

**1874**

The first ice-cream  
soda is served



**Start from scratch, taking nothing as given.**

**There is every reason to reinvent the wheel, so long as you come up with a better wheel.**

1876

Root beer is  
produced in quantity  
for public sale

## **INTRODUCTION OF PROJECT**

- Product or object doesn't have to be omnipresent. But it could be ubiquitous.
- Beverages somehow fall in the typology of product we are talking about. Giants like Coke and Pepsi can be seen right from Kalahari desert to Alaskan snow mounts.

As far as the Indian scene goes, the soft drink market is ruled by Pepsi & Coke. Though Coca-Cola remains the largest producer of soft drinks in the world, Pepsi has edged them out in the Indian market.

The fight for supremacy is hot and so the Indian consumers are able to witness various gimmicks and stunts.

Thanks to the aggressive marketing policy of both the companies, means and methods of sale of drinks which are followed in America and Europe are followed in India also, respecting the context, as context never remains constant.



**1881**  
First cola-flavored  
beverage is  
introduced

## **PREMISE OF PROJECT**



Improving the transportation, which has been very cursory.

Transportation of beverages, which is mobiled through handcarts, and reaches people in a better way.

Idea is to break the anarchy which exists in the current situation. Cold drinks have succeeded in generating adequate curiosity and interest among Indian consumers, and you find them in every street corner. But how far the needs and requirements of Indian consumers are taken into account needs in-depth study.

This project is aimed at identifying the drawbacks associated with the existing cart from the view point of the end-user as well as the operators and evolving effective solutions for the betterment of the present design.

Attention will also be given to features which will enable the cart to capture a greater range of consumers other than the existing ones.

1892  
Invention of the  
crown bottle  
cap

## **PROBLEM/OBJECTIVE**

To design a mobile handcart for  
**pepsi.**

- ☐ To create a new, refreshing and highly differentiated cart and environment for Pepsi.
- ☐ A trendy, aspirational and cool place to hang out and chill.
- ☐ Modular, practical and generic, Dynamic...a constantly changing canvas.
- ☐ A break from the generic imagery, and appeal to teenagers and young adults.

**Should promote stress free browsing with no overt pressure  
to purchase**





1899

First patent for a glass blowing machine, used to produce glass bottles

## DESIGN METHODOLOGY



### 1- DATA COLLECTION:

- Technical data and literature, regarding materials, frame, weight and ergonomic data.
- Doing case studies (user survey)
- constructive communication
- interacting with the user and the vendor
- user behaviour study
- discussing the emotional issues and experiential constitution as against the intellectual backgrounds

### 2- DATA ANALYSIS

- Data is processed, analysed, assimilated for identifying the problems and to look for the scope and potential areas for innovations.
- preparing the weightage chart with attributes like cost, aesthetics, manufacturing, interface and material technology

### 3- DEVELOPING THE BRIEF

- Product succinct is based on the information gathered from the previous points.
- listing down the USPs for the product

### 4 - DESIGN MORPHOLOGY

- Developing range of concepts and details
- verbalizing the thoughts and feeling about the project
- abandon the familiar way of looking at the things, transcend the rational frame of mind.

### 5 - CONCEPT EVALUATION:

- comparing all the concepts from all the design aspects.
- requirement list and mock up models

### 6 -FINAL CONCEPT :

- This stage is reached after lots of iteration.
- dimensional drawings are made.
- finer things are detailed out.

### 7 - EXECUTION:

- final model making.



1913

Motor trucks begin to replace horse drawn carriages as delivery vehicles, beginning a new era for the soft drink industry

## HISTORY OF VENDING



Today's soft drinks are the same as the first ones enjoyed in the **1800s**. Soft drink production begins with the creation of a flavored syrup using a closely-guarded company recipe. The syrup is mixed with purified water and then carbonated by adding carbon dioxide gas under pressure. **This carbonation creates the “tingly fizz” that gives soft drinks a refreshing taste.**



A uniquely, In American industry, the manufacturing of soft drinks began in the 1830's. However, the evolution of soft drinks took place over a much longer time period. The forerunners of soft drinks began more than 2,000 years ago when Hippocrates, the “Father of Medicine,” first suspected that mineral waters could be beneficial to our well-being. But Hippocrates did not envision drinking the effervescent mineral waters bubbling from the earth's crust. Instead, the Greeks and Romans used them for bathing and relaxation. More than a thousand years passed before mineral waters made the transition from therapeutic bath to refreshing beverage.

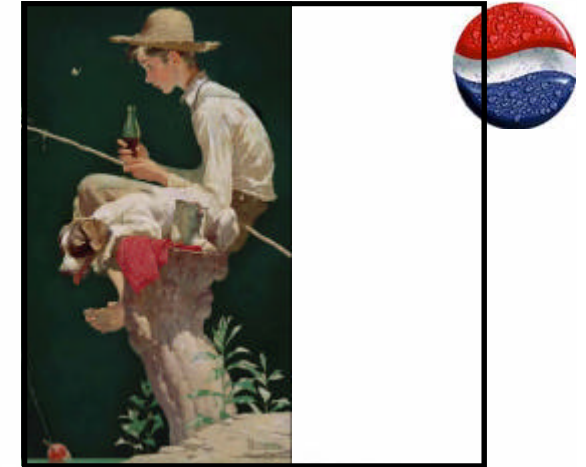


1919

Industry joins to form a national association, "American Bottlers of Carbonated Beverages"



The transition resulted from the discovery of the natural springs in New York. Many legends and myths developed about the earth's mysterious waters, believed to be cures for everything from arthritis to indigestion. The claims attracted physicians and scientists who began studying the tiny bubbles fizzing from these waters



### SOME PAINTINGS ,SHOWING THE PRESENCE OF SOFTDRINKS,DURING THE 19th CENTURY

Scientists eventually proclaimed the air being released as gas carbonium — simple carbon dioxide. Soon afterwards they perfected a way of producing artificially carbonated water in the laboratory. With that development, it was only a matter of time before soft drinks made it into the hands of the American public.

By the 1830's, both artificial and natural mineral waters were considered healthy and refreshing products





1920

U.S. Census reports more than 5,000 bottlers in business

## SOFT DRINK SCENE IN INDIA:

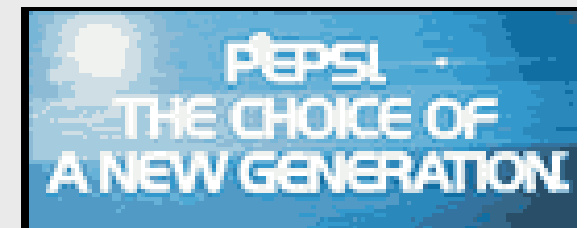
- Major players are Coke and Pepsi.
- A variety of flavours are offered by these brands.

	<u>Coke</u>	<u>Pepsi</u>	<u>Cadbury Schweppes</u>
<u>Cola flavour</u>	Coke, Thums Up	Pepsi	Sport Cola
<u>Orange</u>	Fanta	Mirinda	Crush
<u>Lemon</u>	Sprite, Limca	7-Up, Duke's Lemonade	Canada Dry, Schweppes
<u>Mango</u>	-	Slice	-

For Coca-Cola, Thums Up is doing well in India. Coke shares depend heavily upon Thums Up.

Pepsi is doing well in all the drinks, all over India.

Cadbury drinks are doing average business in India.





Early 1920's.  
Automatic vending  
machines begin to  
dispense sodas in  
cups

## **HOW COLD DRINKS ARE SOLD IN INDIA:**

### **Glass bottles**

- (250ml, 300ml) - Restaurants/Hotels/Canteens
- Retail Shops
- Kiosks

### **Carry home bottles**

- (1 litre, 1.5 litres, 2 litres) - Retail Shops
- Bakeries- general Stores

### **Cans**

- (330 ml) - Restaurants
- Retail shops

- Fountains/Vending Machines** - Restaurants
- Public areas (like theatres)

Small vendors





1923

Introduction of  
six-pack cartons  
called "Hom-  
Paks"

## CASE STUDIES



### MOTHER DAIRY:(new delhi)

- 1) Manoeuvrability, because of one wheel in the front, cart cannot be turned.
- 2) In spite of FRP, weight is still high.
- 3) Canopy is heavy, because of acrylic and L-sections.
- 4) Joinery details are poor.
- 5) Dustbin not integrated in system.
- 6) No locking system for cart.
- 7) Difficult to push of basic form, squarish in shape, and very unidirectional
- 8) Very poorly lit signages.
- 9) No displaying system for products.
- 10) Bad ergonomics, as vendor has to bend for taking ice-cream.
- 11) Drainage problem.
- 12) No provision for person to sit/rest during the day, during non-business hours.
- 13) Inadequate weather protection.
- 14) No proper place for batteries and exposed wiring.



1934

Color labels are  
used to  
merchandise  
products



### KWALITY-WALLS:(delhi)

- 1) High-density plastic used for body.
- 2) Squarish form.
- 3) No sense of orientation.
- 4) Lockability not integrated in design.



- 5) Poor signage quality.
- 6) Display of rates and posters not thought of.
- 7) Inadequate weather protection.
- 8) Ice put in cart twice a day.



1952

First diet soft  
drink introduced



plates showing the overall view



### PEPSI:(ahemadabad)

- 1) Body made of sheet metal.
- 2) Poor detailing.
- 3) Inadequate weather protection.
- 4) Overweight because of body material.
- 5) Tyre repair recurrent problem.
- 6) No proper provision for drainage and washing.
- 7) While taking out chilled soft-drink bottles from chiller box, the operator has to bend and search for the required brand.



- 8) Use of 17-20 kg of ice in a day.
- 9) Storage capacity of 100 bottles.
- 10) No proper bottle opener.



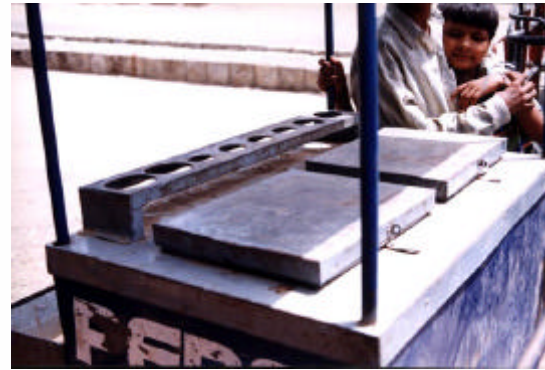


1958  
First aluminum  
cans are intro-  
duced



insulation box shutter

## PEPSI:(ahemadabad)



top area of the cart



wheel on pivot, difficult to move



existing canopy detail



front wheel



1959

First diet cola is introduced



Cart with full display

plate showing the existing stacking



## COKE AHMEDABAD:



front view ,with display

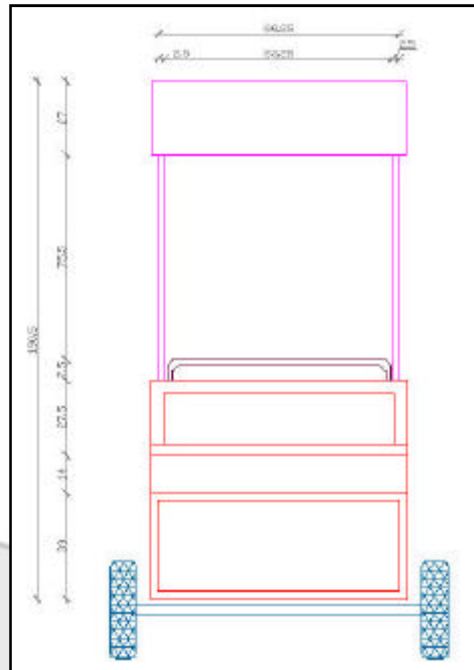
view showing the wheel problem and its orientation.



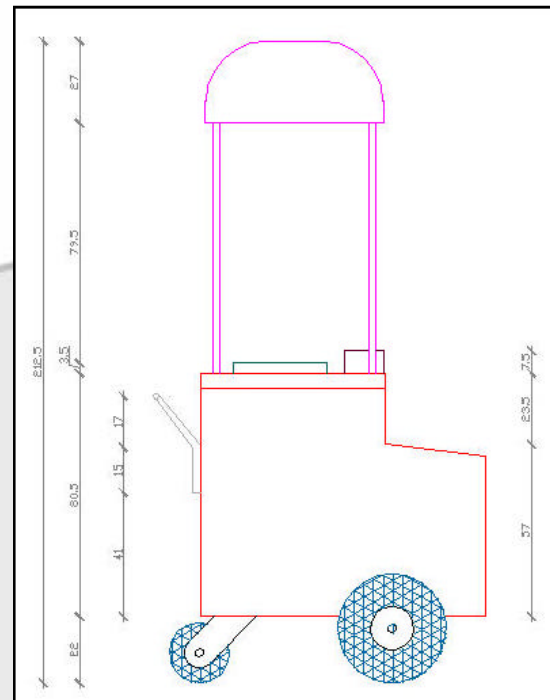
existing rate list,painted on the front surface.



## DIMENSIONAL DRAWINGS OF THE EXISTING DESIGN:

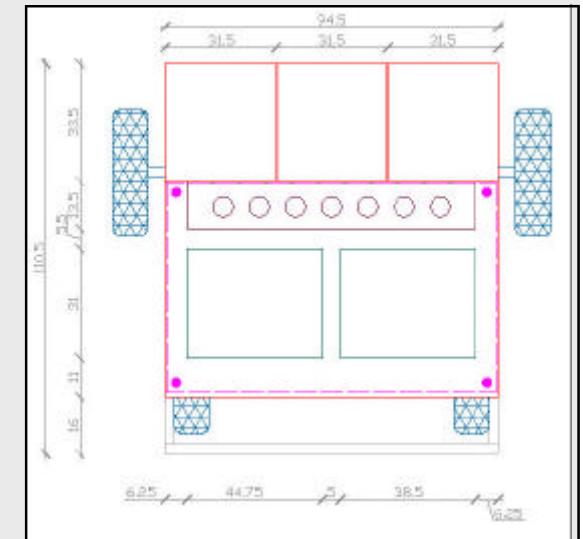


**FRONT ELEVATION**



**SIDE ELEVATION**

**TOP PLAN OF THE CART**





## STUDY OF VARIOUS HAND DRIVEN CARTS:

1962

Easy opening,  
pull-ring tabs  
are first  
available

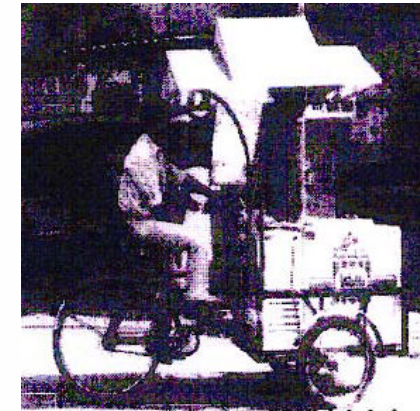




1965

Soft drinks in  
aluminum cans  
appear in  
vending machines

## STUDY OF VARIOUS CYCLE DRIVEN CARTS:



1966  
American  
Bottlers of  
Carbonated  
Beverages  
renamed  
National Soft  
Drink  
Association



Plate showing the municipal truck taking away the cart

## PROBLEMS FACED BY VENDORS:



- ❑ The wrath of municipal authorities when they crack down on them, which results in fines or the forfeiture of goods and the added damage of their wares.
- ❑ The parking for the vendors of the vendors carts and the proper storage of the other goods and paraphernalia, is a matter of prime importance as the vendors livelihood depends on it. The absence of safe and convenient parking spaces and storage facilities is a largely felt need.

## FACILITIES REQUIRED BY VENDORS

- ❑ **Electricity** is the most widely required facility.
- ❑ **Waste collection**, is a rather important facility that needs to be provided to prevent the littering and spoiling of the place.
- ❑ **Shelter**.
- ❑ Protections against the elements of weather are not adequate. Hence, this leads to a great inconvenience in times of extreme rain or heat.
- ❑ The work environment around is not very comfortable and offers little or no scope for relaxation, hence the subject is under great stress and strain both physically and mentally.



1970

Plastic bottles  
are first used for  
soft dri



## SIGNAGE AND ADVERTISEMENTS:

- The signage and advertisement displays lend a flavour and give the stall its image and identity.
- They also lend colour and variety (if properly designed) to urban life.
- The signage is either in the form of painted boards or backlit acrylic boxes.



1973

Creation of the  
PET bottle

## HOW THE PEPSI CART CONCEPT CLICKED

Pepsi is generally available at shops, restaurants etc. from where bottles can be ordered, which could be 250ml, 200ml, 1 litre, 1.5 litres, 2 litres. This kind of availability and cost has restricted users from the low income group from availing these drinks.

So it wasn't a fastidious process for PepsiCo to make a niche in mobile vending. The whole idea of serving Pepsi for low cost as Rs.3.00/glass becomes a star annotation to their collars.

### It became more popular because:

- Drinking Coke/Pepsi seems to be a **prestigious affair**, when it comes to the labour class. Hence, Rs.3.00/glass is something which is not a big deal for them.
- Users have the convenience of walking away with the glass, as they are disposable.
- There is no hassle of returning the container as in the case of glass bottle.
- Availability of drinks in dire situations, in different situations.
- The cart generates wider publicity for the company as it provides easy visibility of company logo and graphics, and definitely has a better reach to people.
- The mobile cart is a convenient arrangement for the city-dweller
- General atmosphere of hurriedness and the need for fast operation almost induces the common man to use these carts in their routines.
- Mobile carts are found to be very suitable for recreational environment.
- Approach is to make good marketing point for Pepsi and also made to understand these shops, considering them as a way of life for the man who owns it as well as for those who use it.
- The kind of impact these carts can create was kept in mind during the evolution of its physical elements.





1974

The stay-on tab  
is invented



## PLACES WHERE THE CART IS LOCATED



Cart is driven by single person throughout the day. He earns the wage of Rs.50/50 rs a day from the company, apart from percentage on bottles.

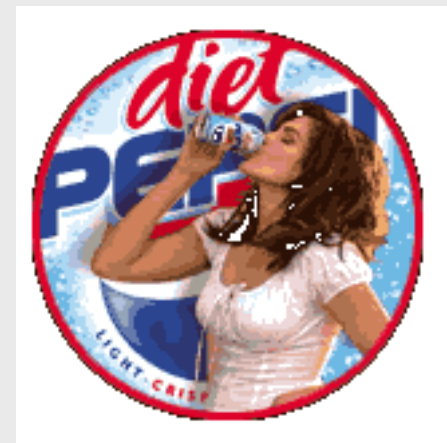
### Most common locations are:

- Streetscape
- College gates
- Fairgrounds, mela
- Beaches
- Railway stations
- Bus stations



## USER GROUP

- People walking in streetscape
- Passengers at railway station, bus station, airport
- Youngsters moving in a group, after their lecture or a day
- People traveling in their own vehicles
- Public events like fun fairs, circuses, melas etc.
- People who do not have alternatives
- Those who want to refresh themselves
- Those who want to shop aimlessly
- People who hunt for novelty/ souvenirs in between major shopping sprees
- The poor, as it suits their economy

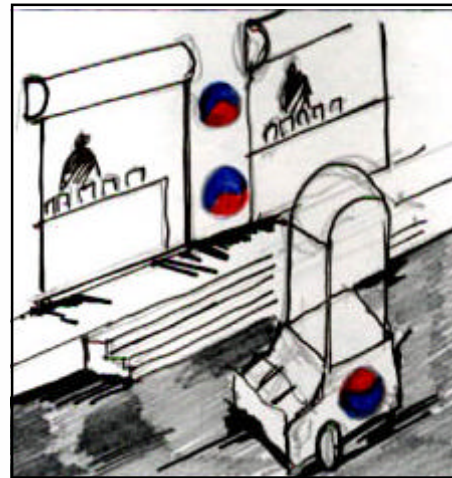


1981  
Talking vending  
machines are  
invented

## ANALYSIS OF PRODUCT USAGE/ACTIVITIES



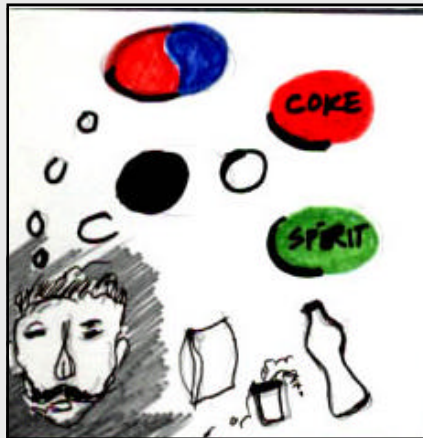
1-Thought occurs of having the softdrinks



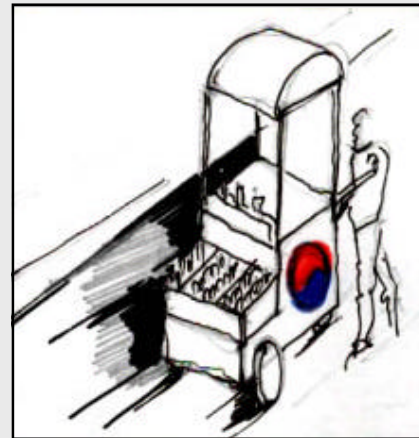
3- Shops or the cart.....



5- starts the day by washing his cart



2- What is cheap



4- plate shows the begining of the vendors day

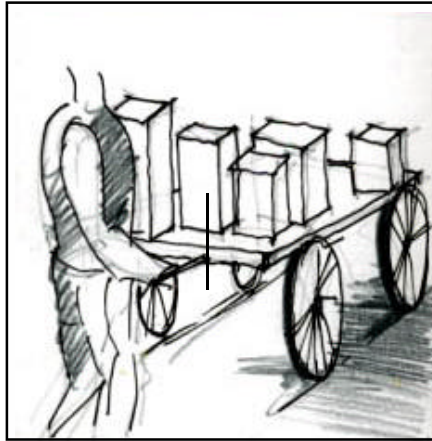


6- used water is splashed/ littered all over

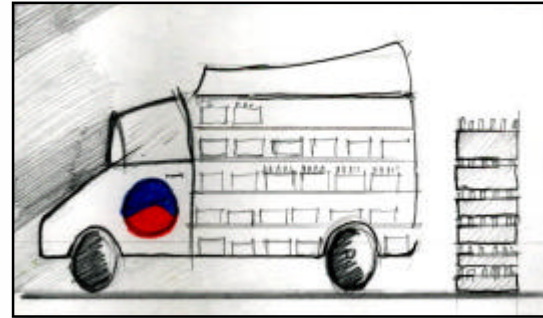


Mid-80's  
Caffeine-free and  
low-sodium soft  
drinks gain  
popularity

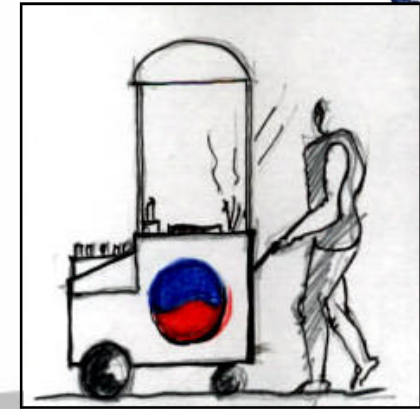
## ANALYSIS OF PRODUCT USAGE/ACTIVITIES



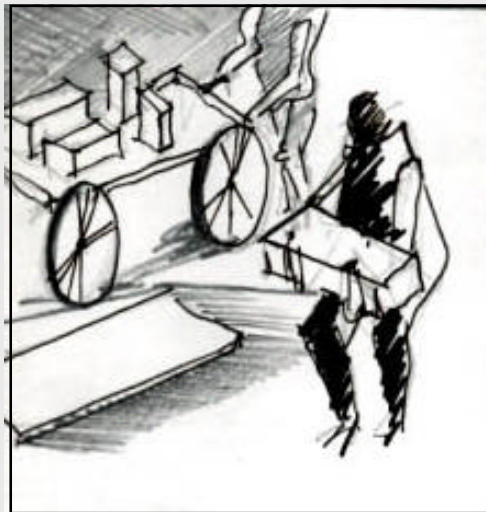
7- ice slab supplier comes in the morning



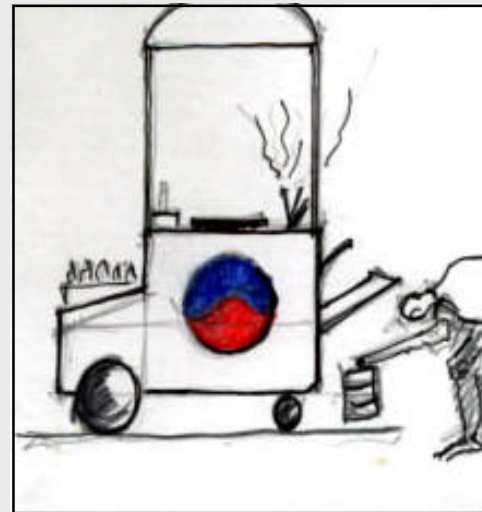
9- pepsi van comes to deliver the day quota of bottles



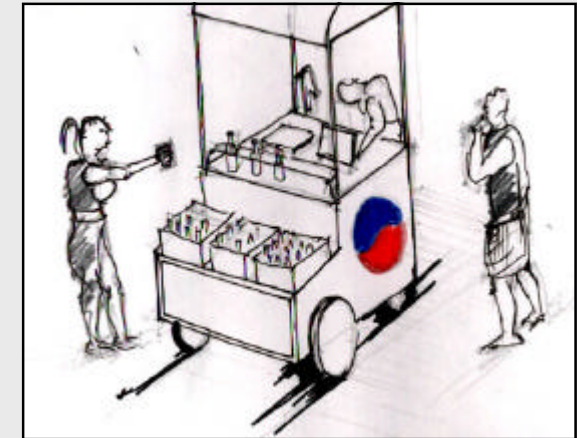
11- moving for the business



8- vendor lifts the slab and put it on the road or ground



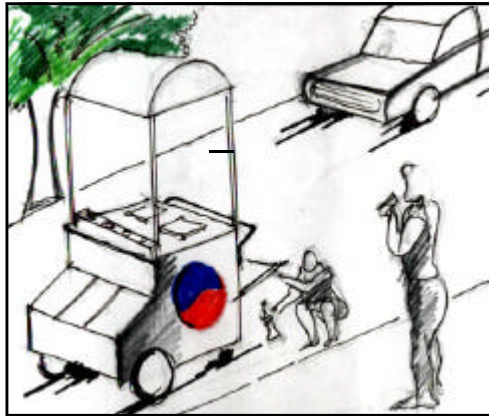
10- vendor arranges the bottles and keeps his lunch box, light the agarbatti...and moves out.



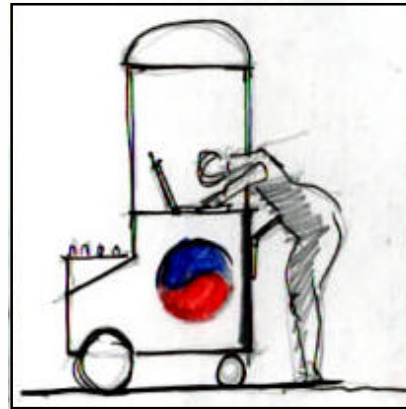
12- doing his business

Early 1990's  
Clear colas  
manufactured.

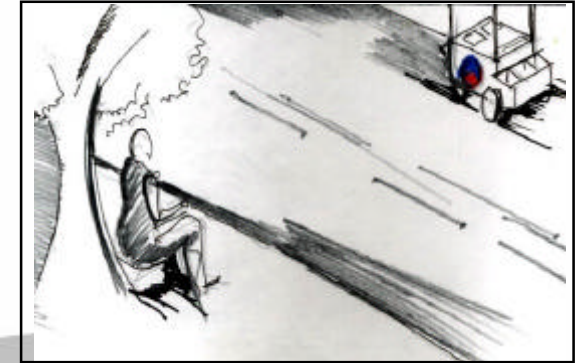
## ANALYSIS OF PRODUCT USAGE/ACTIVITIES



13- keeps the empty bottles in the storage below



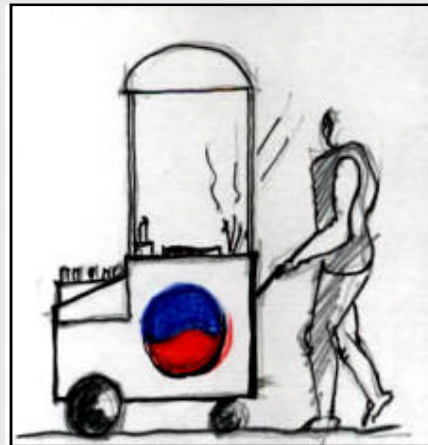
15- moment of stacking



17- time during non business hours, sits below the tree or any shaded area.



14- picks the new bottles from the stored crates, and stack them inside the chilled box



16- moving for business

- Vendor **starts** the day by **7.30 am**

- Vendors moves around the **distance of one and half kilometres** in a day some time he is stable and some time mobile

- vendor is back home by **11.30pm -12.00am**

1991  
Soft drink  
companies begin  
using PET  
bottles

## **COMMODITIES**

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- Cart mainly strives on selling Pepsi, supplied by PepsiCo.



## **USER FEEDBACK:**

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- Novelty approach in cost factor and considering people's background.
- New means of soft drink dispensing
- Factor of convenience
- Disposable glasses are easy to use and dispense

## **NEGATIVE POINTS:**

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- **Fear of adulteration and malpractices**
- **Lack of cleanliness in and around the cart**
- **Flies around the cart**
- **Absolutely no idea of inside happening of cart**
- **Water and other waste is thrown onto the sidewalk or roads, and left as it is when a cart moves out**
- **There are doubts about the civic consciousness and responsibility, as there is no discipline in operation**

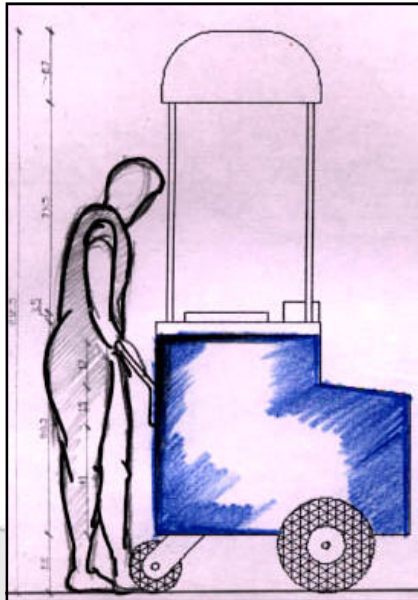


## ERGONOMIC ISSUES:

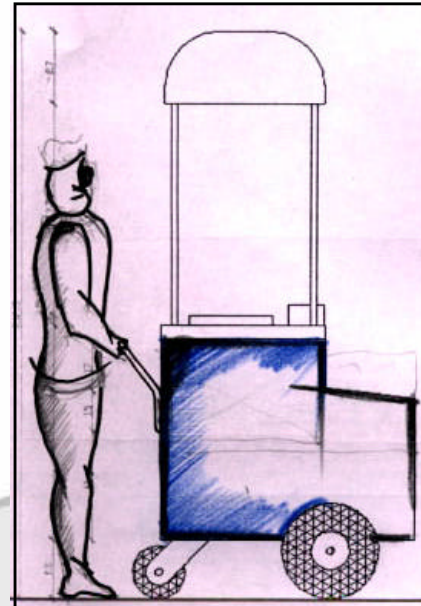


1993

Number of soft drink containers recycled since the first Earth Day in 1970, reaches 384 billion



Rear wheel and handle obstruct the movement



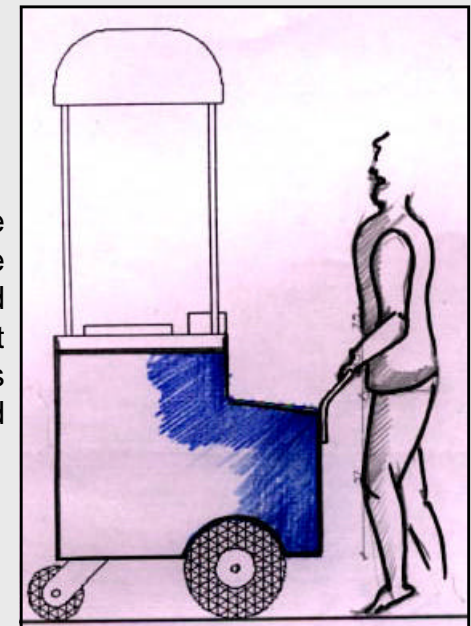
Cart being un-directional, plates shows the existing handle location



Side ways, front wheel comes under way when cart is used from the sides.

Plates shows the **different postures** done by the vendor through out the day.

plates shows the handle on the opposite direction as compared to existing one, not much difference is noticed





## ERGONOMIC ISSUES:

1798

The term “soda water” is first introduced

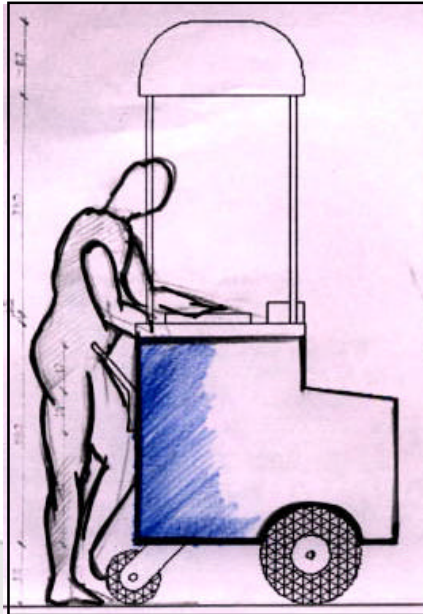
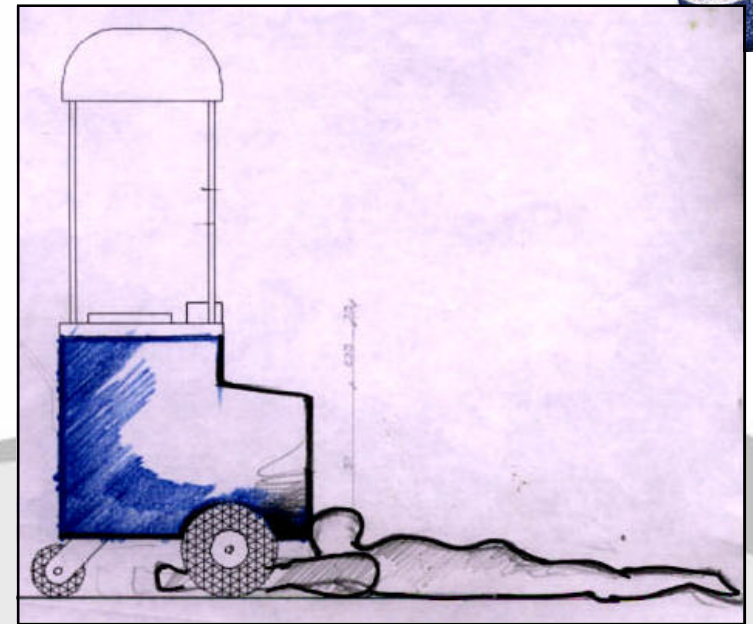


Plate shows the handle which keeps hitting the abdominal area while taking out the bottles



Height of the cart is such that ,if some repairing is needed,then vendor cant see beneath the cart body.

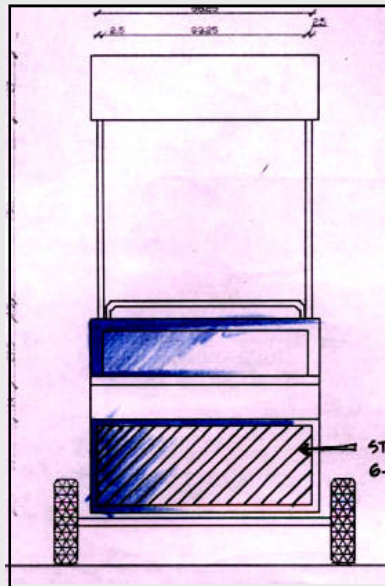
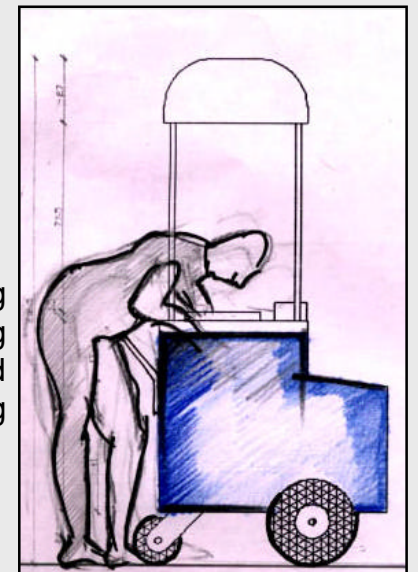


Plate showing the storage area for the extra bottles.

Posture showing the vendor ,using the cart,and doing some thing

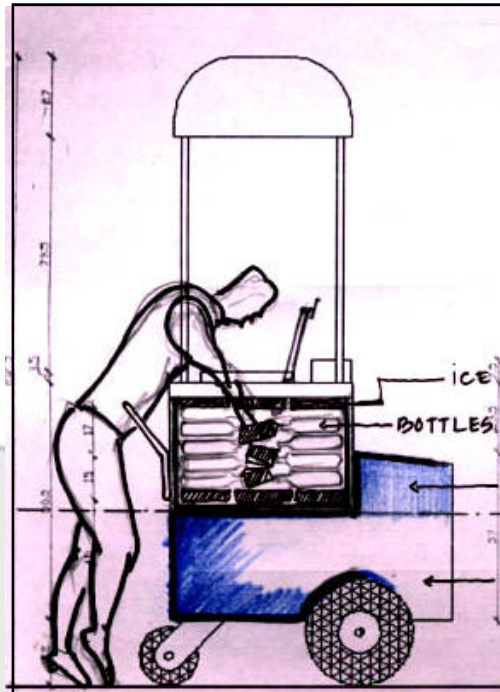




## ERGONOMIC ISSUES:

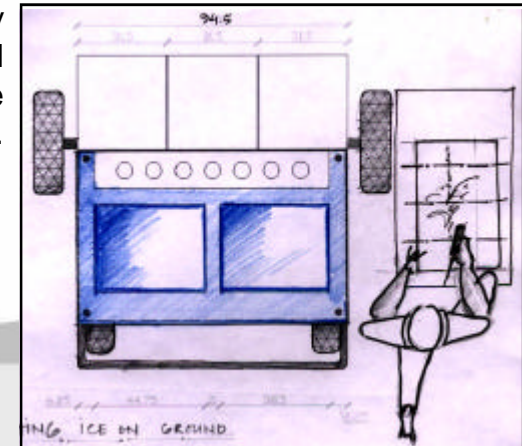
1809

First U.S. patent issued for the manufacture of imitation mineral waters



Vendor laying up the bottles inside the chilled box ,also inserting ice pieces between the bottles

Plan view of the activity ,of breaking the ice, and putting it inside the chilled box.



Vendor is laying the ice pieces inside the box we can observe the handle hitting the abdomen area.



**1815**

The first soda  
“fountain” is  
patented

## HEALTH HAZARDS FACED BY VENDORS:



- ☐ Impotency.
- ☐ Hernia.
- ☐ Weakness/fatigue.
- ☐ Joint pains.
- ☐ Breathlessness/lung problems.
- ☐ Stiffness in legs.
- ☐ Backache.
- ☐ Stomach disorders/lack of appetite.
- ☐ Chest pains.

1835  
Bottled soda  
water first  
produced in U.S.

## VOLUMETRIC STUDIES



Crate Volume	0.015 m <sup>3</sup>
Weight of empty crate	1.068 kg
Weight of 1 filled glass bottle (300 ml)	0.692 kg
Weight of 1 empty glass bottle (300 ml)	0.400 kg
Weight of 1 filled glass bottle (200 ml)	0.524 kg
Weight of 1 empty glass bottle (200 ml)	0.314 kg
Weight of 1 filled glass bottle (1 litre)	1.958 kg
1 crate + 24 bottles (filled)	17.676 kg
1 crate + 24 bottles (empty)	10.668 kg
100 bottles in insulated box without crate (300 ml)	69.2 kg
4 crates with Pepsi bottles (300 ml)	70 kg
18 kg of ice is used in a day	0.018 m <sup>3</sup>
<b>Total volume required for the insulation box</b> <b>(Ice volume + Bottle volume + Circulation)</b>	<b>0.16 m<sup>3</sup></b>

**1850**

Manual hand-foot  
filling, corking  
device is first  
used for bottling  
soda water

## **HYPOTHESIS :**



- **Compactness in design**
- **Structure to be made of very light and easily transportable material**
- **To have parts which can be assembled easily**
- **Closing mechanism simple enough for the cart owner to operate**
- **Counter surface and floors easy to clean**
- **Cart body to be weatherproof and corrosion-resistant.**
- **Activity of the vendor ,needs to be simplified.**
- **Manoeuvrability, should be smooth.**

### **Mechanical efficiency.**

By good quality ball bearing and better wheels.

### **Mechanical stability/strength.**

By use of material with high strength-to-weight ratio for the cart (eg. FRP)



1851

Ginger ale is  
introduced in  
Ireland

## MATERIAL STUDY (EXISTING DESIGN)

- Body is made of sheet metal
- Insulation is of thermocol
- Pneumatic tyres
- Canopy also made of sheet metal

## INFERENCES

### CART BODY

- Stainless steel
- Aluminium sheet
- **FRP**
- Polycarbonate
- ABS
- Polyethylene
- Polyurethane
- **Sheet metal**

### INSULATION

- Eco-batt
- Barrier ultraVIP. Instill intelligent insulation
- Silica aerogel
- PUF
- Cellulose fibre
- Fiberglass
- Mineral wool
- **Urethane**
- Polyiso cyanurate

### TYRES

- Urethane tyres
- Pneumatic tyres
- Pneumatic tyres with urethane
- **Solid rubber puncture-proof**
- Solid and Cushion tyres
- UMHW = ultra high molecular weight polymer (solid tyres)

### CHASSIS

- Steel tube (circular, box)
- Aluminium
- **Metal sections**
- Rubberwood

1861  
Soft drinks  
referred to as  
“pop”

## MATERIAL STUDY :



### WHAT IS FRP?

FRP, fiberglass reinforced plastic, is a composite made from fiberglass reinforcement in a plastic (polymer) matrix. A construction analogy would be the steel reinforcing in a concrete matrix for highways.

By reinforcing the plastic matrix, a wide variety of the physical properties can be designed into the FRP composite. Additionally, the type and configuration of the reinforcement can be selected, along with the type of the plastic and additives within the matrix. These variations allow an incredible range of strength and physical properties to be obtained. **FRP composites can be developed specifically for the performance required versus traditional materials:** wood, metal, ceramics etc.

Engineers can design the FRP composite to provide the needed characteristics, and avoid cost penalties of an over-engineered product.

### CHARACTERISTICS OF FRP MATERIALS

Glass fiber reinforced plastic, FRP, is a complex material composed of multiple layers of glass fibers and resin.

**This structure ensures superior elasticity, durability and heat resistance characteristics**

#### The main characteristics of the FRP material are:

- 1) Superior strength, excellent durability and lightness.
- 2) Good forming capability simplifies the manufacturing process.
- 3) No cracks because of high corrosion resistance.
- 4) The material feels good to the touch.
- 5) Drastic reduction in usage cost because the initial characteristics lasts for a long time

1898

Caleb Bradham, a New Bern, North Carolina pharmacist, renames "Brad's Drink," a carbonated soft drink he's created to serve his drugstore's fountain customers. The new name, Pepsi-Cola, is first used on August 28

## **MATERIAL STUDY :**



### **URETHANE**

Materials vary enormously in their ability to conduct heat. Those that do not conduct it well are called insulators.

R-value is the term used to indicate a material's resistance to heat flow or ability to insulate. The higher the R-value, the better the insulator.

### **SELECTING INSULATING MATERIALS**

Among insulating materials, R-values can vary widely. This is the reason it is important to purchase insulation by R-value, and not by the inch. **R-values of materials can be compared while thicknesses cannot.** Two materials rated R-11 have precisely the same insulating ability, but 2 inches of the same R-11 materials may not.

**Example:** Fiberglass and brick. To achieve R-30 with fiberglass batts requires 8.5 inches, it would be 60 inches of brick to attain the same rating.

### **R-VALUE PER INCH FOR COMMON MATERIALS**

<b><u>Material</u></b>	<b><u>R-value per inch</u></b>
Vermiculite	2.3
Cellulose	3.1-3.7
Glass fiber batts	3.2-3.6
Rock wool batts	3.5
Polystyrene	3.6-5.0
<b>Urethane foam</b>	<b>5.5-6.0</b>

Bradham applies to the U.S. Patent Office for a trademark for the Pepsi-Cola name.

## MATERIAL STUDY :



### Urethane: R-60 per inch

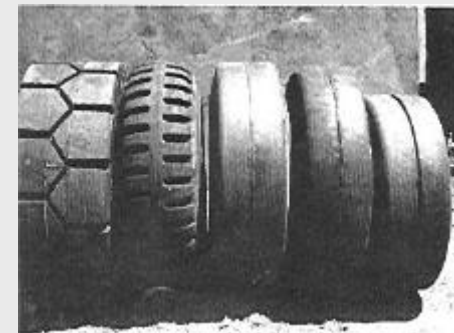
Urethane is a spray-applied foam that is chemically similar to the material used to make rigid isocyanurate. Like the iso-board, it is made with CFC

In addition to its high R-value, urethane has advantages in its air sealing properties and strength. When sprayed into a wall or attic, it forms an extremely effective air seal and adds rigidity to the structure.

### TYRES

#### Pneumatic Tyres

- **Problem:** Punctures, blow-outs, impact fractures.
- **Cause:** Driving over foreign objects, running into obstacles i.e. kerbs, pallets etc.
- **Remedy:** Fit puncture-proof tyres. If not possible, remove or avoid obstacles. Be particularly observant when reversing.
- **Problem:** Tyres run flat.
- **Cause:** Air pressure not checked, puncture, or tyre grossly overloaded.
- **Remedy:** this is the most inexcusable tyre cause of pneumatic tyre failure. Upon loss of air, driver should stop immediately. Fit puncture-proof tyres.
- **Problem:** Uneven wear on one side.
- **Cause:** Steerage linkage, castor, camber and alignment faulty.
- **Remedy:** Inspect tyres regularly for uneven wear.
- **Problem:** Shredding and uneven wear.
- **Cause:** Over- or under- inflation.
- **Remedy:** Check for correct inflation daily or fit puncture-proof
- **Problem:** Impact fractures.
- **Cause:** The driver obviously hits curb or other obstruction at excessive speed.
- **Remedy:** Operator instruction, unlettered floors. Consider replacing with puncture-proof.



1903

In keeping with its origin as a pharmacist's concoction, Bradham's advertising praises his drink as "Exhilarating, invigorating, aids digestion

## MATERIAL STUDY :



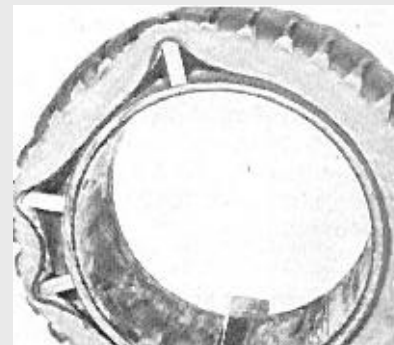
### Pneumatic tyres filled with polyurethane

A conventional tyre is mounted to a wheel in the usual manner and two urethane components are metered and pumped into the casing via the air valve. The tyre is deliberately punctured at the top, and a hyperdermic or pre-set pressure valve is inserted in the hole. When the polyurethane mixture flows from the hyperdermic all the air has been expelled from the tyre. At this point, the hyperdermic is removed, the hole is sealed and pumping continues until the pre-determined equivalent air pressure is reached. The valve is sealed to prevent leakage and the tyre left for approximately 24 hours, by which time the liquid urethane has changed to a resilient solid mass.

Granted, the process eliminates normal punctures and the tyre, once filled, can be used with sustained travel speeds up to 50 km/h and intermittently at speeds up to 80 km/h. it could be suitable for on/off highway use, straddle carriers, side-loaders, earthmoving applications, front-end loaders, and very big forklift trucks.

**Also, as puncture-proof tyres have a considerably superior load carrying capacity, they offer greater stability and safety.**

A point not often considered is that is pneumatic tyres are under-inflated they will absorb considerably more power in order to move. This applies to both electric and internal combustion powered machines. Puncture-proof tyred machines, over a period, show a saving on "fuel" costs due to the fact that power absorption is constant.





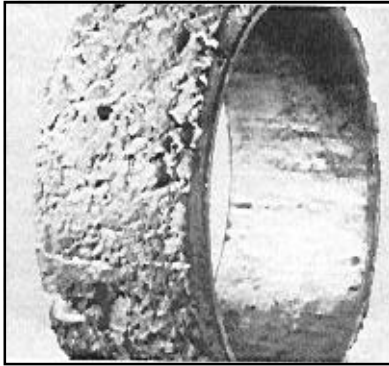


## 1905

A new logo appears, the first change from the original in 1898

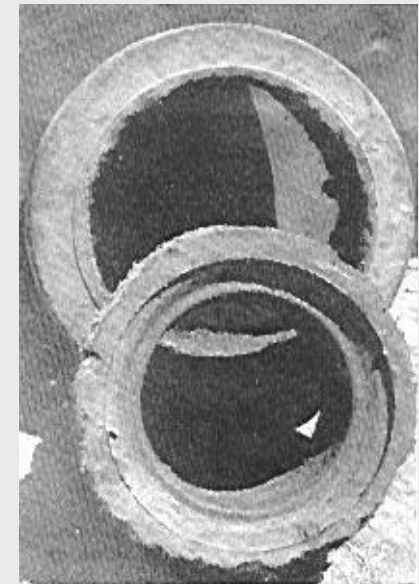
Pepsi-Cola's first bottling franchises are established in Charlotte and Durham, North Carolina.

## MATERIAL STUDY :



### Rules for longer tyre life

- Select the tyre for the job
- Inspect tyres regularly – pneumatics daily, solids once a week
- Avoid excessive heat
- Avoid overloading
- Check wheel and axle alignment
- Avoid rapid acceleration, harsh braking
- Allow sufficient clearance between tyre and vehicle
- When ordering new tyre give the supplier as much information of the operation as possible



1906

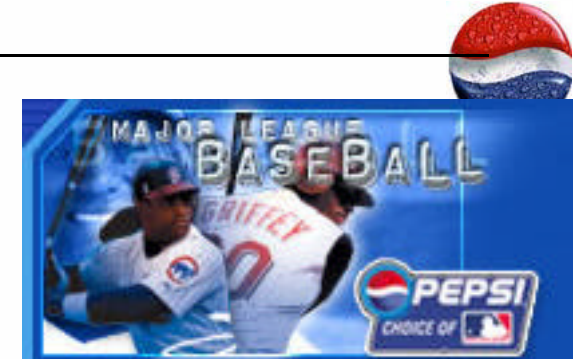
Pepsi gets another logo change, the third in eight years. The modified script logo is created along with the slogan,

“The Original Pure Food Drink.” There are 15 U.S. Pepsi bottling plants. The Pepsi trademark is registered in Canada. Syrup sales rise to 38,605 gallons.

## POSITIONING AND ITS IMPORTANCE :

- Positioning concept has its roots in the **behavioural sciences**, in the theories of perception and learning of **imagery and symbolism**.
- Positioning also has its roots in mathematical psychology. It needs and uses the powerful tool of **perceptual mapping** with the help of techniques that range from multi-dimensional scaling to conjoint analysis. It is very important to understand the interaction between those dimensions of a brand that we can control, design and manipulate, and the consumer perception we seek to create.

Theodore Levitt in Harvard Business Review says, “*It’s important to make tangible the intangible to create impact*”.



- **All brands need positioning.** If a brand is born with an inherent competitive advantage, its positioning will be based on that advantage. Its differentiation will be heightened through other aspects of positioning strategy such as the choice of target segment and the usage occasion for which it is best fitted.

1907

The Pepsi trademark is registered in Mexico

## POSITIONING AND ITS IMPORTANCE :



- **USP is still the best strategy for competitive advantage provided that it is persuasive and self-sustainable.**
- **Position is another name for this unique selling proposition.** We must beg to differ/positioning is much broader and more versatile.
- Technological features can be duplicated; a competing brand cannot enter the perceptual territory that you have occupied if you defend it well.
- Positioning in marketing:
  - Market segmentation
  - Target marketing
  - Product differentiation
  - Consumer benefits
  - Brand image
- Product concepts should emerge from a market positioning analysis. What I have understood is, market analysis can reveal in a vivid manner, the particular soil where a new brand should be planted. It can open a window to advertising appeals that are radically different.
- As Trout & Rios say:

*"To find a unique position, you must ignore conventional logic. Conventional logic says you find your concept inside yourself or inside the product."*
- **Positioning is less what we do to the product and more what we do to the consumers perception of the product.**



*Not true. What you must do is look inside the prospect mind. You won't find an "un-cola inside a 7-Up can. You find it inside the cola drinkers mind."*

1909

Automobile racing pioneer Barney Oldfield becomes Pepsi's first celebrity endorser when he appears in newspaper ads describing Pepsi-Cola as "A bully drink...refreshing, invigorating, a fine bracer for a race." The theme "Delicious and healthful" appears, and will be used intermittently over the next two decades.

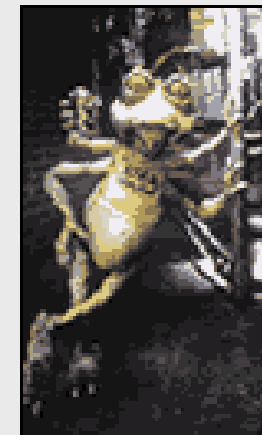
## POSITIONING AND ITS IMPORTANCE :



- All the concepts and strategies involved must start from a sensible and practical definition of position.
- **The fusion of element of product class, product benefits and target consumer creates a brand position and lays down the foundation on which to build all the elements of marketing programme.**



- Product design and features
- Brand name
- Price
- Packaging
- Distribution
- Advertising and sales promotion





1920

Pepsi appeals to consumers with "Drink Pepsi Cola. It will satisfy you."

The price of sugar on the New York Stock Exchange reaches 26 cents per pound. Bradham gambles on the price going higher and buys

large stocks of sugar. By the end of the year, sugar demand slows on the open market and the price drops to a catastrophic low of two cents per pound.

## BRANDING AND ITS IMPORTANCE :



- Think of positioning as an integrating concept. Each element of the marketing mix is crafted to serve the positioning objective and thus becomes consistent, one with another, and together form an integrated strategy.
- Driving force can be expressed as the preferred position in the target consumers mind as reflecting a need or a want, which our brand must fit better than others.

- Market position analysis is the starting point. It goes beyond the conventional "situation analysis" in that it uses the tools of perceptual mapping to derive:
- Knowledge of the relative positions of competing brands in a market structure.
- An insight into vacant position or opportunities for new and repositioned brands.
- An indication of the preferred or ideal positions of various segments.



1923

Pepsi-Cola

Company is

declared bankrupt  
and its assets are  
sold to a North  
Carolina concern,  
Craven Holding  
Corporation, for  
\$30,000.

## BRANDING AND ITS IMPORTANCE :



Such analysis and mapping leads us to alternative positioning hypotheses.

- Brand positioning is the matter of physical reality, of looking at the physical or functional attributes of the product; or it is the consumers' perception of the product, the only reality that counts.
- Battleground for a brand sitting on a shop shelf or in a showroom is the perceptual space which represents the consumers mind, in other words, the eye of the beholder.

**If we have to shape marketing events and not be caught on the wrong foot because we misjudged the consumers' perception, we must search for relationships between our reality and the brand. Physical attributes and the image we present – and the consumers' reality.**



1923

Roy C. Megargel, a Wall Street broker, buys the Pepsi trademark, business and goodwill from Craven Holding Corporation for \$35,000, forming the Pepsi-Cola Corporation

## DESIGN OPPURTUNITIES:



- ❑ Understanding the industry and its requirements.
- ❑ To give a very profound form to the vehicle, and make Pepsi an experience.
- ❑ Design a product, after removing contextual clues and seeing the product, as context will keep changing in case of mobile cart.
- ❑ Interactive spaces with unusual dimension that evokes a positive vibration for the brand.
- ❑ Exploit branding opportunities in terms of interior spaces and signages.
- ❑ Incorporating new concepts of attracting crowds by audio sound, i.e. FM radio channels etc.
- ❑ To make product, which speaks for self, talks about Expression. "Hold me, I am mobile".
- ❑ Space planning on the outer area, for the people to sit or stand and experience the Pepsi.
- ❑ Most of the parts to be collapsible, so that transportation becomes easy.
- ❑ To address Ergonomical issues, for the person riding the cart.
- ❑ To work out carts with dual functioning, i.e revolving and pushing.
- ❑ Working out proper dispensing system.
- ❑ More contemporary elements in terms of style and material use.
- ❑ To use appropriate material, which is light-weight, well insulated and easy to handle.
- ❑ To have hoarding, which is replaced every weekend, giving message to the country.
- ❑ To have a very soothing form, which doesn't appear heavy on the upper area and frontal areas.
- ❑ The idea is to hit a mainstream, which would indirectly influence social perception.

1932

The trademark is registered in Argentina.

## **PROPOSED DESIGN UNIQUE SELLING PREPOSITION (USP) OVER THE EXISTING DESIGN**



- 1 Restrict cart dimension to 1 sq.mts.
- 2 Store 100 bottles in a insulated box.
- 3 Total nine crates of bottles, to be carried.
- 4 Providing seat for vendor to rest, during non business hrs
- 5 Have separate space for advertisement and display.
- 6 Cart to have night/ evening life.(7.00pm – 12.00am)
- 7 Using light weight material for the cart body, to minimize the total weight.
- 8 Creating visibility / propagating market by novelty element like canopy, colour coding etc.
- 9 dispensing of the cold drink in a better way. As compared to existing design.
- 10 Better maneuverability by new tyres , as compared to the existing scenario
- 11 Nothing is exposed i.e used crates , stored crates with bottles.
- 12 Addressing two situation i.e mobile and stable, throughout the day.

**Mobile situation:**

- there will be movement
- cart is reaching people
- cart as a mobile identity for the company.
- It will require elements with eye catching values.

**stable situation:**

- there is no movement.
- people coming to the cart.
- cart to attract crowd, people will Look into the cart and experience .
- need to provide experience ie hygiene ness and serving platform.



## **CONCEPT EVALUATION CRITERIAS:**

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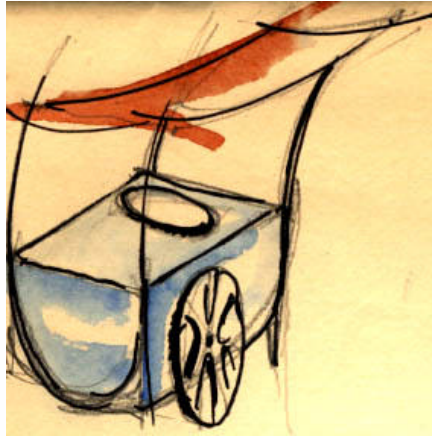


- Coverage for branding.
- Hygienic look.
- Compact in size.
- Easy to ride.
- Aesthetic value.
- Maintenance and easily replaceable parts.
- Storage capacity.
- Economy.
- Technical superiority.

1934

Pepsi begins selling a 12-ounce bottle for five cents, the same price charged by its competitors for six ounces.

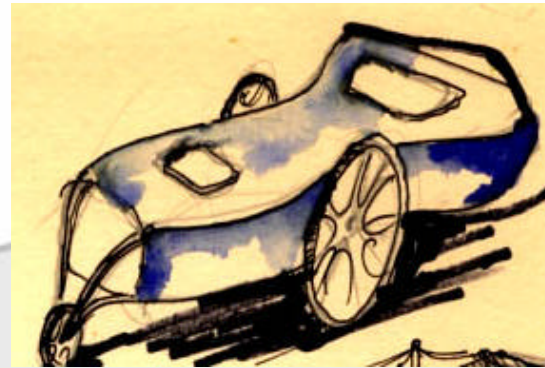
## MORPHOLOGY OF DESIGN:



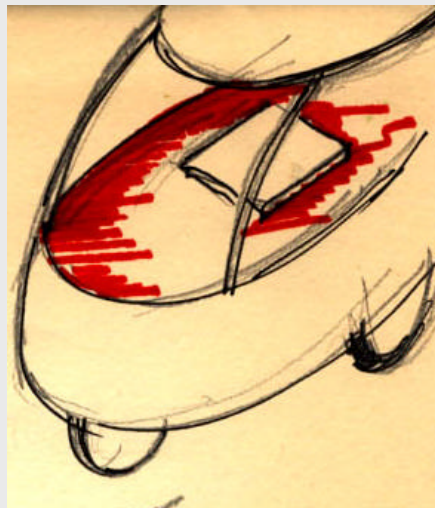
**Leitmotiv** was to design something which has a value addition in terms of physical appearance, but to make an object of desire other than an object of utility.

To build consumer of cultural products, rather than as user.

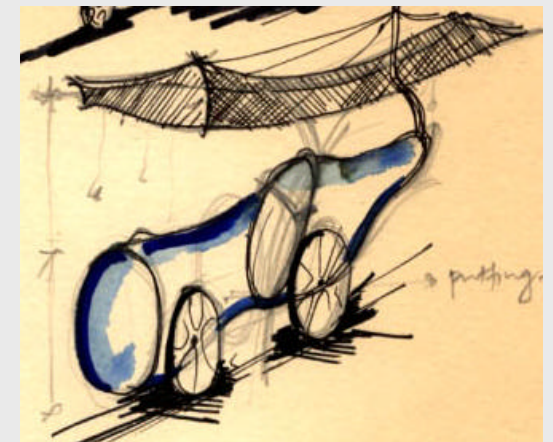
**“design is considered to be an idea, in knowledge, a project, a process, a product or even a way of being”**



**What I firmly believe is “Design is to be found somewhere at the intersection of technology, art and science.”**



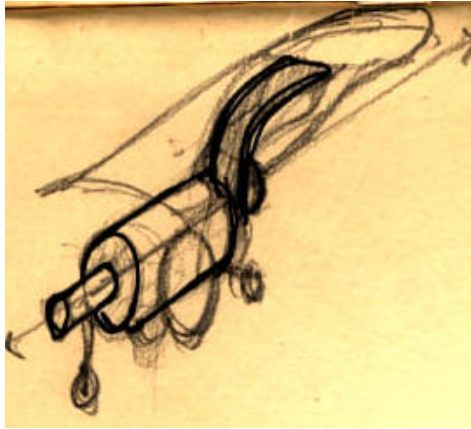
Focus of the project is to raise obscure issues in existing design, and come out with very legitimate solutions.



1939

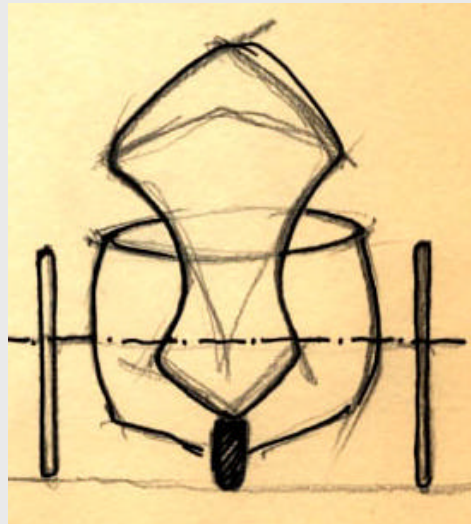
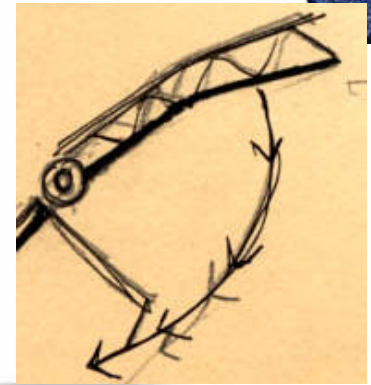
A newspaper cartoon strip, "Pepsi & Pete," introduces the theme "Twice as much for a nickel" to increase consumer awareness of Pepsi's value advantage.

## MORPHOLOGY OF DESIGN:

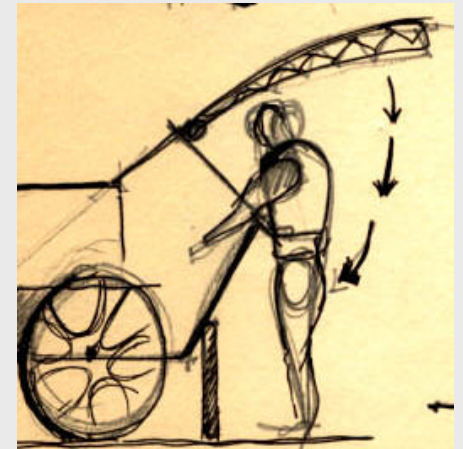


### EPISTOMOLOGY

To be a designer means not only to sensibly manipulate techniques and analyse production processes, but also to accept the concomitant social obligation. Thus quality of design is dependent not alone on function, science and technological processes but also upon social consciousness.



To begin with, basic volumetric studies were conducted which were used in deriving the basic volumes needed for insulation box, storage area, working out basic dimensions.





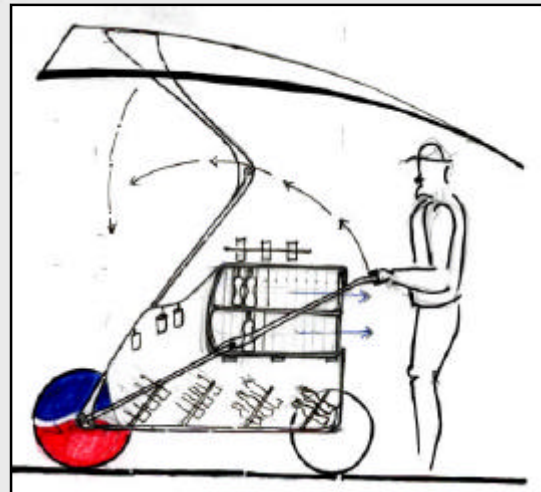
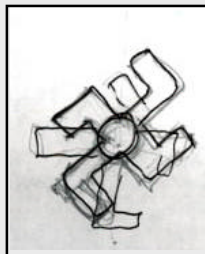
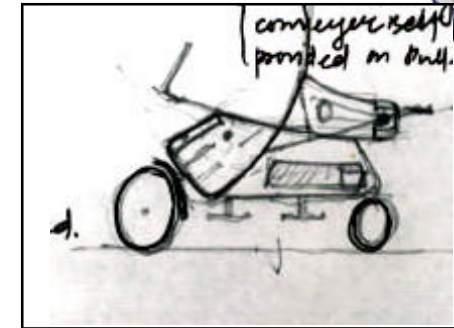
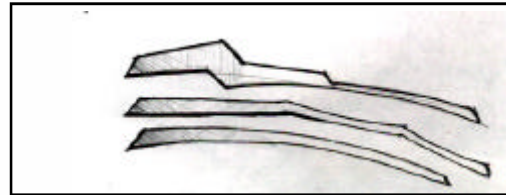
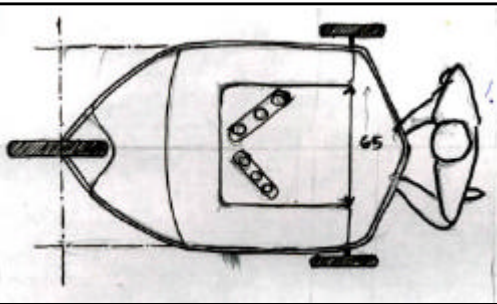
1940

Pepsi makes advertising history with the first advertising jingle ever broadcast nationwide. Pepsi-Cola hits the spot/Twelve full ounces that's a lot/ Twice as much for a nickel, too/Pepsi-Cola is the drink for you." "Nickel, Nickel" will eventually become a hit record and will be translated into 55 languages

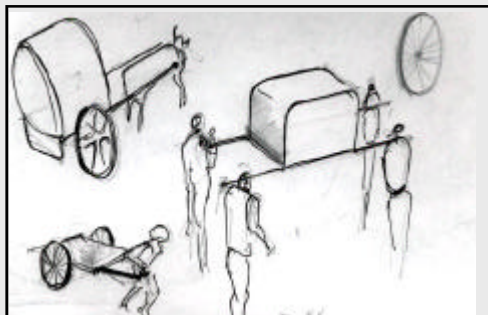
## MORPHOLOGY OF DESIGN:

**Analysis:** Of the existing design, where design postulates were drawn from the data collection studies.

**Synthesis:** Putting together of parts or elements to make up.



**Hypothesis:** What is achieved after these stages.



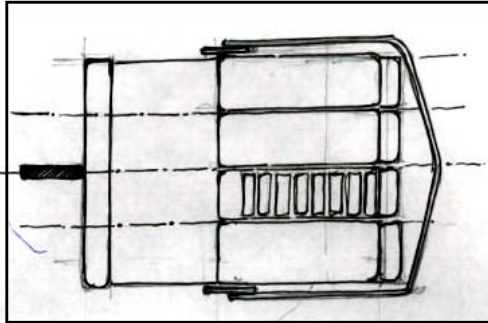
Nothing was **considered as prerogative or imperative**, everything was well considered and thought of, before placing and finalising it in the design.



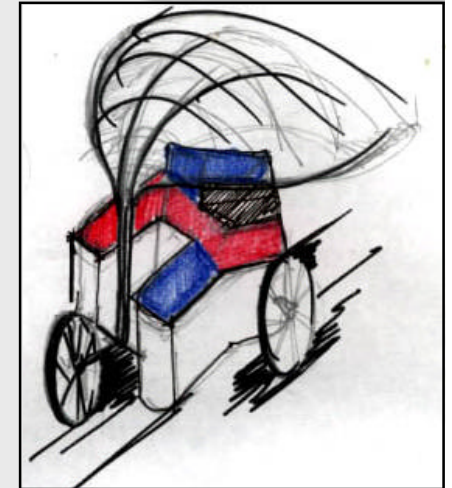
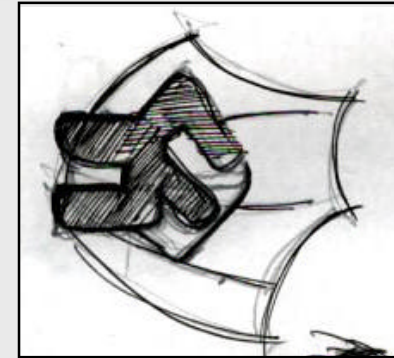
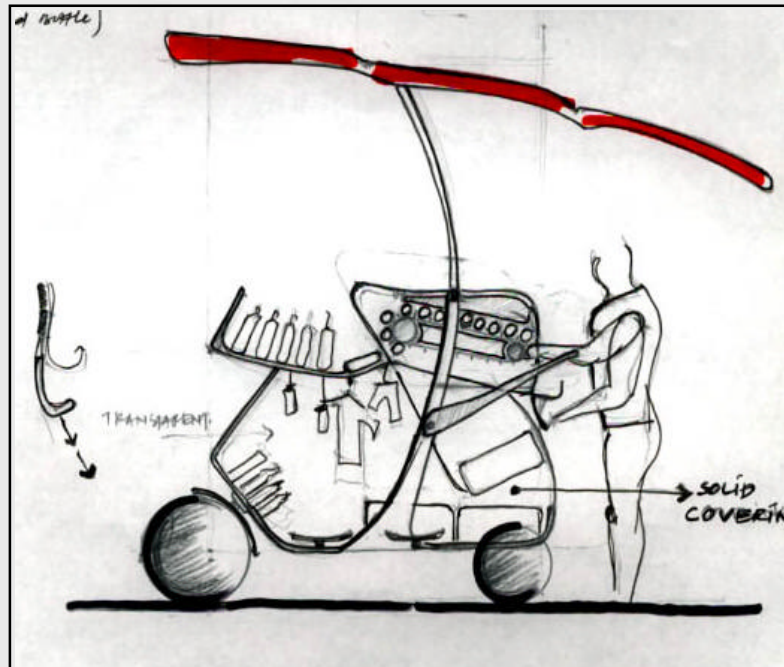
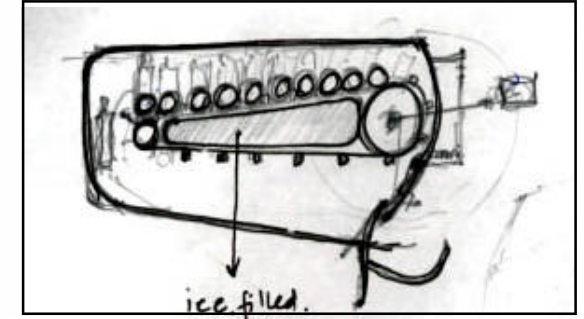
1943

The “Twice as much” advertising strategy expands to include the theme “Bigger drink, better taste.”

## MORPHOLOGY OF DESIGN:



The project is basically very marketing oriented. Strategy to use this project as a signage was a challenge. **Great impetus is required, when one thinks of substituting Tendulkar & Amitabh Bachchan as far as visual communication goes.** These personalities also propagate the Pepsi brand.



So the challenge is to design a product which makes its presence **ubiquitous** in every mind.

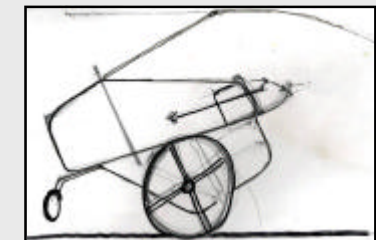
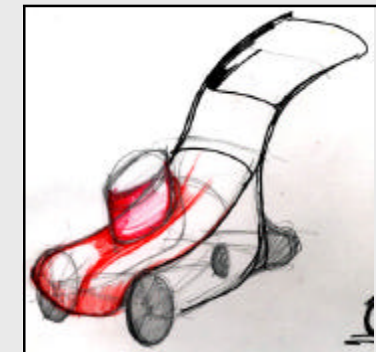
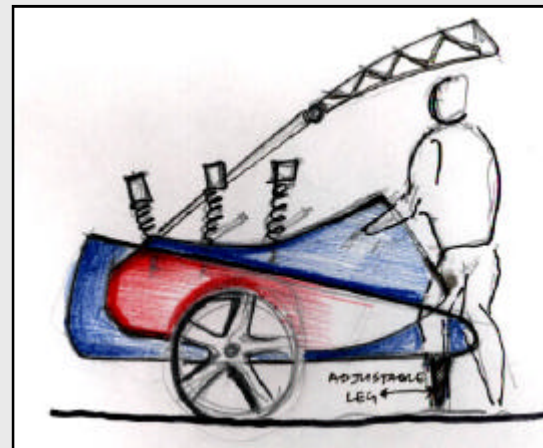
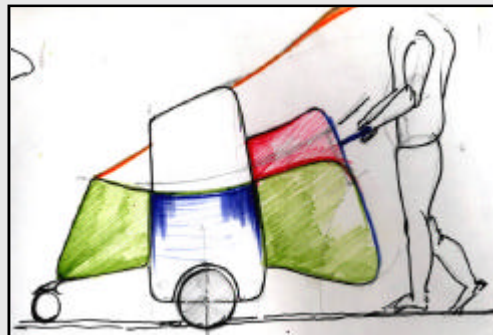
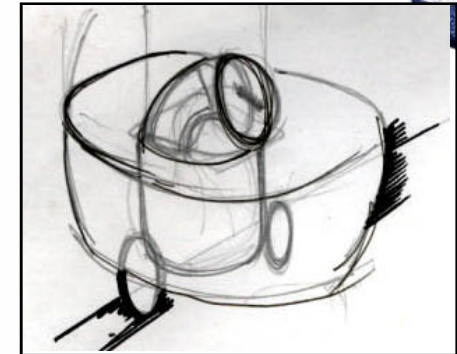


1946

World War II demands that sugar be rationed again. To counter the effects of rationing, Mack purchases a sugar plantation in Cuba, which proves to be a highly profitable venture.

## MORPHOLOGY OF DESIGN:

The function of things is enhanced by our ability to become aware of an object, or to reflect, share and exchange these observations in moments of leisure, at a later time.



## THREE DIMENSIONAL STUDIES:

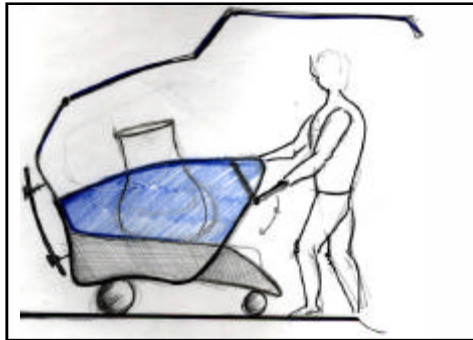




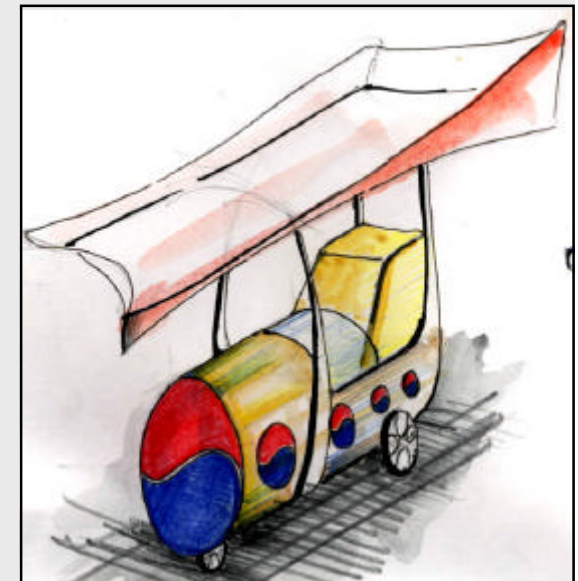
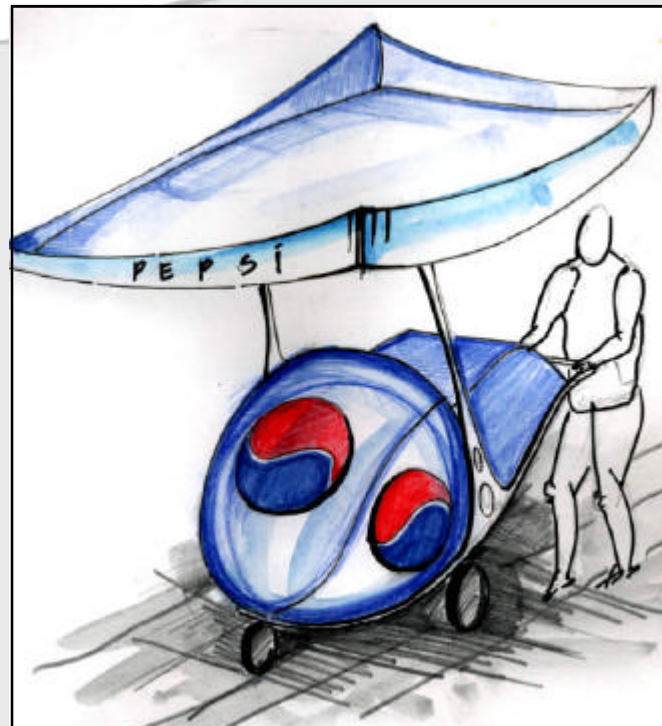
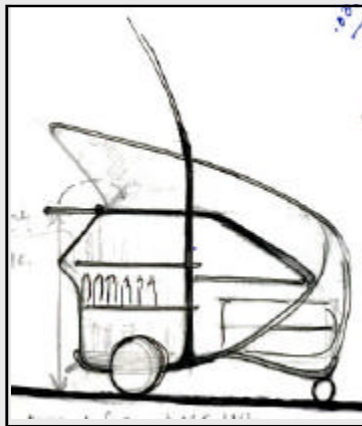
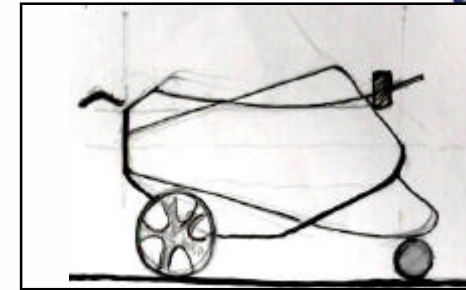
1946

Pepsi's theme line becomes "Bigger Drink, Better Taste."

## MORPHOLOGY OF DESIGN:



The project has a very kaleidoscopic context, hence the design basically has to survive in any context, whether it is a public space, mela or a blank streetscape.



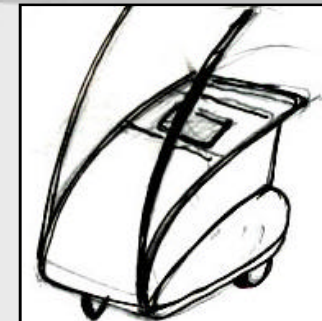
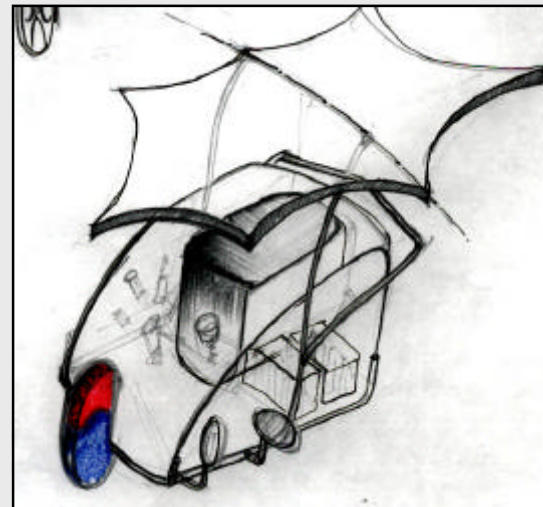
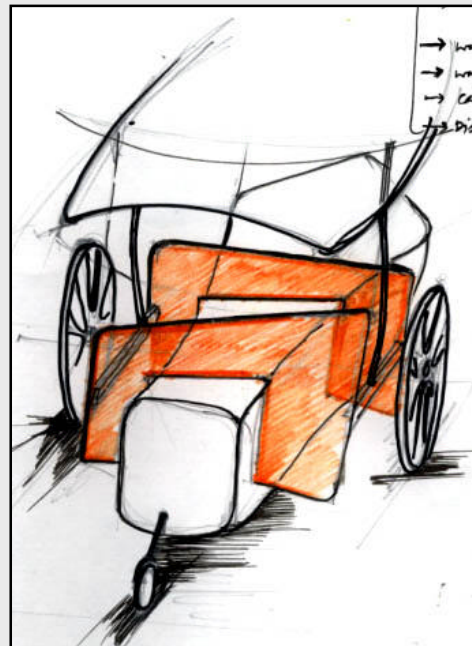
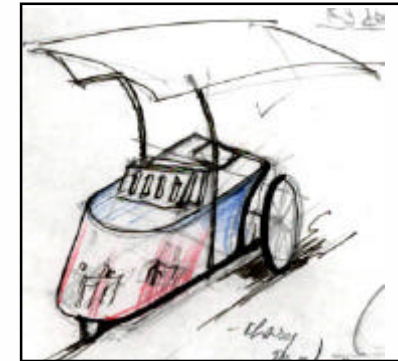
1946

Pepsi-Cola moves  
into Latin America

## MORPHOLOGY OF DESIGN:



Elements which could be termed “novelty elements” were focussed upon, i.e. the cart canopy, some colour coding which helps people identify the cart, even if glimpses are seen. This ultimately works as their brand identity.



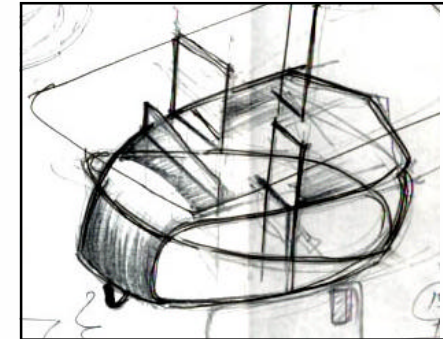
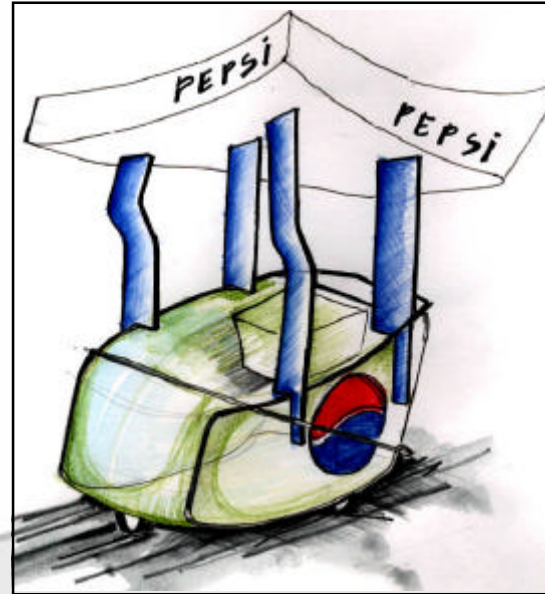
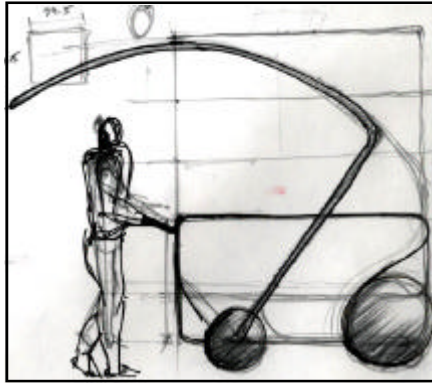
Basic USP's were targeted, to accommodate in the design, as that is the new proposal and points, for PepsiCo, to build upon.



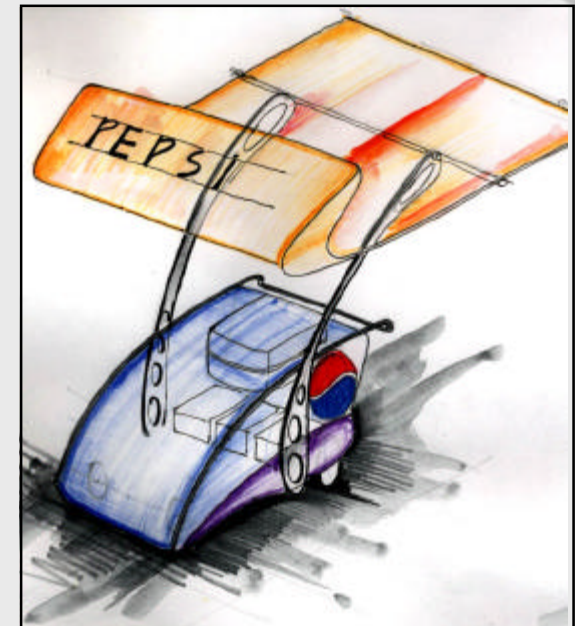
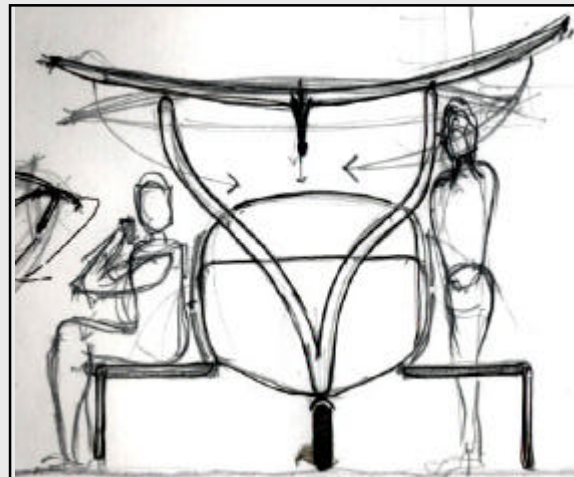
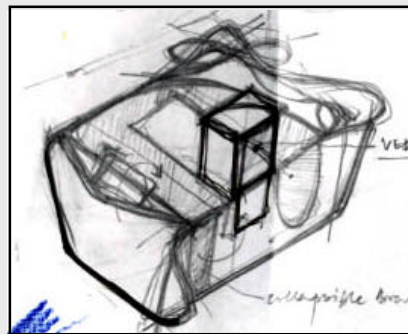
1953

Americans become more weight-conscious, and a new strategy based on Pepsi's lower caloric content is implemented with "The Light Refreshment" campaign.

## MORPHOLOGY OF DESIGN:



Provision for vendor to sit..a thought

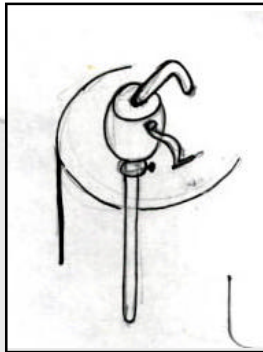
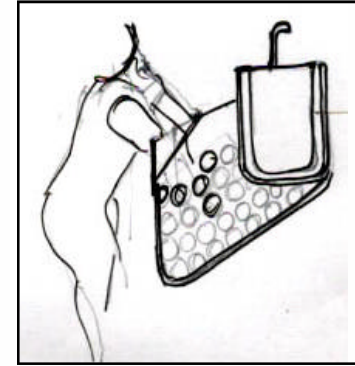
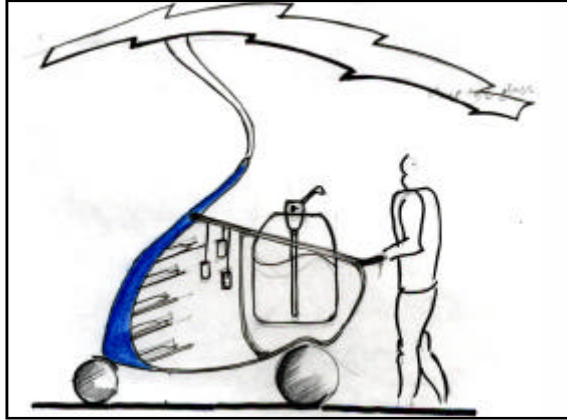
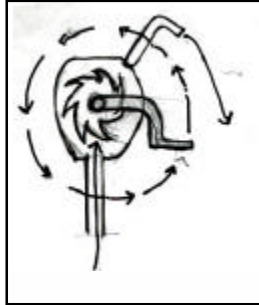




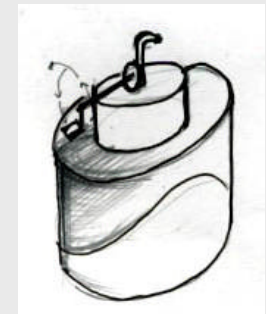
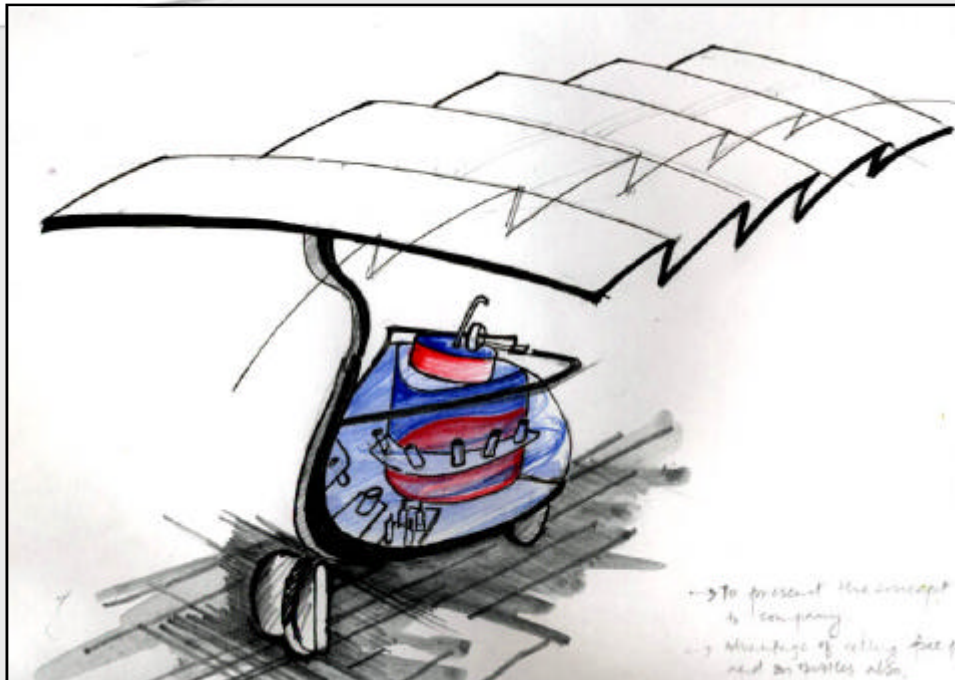
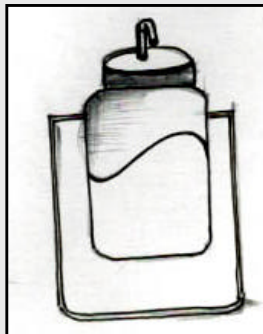
1954

"The Light Refreshment" evolves to incorporate "Refreshing Without Filling."

## MORPHOLOGY OF DESIGN:



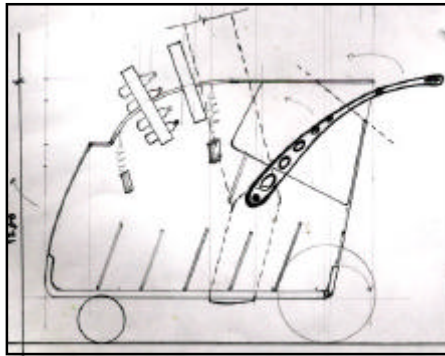
Concept of introducing the big cans, where pepsi can be served through some manual attachment, concept of using the bottles can be avoided.



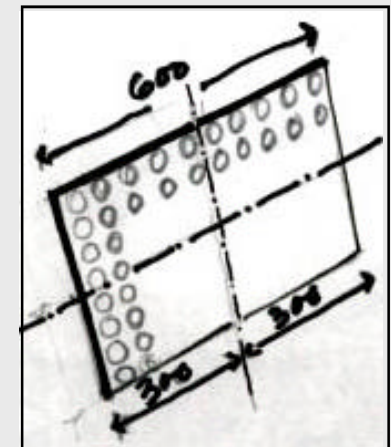
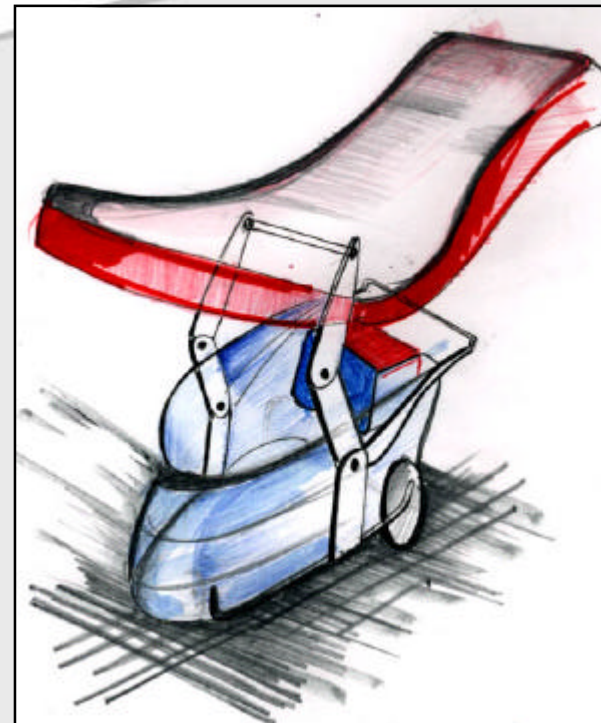
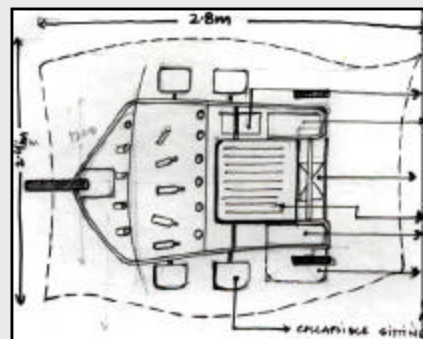
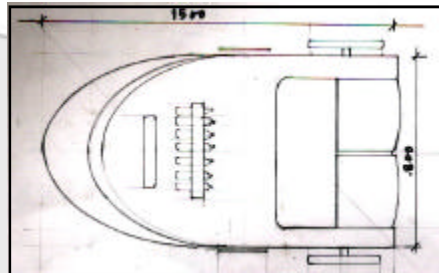
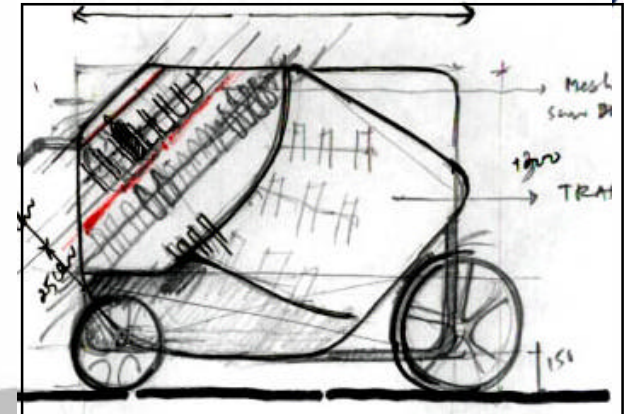
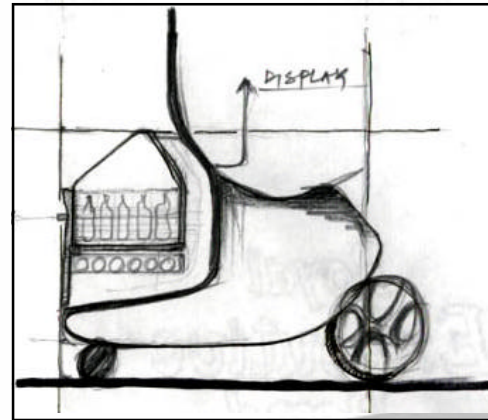
1956

A total of 149 Pepsi-Cola bottling plants operate in 61 countries outside the U.S.

## MORPHOLOGY OF DESIGN:

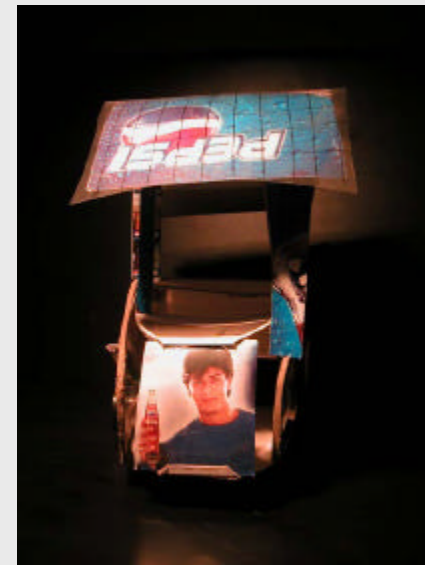


scaled drawing for the proportion understanding.



## THREE DIMENSIONAL STUDIES:

## THREE DIMENSIONAL STUDIES:



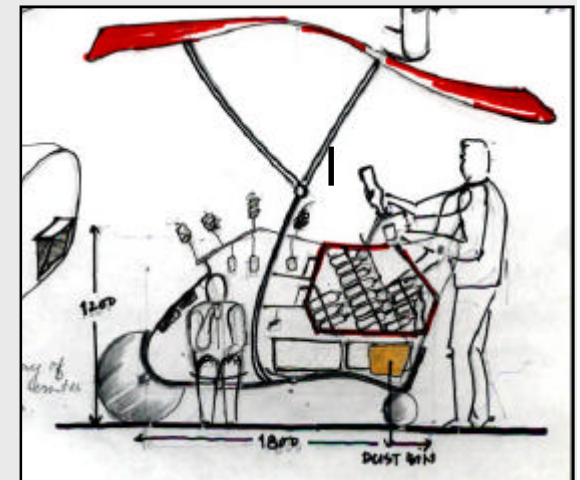
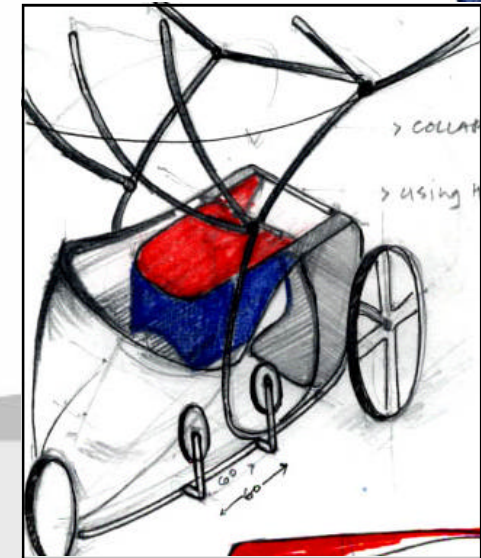
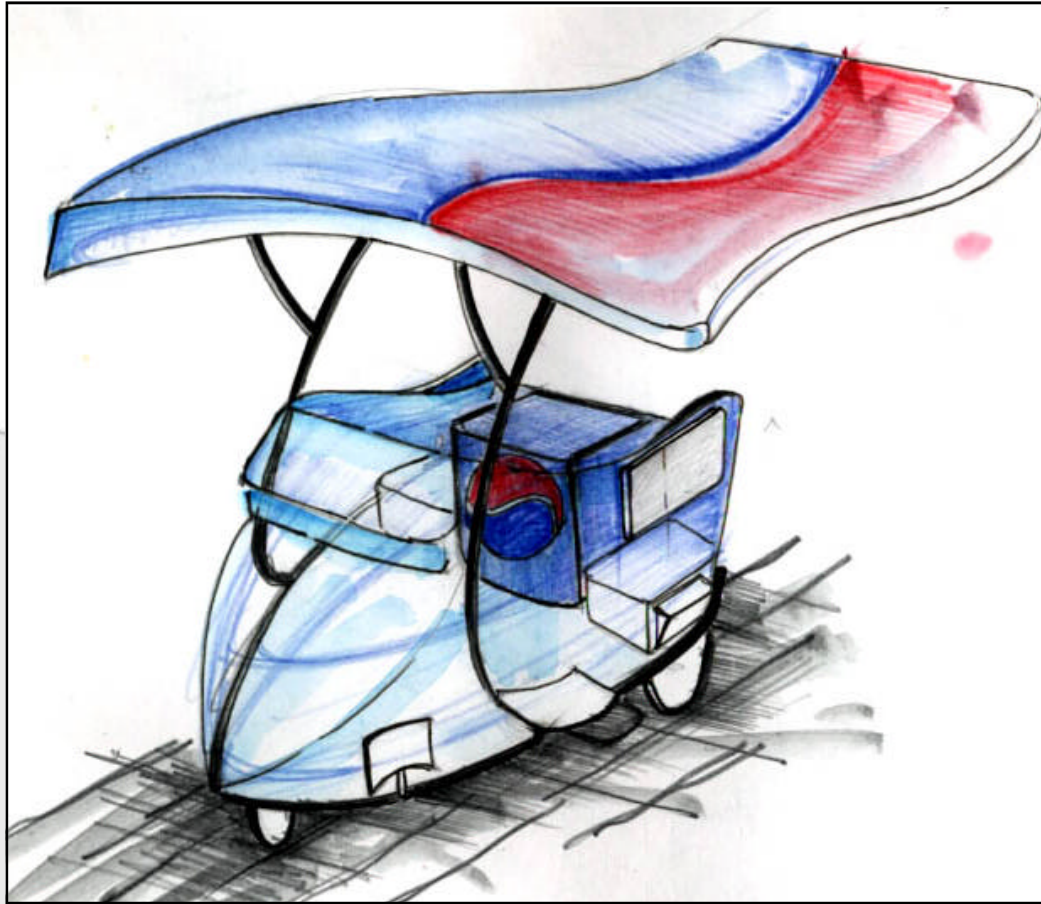


1961

Pepsi further refines its target audience, recognizing the increasing importance of the younger, post-war generation. "Now it's Pepsi, for those who think young" defines youth

as a state of mind as much as a chronological age, maintaining the brand's appeal to all market segments

## MORPHOLOGY OF DESIGN:





1962

Pepsi receives its new logo, the sixth in Pepsi history. The “serrated” bottle cap logo debuts, accompanying the brand’s groundbreaking “Pepsi Generation” ad campaign

## MORPHOLOGY OF DESIGN: study of different vendors, showing their way of

operating



view showing the pani puri wala, his place for washing ..ie bucket hanging

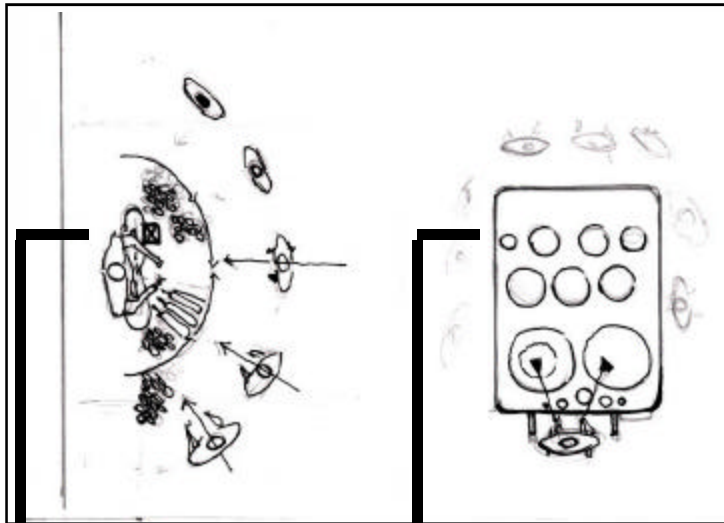
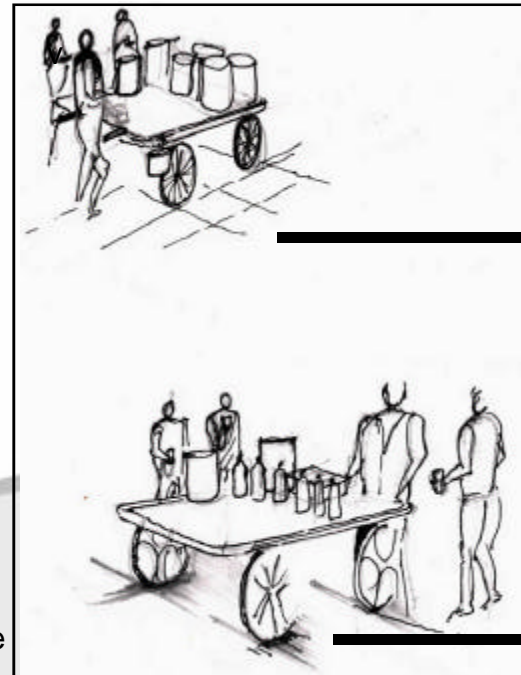


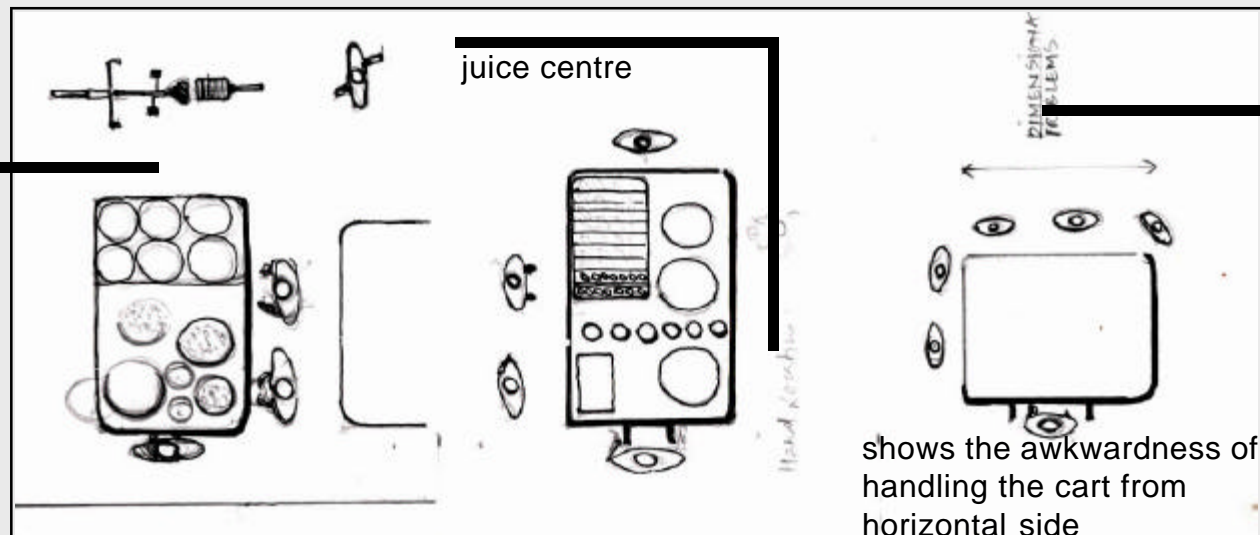
plate shows the habit of typical vegetable guy, sitting and doing business

way the dosa vendor serves, and people are all around



juice guy

plate shows the typical pani puri wala's ..set up, his sense of display



juice centre

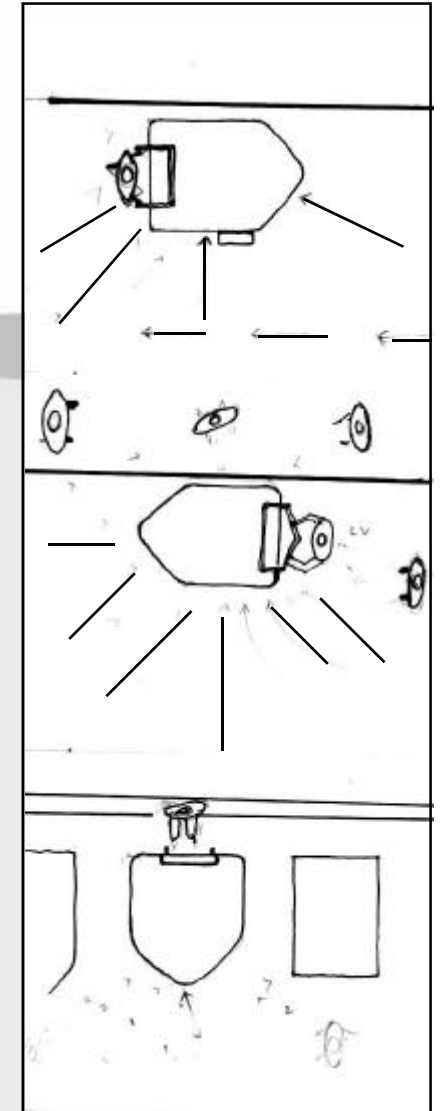
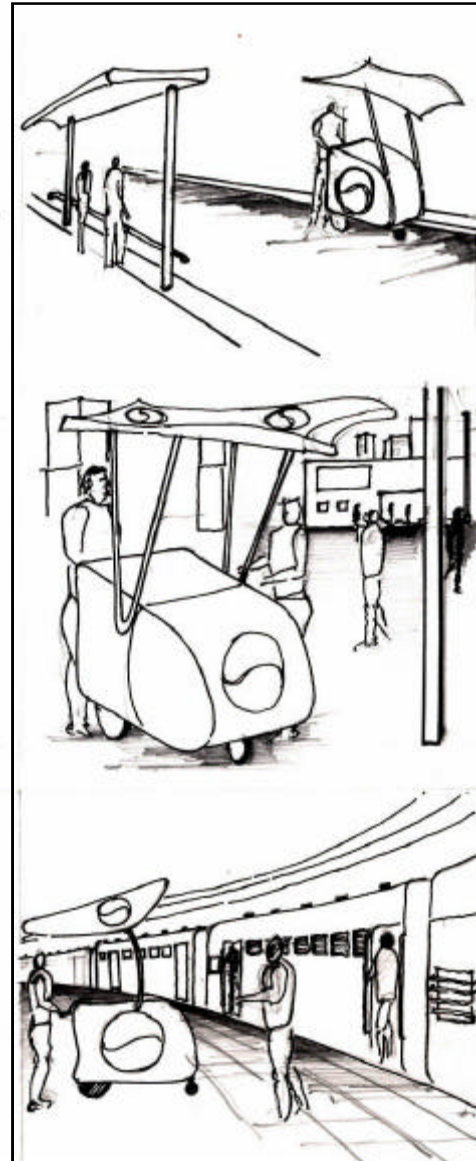
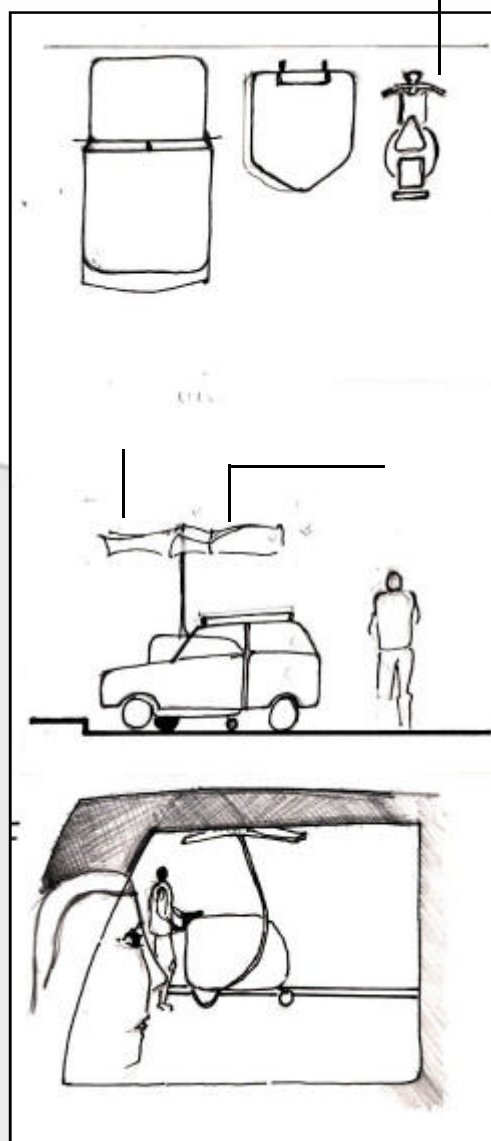
shows the awkwardness of handling the cart from horizontal side

1963

In one of the most significant demographic events in commercial history, the post-war baby boom emerges as a social and marketplace phenomenon.

**MORPHOLOGY OF DESIGN:** study of different situation, where the cart will operate and cart might be placed between the other vehicles

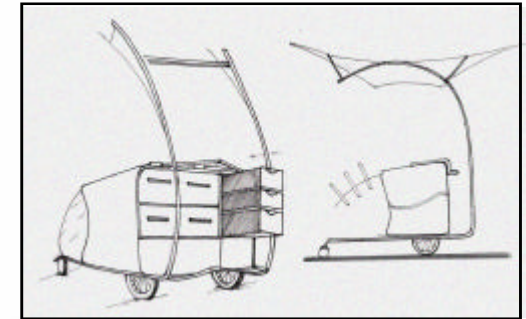
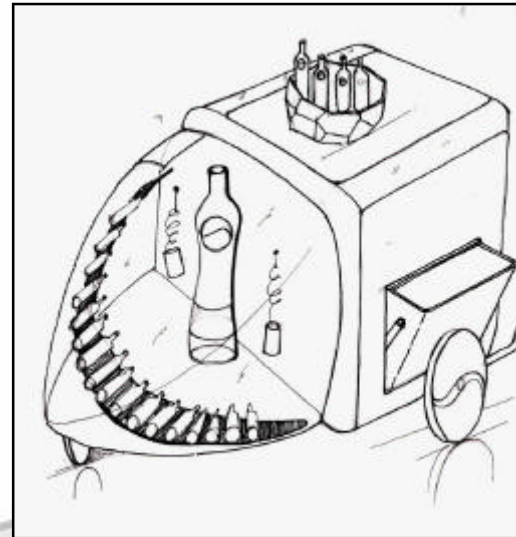
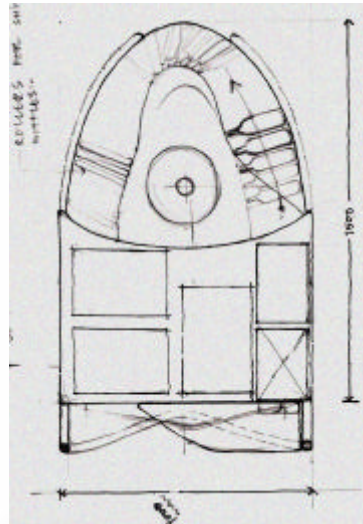
shows the need of **putting up graphics** at certain areas.



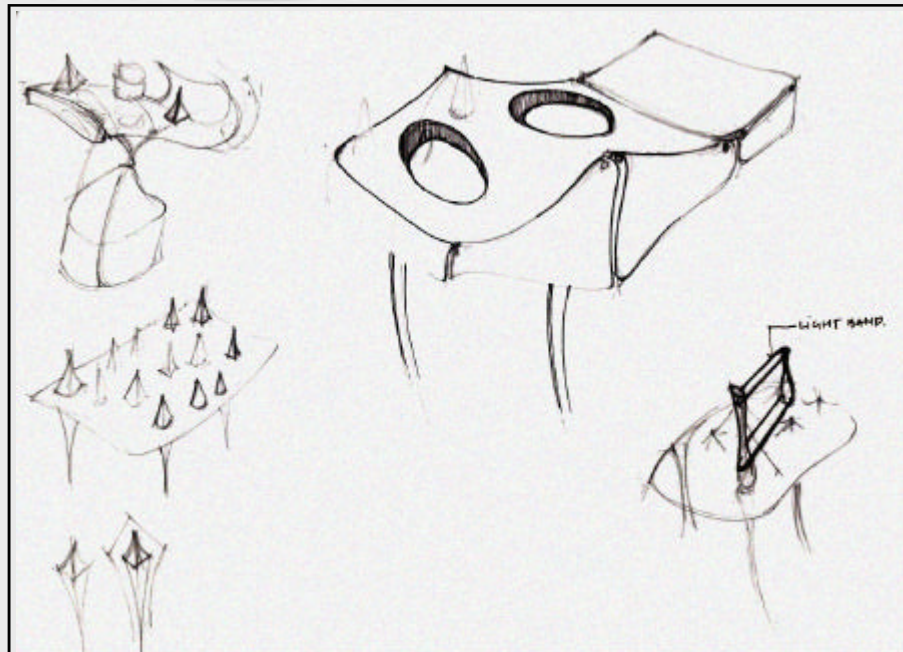
1963

Pepsi recognizes the change, and positions Pepsi as the brand belonging to the new generation – The Pepsi Generation. “Come alive! You’re in the Pepsi Generation” makes advertising history. It is the first time a product is identified, not so much by its attributes, as by its consumers’ lifestyles.

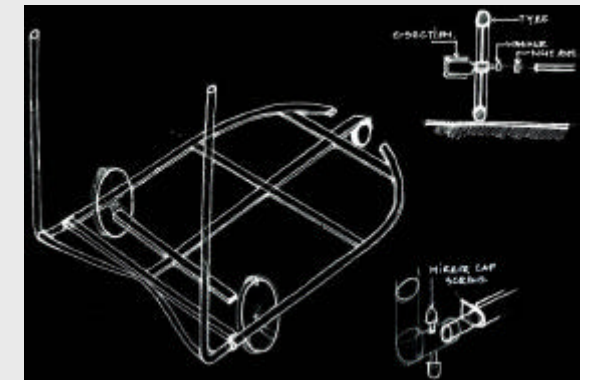
## MORPHOLOGY OF DESIGN:



Concept where front area is used for the display, things like dustbin is also seen

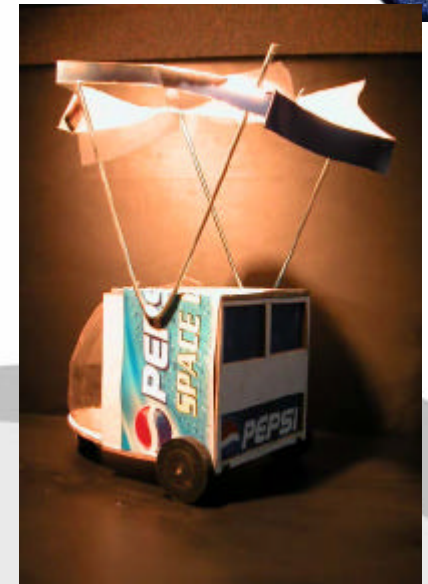


concepts for canopies, as canopy is one of the main novelty element.





## THREE DIMENSIONAL STUDIES:

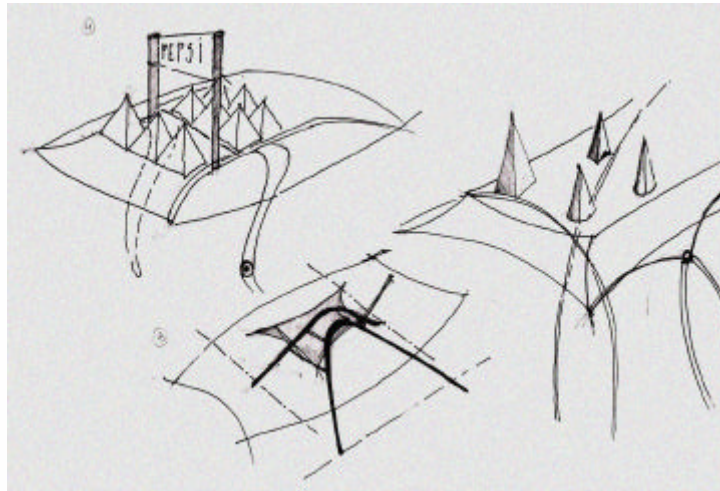




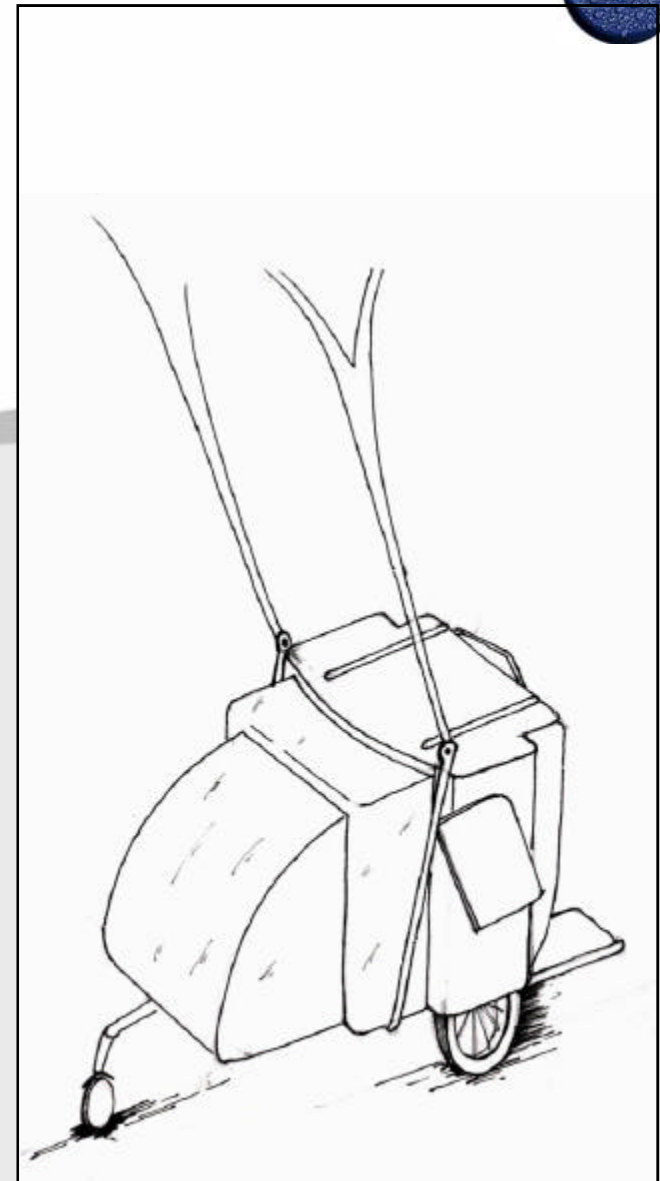
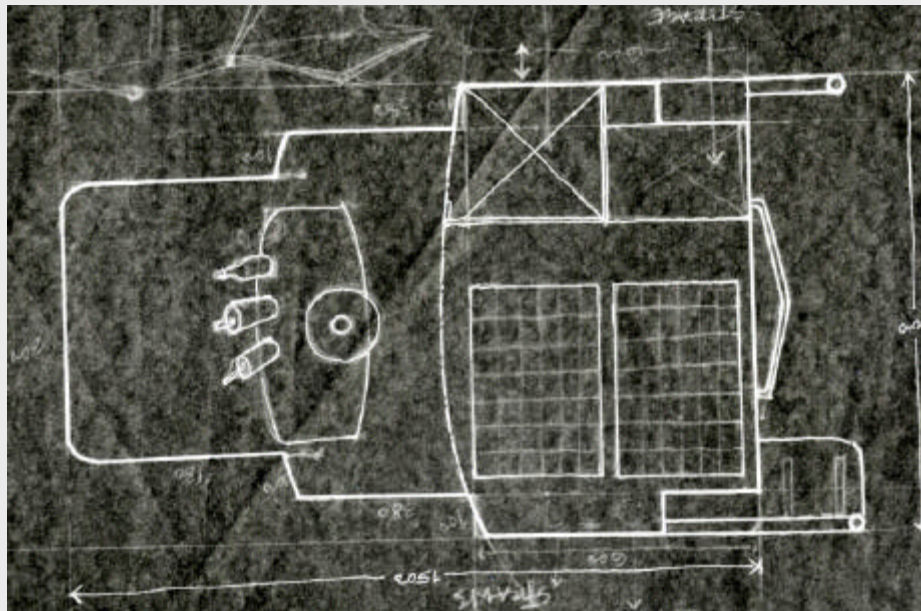
1964

A new product, Diet Pepsi, is introduced into Pepsi-Cola advertising.

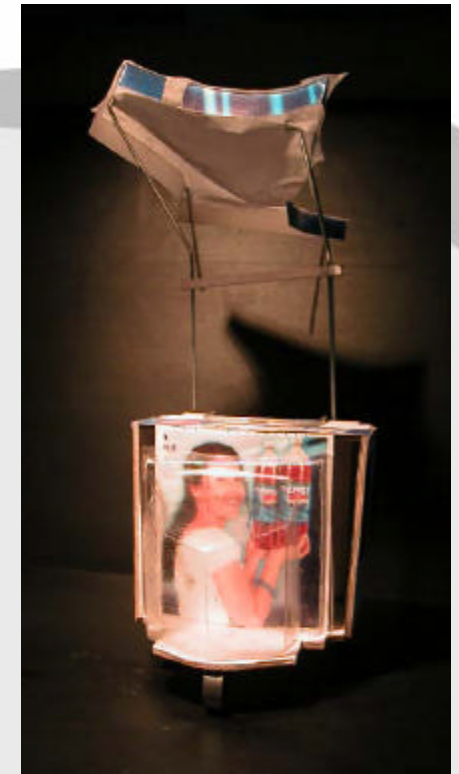
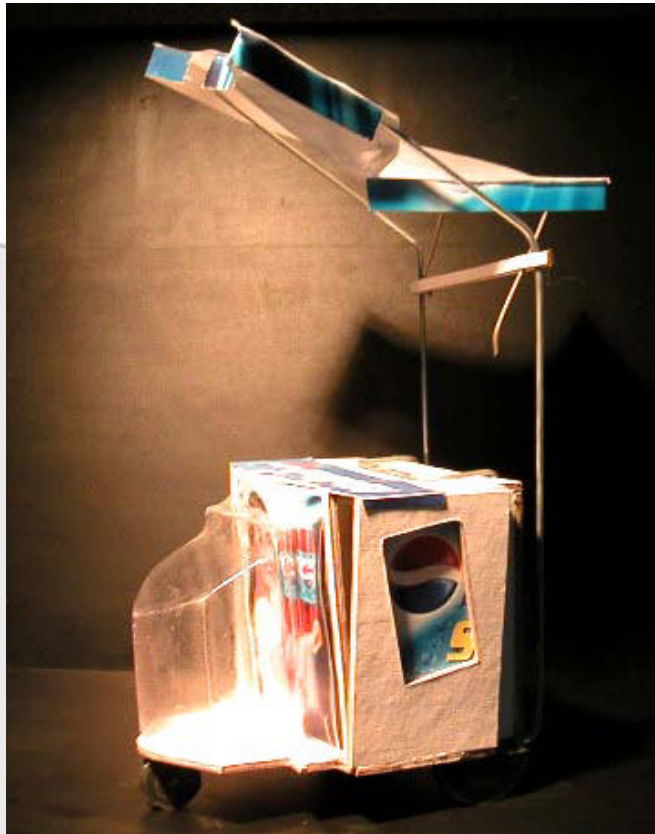
## MORPHOLOGY OF DESIGN:



Exploration in canopy.



## THREE DIMENSIONAL STUDIES:

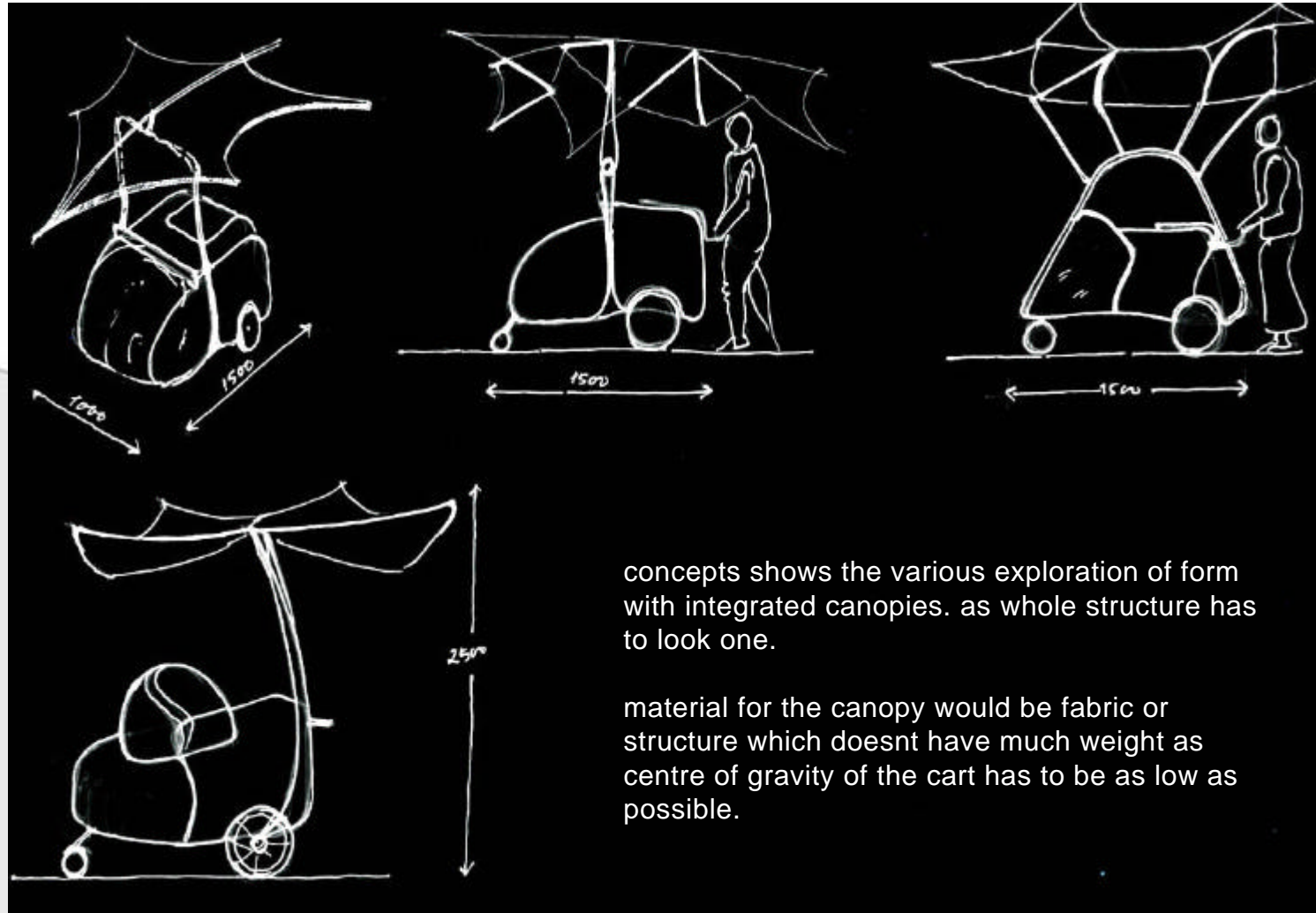


## MORPHOLOGY OF DESIGN:



1976

“Have a Pepsi day” is the Pepsi Generation’s upbeat reflection of an improving national mood. “Puppies,” a 30-second snapshot of an encounter between a very small boy and some even smaller puppies, becomes an instant commercial classic.



concepts shows the various exploration of form with integrated canopies. as whole structure has to look one.

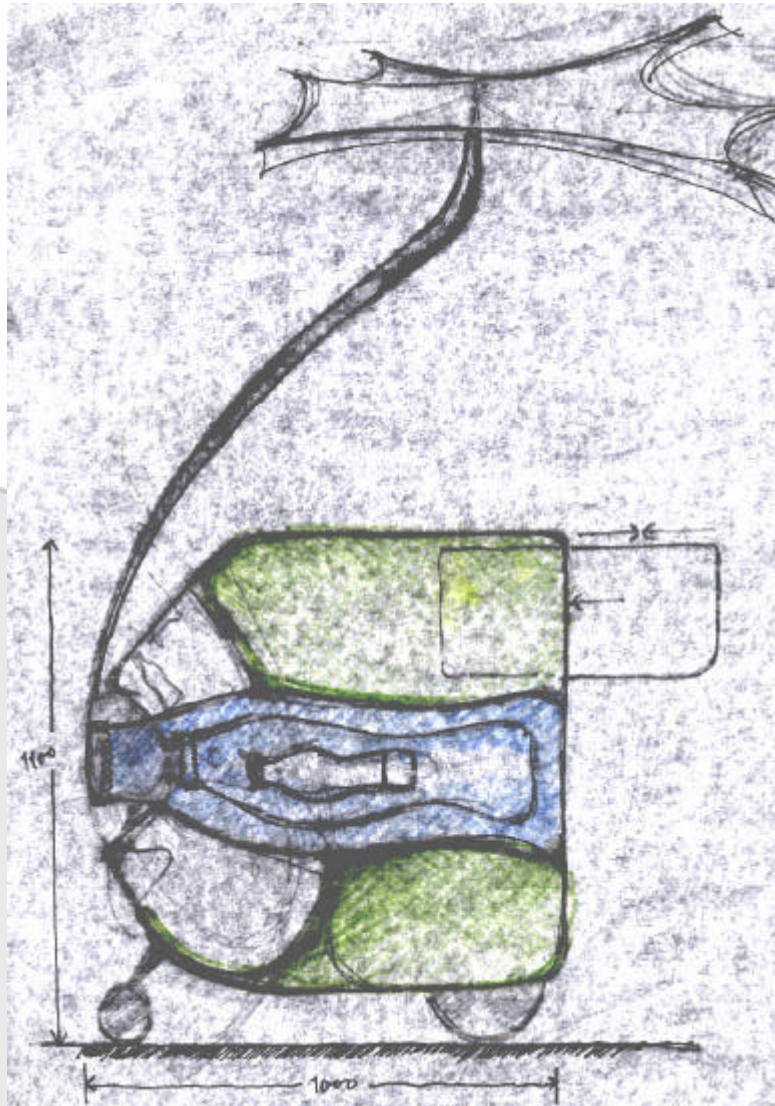
material for the canopy would be fabric or structure which doesn't have much weight as centre of gravity of the cart has to be as low as possible.



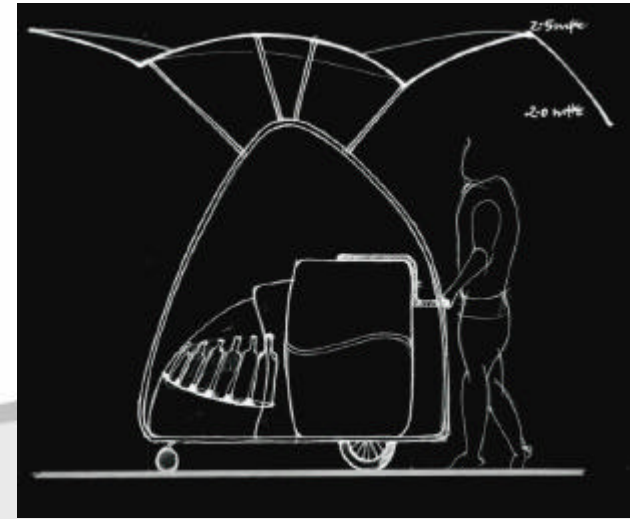
1982

With all the evidence showing that Pepsi's taste is superior, the only question remaining is how to add that message to Pepsi Generation advertising. The answer? "Pepsi's got your taste for life!" a triumphant celebration of great times and great taste

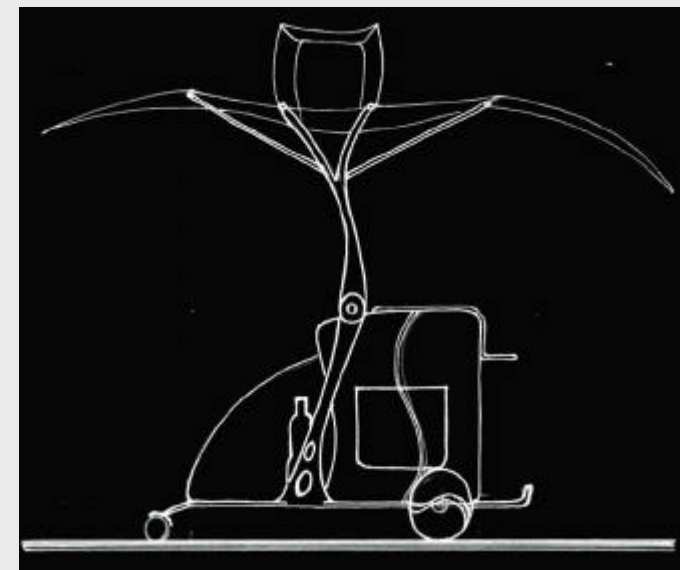
## MORPHOLOGY OF DESIGN:



Concept showing, the play with pepsi bottles.  
bottles have been interpenetrated with in each other



Exploration of canopy structure.





1987

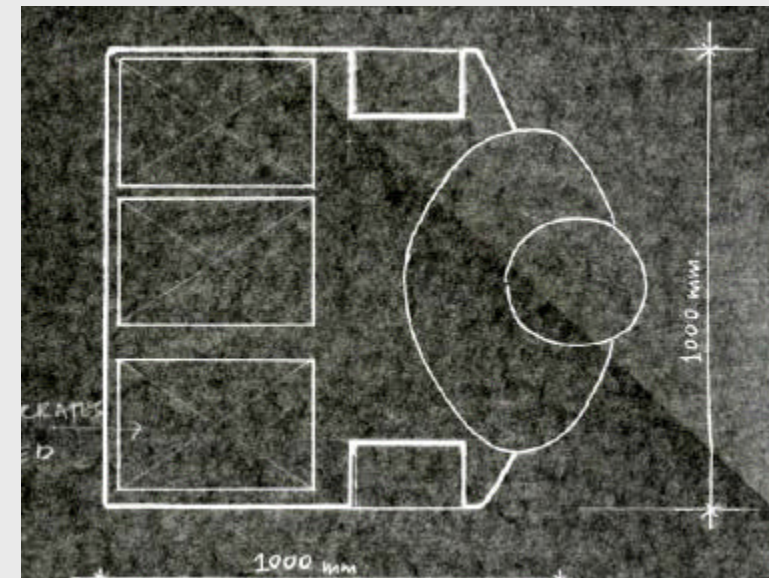
After an absence of 27 years, Pepsi returns to Times Square, New York, with a spectacular 850-square-foot electronic display billboard declaring Pepsi to be "America's Choice."

## MORPHOLOGY OF DESIGN:

Aspects of display and signage were decided, on the **basis of studies done on vendors**, which sell panipuri, vegetables, local made juice etc.



After doing these studies..it became easy to **stationed the vendor...for doing the business.** dilemma like, where and which side the vendor will stand....were solved.



1989

Pepsi-Cola introduces an exciting new flavor, Wild Cherry Pepsi.

## MORPHOLOGY OF DESIGN:



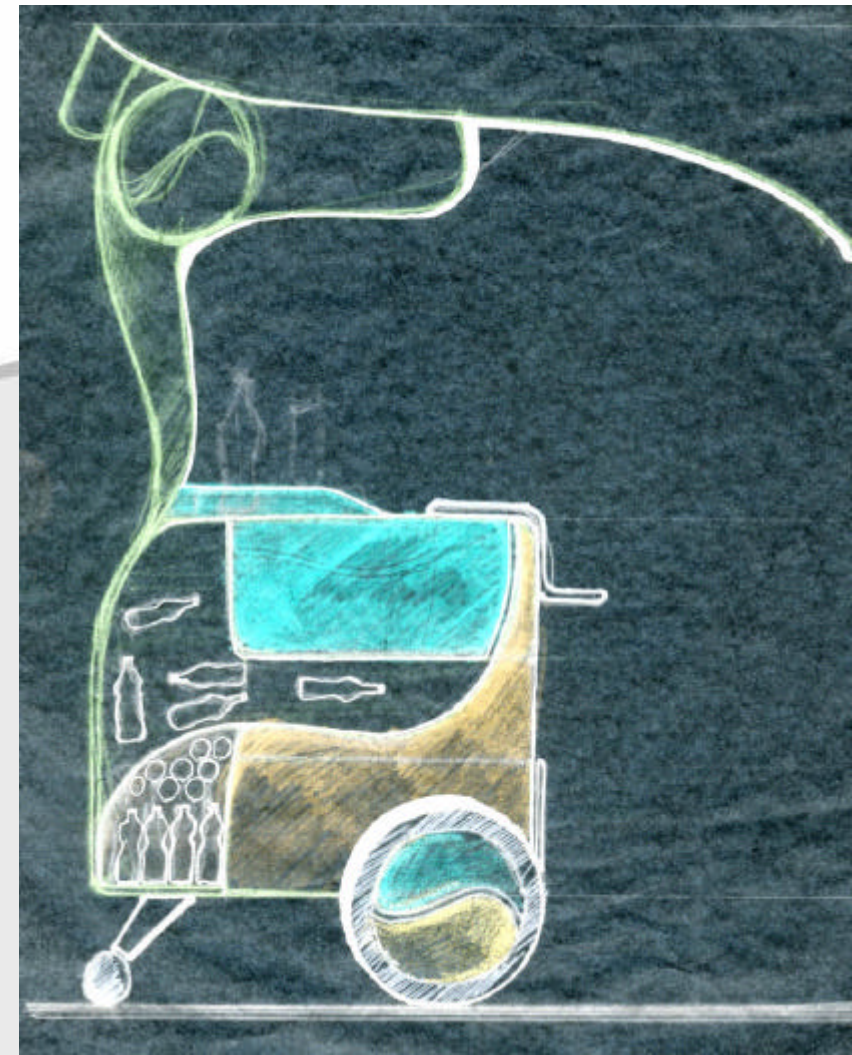
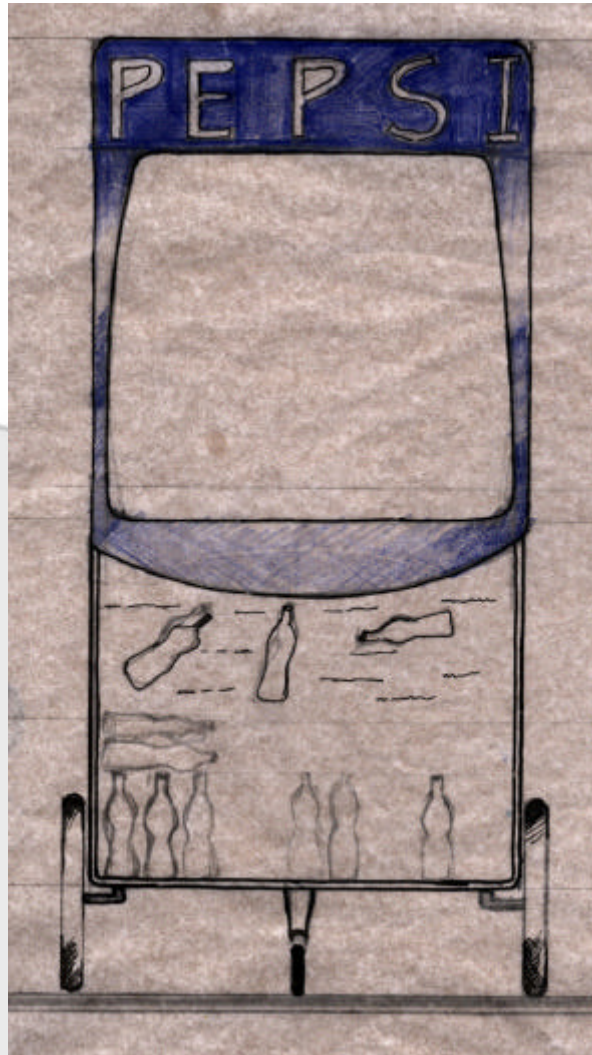


1991

"You got the right one baby" is modified to "You got the right one baby, uh-huh!" The "Uh-Huh Girls" join Ray Charles as backup singers and a campaign soon to become the most popular advertising in America is on its way. Supermodel Cindy Crawford stars in an award-winning commercial made to introduce Pepsi's updated logo and package graphics

## MORPHOLOGY OF DESIGN:

Concept with more **refined approach**  
all the issues were taken care of.....



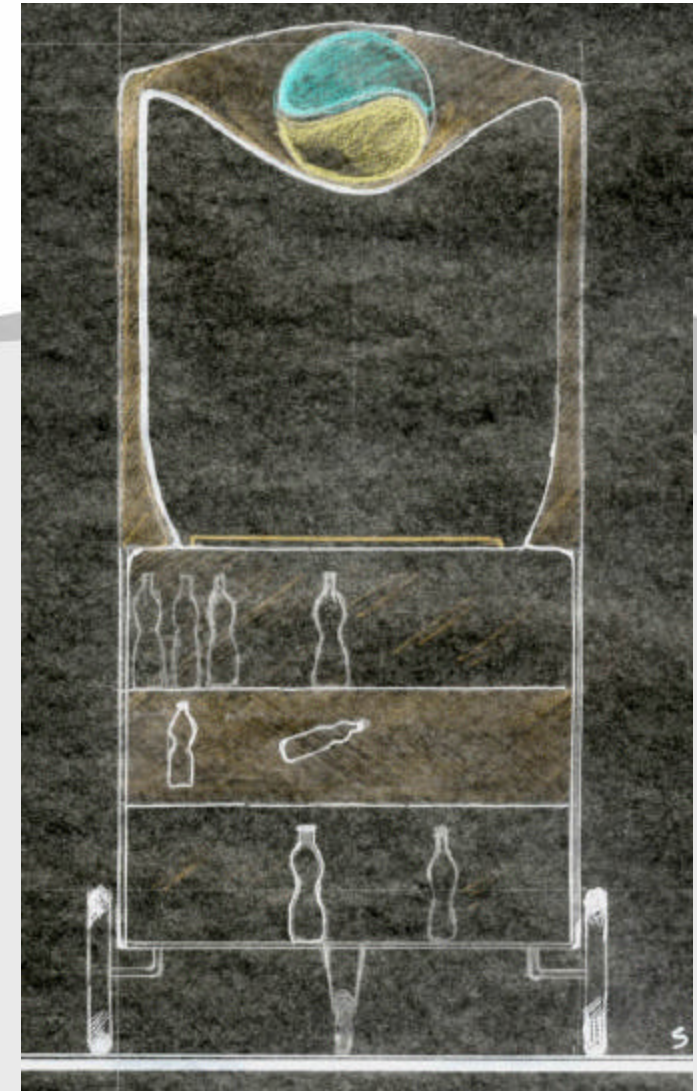
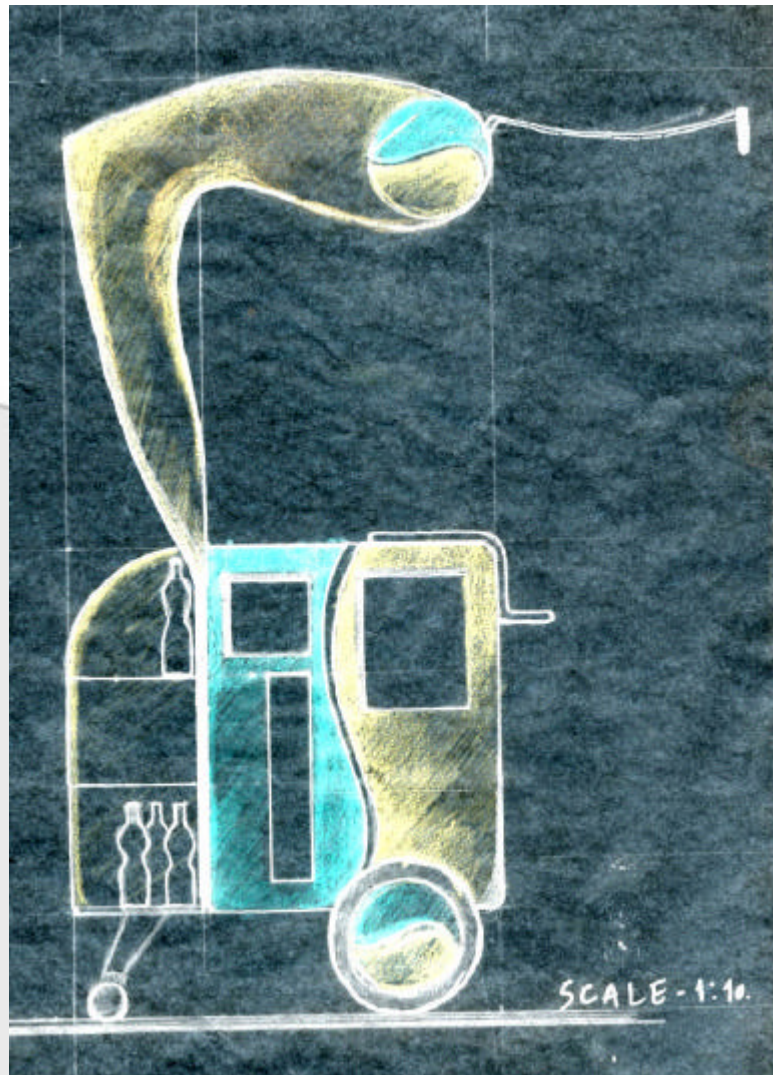


1993

"Be young, have fun, drink Pepsi" advertising starring basketball super-star Shaquille O'Neal is rated as best in U.S

## MORPHOLOGY OF DESIGN:

Play of curves with reference to Pepsi curve, were attempted. **Idea is to create and achieve Pepsiness in the form**



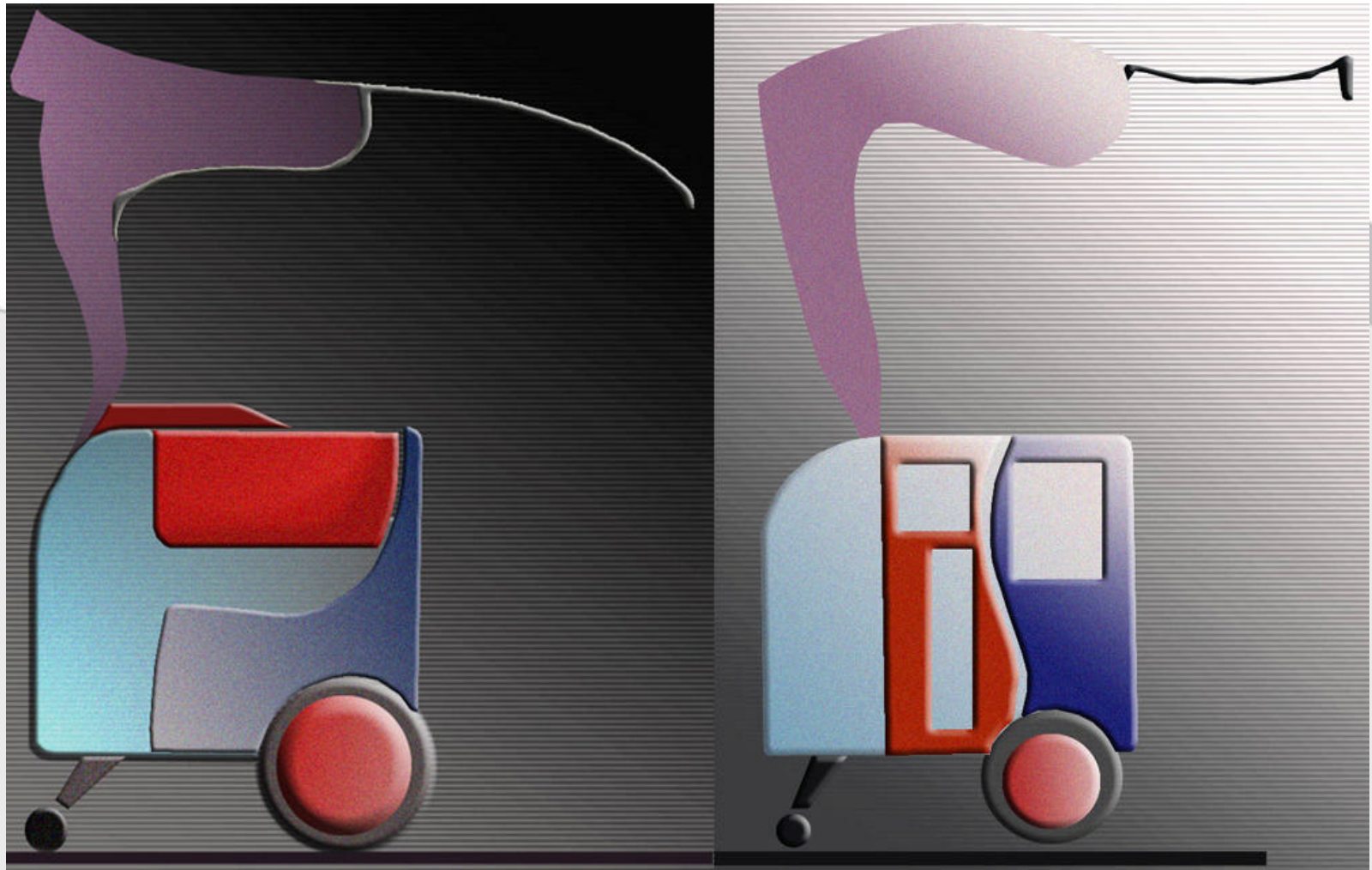
1996

In February of this year, Pepsi makes history once again by launching one of the most ambitious entertainment sites on the World Wide Web.

Pepsiworld eventually surpasses all expectations, and becomes one of the most launched and copied sites in this new medium, firmly establishing Pepsi's presence on the Internet

## MORPHOLOGY OF DESIGN:

Computer Simulation, showing the comparison of two concepts.





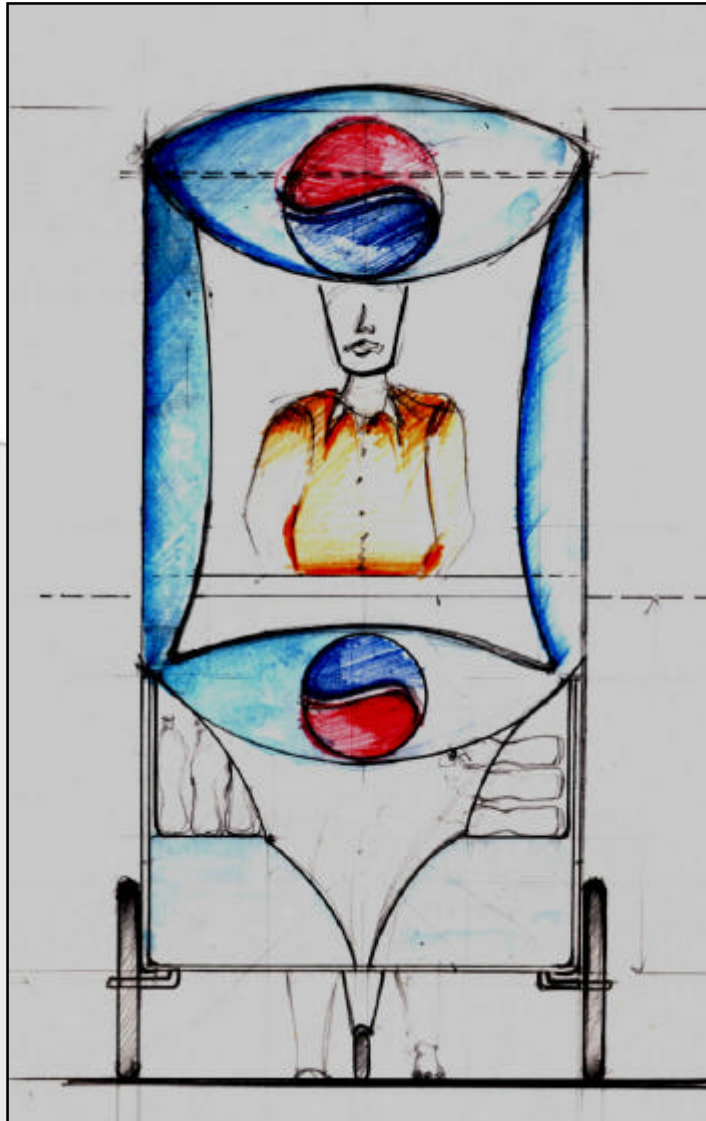
1998

Pepsi continues its popular "GenerationNext" campaign with spots that include: Goose, Gnat and Stunt Driver (featuring racing superstar Jeff Gordon).

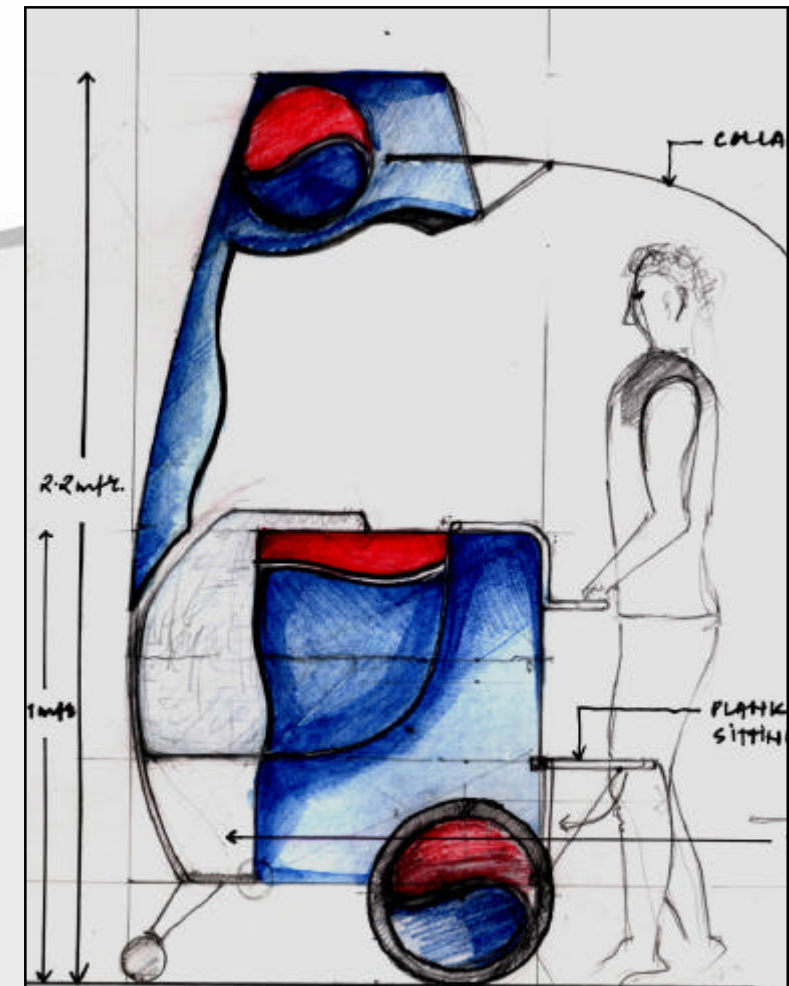
## MORPHOLOGY OF DESIGN:



The interface with the form is consciously done.



Concept has a form which is accentuated, in terms of its surface and edges. This act propagates the form visually.

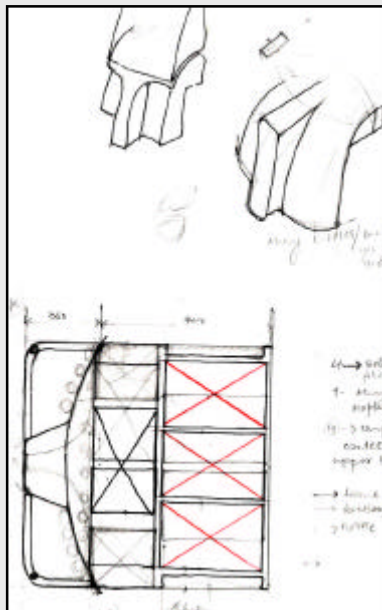
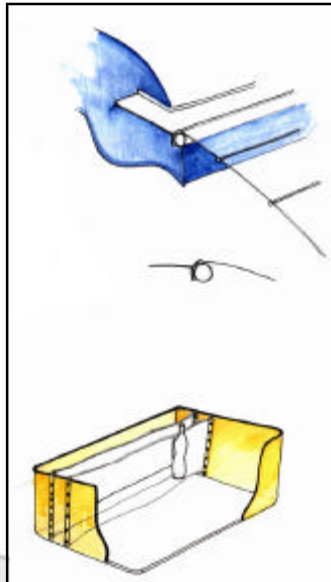




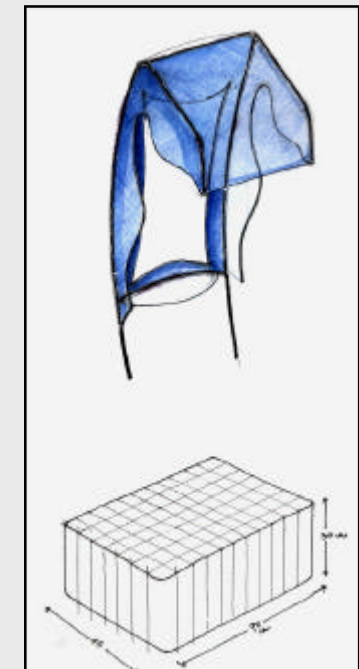
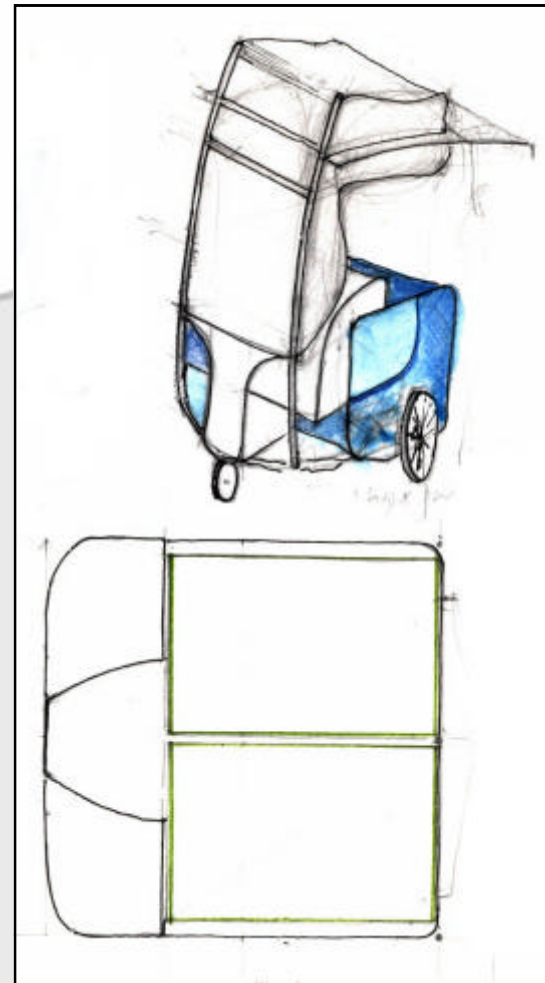
1998

In 1998 Pepsi launches its new look, called "Globe," which prominently features a stylized, three-dimensional Pepsi Globe set against a blue ice backdrop. It affects all can, bottle, and multican packaging for Pepsi, Diet Pepsi, Caffeine Free Pepsi and Caffeine Free Diet Pepsi

## MORPHOLOGY OF DESIGN:



Directing the endeavour towards sensitivity and sanity, it was not a drastic move on form, whole act was very deliberately delicate, as emphasis on change can overlap sometimes, **so idea applied is very mild and followed the rhythms of Pepsi in a rigorous and bold manner.**

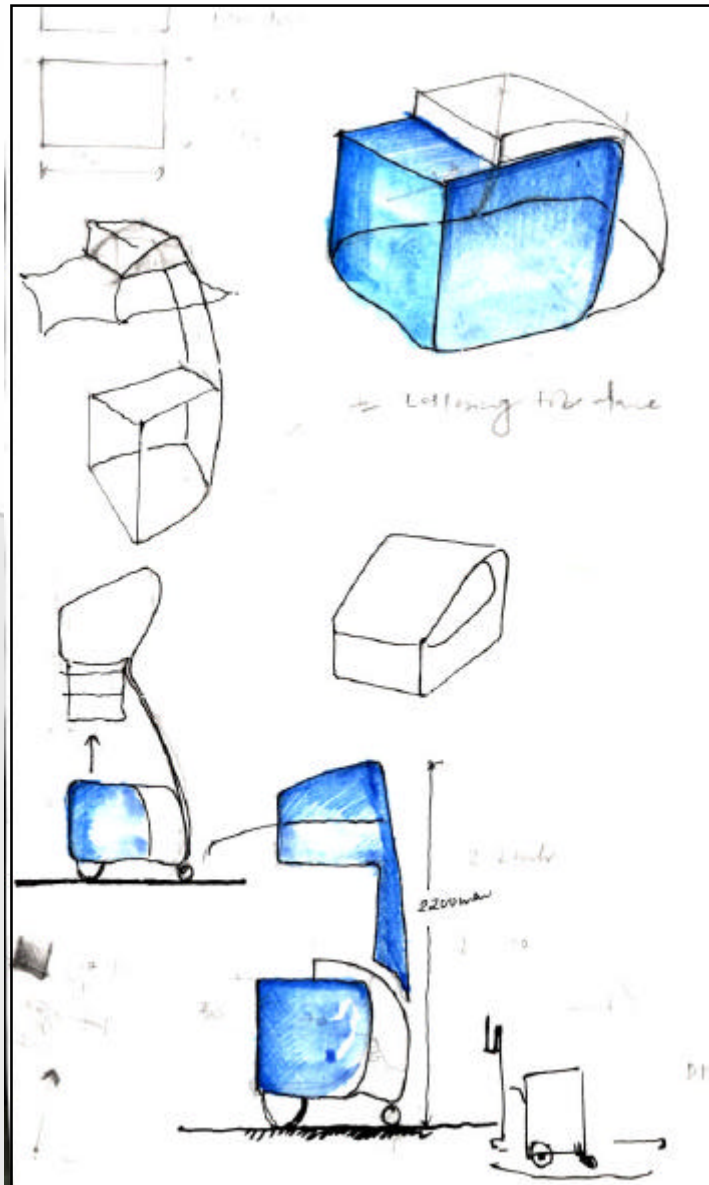




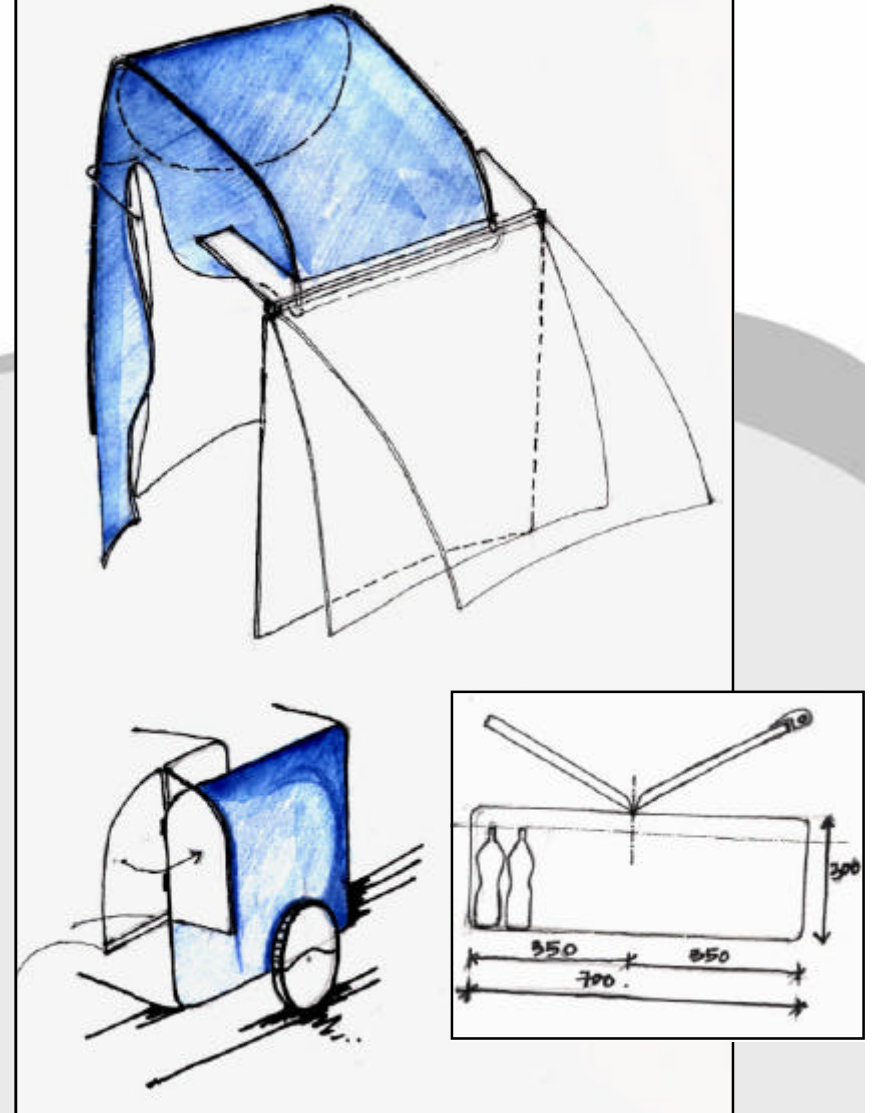
## MORPHOLOGY OF DESIGN:

1999

Pepsi and Lucasfilm team up again as "Star Wars: Episode I – The Phantom Menace" hits movie theaters.



### DETAILS



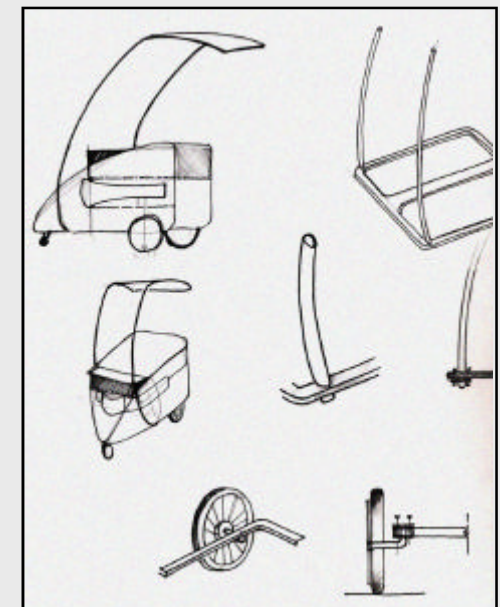
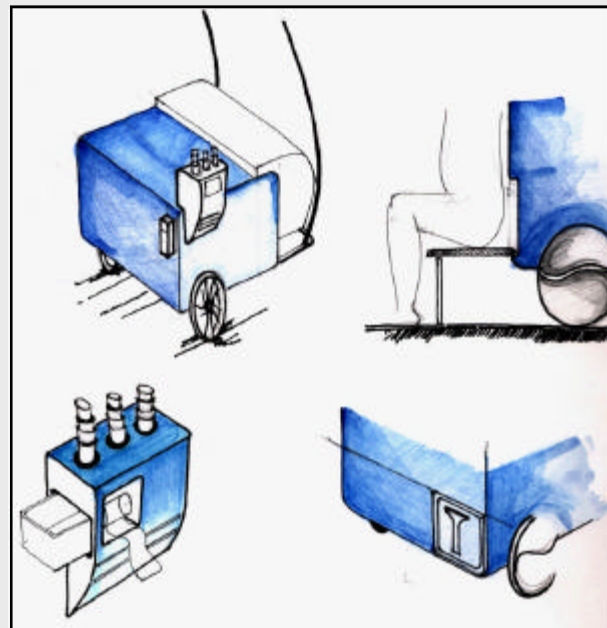
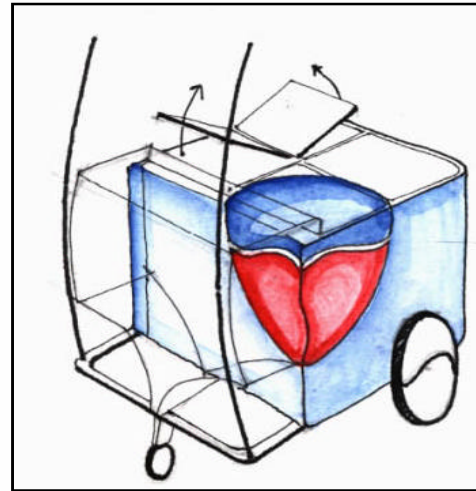
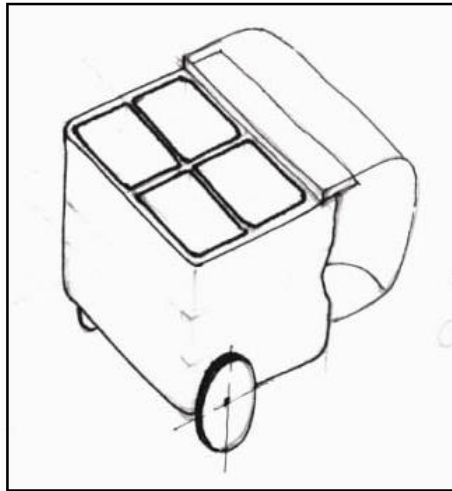
1999

Consumer excitement surrounding the long-awaited return of the Star Wars series is heightened as special Pepsi bottles and cans offer 24 different Star Wars characters. The collection series includes a gold Yoda can.

## MORPHOLOGY OF DESIGN:



Its not just facile value we achieved, but its about understanding the change.





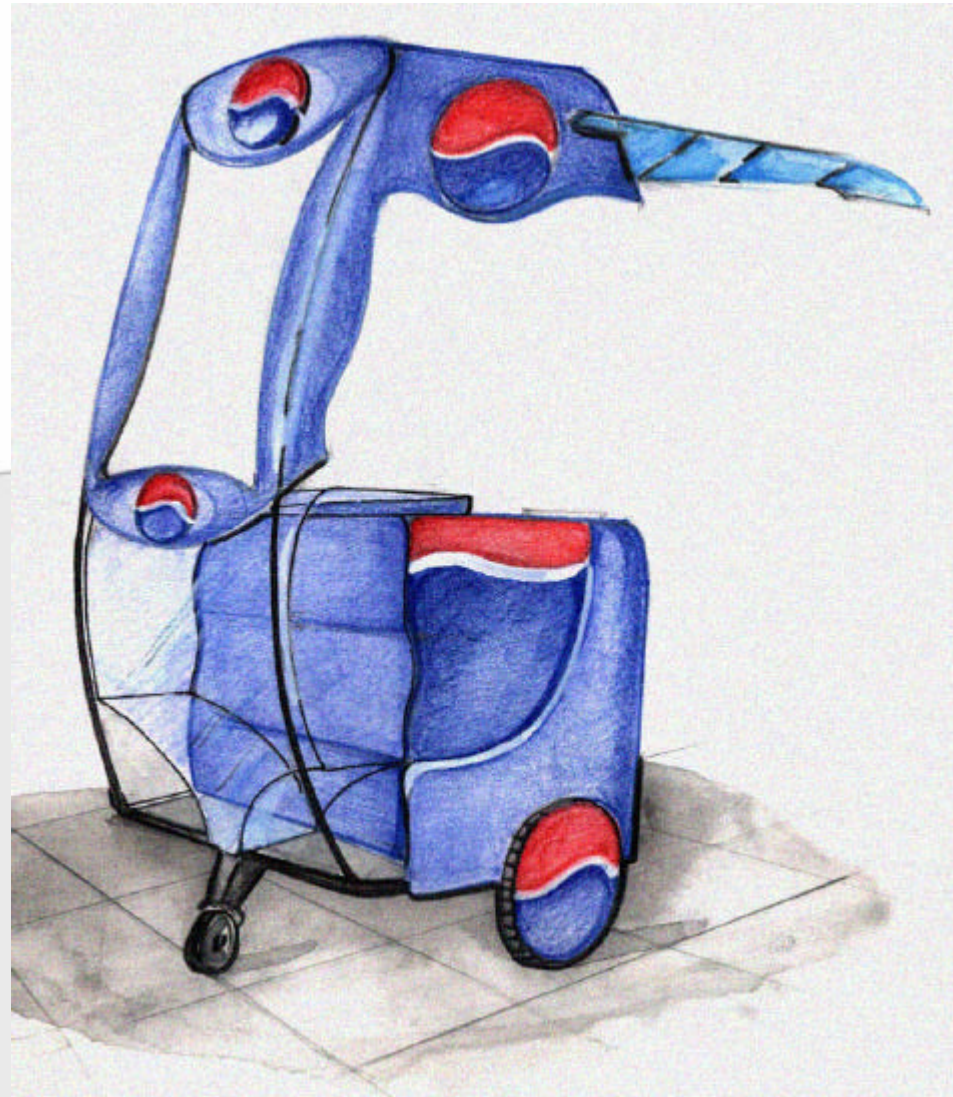
## MORPHOLOGY OF DESIGN:



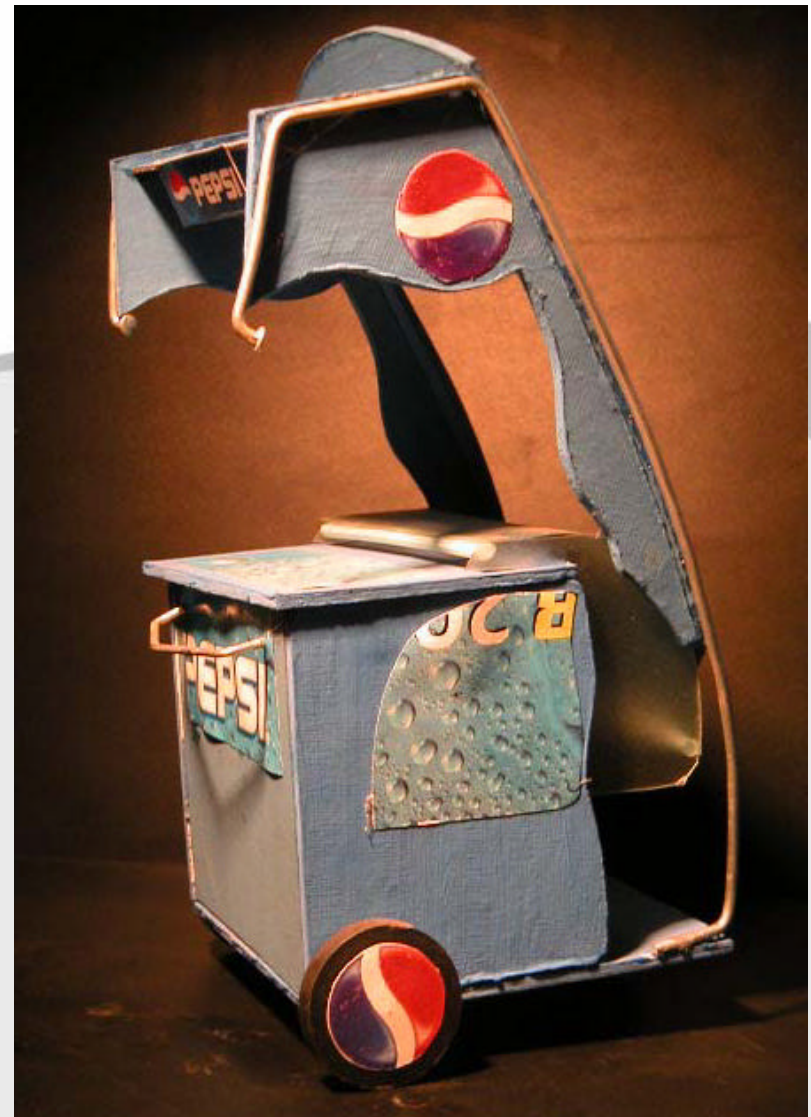
2001

Pop superstar Britney Spears appears in her first Pepsi commercial during the 2001 Academy Awards. The high-energy spot also runs online, where more than 2 million

fans click their way to Britney's own version of "The Joy of Pepsi."

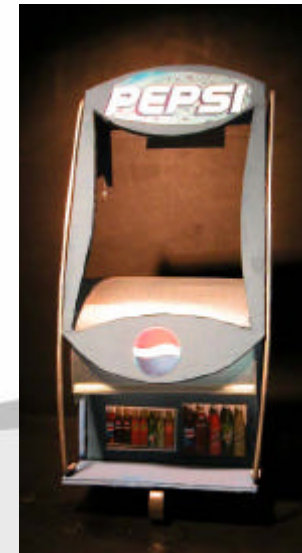


## THREE DIMENSIONAL STUDIES:





## THREE DIMENSIONAL STUDIES:



Front view of the cart



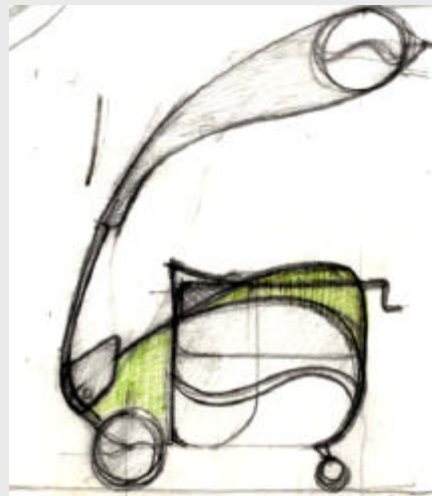
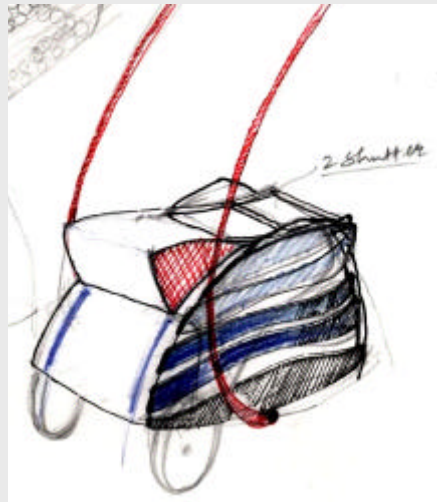
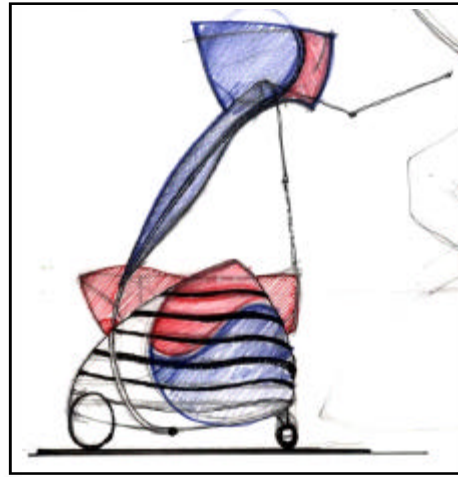
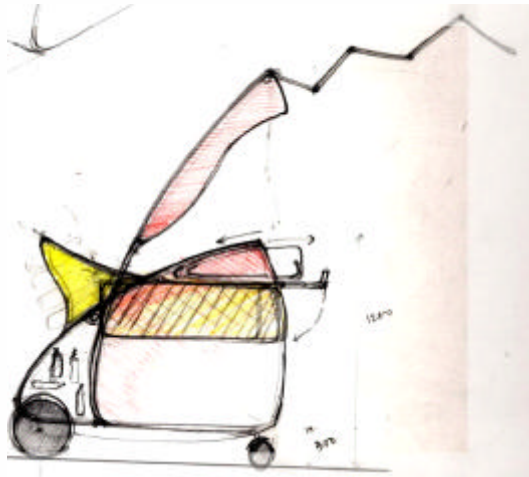
Rear view of the cart

Side view of the cart

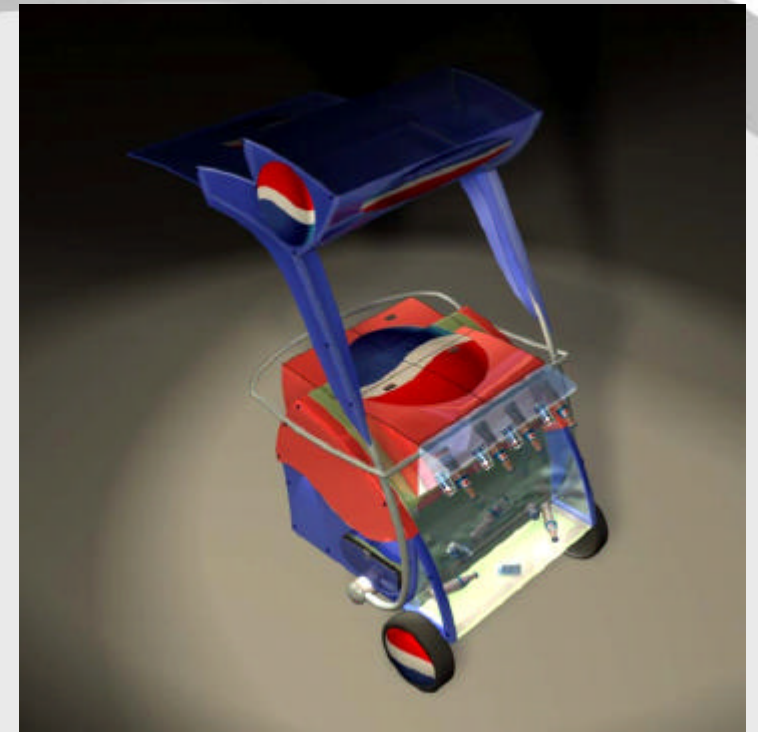




## Concept development:



## Final Concept:



## Final Concept:

