at the rate of Rs1,200 per PPE kit.

Many private hospitals have billed as much as ₹1,500 for a single personal protective equipment (PPE) kit, three times higher than its actual cost. Suppliers of PPE kits in Hyderabad procure it for just ₹350-500.

Eye wear
The Central Scientific Instruments Organisation (CSIO) has developed a technology for precision manufacturing of safety goggles for healthcare professionals involved in treating high viral load patients as in the case of the COVID-19 pandemic.

Many safety goggles or plano (non-prescription) safety glasses fit comfortably over street eyewear and can provide satisfactory protection without impairing the fit of the prescription eyewear.

Goggles are key to a PPE kit, whose components after their use are discarded as bio-medical waste as per the standard operating procedure (SOP). However, the goggles that conform to the prescribed quality specifications of the Bureau of Indian Standards (BIS) can be reused after proper disinfection, the ministry said.

The price range of goggles ranges to Rs.150 to Rs.1000 depending on the quality and brand. However recently, the online websites selling these have significantly lowered the prices.

Masks
Masks are used as a protective barrier between the air you inhale and your nose/mouth. This prevents the droplets you exhale from entering the air around you and prevents the droplets in the air from reaching your nose or mouth. This is important as corona virus travels through this medium.

For this protective purpose, the material amongst other factors of the mask you wear decides the filtration capacity of the mask. In this case, the following are different types that exist in the market:
- Amongst these masks, the N95 un-valved mask (no.14) is said to be the most effective mask in the market, while a bandana and fleece mask come last, they are in fact worse than not wearing a mask at all as they retain moisture which can transmit the coronavirus.
- Surgical masks are second but unfortunately cannot be re-used and hence are a poor option.
- The most recommended reusable mask for us would be a cloth mask

Guidelines provided by the government and WHO:
According to WHO, provided the materials are right cloth masks can be used regularly to efficiently protect you from corona virus. The mask has to be three layered, the inner layer has to be hydrophilic material like cotton, the middle layer has to be a filter or another hydrophilic material and the outer layer should be hydrophobic material which repels water.

Unfortunatley, The market at the moment is flooded with fake masks which makes it difficult to differentiate for customers. Many of the mask also use ear loops when they are in fact not authorized to, only head bands are as ear loops failed fit test, they leave opportunities for air gaps between your face and the masks. Masks are also putting a significant strain on the environment as many people are still using disposable masks rather than reusable ones.

Gloves

Gloves act as a barrier between your hands and any surface you touch, this ideally protects you from the germs on that surface. But it is said to rather give a false sense of security as you end up contaminating yourself while removing the gloves. The gloves are more prominently used in the food and drinks or cleaning industry to protect your hands from chemicals and create perception of safety and hygiene to the customers

Issues regarding the product
- The disposable gloves are discarded by employees almost every few hours, these non-biodegradable gloves cause a huge strain on the environment, for this we have found some biodegradable gloves that perish in 5 years
- They are not reusable, for this also reusable gloves have been found
- They give false sense of security that might convince you into not washing your hands after taking them off, which is potentially risky
- If not taken of carefully, you can contaminate yourself
- The disposable gloves are often flimsy and tear easily

Sanitiser

There are two approved formulae for sanitisers:

The first sanitizer comprises:
ethanol — 80% by volume (vol/vol)
glycerine (also known as glycerol) — 1.45% vol/vol
hydrogen peroxide — 0.125% vol/vol

The second sanitizer comprises:
isopropanol (also known as 2-propanol or isopropyl alcohol) — 75% vol/vol
glycerine — 1.45% vol/vol
hydrogen peroxide — 0.125% vol/vol

Hand sanitizer should be stored out of reach, and sight, of children. It should not be stored above 105°F . FDA is warning consumers and health care providers that the agency has seen a sharp increase in hand sanitizer products that are labeled to contain ethanol (also known as ethyl alcohol) but that have tested positive for methanol or 1-propanol contamination.

Holistic Insights

Looking at the research we gathered we narrowed down our products to what was commonly used. During the research while looking at the areas that demand these products the most we arrived at a conclusion that our target audience should be different and more targeted. We changed our target industry to the hospitality industry as they are in direct contact with a lot of customers each day. We also moved our focus from complete PPE kits to selected items customised for each company. We decided against standardising our kits to customising them for various sectors of the hospitality industry and instead of manufacturing, as a business we decided to focus on designing the packaging; while products like sanitisers can be outsourced.

Redifining The Brief

To Design a COVID protection package/kit for organizations to provide to employees, and customers, majorly targeted towards the hospitality industry, and provide with customization options according to the organization's need and brand.

Second round of research

Since we made a few changes in the overview, we had to improvise our research to include the hospitality industry. We researched into the workings of various aspects of the hospitality industry to understand government guideline, major players, and average customer/employee counts. For our Primary Research, we went to check out the current working conditions of a restraunt, and were able to talk to a chef, and also talked to a business executive from the chemical industry.

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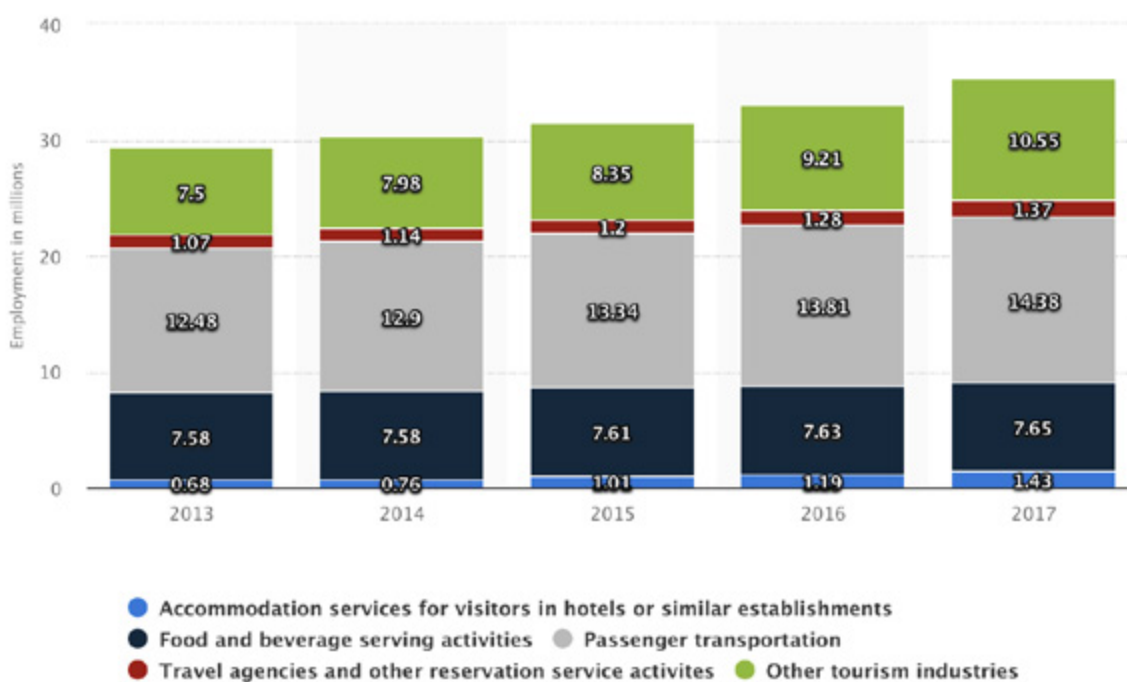
Amusement Parks & Theatres

- Visitors need to maintain a minimum distance of 6-feet from each other.
- Wearing face masks/ face covers is mandatory.
- The park authorities should ensure to disinfect objects susceptible to human touch, like rides, hand rails, chairs, benches, doorknobs, tabletops, etc. with one percent sodium hypochlorite solution on a daily basis. They must carry out the cleaning process before opening the parks, at the end of the day and other appropriate times.
- The authorities must ensure deep cleaning of washrooms, drinking and handwashing stations.
- Swimming pools will continue to remain closed. For water-themed amusement parks and water rides, the staff must ensure regular water filtration and chlorination.
- Theatres will allow only 50 percent seating capacity.
- The parks must not allow the number of visitors at any given time to exceed the permissible limit.
- Every visitor will have to undergo thermal screening and sanitise hands during entry.
- The parks must allow only asymptomatic visitors and employees.
- Seating arrangements must ensure 6-feet distance between chairs, benches, etc.
- The Indian amusement and theme park industry has brought employment for <75,000 people.
- The amusement park industry in India generated about 15 million footfall during last year.
- The SOPs mandated by the Union government include one seat distance in halls, masks at all time, proper ventilation and air conditioner temperature settings at above 23 degrees Celsius.

Hotels
8.78 percent of the total employment in the country is due to the hotel and hospitality industry, this is how many employees we would be catering to simply in one sector. We looked into each of them to see their current functioning during the pandemic, in order to see what their demand of protective equipment kits would be like.

Some clear cut instructions have been provided by the government such as:
- Maintaining social distance
- Install sanitizers at entrances
- Thermal screenings
- Regular disinfecting
- These allowed us to understand the sector better, their constraints and the ways we we can work around them, what the employees and customers need and what equipments will benefit them.

Some overarching insights

- Various sectors of the hospitality industry have slightly different requirements
- The gear provided to employees must be reusable
- The gear provided to visitors must be disposable, biodegradable
- Protective gear must cause least discomfort

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Design opportunities

- Packaging designs for individual products
- Packaging for all the products together
- Spreading awareness through design
- Designing office systems and regulations
- Handling product material
- Customizing products
- Branding the packages
- Communicating the credibility of certain products
- Creating the perception of safety and trust between employees and customers in a workspace

Future steps

- Primary research into the hospitality industry required
- Finalising a specific audience in the hospitality industry
- Finalising the products we will be including in our package according to our final audience and
  them some more detailed primary and secondary research into those products to find out where to
  outsource them from
- Learning how to start a customisation business

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