

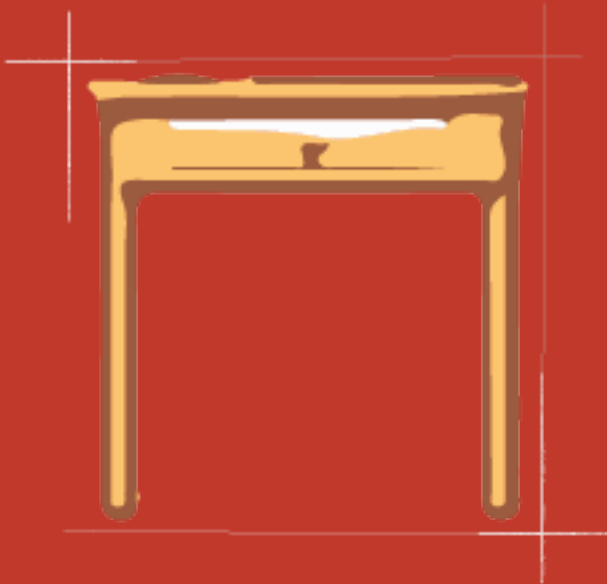
Aid for Planning Furniture Projects

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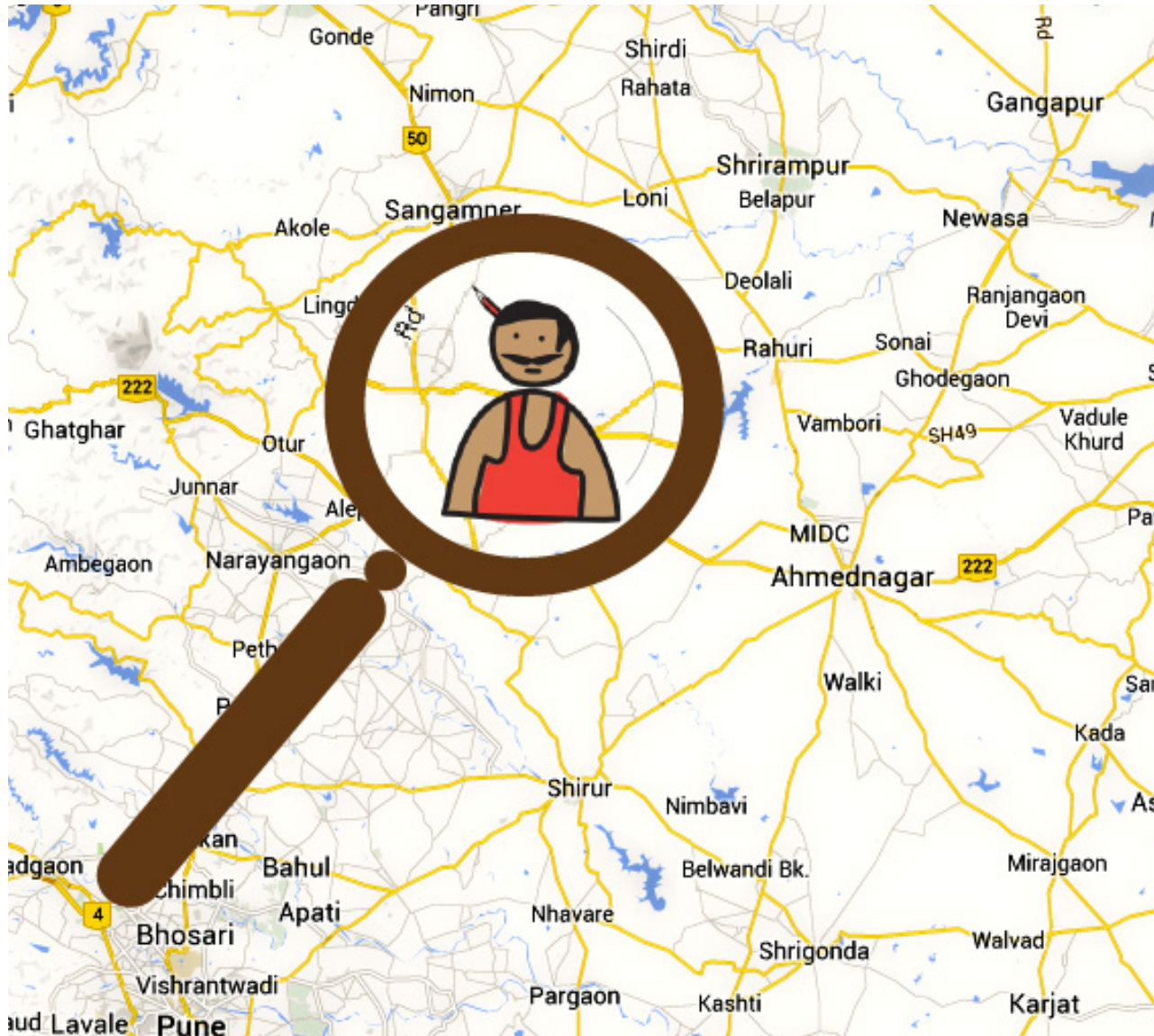


Why this project?



Vigyan Ashram
Carpenters
Clients
Interaction design
System Design

Why this project?



Carpenters are required for making furniture as per individual needs. But nowadays good carpenters are increasingly hard to find.

User Studies

Who were interviewed?

Carpenters who:

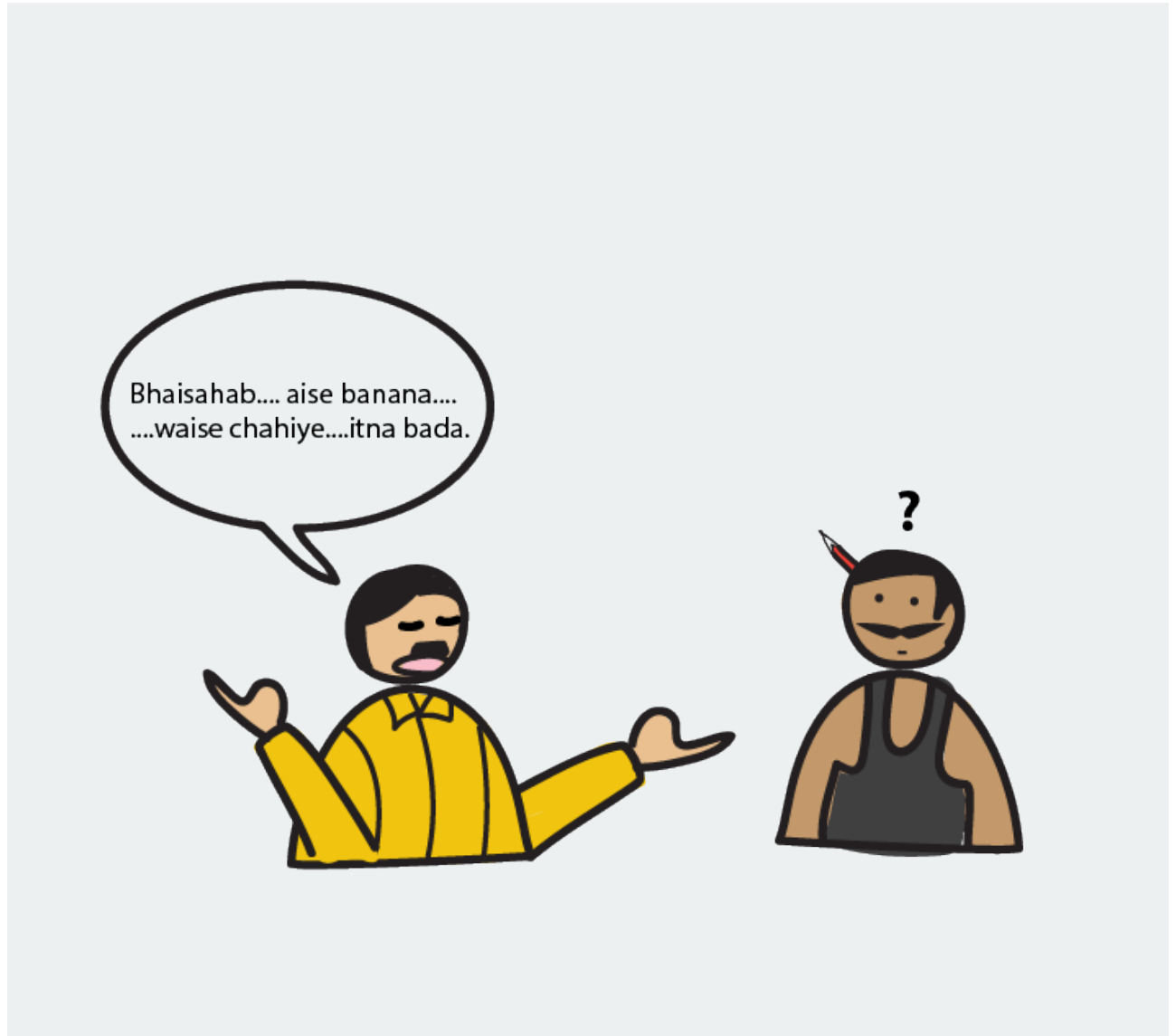
- a) fall in the age groups 17 to 50 years
- b) made customised furniture to order.

No. of Carpenters interviewed- 8

Clients who :

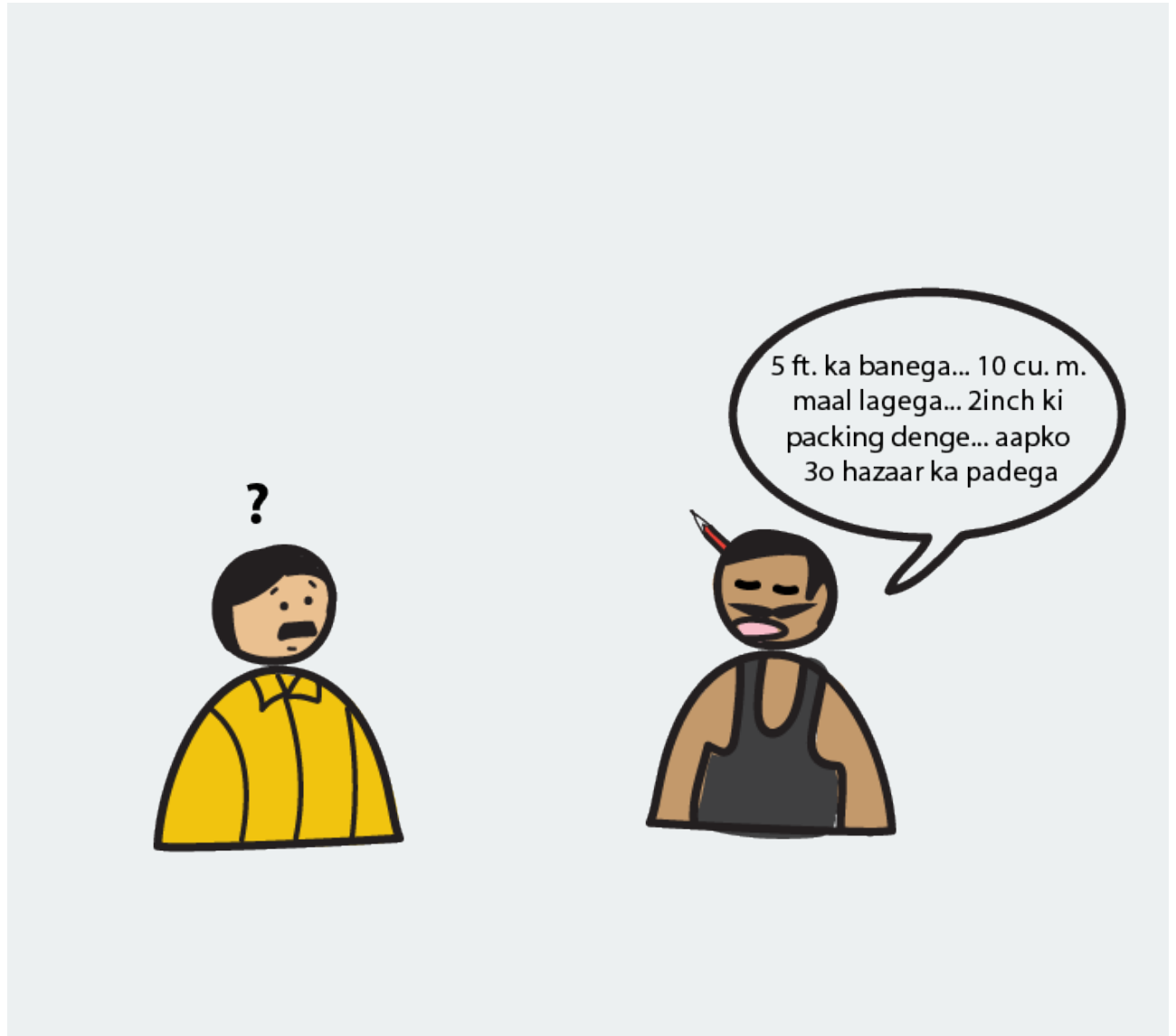
- a) had commissioned a carpenter to make customised furniture for them in the last 2 years.
- b) who had recently moved into a new home or set up a new workspace.
- c) who were looking for a carpenter for any other furniture requirements.

No. of Clients interviewed- 7



User Studies

Clients articulate their expectations about furniture in visually descriptive language. However, carpenters may not always share the same visual paradigm as their clients.



Triggers for new furniture



Moving into a new home

Growing children and their changing needs

A marriage in the immediate family.

Newborn in the family

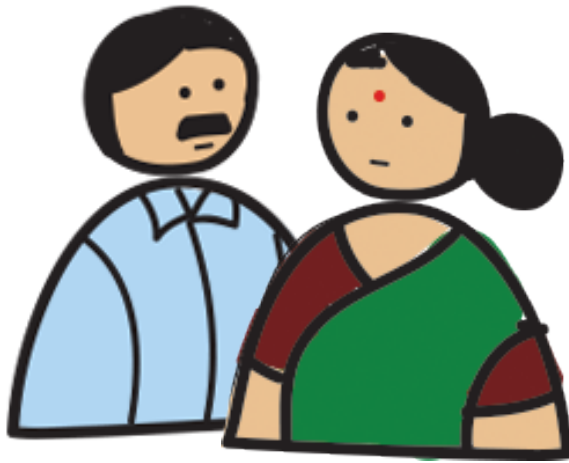
Old, decaying furniture

Extreme pest menace (bed bugs, termites, etc.)

Opportunities

Clients can be introduced to the product through builders.

Personas - Client



“We need to make enough room within the available space.”

Understanding of carpentry techniques



Willingness to pay extra for better service:



Spatio-visual Sense



Persona 1: The Family

Anubhav & Anubha

Who are Anubhav and Anubha?

Anubhav and Anubha have been married for 8 years and live with their two children, Anoop of 7 and Anuja of 4 years, in a two-bedroom apartment in Goregaon. Anubhav is a general physician and Anubha is a home-maker with a Bachelor's degree in Home Science. With their kids growing up, they need to make space for them to keep things comfortable. They are looking for compact furniture with good storage capacity.

Nature:

Anubhav is passionate about philately, Anubha loves trying out new recipes, from the weekly cookery show. Anubhav has a laptop which he carries to his clinic and owns a smart-phone with internet. He uses his laptop to maintain and refer to records of his patients, while he's at the clinic. In his free time he refers to journals on new medical findings. He buys things online only if there is a cash on delivery option, as he is not comfortable revealing his credit card details online. He also has a desktop and printer at the clinic, which is operated by the receptionist. They have purchased a tablet as they feel it is a good learning device for their children. During the day, when the kids are at school, Anubha uses the tablet to post pictures and updates on facebook, about interesting things her children do and new recipes she has tried. She also uses facebook to keep in touch with her friends, she is now considering starting a blog on nutrition and foods that heal.

Requirement:

Furniture for home, made as per measurements of available space

Concerns:

Furniture mustn't make the home too congested, there should be enough space for children to move freely.

Personas - Client

Persona 2: The Service Consumer

Rustom Baria

Who is Rustom?

Rustom lives in his ancestral home at Koregaon park, Pune, along with his wife. He used to own a popular antique store on MG road. 5 years ago he wound up his business to spend time with his family. His son has settled abroad and has two little girls, aged 3 and 5. Rustom visits his son to spend a couple of months with his granddaughters, during their vacations, every winter. He suffers from diabetes and arthritis. This year, he could not go to his son's home, owing to his advancing trouble with arthritis. He plans to use this time to carry out various repairs around his home. He definitely needs a carpenter to do a number of small repairs for restoring some pieces of furniture from his father's times.

Nature:

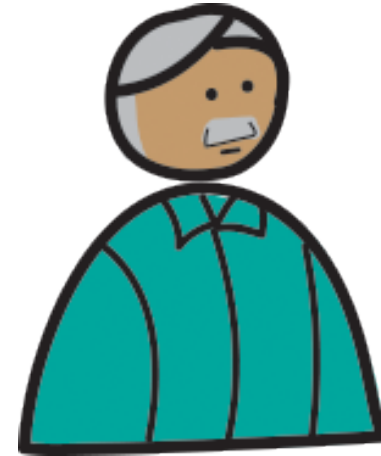
He enjoys listening to classical piano, reading novels and periodicals and loves socialising at the local club. Rustom has a desktop computer which he uses to correspond to e-mails, (which he prints and files away, regularly) and make Skype calls to his son and granddaughters. He also watches videos of piano solos on Youtube, he conducts Google searches and refers to wikipedia to know anything he may be curious about. He also has a fixed phone line at his home, which he uses more frequently than his basic feature phone.

Requirement:

A carpenter to do petty repairs, he doesn't mind paying a little extra. The carpenter must be patient.

Concerns:

He should be reliable.
He should know his job.



“Nothing much.. But it’s tough to find men to do it.”

Understanding of carpentry techniques



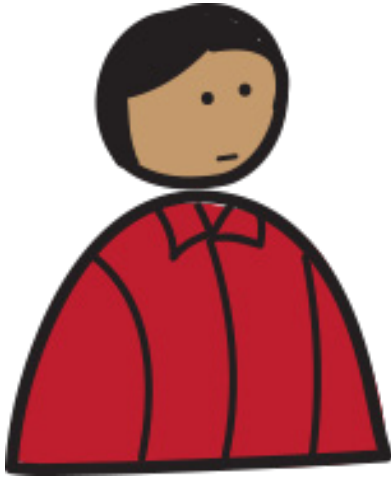
Willingness to pay extra for better service:



Spatio-visual Sense



Personas - Client



“Every Rupee counts.”

Understanding of carpentry techniques



Willingness to pay extra for better service:



Spatio-visual Sense



Persona 3: The Optimal Benefit Extractor

Sreekant

Who is Sreekant?

Sreekant is a young entrepreneur, CEO of a small start up for IT solutions. Sreekant has just bought himself a new apartment . He needs furnish the apartment before he moves in. But after buying this place, he's on a tight budget now.

Nature:

Sreekant wants to make furnishing a worthwhile investment which keep him without being too heavy on his pocket. He uses his laptop and Smart-phone all the time and feels he wouldn't be able to do without them. He's quite tech savvy. He's comfortable buying things online. Sreekant feels he'll be able to have furniture as per his requirements and yet maintain his budget, if he opts for custom made furniture.

Requirement:

Home furniture to be planned as per the given floor plan.

Concerns:

Should fit within the budget

Furniture must be well planned and suitable for long time use.

Personas - Carpenter

Persona 1: The established businessman

Name: Ramulal Sutar

Age: 50 years

Based in: Powai

Ramulalji has been in the carpentry business for the past 35 years. He coordinates most of his business by making phone calls through his Nokia basic phone. He has around 15 assistants. He is frequently contacted for society maintenance as well as renovation work in residences. Recently he has opened up his workshop near Vikhroli after receiving a large contract for renovating the Haiko Supermarket at Powai.



“Humko yahaan jaante hain. Main agar ek jagah baith bhi jaoon toh business chal jaega.”

Personas - Carpenter



“Yeh business toh trust pe chalta hai...Aur aaj kal toh mall pe zyaada bharosa karte hain.”

Persona 2: The team worker-cum-entrepreneur

Name: Omprakash

Age: 35 years

Based in: Pune

Omprakash has been in the business for the past 15 years. He works along with his team on the job. He takes up home renovation, repairs and reuse furniture jobs and also has ties with a few interior designers. He works on site and does not have any fixed workspace. He can be contacted on his mobile phone or through a hardware shop in city's Ply market.

Personas - Carpenter

Persona 3: The Assistant

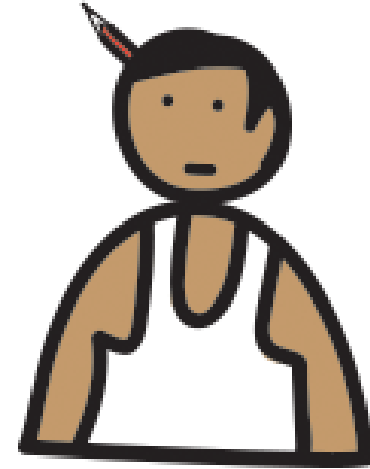
Name: Raju Tripathi

Age: 27 years

Based in: Powai

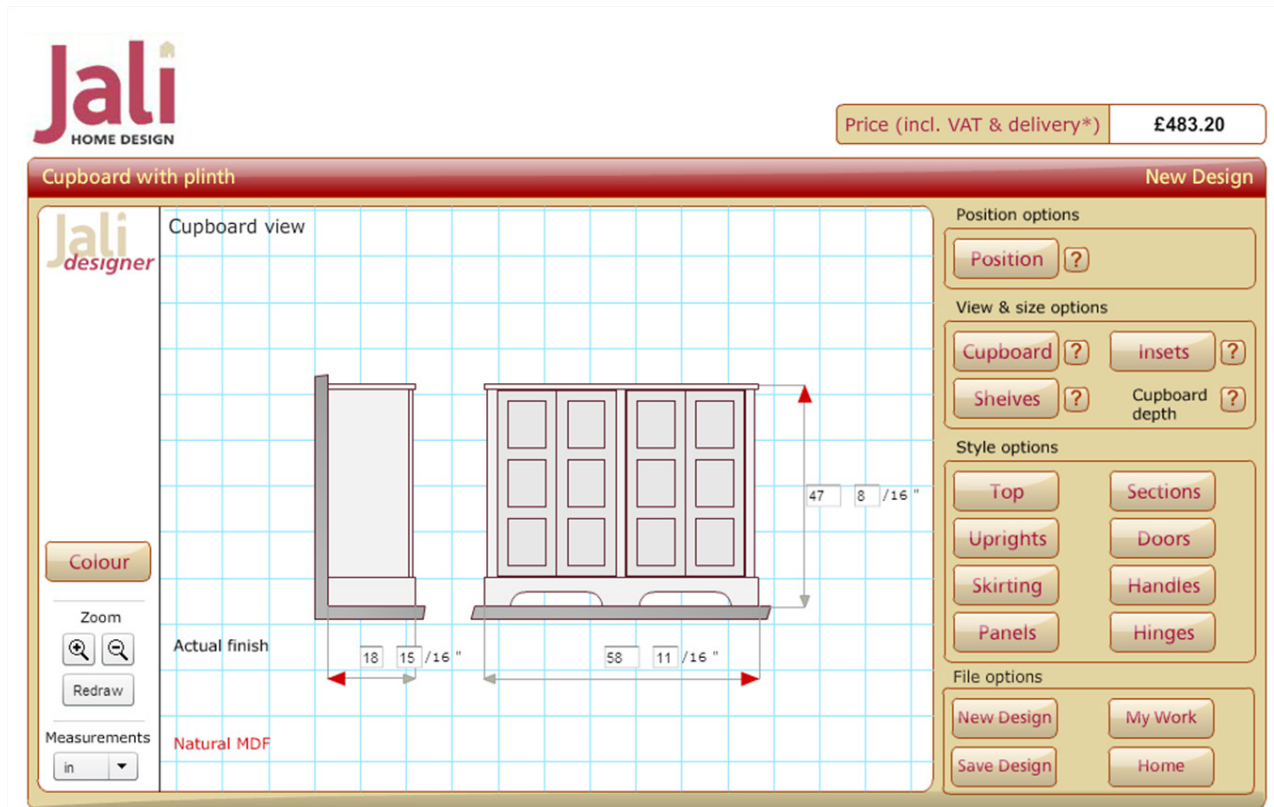
Raju has been working under Ramulal ji for the past 12 years. He is quite adept at his work and is trusted by his superior, but the work procedure demands that he wait for Seth ji's approval at regular checkpoints and conducts critical tasks under his direct supervision. He uses his phone to make and receive phone calls and to listen to the music player or radio as he works.

He plans to start an independent business in the future.



“Seth se poochna padega.”

Analisis of Existing Products



<http://www.jali.co.uk/> "http://www.jali.co.uk/designer.cfm?CFB1B1DB6E47599AD052DF8A71BE3A98

Jali

Is a UK based furniture store which allows its clients to customise the furniture online and then place an order for the same. The furniture is then shipped to the client's address. (3)

Notable features

They provide a minimum and maximum limit to many customizable elements like measurements, number of shelves, number of column in a wardrobe, etc.

Well planned customisation options, they guide the user through all their functions so that the user understands and is able to utilise all the available options.

Breakdowns

Can't make out how the material and finish will actually look.

Mainly numerical input based interactions, take a while to understand what all customisation options are available.

Cannot introduce a change in basic design, e.g. one cannot introduce drawers into a wardrobe which has only shelves.

Analysis of Existing Products



Choices Custom Upholstery

Click on Your Customizable Piece



Suggested Pieces/Set A

From left: Left Arm Facing Loveseat, Armless Chair, and Right Arm Facing Corner Sofa



Suggested Pieces/Set B

From left: Left Arm Facing Loveseat, Corner, Armless Chair, and Right Arm Facing Loveseat



Suggested Pieces/Set C

From left: Left Arm Facing Loveseat, Corner, and Right Arm Facing Loveseat

Broyhill

Sells mainly seating furniture online. It has a wizard for customising furniture (4)

Notable features

Can systematically customize furniture using a wizard approach.

Every element in the design options provided are well rendered, this makes it easier for the user to understand what kind of a finished product they must expect upon delivery and makes it easier and more interesting for the user to choose from.

Breakdowns

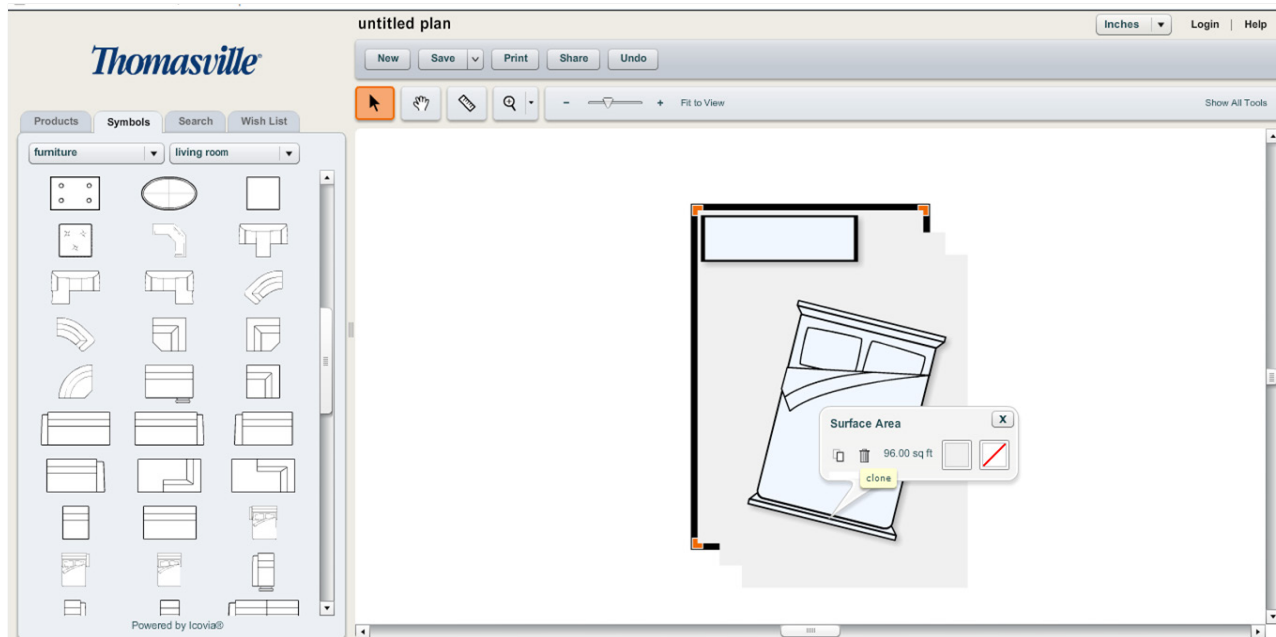
The interaction is often over simplified and may become a little rigid, user is unable to skip ahead in the process if they already know what changes they would like to make.

The tool can be very heavy on the browser and tends to hang very often.

It is difficult to use on low internet bandwidth.

<http://www.broyhillfurniture.com/Furniture/Design-Your-Own.aspx>

Analysis of Existing Products



<http://www.broyhillfurniture.com/Furniture/Design-Your-Own.aspx>

Thomasville - Icovia Room planner

Is a room planner, offered by a furniture store. It allows the client to plan their furniture according to space in their room and then they may share their plans with friend, they may download a PDF of the plan. (6)

Notable features

One could modify the size and shape of the room simply by dragging the handles provided on the objects.

The manner of displaying various options and interaction of placing objects was very similar to Ikea Beta Planner (viz drag and drop from side menu).

Breakdowns

Offers only plan view.

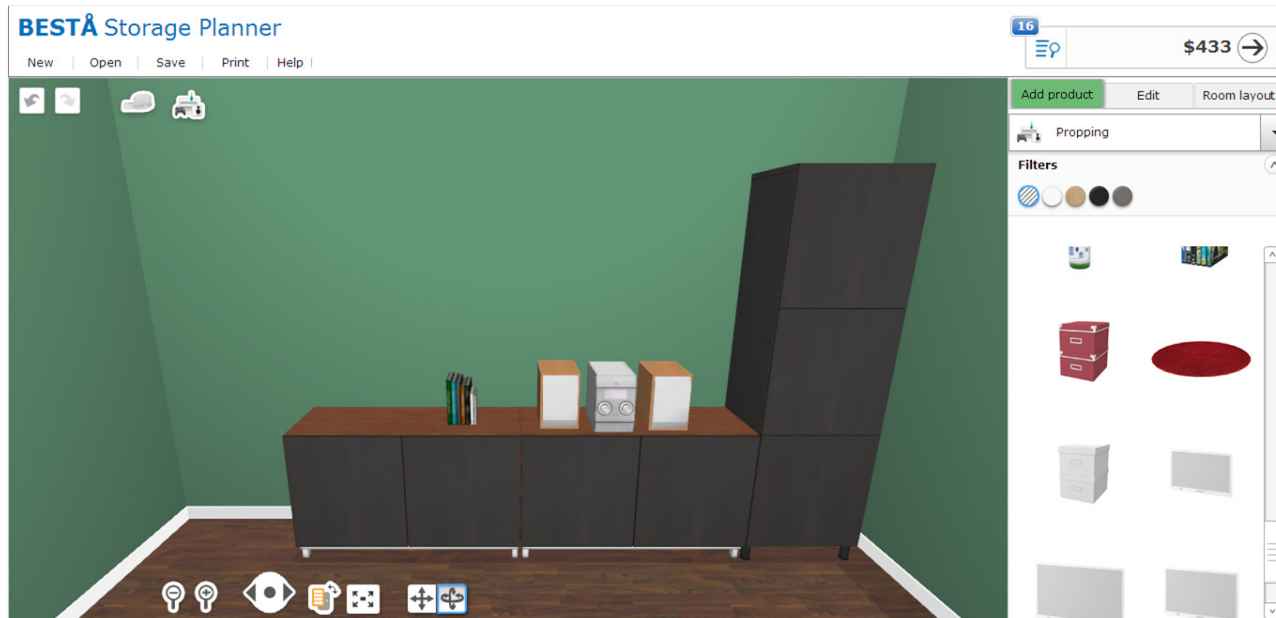
Cannot customise furniture

Sharing through e-mail facility is not safe, there is a possibility of email phishing.

After planning the furniture there was no link or indication to the next action or service that the business could offer. Actually, the user was expected to schedule a personal meeting with Thomasville and this had been mentioned on Thomasville's webpage.

However, when the users finished using the Icovia room planner, they expected to be guided towards their next course of action and that did not happen.

Analysis of Existing Products



Books and music system were among the reference objects available for users to have a better understanding of how the products could look once were in use.

http://www.ikea.com/ms/en_US/rooms_ideas/planner_bestapulleva/index.html

Ikea Beta Planner

Allows user to plan their own room, with a wide variety of products that they offer for sale. After making all the necessary choices, the client may either email or download a copy of the room along with a floor plan and product list. They are then offered information about Ikea stores near their location, where they may proceed to make the purchase. (5)

Notable features

Clear definition of functionality,

Self aligning furniture

Good graphics

Not very heavy on the system

Offers pop up objects, which are not for sale but available to help the client better understand how his room and furniture will look once it is in use.

Provides constant information on the bill

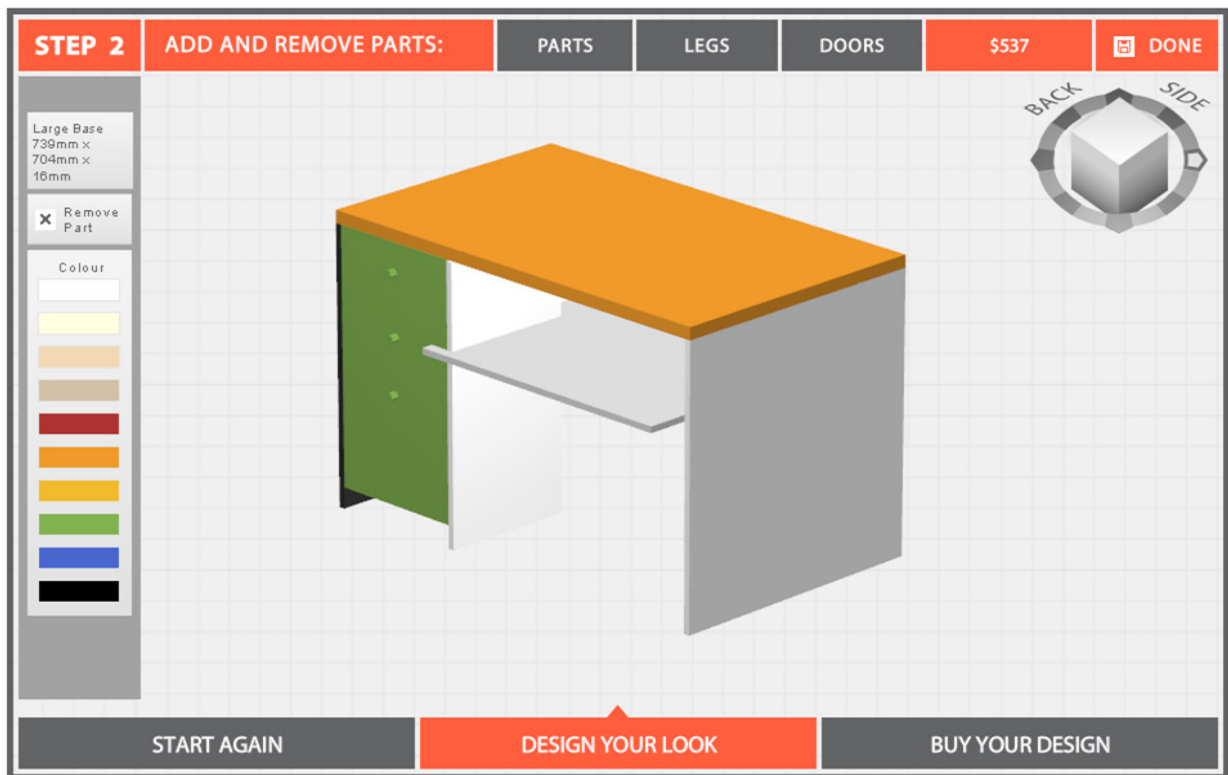
Breakdowns

Does not allow customisation in terms of size proportion, structure and other elements.

Options are open for making choices for element which may not be present in the current product, this confuses users.

Furniture needs to be collected from the store and cannot be ordered online.

Analysis of Existing Products



<http://www.evolvex.com.au/design-your-own/>

Evolvex

Is an award winning, patent pending furniture design tool for viewing and customising flat-bed mdf furniture. After asking their buying decisions, clients may place an order their customised furniture, which they receive in flat boxes and may assemble them on their own. (7)

Notable features

One can change point of view of the object by clicking on the object on the top right corner.

Can change colours of the mdf and view furniture in 3d. There is a facility to add, remove and modify various elements like doors, planks, and legs of the furniture.

Breakdowns:

Can't change measurements and proportions. Offers modular furniture with very limited customisation, there is a dead end in the interaction when user is unable to join loose planks to the furniture in order to make any significant structural change and the system does not allow any progress without either deleting or somehow join these loose planks.

All the above mentioned products are run by individual organisations in or to sell their furniture. However, this project aims to develop a decentralised system for commissioning individual carpenters, no particular organisation that claims rights to the designs suggested in them.

Analysis of Existing Products

The screenshot shows an eBay search results page for the keyword 'service'. The page layout includes a top navigation bar with links for 'Sign in or register', 'Daily Deals', 'Sell', and 'Customer Support'. A search bar at the top center contains the text 'service' and a 'Search' button. Below the search bar, there are filters for 'All Listings', 'Auction', and 'Buy It Now', along with sorting options like 'Best Match' and 'View'. The main content area displays three product listings:

- Listing 1:** 'Gurkha Service Kukri - Authentic Khukuri Knives - British Gurkhas Issue Knife' from Nepal. Price: \$39.99. 2m left, Today 1:40PM. 1 bid.
- Listing 2:** 'LOT INTERNATIONAL 886 986 1086 1486 TRACTOR SERVICE REPAIR SHOP MANUAL IH ENGINE'. Price: \$79.97. Buy It Now. 14 Watchers.
- Listing 3:** 'Kukri, British Gurkha Service Gripper Handle Khukuri, EGKH-Handmade Blade - Knife' from Nepal. Price: \$59.99. 2m left, Today 1:40PM. 0 bids.

The left sidebar shows various categories such as 'eBay Motors', 'Parts & Accessories', 'Collectibles', 'Business & Industrial', 'Pet Supplies', and 'Home & Garden'. The right sidebar features 'Popular on eBay' with images of service manuals.

<http://www.ebay.com.au/design-your-own/>

E-bay

Ebay is an open portal for buying and selling a wide variety of goods. It acts as a platform for buyers to find what they are looking for and sellers to advertise their ware. They deal in both new and used products. (8)

Notable features

Any one can set up an account and directly sell any thing.

There is a bid system available which makes to the experience of buying equal to that of winning. It also makes the transaction much more engaging and exciting.

Because the system is for regular use, it can allow the user to learn newer features and strategies to make the most of their presence on E-bay over multiple uses and a sizeable duration off time.

Breakdowns:

There is practically no quality control buyers and sellers judge each other's trustworthiness on the basis of the feedback on their profiles.

For the current project, our system also must maintain the role of an unbiased mediator similar to what E-bay plays.

Analysis of Existing Products

Sort Results By | Top Results | Location | Distance | User Ratings | Special Offer

Carpenters

- Furniture Dealers
- Second Hand Furniture Buyers
- Bean Bag Dealers
- Modular Kitchen Dealers
- Second Hand Furniture Dealers
- Cupboard Dealers-Godrej
- Office Chair Dealers
- Sofa Repair & Services
- Furniture Dealers-Godrej
- Chair Dealers
- Sofa Dealers
- Plastic Chair Dealers-Nilkamal
- Office Furniture Dealers
- Furniture Dealers-Nilkamal
- Sliding Window Dealers
- Plastic Chair Dealers
- Swing Dealers
- Chair Dealers-Nilkamal
- Furniture Manufacturers
- Beds On Hire
- Steel Cupboard Dealers
- Modular Kitchen Manufacturers
- Aluminium Sliding Window

Fine Home
3.1 Very Good
14 ratings
(022) 61618650
Kandivali East | More...
Carpenters, Carpentry Contractors
SPECIAL OFFER

Raj Interiors
3.7 Very Good
6 ratings
(022) 49177696
Vakola-Santacruz East | More...
Carpenters, Glass Door Dealers, More...
SPECIAL OFFER

Rampravesh Carpenter
3.8 Very Good
9 ratings
(022) 49179600
Andheri East | More...
Carpenters, Wall Paper Retailers, More...
SPECIAL OFFER

Justdial

Is an award winning, patent pending furniture design tool for viewing and customising flat-bed mdf furniture. After aking their buying decisions, clients may place an order their customised furniture, which they receive in flat boxes and may assemble them on their own. (9)

Notable features

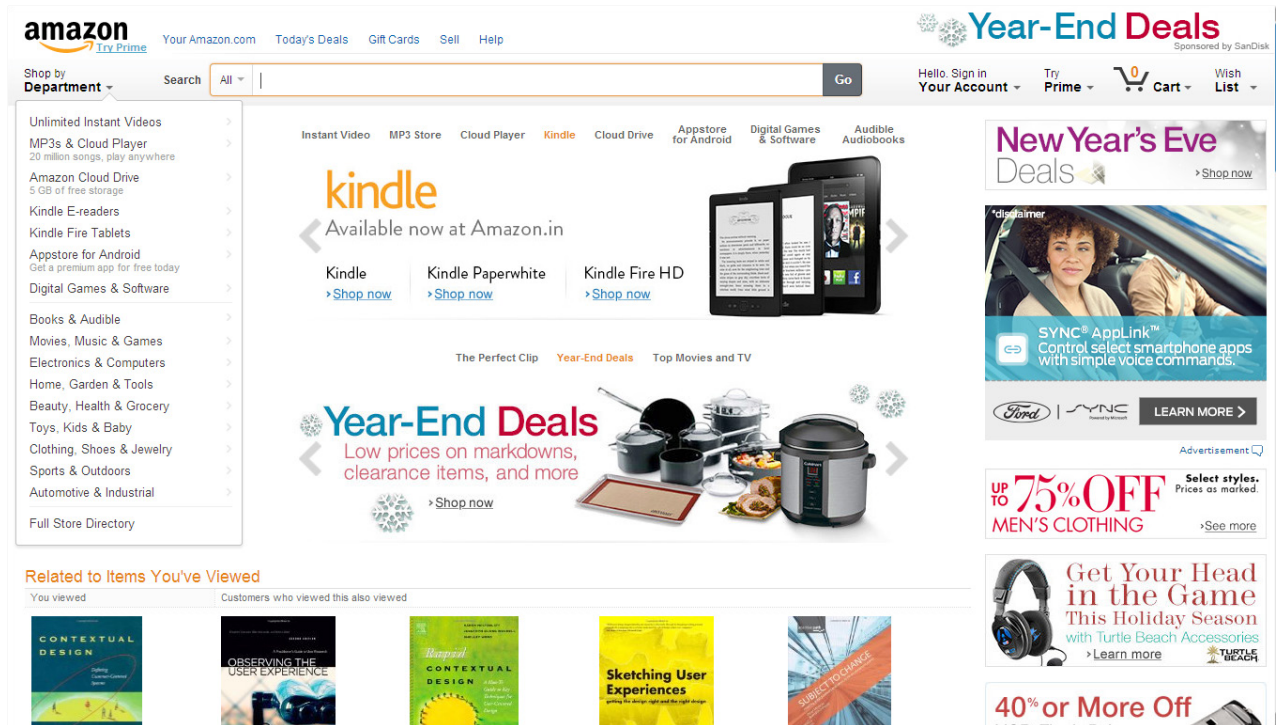
Large number of businesses available within small localities.

Breakdowns:

Does not maintain any quality control, few of the business have been verified to be real and functioning at the time of registration. However, that does not guarantee anything about its current state.

<http://www.justdial.com/Mumbai/Carpenters/ct-310711>

Analysis of Existing Products



Amazon

Is a massive online store that curates and sells a goods ranging from books to (10)

Notable features

More controlled user experience as compared to Ebay.

It has a dedicated device (the KindleFire) which acts as a pocket store

Breakdowns:

No independent selling, is possible.

Although the store facilitates a large geography, many of its offline services like 30 minute delivery are limited to a few locations.

<http://www.amazon.com/>

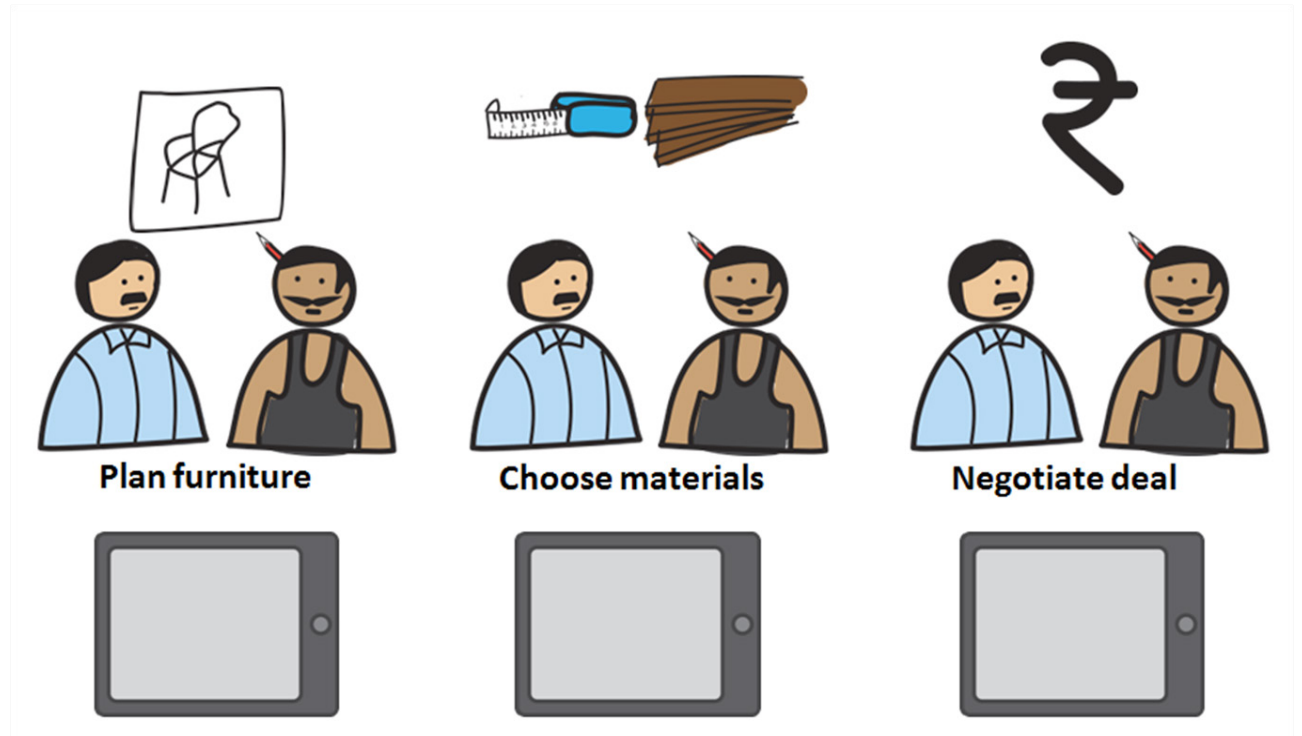
Approach 1

A tablet app for carpenters to manage their projects

Software designed for the carpenter to help him communicate with the client. This software could be operated from a tablet or a smart phone.

It will have a customisable furniture design software.

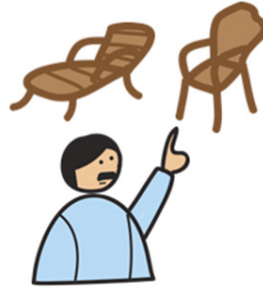
It will give estimates of material required and current market rates of the material. It will also aid in negotiating the deal as well as maintaining records of the deal.



Approach 2

A website to allow clients to customise furniture and find carpenters

Interface facilitates client to take initiative to choose furniture, plan space and choose a carpenter as per his requirement. Carpenter receives a call from the client and also hard copies of the plan with all necessary details chalked out.



Choose furniture



Customize as per your home



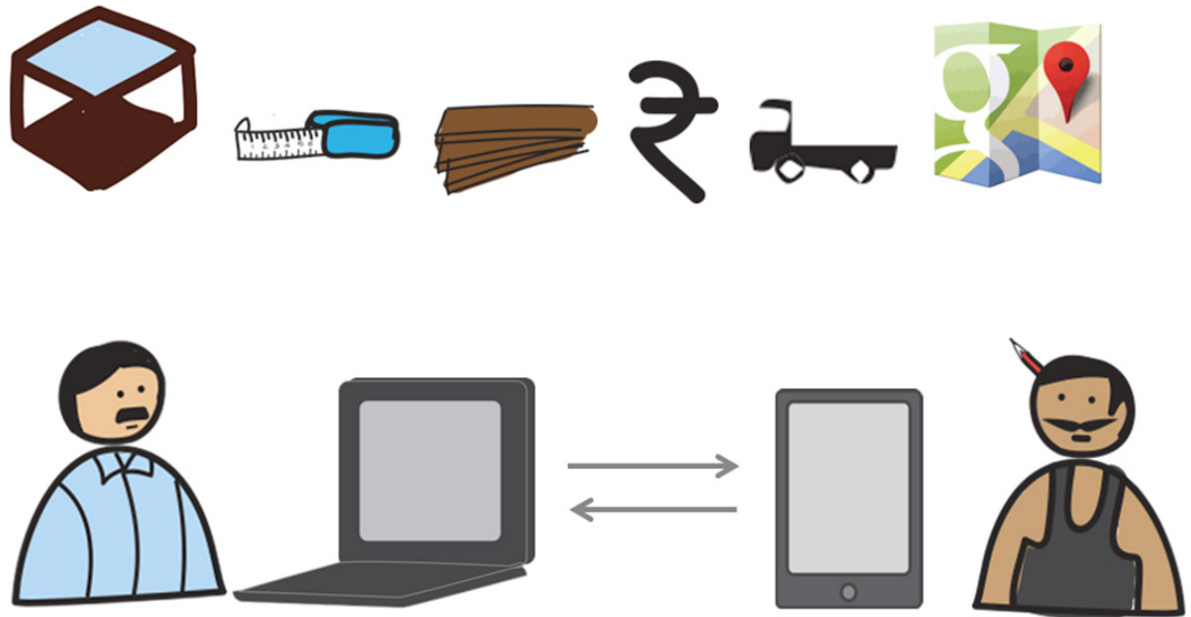
Find a carpenter



Approach 3

An app which allows carpenters and clients to collaboratively plan the project

A software that has two sides, the client side and the carpenter side. While clients may plan their project, carpenters may add their opinion, share ideas and make suggestions for better design, material options to the client. The client and carpenter collaborate in real time to come to a consensus about the project.



Final Approach

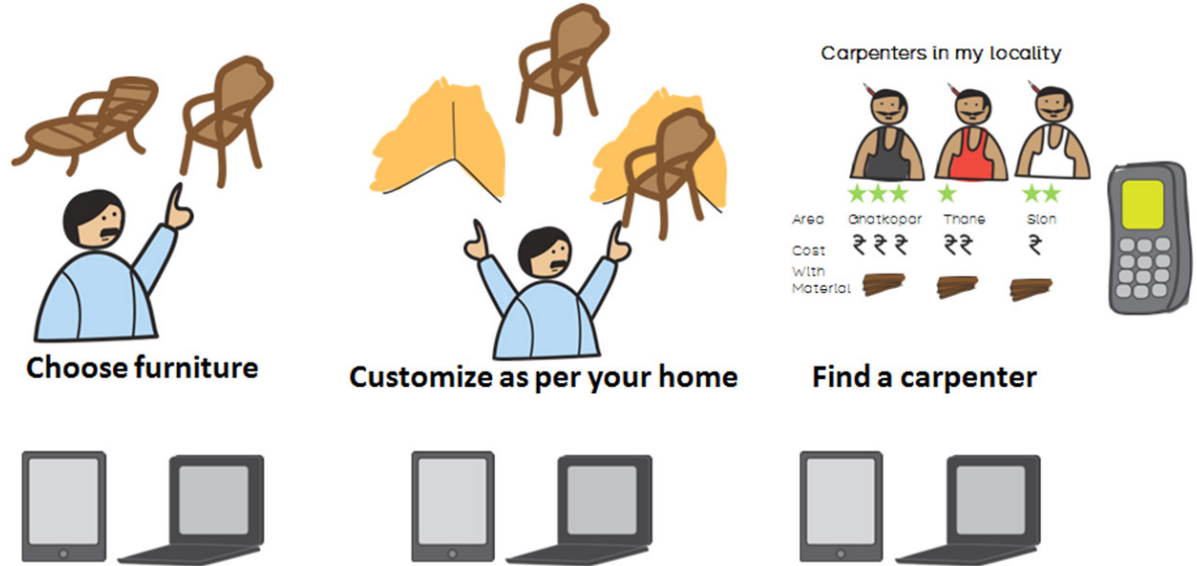
A website for clients to customise furniture and find carpenters

Clients were almost always new to carpentry and could not spend much time in understanding market trends and latest practices in carpentry. Consequently, they were the ones who felt weary and insecure.

They were also the ones who had warmed up to technology and were more willing to take help from smart devices.

Therefore, it seemed most effective to approach the problem mainly from their end and then bring in the carpenter where he may participate comfortably.

Thus, designing a service plan for clients to customise furniture and find carpenters would come to be chosen as the task at hand.



Final Concept

What is it?

A system that provides services to aid furniture-project planning and management.

For clients:

- Help them find different furniture designs
- Allows them to make changes to the structure, size, elements, material and finish of the piece.
- Find a carpenter who will be able to deliver as per the plan.
- Help client be better informed about current trends in the market with regards to furniture design, materials, finish and prices.
- It offers transparency and credibility to the process of commissioning carpenters and planning furniture design projects by keeping track of the project and maintaining a contractual agreement between the client and carpenter.
- It offers to buy good quality material for the client at retail price or lower.
- A system representative is assigned to every project, this gives the client a personal point of contact to help manage the project.

Final Concept

For Carpenters:

- Credibility - The system recognises and certifies a skilled carpenter, this instils the client's trust in the carpenter.
- It provides a platform for showcasing them and making contacts with clients.
- It attempts to provide a steady flow of work.
- A clearer understanding of clients expectations
- A framework to better manage their projects

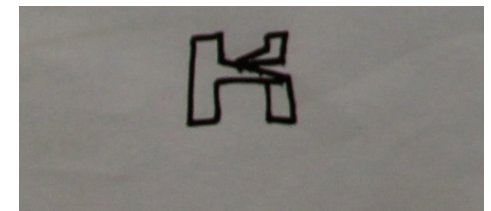
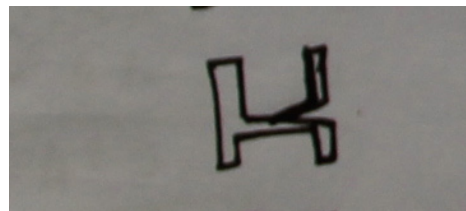
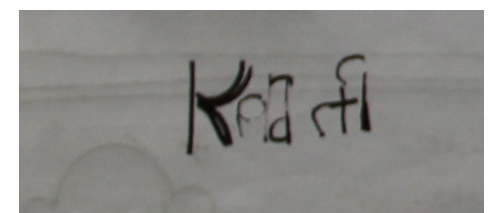
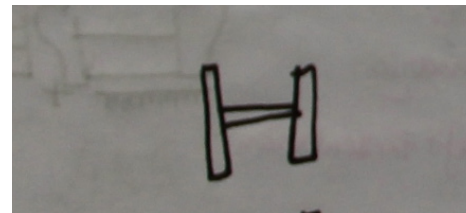
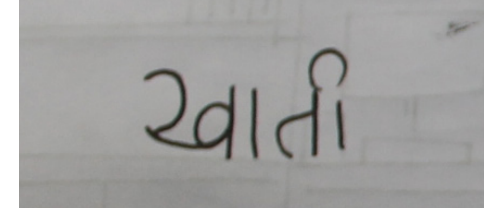
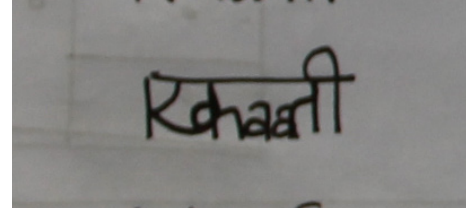
Brand Identity



Khaati

Among other names carpenters are also referred to as Khaati in Hindi.

Because this site aimed at encouraging the self employed carpenters who make furniture to order and preference of the client. this being the traditional way of practicing carpentry in India. The traditional reference to a carpenter seemed to be an apt name for the site.



Key Features



Browse
furniture Designs



Customise
furniture



Find
carpenters



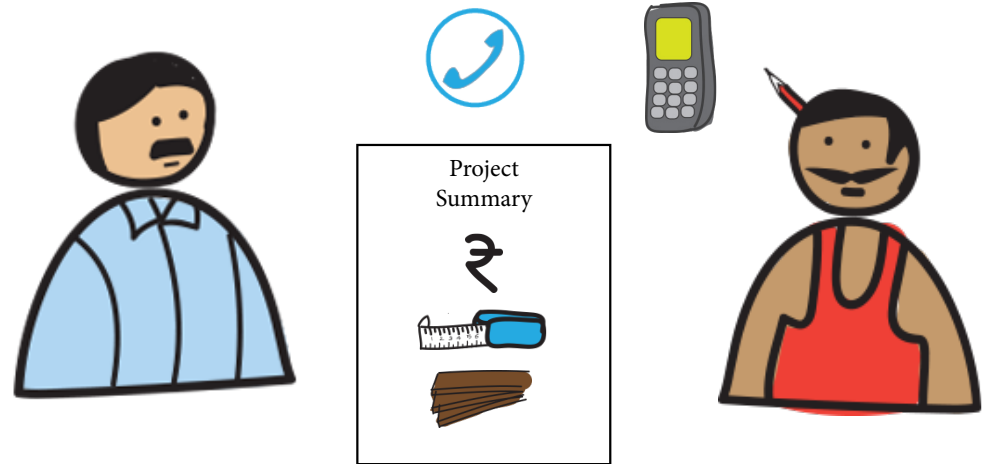
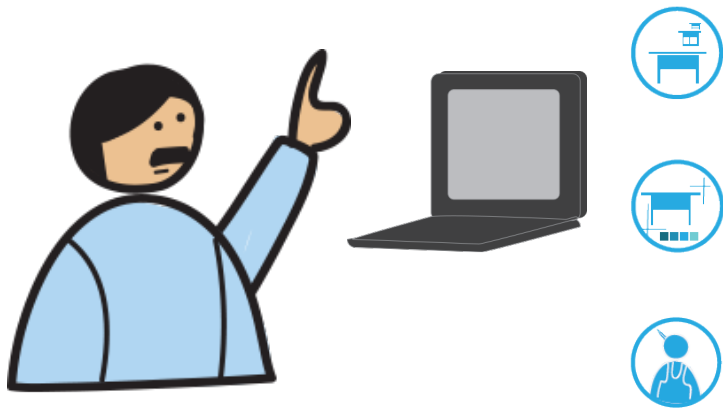
Manage
projects with the help
of a Khaati Assistant

Scenario



The prospective client, Anubhav, accesses Khaati.com during his free time

Final Taskflow



Agreement

- Final Project Summary
- Stages and Dates for completing them
- Making charges
- Khaati's commission
- Signatures



- Ensure timely and good quality work as per schedule
- Bring in good quality Materials at reasonable prices
- Documenting the projects
- Collect feedback

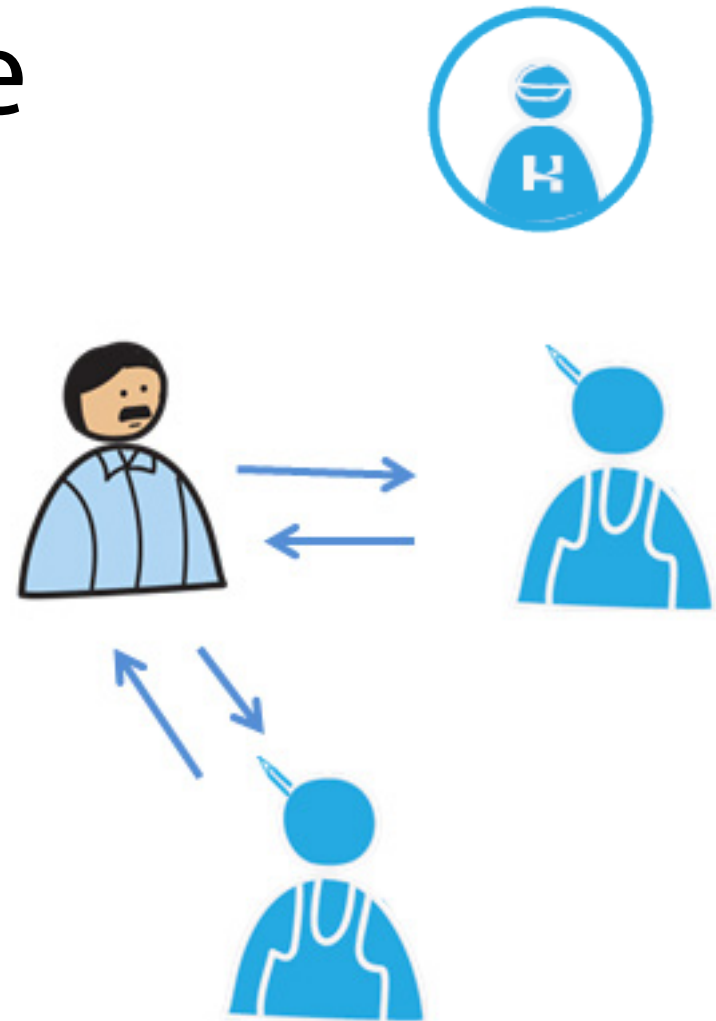
- Profile building
- Steady flow of work
- Bonus on completion of every 5th project
- Goodwill building



Management Service

Meetings and negotiations: Anubhav meets carpenters and they discuss the cost, material, design details, Anubhav shows them where the bunkbed will be placed he is able to clearly express how he wants the bed to be by showing them the project plan and summary. Ramulal seems most suitable, reasonable and willing to take up the project.

The Agreement: Anubhav downloads the project plan and agreement form from the site. They fix up and fill in the making charges, various phases of the project and deadlines by when they shall be completed. Anubhav opts to pay the money in installments, he is expected to pay an installment before the commencement of every stage. Finally they both sign this agreement and Ramulal submits the agreement and the project summary to his local Khaati representative.

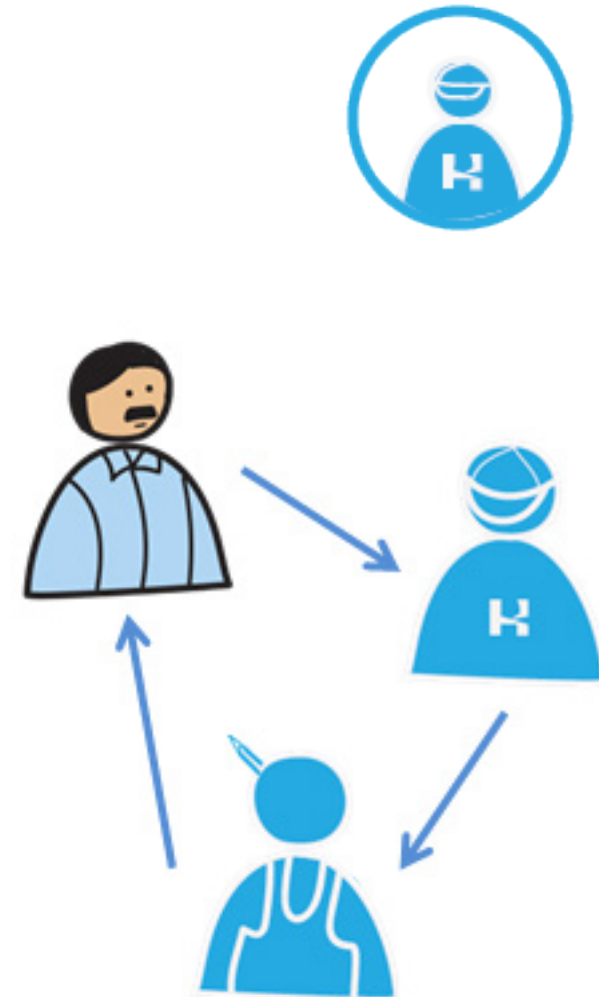


Management Service

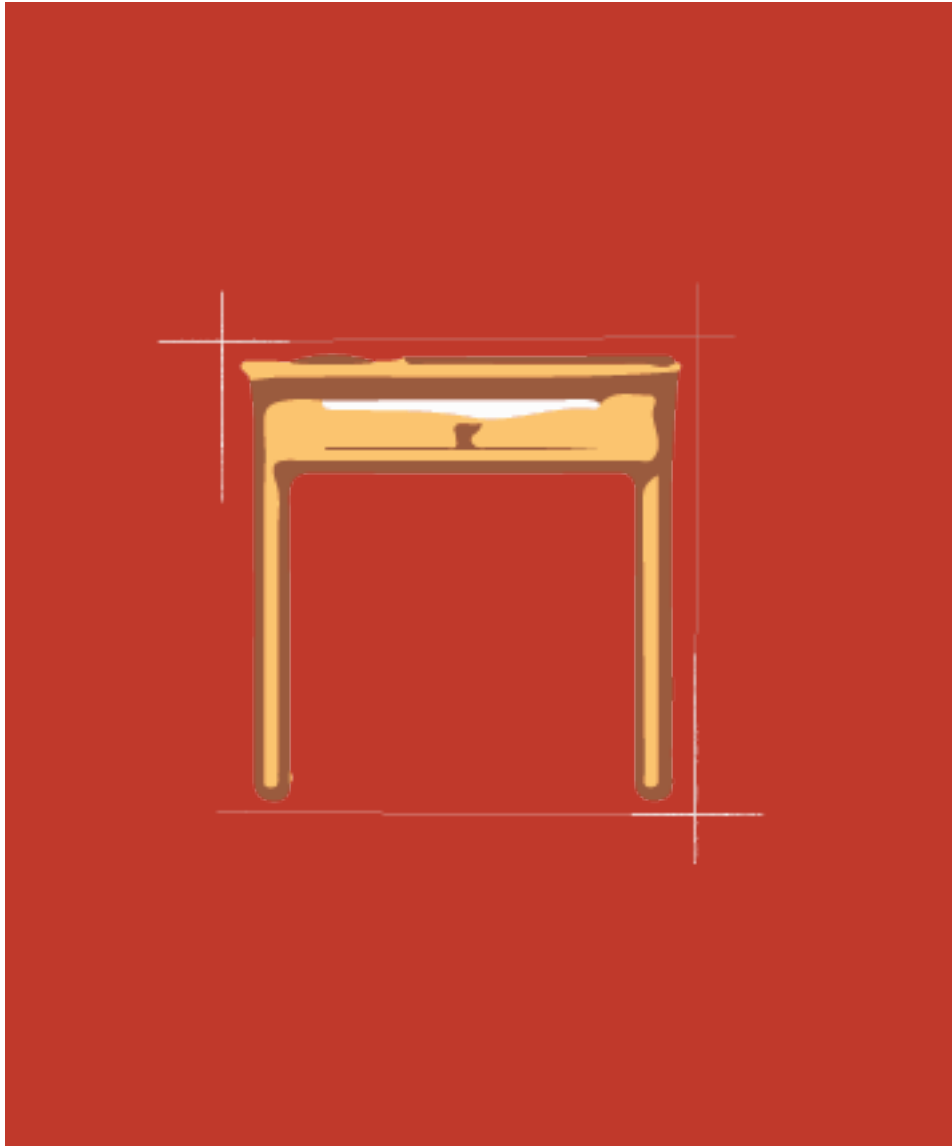
The Project Execution begins: Anubhav pays his first installment. On the day of commencing work, a Khaati representative brings in materials and ensures that work has begun. From then on the representative comes in at regular intervals to supervise work quality and supply material and collect feedback from Anubhav. The said Khaati representative remains a point of contact for Anubhav and can be contacted in case there are any complaints or inquiries.

Project Completion and Feedback: Only those projects that have been completed in partnership with Khaati may be displayed on the Khaati profile of the carpenter. This makes the data more credible and ensures that the carpenters participate in the system with interest. Upon the completion of the project the Khaati representative take pictures of the project for uploading onto Ramulal's profile. When the Ramulal successfully completes 5 projects with Khaati, he is awarded a bonus, part of which is proportionate to the client feedback ratings he has received across projects. The timeline plan helps carpenters manage their projects better. The feedback system also is strong enough discourage carpenter from malpractices and expose them if they still insist on sticking to any.

When a carpenter consistently performs well across projects, Khaati arranges for him to receive recognition in professional circles by publishing about him in Interior Design or Furniture design magazines and so on.



Thank you :)



Future Plans for Khaati :

Allowing carpenters to collaborate with clients to design in real time

Interface to allow 3d printing option

Lessons from this project:

Interviewing insecure users

End to end service

Execution