

Introduction



Summer training at Philips Corporate Design, Pune

Problem Statement



Designing new speaker concepts for PSS (Philips Sound Solutions) For Indian Market

Methodology

Initiation phase

Analysis Phase

Concept phase

Evaluation phase

Schedule

June
2002

1st

10th

15th

25th

30th

Initiation
phase

Analysis
Phase

Concept
phase

Evaluation
phase

Initiation phase

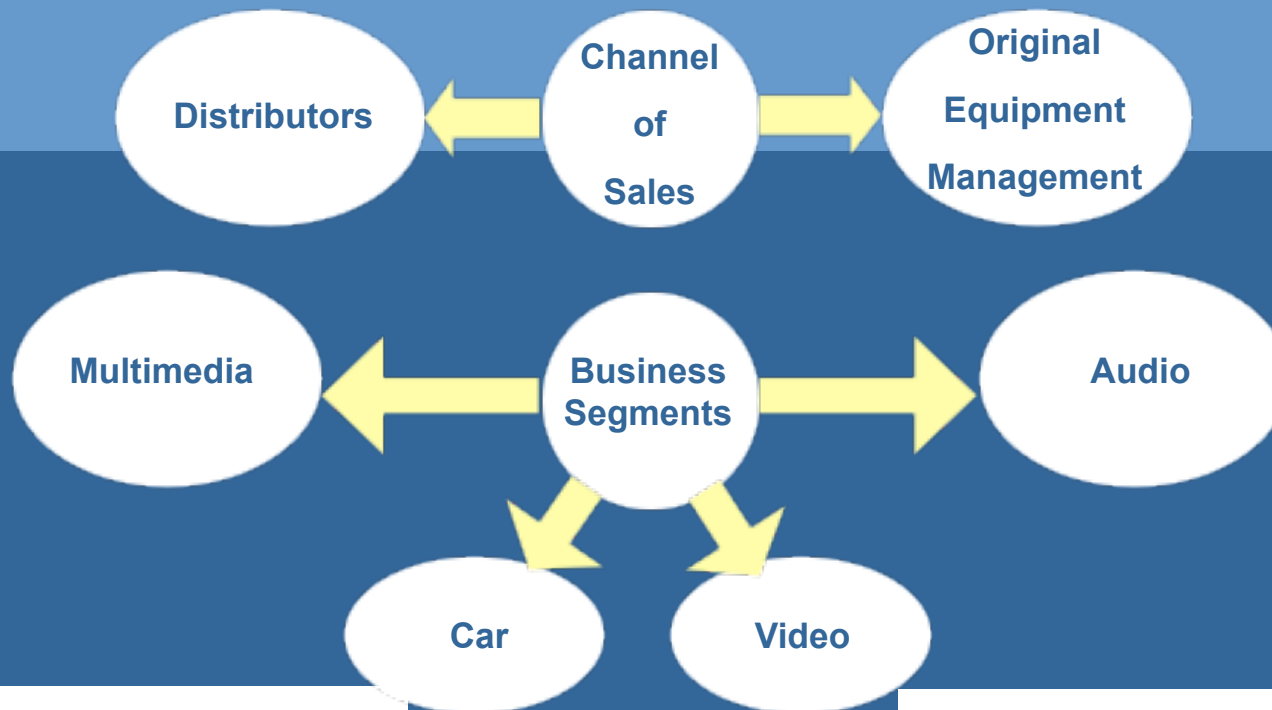
Analysis Phase

Concept phase

Evaluation phase

Discussion with Mr. Piyush (PSS Marketing)

Product range of PSS



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Initiation phase

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Evaluation phase

Discussion with Mr. Piyush (PSS Marketing)

Extract of discussion

Low end products have tough competition from local and chinese products

Sell of home theatre systems is growing fast.

People are more inclined to buy 29" television set than 21"

More inclination towards hi end multimedia speakers because computer is used almost throughout the day.

Hi-end professional speakers need dedicated sales and marketing set-up like bose and Pro-fx.

Youngsters are looking for product in between multimedia speakers and hi end professional speakers.

People want their speakers more than just black boxes.

Initiation phase

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Discussion with Mr. Prasanna Salvi (Consumer Electronics Marketing)

PSS will have good market in
Hi end stand alone speakers
wireless speakers

Potential buyers for hi end speakers will be
Personal use

Rich class people,
30-40 age group,
People who are traveling abroad often.

Five star hotels
Fitness clubs
Pubs , Discotheque

Initiation phase

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Existing market details

Personal use stand alone speakers

Local made Rs 500-1000

Cheap brands like Soni, boss Rs 800-1800

Public address speakers

Local made Rs 1500-3000

Ahuja Rs 2100-12000

DVDs

Local brands Rs 3000

Sony, Panasonic, Aiwa Rs 28000- 35000

VCDs

Sony, Panasonic Rs 11000-35000

Home theatre speaker system

Sony, Panasonic Rs 40000-90000

Hi end professional speakers

Cadence, Pro-fx Rs 30000-400000

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User Survey Findings

Personal use

Age group: 20 – 35yrs

About 40% people are deeply interested in music.

They know about high end stand alone speaker systems.

Not going for professional speaker systems because of budget and space constraint.

Likely investment in speakers- Rs 15000 to Rs 20000.

Product should look decent not funky.

It should show their seriousness towards music.

Public use

Speakers brand : Bose, Onkyo, Spandex

Cost : Rs 5000 to 30000 per pair

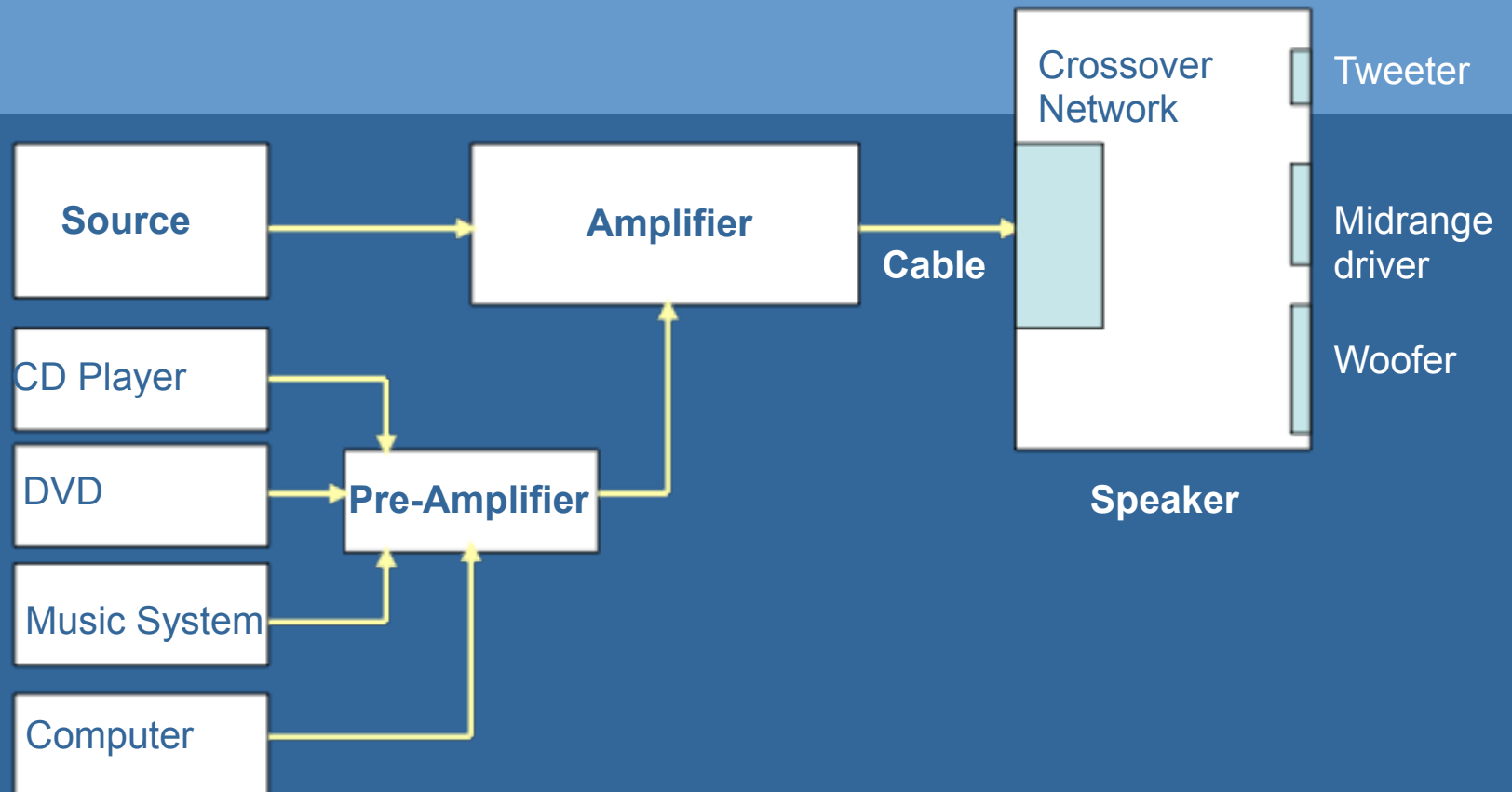
Initiation phase

Analysis Phase

Concept phase

Evaluation phase

Technical data



Initiation phase

Analysis Phase

Concept phase

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Design guidelines

- Wood is the best material for cabinets.
- Spherical form is better for cabinets.
- Tweeters should be at ear level.
- The edges of the cabinet should be rounded to avoid defraction.
- Dimensions of the cabinet should not be in multiples.
- Contact area of the speakers with the support on which it rests should be minimal.
- Flat speakers can be designed as the shutters of a cupboard.
- Flat panel speakers cannot produce the sound quality comparable with hi end professional speakers.
- Reducing the size of cabinet deteriorates the sound quality.

Initiation phase

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Environment

Various ways the speakers are kept or fixed.

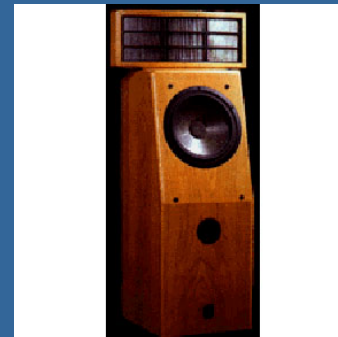
Floor standing unit

Wall mount

Ceiling mount

Wall mount flat panels

Speakers on stands



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Initiation phase

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Need identification

Segment	Products available	Price
Rich class people	Professional speaker systems – Pro-fx	Rs. 30000 to 400000
	Cadence, Bose	
	Home theatre speaker system	Rs. 40000 to 90000
Low income group	Local made cheap speaker	Rs. 500 to 1500
Students	Walkman	Rs. 500 to 1200
	Multimedia speakers	Rs. 2500 to 5000

Observation

Young professionals, have a need for good speaker systems than multimedia Speakers but not as expensive as professional systems, which may be compatible with computer and various other applications like music system, T.V., DVD .

Initiation phase

Analysis Phase

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Evaluation phase

Need identification

Observations

Need for home theatres is growing fast. People are buying 29" television set than going for 21" and DVDs are also available in economic prices. All they want is good speaker systems, not as expensive as home theatre speaker systems available in market ranging in between Rs40000 to 90000. This could also be potential market segment.

As technology is not much developed in wireless speakers , PSS do not want to launch a product in that category presently.

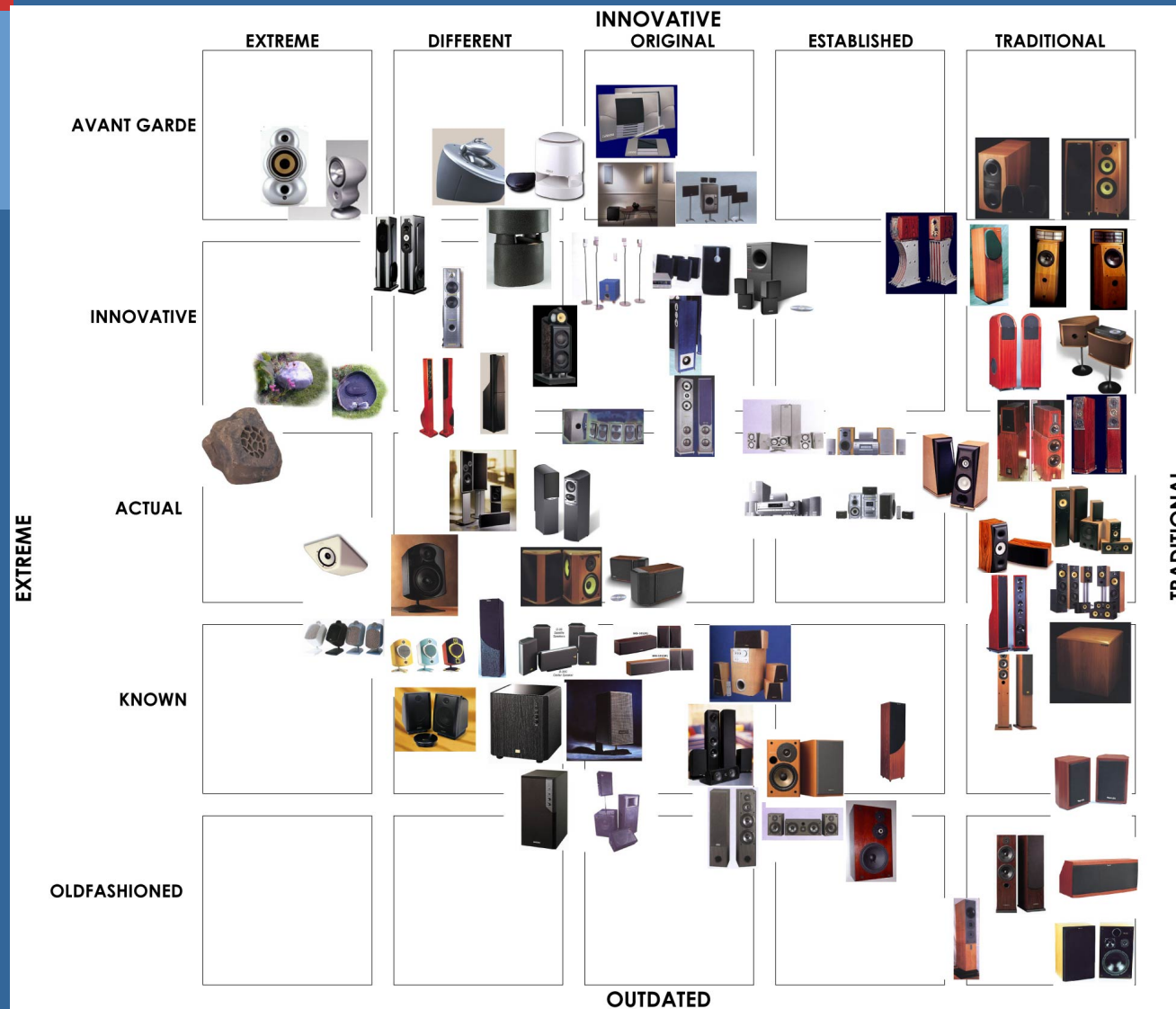
Initiation phase

Analysis Phase

Concept phase

Evaluation phase

Visual Mapping



Position for
proposed
speakers

Initiation phase

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Design brief

Design a **stand alone speaker system** having 1 **subwoofer** and 4/5 **satellite speakers**; wall mount or on stands which will be compatible with various applications like TV, Music system, VCD, DVD, Computer ; for young professionals and students.

Target user

- Age group-Young, 20-35yrs age
- Occupation-Professionals / Students
- Socio Economic Class – A
- Environment-Urban , Semi-urban
- Use
 - Personal use
 - Home - Living room
 - Bed room
 - Family room
 - Hostels
 - Public use
 - Restaurants
 - Gymnasiums
 - Music shops
 - Dance schools
 - Institutes

Outlets

- Net
- Music shops
- CE shops

Technical Specifications

- Volume-
 - Subwoofer- >20 lit
 - Satellite speakers- >10lit
- Power (RMS) –
 - Subwoofer- 50W
 - Satellite speakers-15W/channel
- Driver (cones)-
 - Subwoofer- 1, 200 mm dia woofer
 - Satellite speakers-1, 130mm dia full range driver
- Built in amplifier

Initiation phase

Analysis Phase

Concept phase

Evaluation phase

Analysis of visual features of various categories in speakers.

Multimedia and gaming speakers

Looks like desk top object because of stand.
Looks like a computer accessory.
Not much clutter of visual elements.



Audio system speakers

Too many visual elements on the front plane.
Looks very jazzy.
They borrow features from the music system.
Central and other two small speakers not look from the same family.



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Analysis of visual features of various categories in speakers.

DVDs and home theater speaker system

These look like a part of music system / DVD.

These are not jazzy like audio system speakers.

The whole speaker system looks unified, forms a family.



Professional stand alone speaker system

Each brand has some unique style in terms of form or grill shape, which because the identity of that brand.

Simple form.

Subtle visual features



Initiation phase

Analysis Phase

Concept phase

Evaluation phase

Analysis the features of speakers which are making statement in the market

Blueroom Minipod

Unconventional form

The form is interesting from all sides.

Visually light.

Yellow colour of cone looks striking.
Spikes, though simple, are adding to the hi tech look of speakers



B & W LM1

Though the form is rectangular, The rounded edges make the form interesting.

Protruding tweeter is breaking the boxy ness of speaker.

Adjustable brackets allow swiveling.

Variety in colour makes the form look different in each colour.

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Initiation phase

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Analysis the features of speakers which are making statement in the market

Jamo X3M 10

Hi tech look because of the metallic body,
yellow handles,

Rivet like depressions.

The curved edges reduces the boxyness of the
speakers.

The overall proportion makes it look sleek



Torvin Classical

Metaphor of 'Veena' for the form.

Asymmetry makes the form interesting.

Though wooden cabinet is used the
form,
it is very innovative.

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Initiation phase

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Analysis the features of speakers which are making statement in the market

Mirage Omni sat

The new form, result of the new technology

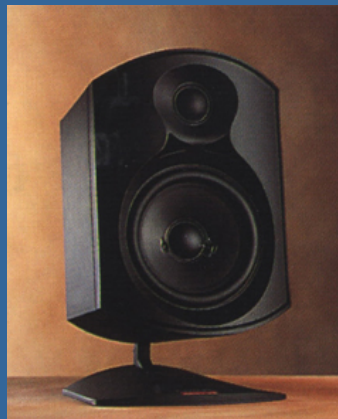


Thiel Power point

Ceiling mount.

Very small in size.

The form, out of technology.



Solid

The protruding curved element
Added on front are adding to the looks of the speakers.



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Initiation phase

Analysis Phase

Concept phase

Evaluation phase

Mood board



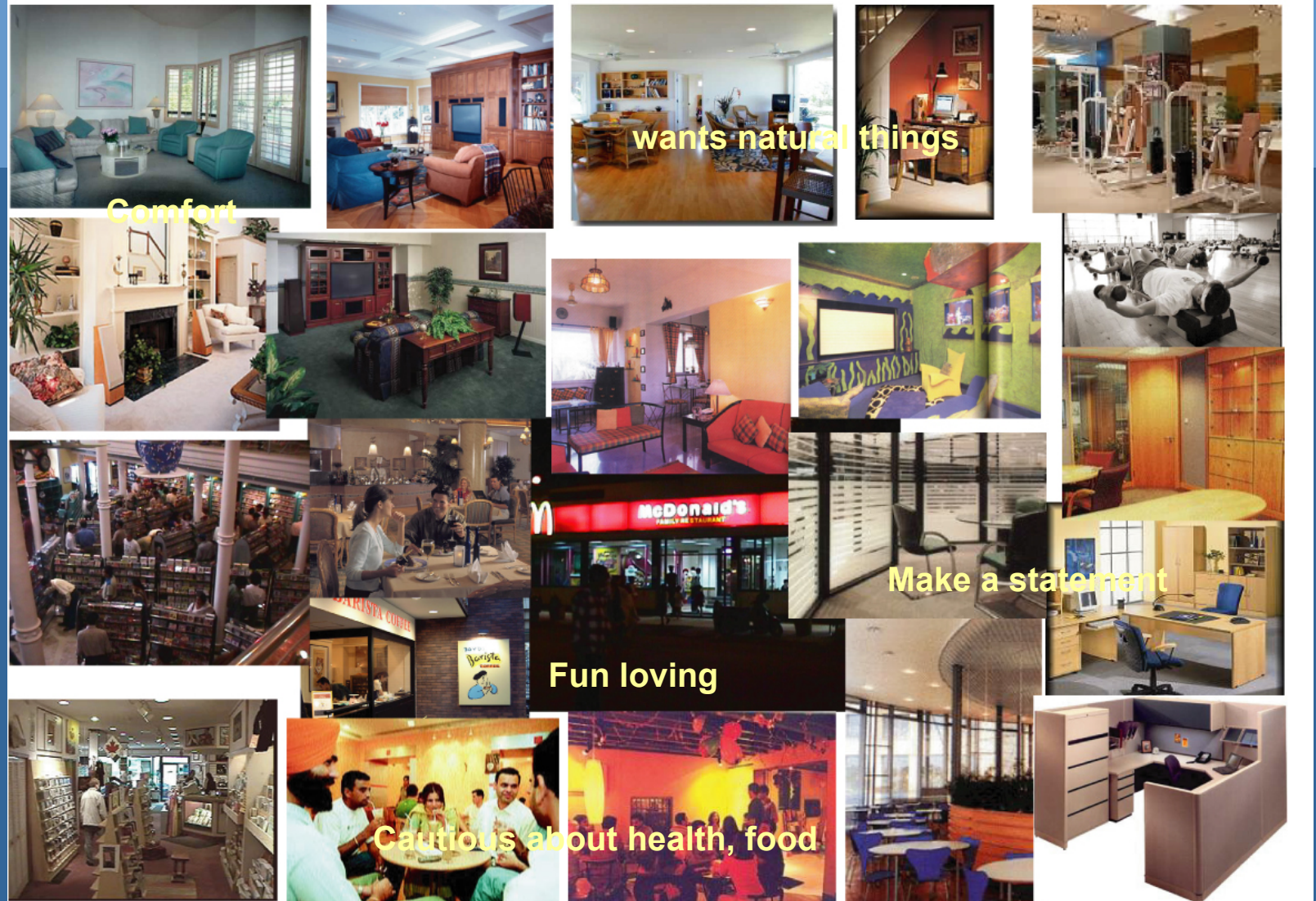
Initiation phase

Analysis Phase

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Mood board



Initiation phase

Analysis Phase

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Evaluation phase

Attributes for the proposed speaker systems

Professional looks

Natural / true materials

Retro-styling

Trying out new things

Technology

Masculine

Young

Initiation phase

Analysis Phase

Concept phase

Evaluation phase

Attributes for the proposed speaker systems



Professiona
|



True materials

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Initiation phase

Analysis Phase

Concept phase

Evaluation phase

Attributes for the proposed speaker systems

Retro-
styling



New things



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Initiation phase

Analysis Phase

Concept phase

Evaluation phase

Attributes for the proposed speaker systems



Masculine



Technology



Young



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Initiation phase

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Concept Generation

I came up with three different approaches in terms of material constraints.

Wood

Combination of wood and composite materials

Composite materials with carbon fibers or glass fibers

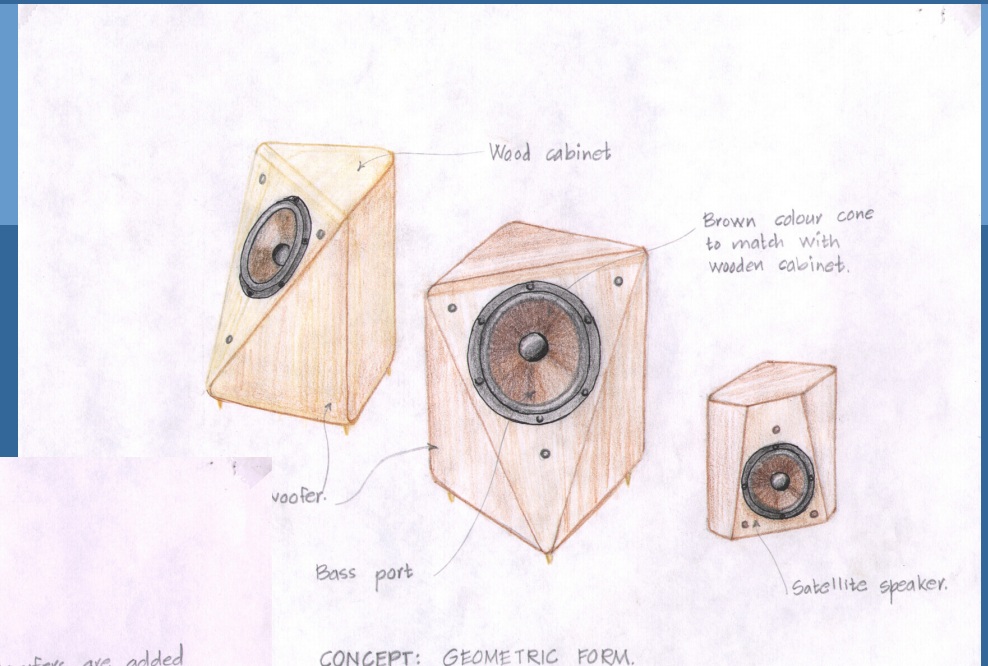
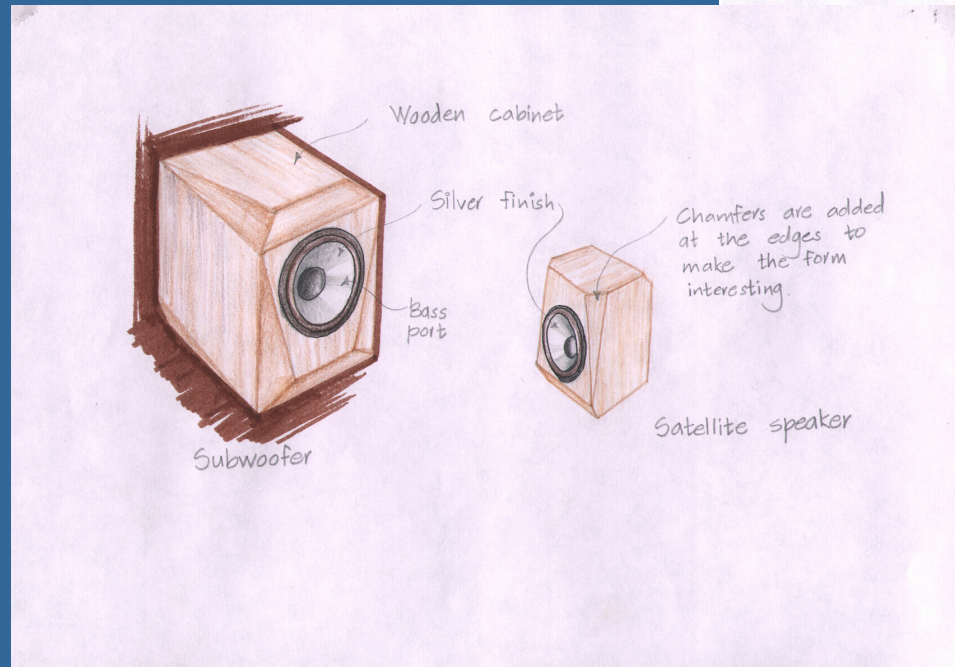
Initiation phase

Analysis Phase

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Evaluation phase

Concept Generation



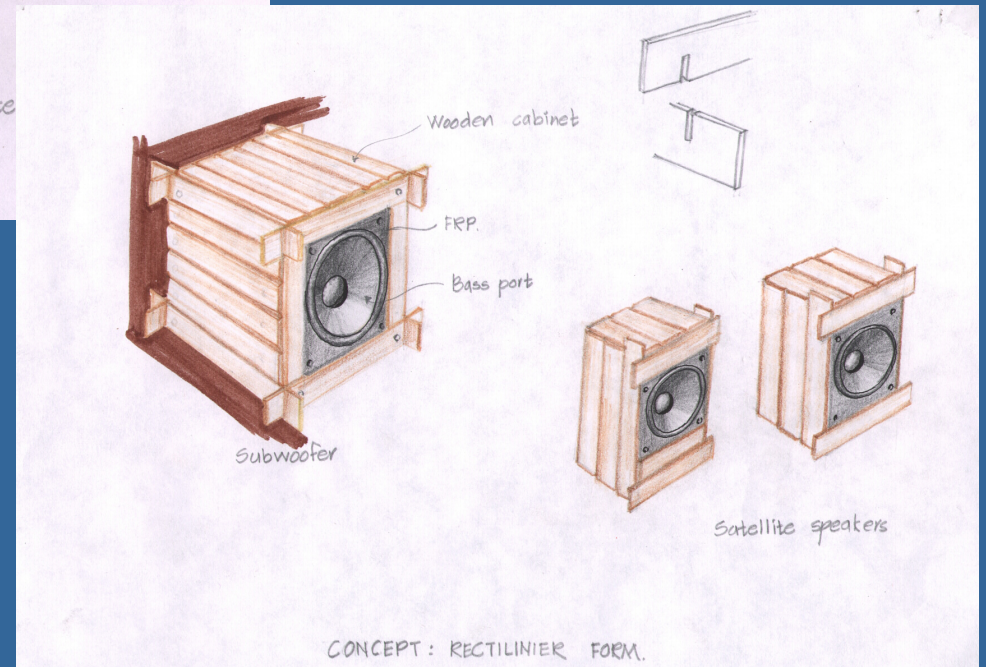
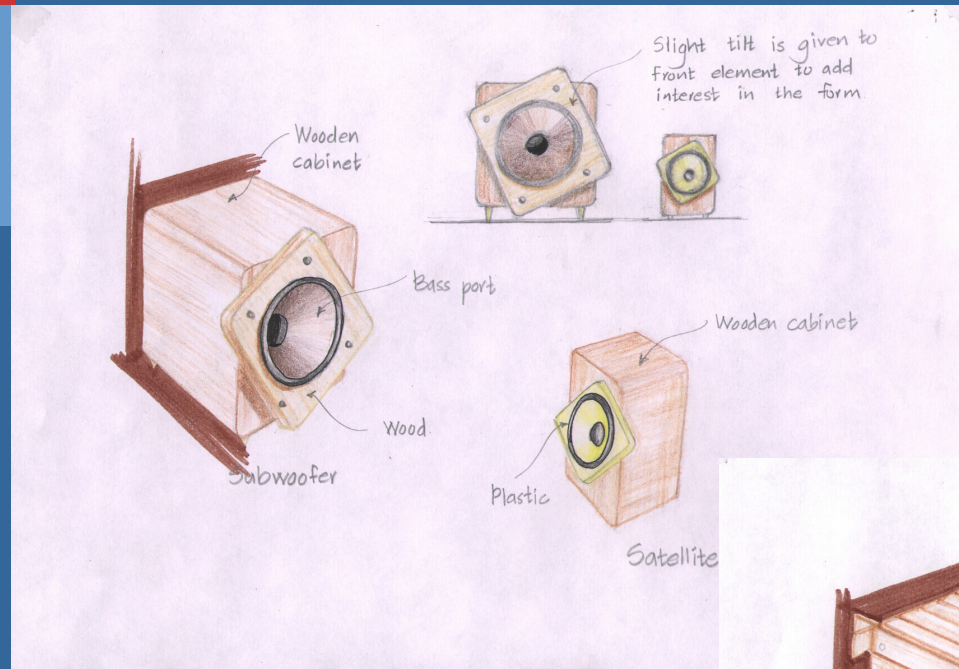
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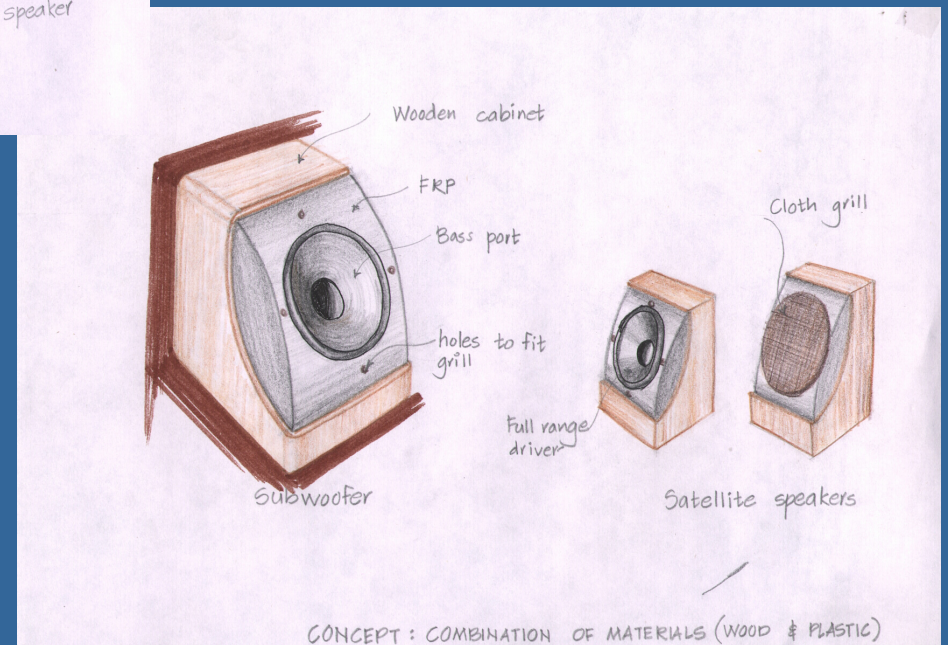
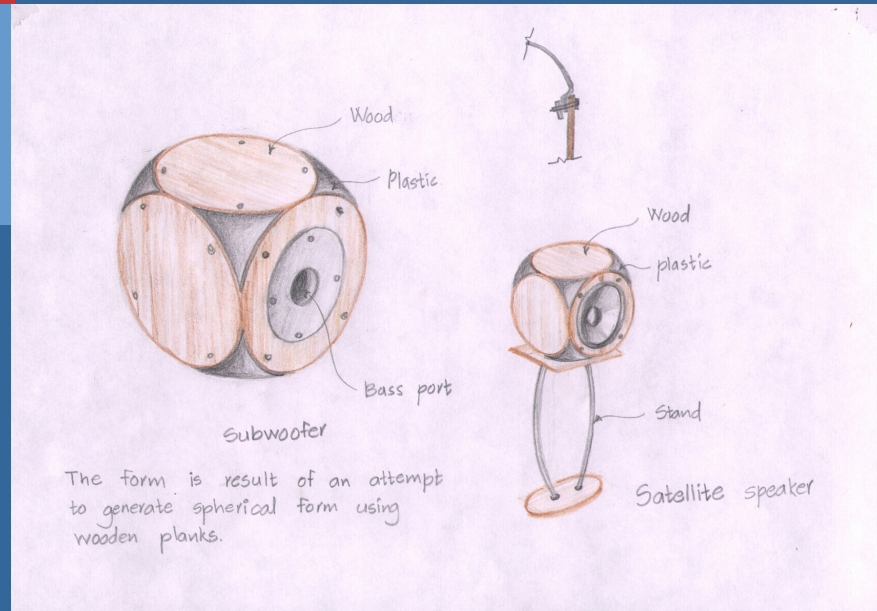
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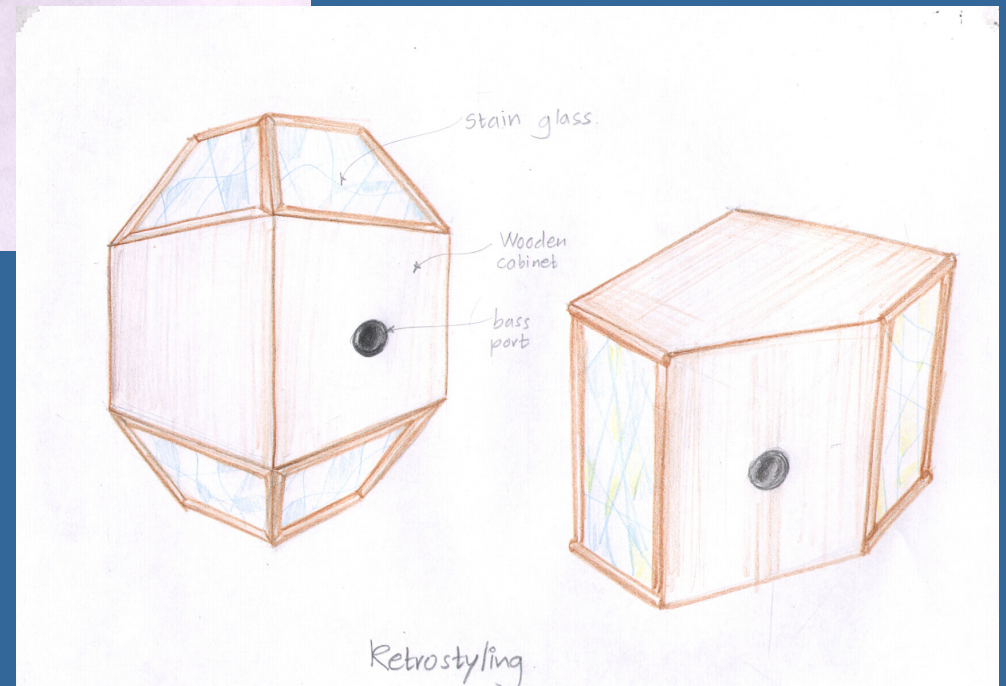
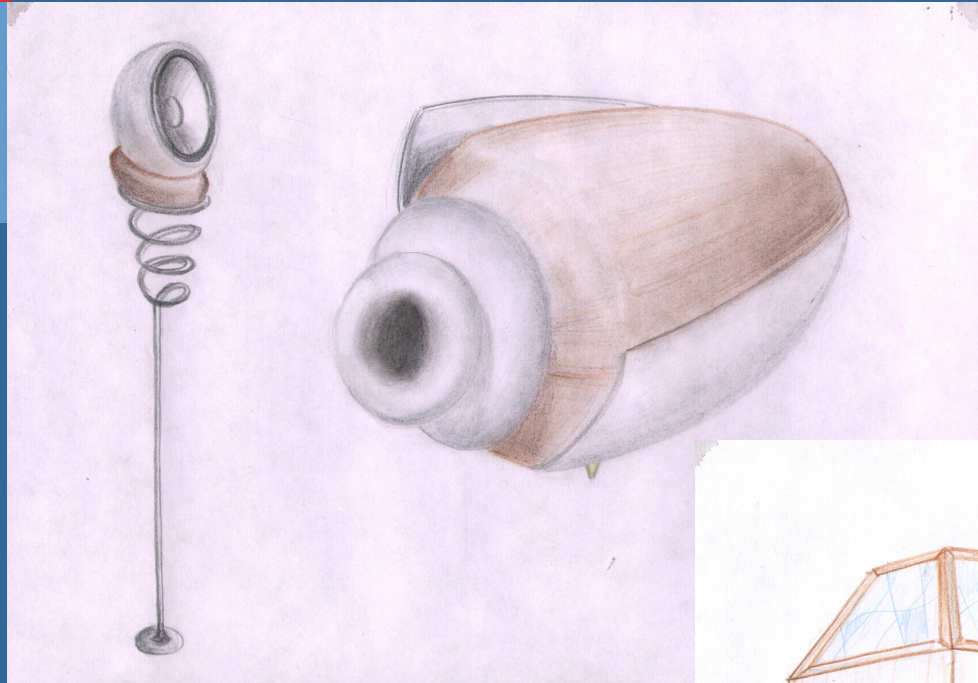
Initiation phase

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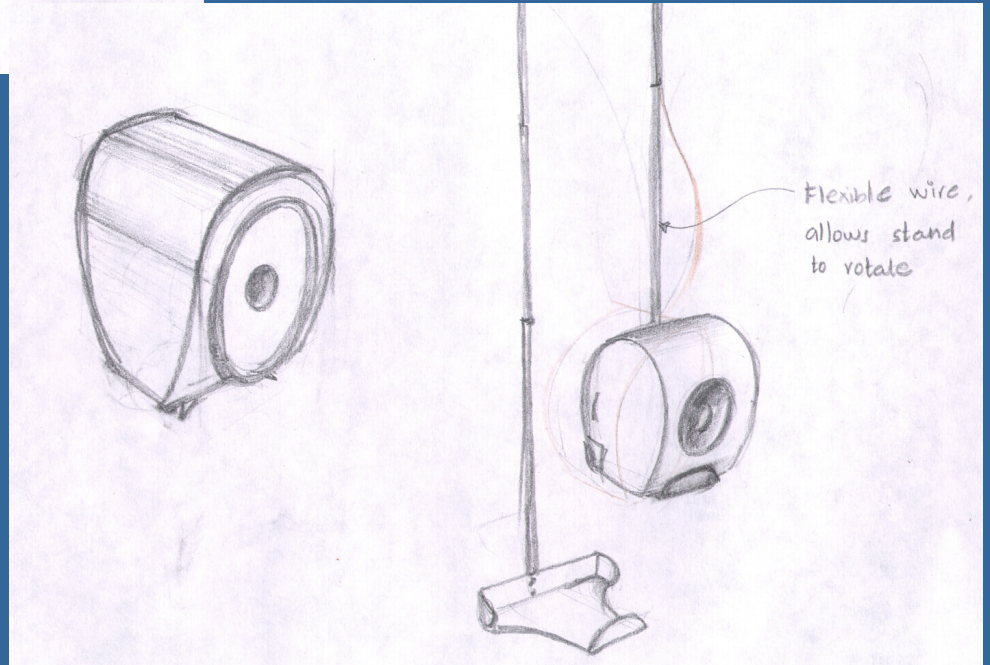
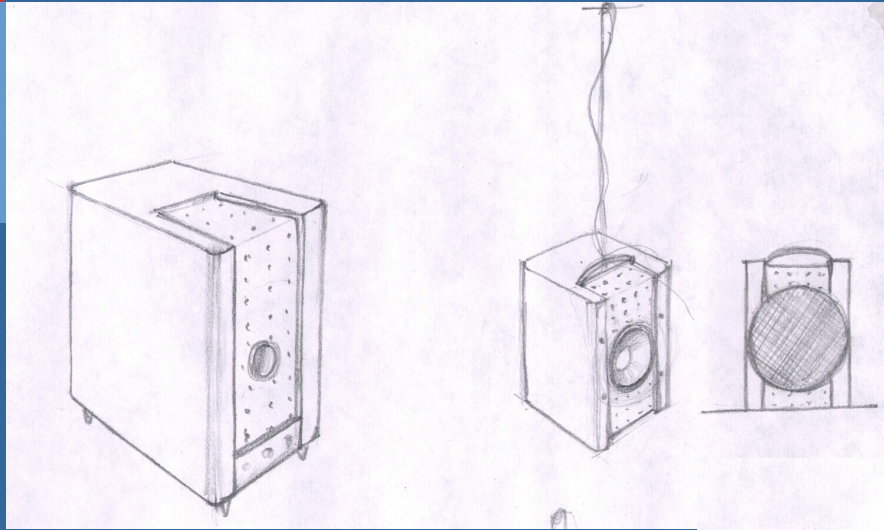
Initiation phase

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Concept Generation



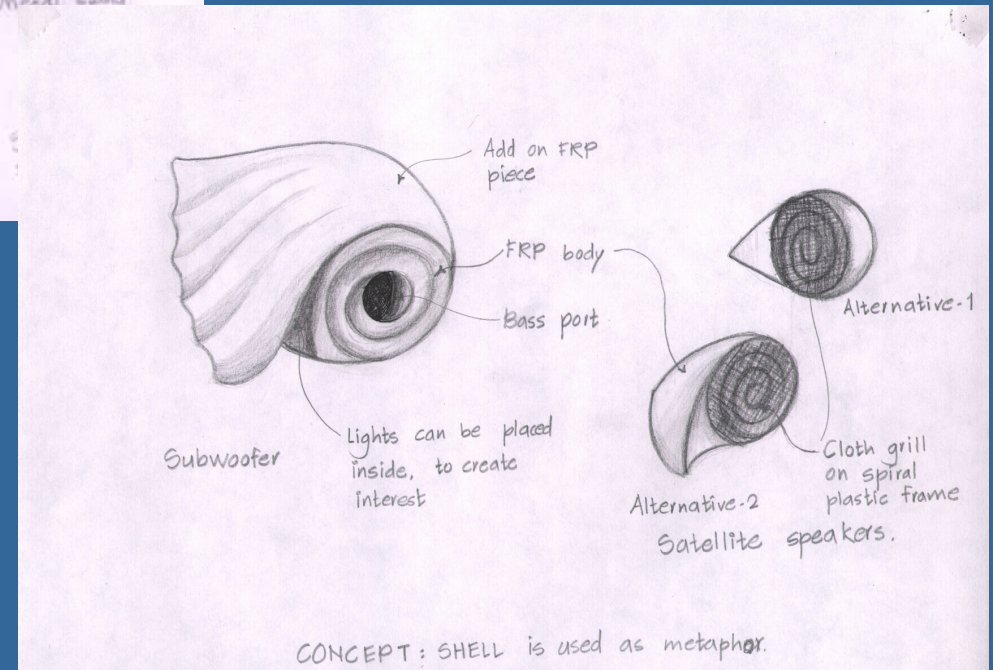
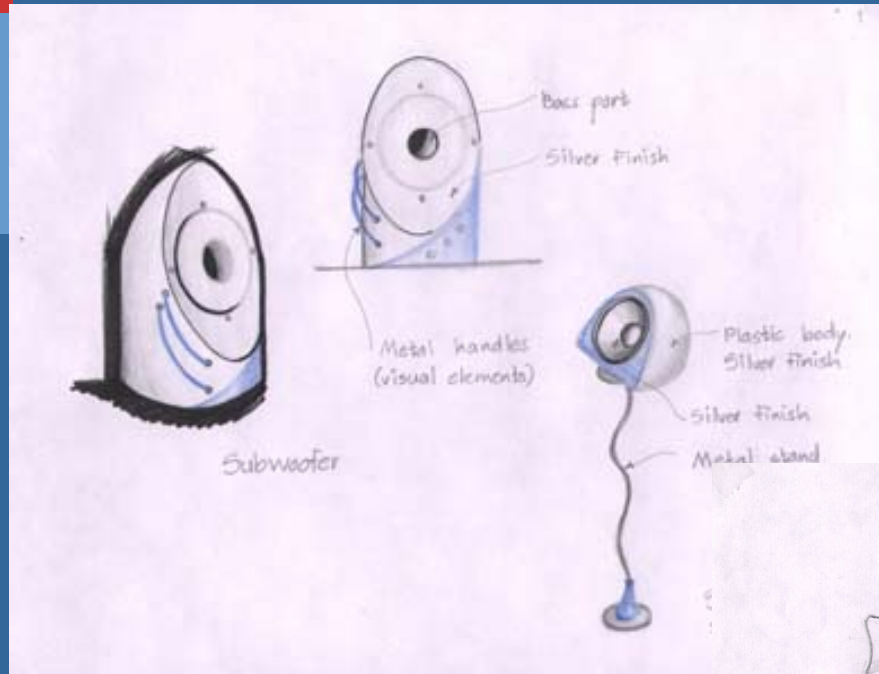
Initiation phase

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Concept Generation



CONCEPT: SHELL is used as metaphor.

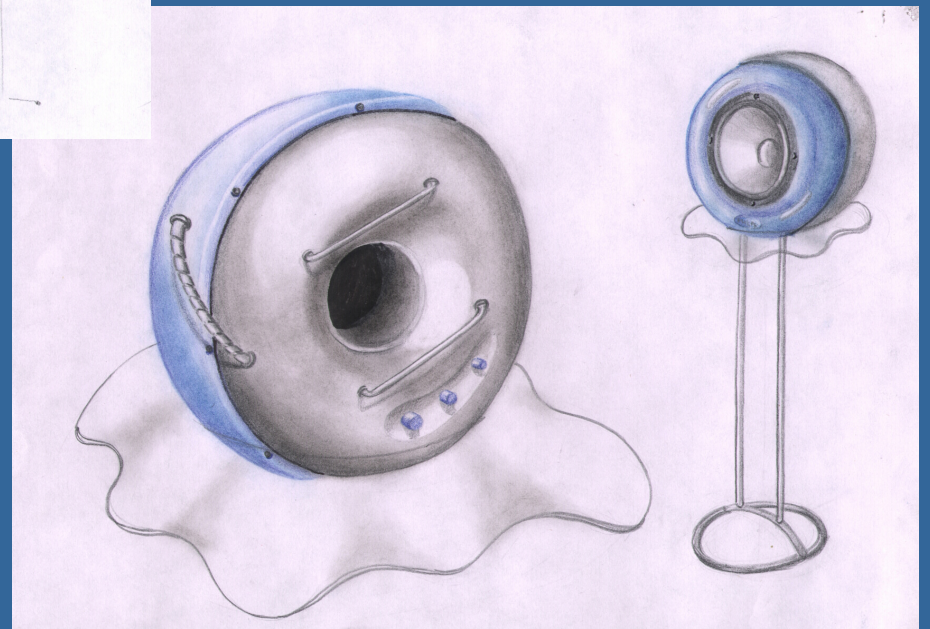
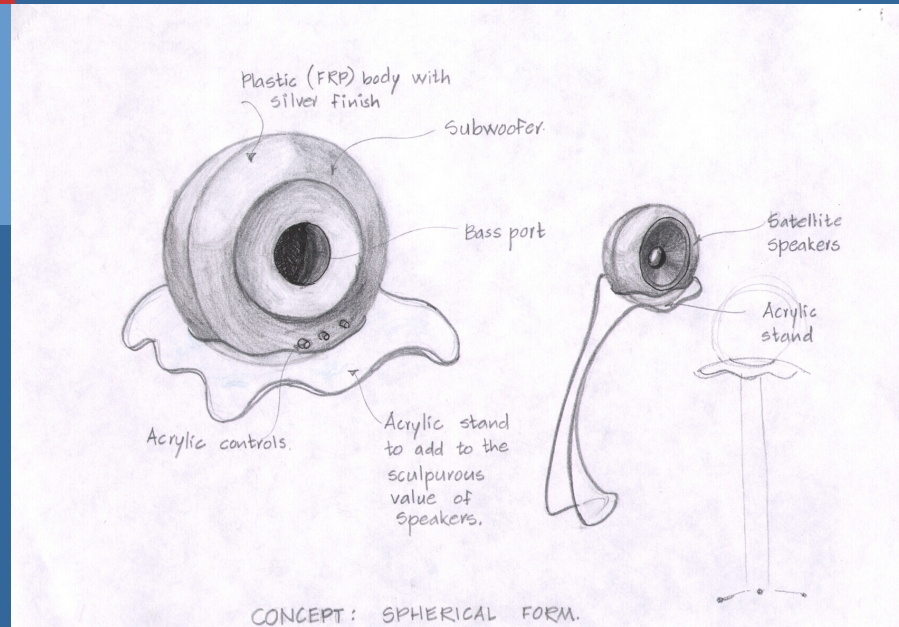
Initiation phase

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Concept Generation



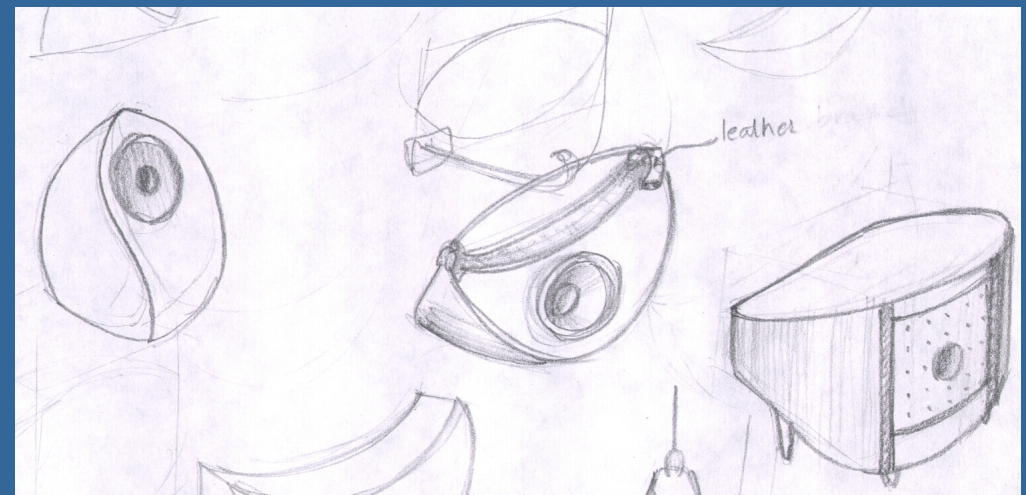
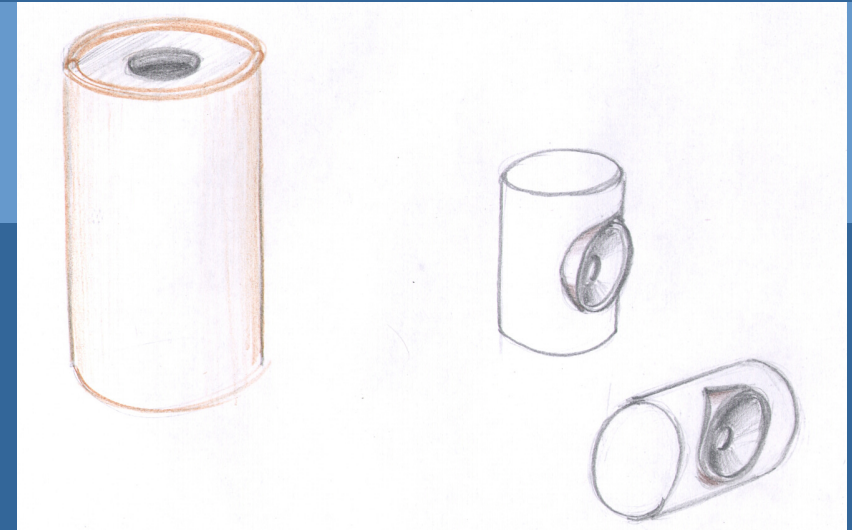
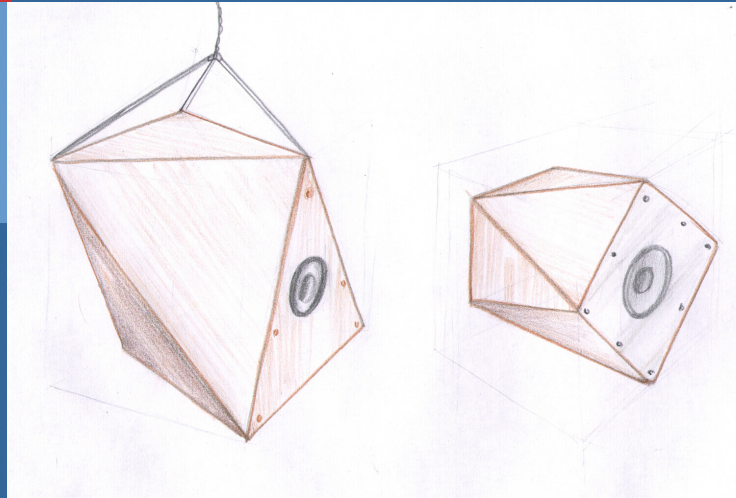
Initiation phase

Analysis Phase

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Concept Generation



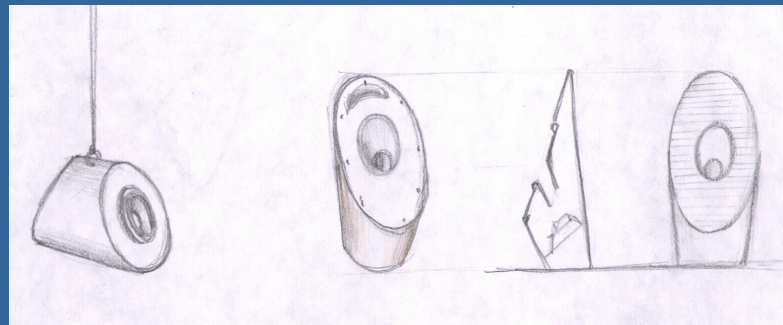
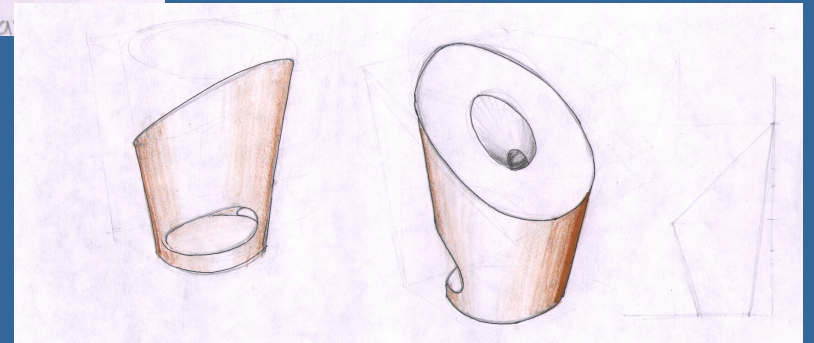
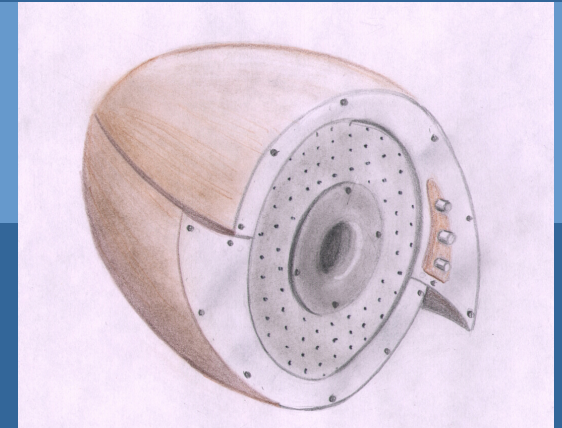
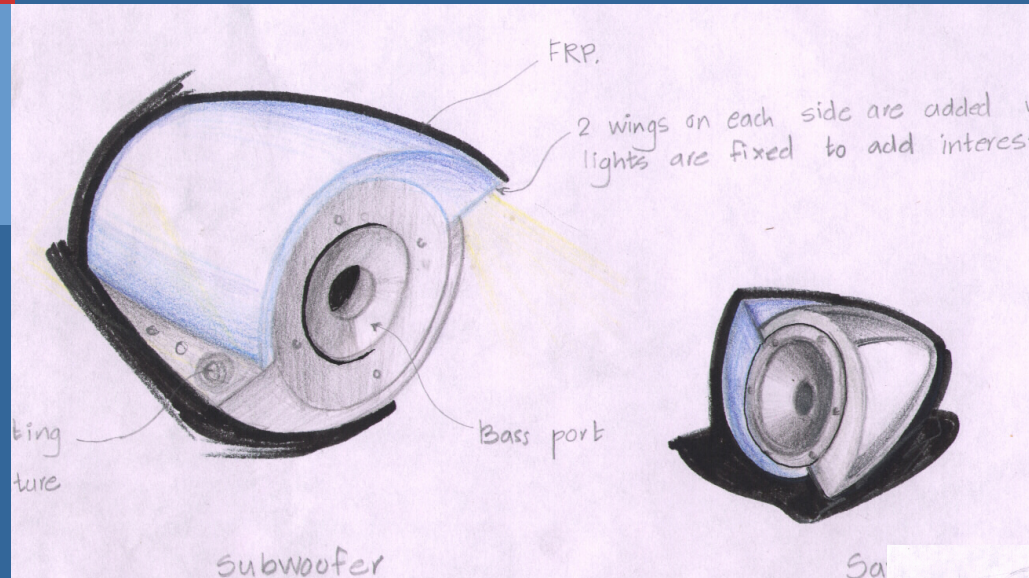
Initiation phase

Analysis Phase

Concept phase

Evaluation phase

Concept Finalization



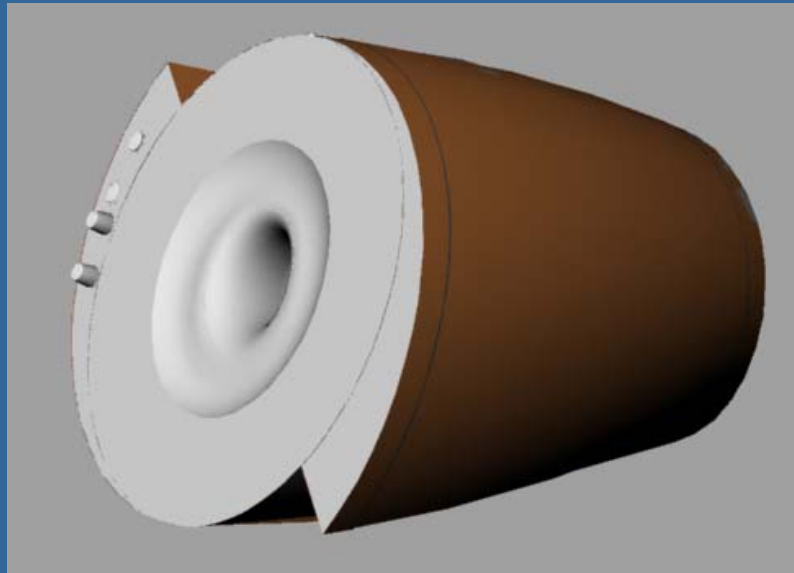
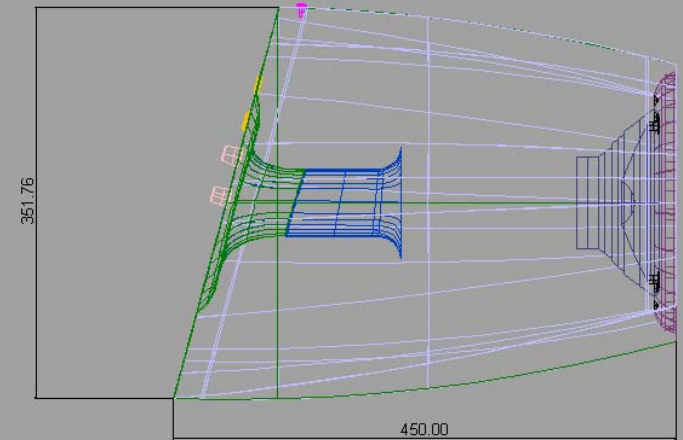
Initiation phase

Analysis Phase

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Evaluation phase

Detailing



Subwoofer

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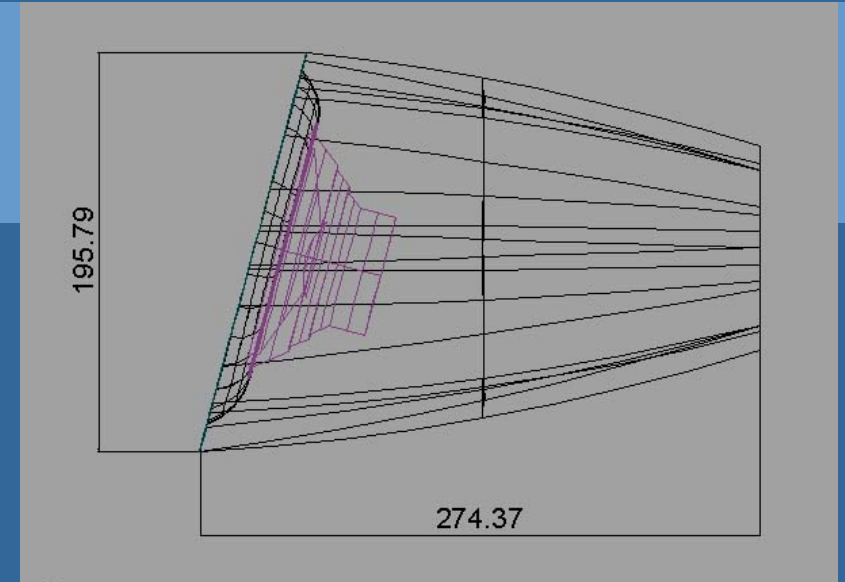
Initiation phase

Analysis Phase

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Evaluation phase

Detailing



Satellite speaker

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Initiation phase

Analysis Phase

Concept phase

Evaluation phase

Thermocol Model



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Thank you

Ashok Panwalkar

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Prakash Bhandare

Piyush Sheth

Sachin Behere

Rajesh Ghodake

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