



Including Social Cohesion in Product Design

Date: 12-04-2010

Assignment 3

Josje van Beusekom	1371568
Marrit Bos	1354876
Mathijs Broekhuizen	1354914
Bregje Steenbeek	1355813
Lennart Weerts	1371630

Table of Contents

Introduction	2
Identification	3
Case analysis	3
Setting	3
Concept idea	4
Scenario matrix	5
Scenario's	7
Final scenario	8
Scenario sketches	9
Integration	10
Concept design	10
Early concept designs	10
Usage	12
Ergonomics	12
Technology	13
Mock-ups	14
Implementation	15
Branding	15
Community workshop	16
Promotion plan	16
Prototyping	18
Business plan	20
Pilot	22
Upscaling & Planning	23
Appendix I	24

Introduction

As a social entrepreneurial design group it is our mission to increase the social cohesion within a community and make their everyday live better. Social cohesion plays an important role in a human life. Without social interaction people can not exist. The current environment in which we are designing is a slum, though; our mission does not have to be specific for this environment.

On the contrary, our mission could be applied to every community, development country or not.

Social cohesion is a very important aspect in life. Due to the designing of many new technical products, the social cohesion is decreasing all over the country. Face to face contact decreases, though, this is not necessarily linked to the technical aspect of the product. Technical products can also increase the social cohesion in a community, if they are designed with social cohesion in mind.

As a reminder of our goals within these kind of projects our mission statement:



'Implement new or existing (technical) products'



'Improve their everyday live'



'Increase social cohesion'



'Needs to be functional as well as fun!'

In this report a new project will be described which follow ups to the previous two projects, the Bobo Bike and the Baggo Collector. The project is about movable furniture which will be produced in Slum Bobo and than sold in both the slum and the Bijenkorf in the Netherlands. There are some corresponding elements which will not be discussed in this report. Elements like the house style and 3D scenario building will not be discussed in this report and can be read in assignment I. This report will start with an analysis of the case and setting X. Sub scenarios were created on how to implement the new product into the community which resulted into a final scenario description. From this final scenario we designed some concepts, out of which a final concept was chosen. The last part of the report encounters the branding, business plan and promotion plan of the product.

Identification

Case Analysis

Setting X

This is slum Bobo in India. It is a tiny slum with about fifty households; an average household contains two parents, two children and a grandparent which results in 250 people. In this slum, there is a school, a water basin, a market, a community centre, local authority, a radio station, a local newspaper, two workshops, one for wood and one for steel, an atelier and an office. The buildings are situated at one side of the slum and the houses are built around them. The community center is situated right at the center of the slum, so that every one can easily come together there.

The people from Bobo are very poor; they do not have much to spend. Therefore there is not much to eat. The children go to school together, it is a small school but they learn how to read and write, and learn stories and songs. When the children are at school, their parents go to work. Some women might work; others stay at home to take care of the younger children or grandparents. Men work at the workshops, at the market, collect garbage or work in the city. When the children come back from school they go begging in the city to try and make some money.

The people from Bobo wear proper clothes in a wide variety of colors. The women wash together; they go to the water basin and wash the clothes from their families. It is a colorful sight, because of their colorful clothes. This is a weekly event where they talk through the news of the week. For the women it is an event which increases the social cohesion.

All the people in this slum love music, it is their way of coming together, relaxing and forgetting about all the trouble in life. Some people make the music, some people listen to the music and all of them dance.

In the workshop for wood you can find hard working men. These men are fathers, grandfathers and the older boys. Products which are being produced are furniture, parts of houses, etc. They saw, drill, screw, glue and paint their products, however sometimes people from the atelier do the painting. This happens when a product needs to be special for the person who ordered it.

In the steel workshop other men are working for a very low wage. Here they work steel into products for the local institutions, but mostly for the western world. Some screws and bolts go to the wood workshop. Their specialty however is pans. They make pans to cook in, pans to bake in, bowls to put food in etc. This is where they make the most money on.

The atelier has a man and some women working there. They do artistic paint jobs, work with fabric and are the creators of new inspiring music at parties. There is not always enough work for all of them, so they sometimes fix people's clothes to make some extra money.

The school is a small building which is pretty crowded because of the amount of kids being

schooled there. However there are books, though they need to be shared, and there is a teacher. It is a safe place for the children to spend a part of the day and it gives them the possibility to be a kid for a little while. Some children work very hard, but there are also some kids who do not want to learn and who try to skip school. When their parents find out they are sent back and the teacher will make sure they do some work.

The radio station in Bobo is not very big; there is one speaker which covers the entire slum. It is used twice a week to play the very famous songs of Sonu Nigam, who is their very idol. One person will announce the songs and tell the latest news so that the people who missed out on the news will know what is going on.

The houses in Bobo are pretty fragile, however there is more in there than you would expect. They sleep on the ground but they do sporadically have a TV and most of them own a mobile phone. People have kerosene-powered lights and some walk on Nikes. They have proper clothes but cheap shoes. There is not much furniture so most of the activities are done on the ground. In Bobo, people move mostly on foot. There are very few bikes and they do not own many cars. The roads therefore are not very wide so cars can only reach some places. There is enough space for everyone to walk through though.

Bobo is situated against Mumbai. The children beg around the boarder of the city and come home to Bobo in the evening. Bobo is a part of a larger slum with other neighbourhoods with different names and different people.



Setting Slum



Concept Idea

In this report there will be a concept design for integrating the system of transportable chair. This will be something to sit on, which is easily transported and placed somewhere else. This chair should make it possible to organize an event at any place where every one can bring a chair and they can all sit together at the event.

This chair will be included in the community life and is supposed to increase social cohesion within this society. People will take the chair to a central point and sit together.

Depending on the context of the chair and the scenario around sitting on the chair, the bike will be designed so that the position of the user will fit in on ergonomic level. Another thing that will

be included in the design is that the people will get a positive feeling when they see the chair. It is important to us that the users associate the chair with fun.

Scenario matrix

In phase one, the identification, all individual team members choose two “fields of opportunity” within the slum. These opportunity fields are for example the supermarket or the community center. Each SED group member generates potential interactions between the community members within these fields of opportunities. Small scenarios will be made which can be read in appendix I. Each of these small sub scenarios needs to stimulate the face to face contact, the social capital and the sense of belonging.

From these sub scenarios, ten scenarios are put in a matrix to come to a new final scenario and product ideas. First the scenarios will be presented and after that the matrix and final scenario choice will be explained.

Scenario 1 (Workshop Steel)

Sagid has made a lot of beautiful products in the last few months from bicycles to garbage collecting systems. This was a great experience but from now on he is going to learn how to make little components for the mobile furniture a new design out of the slum. He is responsible for the metal connection between the several wooden parts of the furniture.

Scenario 2 (Workshop steel)

Because the general idea of the furniture is simple and basic Sagid thinks of a new material. Why not make use of steel in the design of the furniture. In combination with fabric can the product also be light weight!

Scenario 3 (Local Authority)

This new mobile furniture is for the whole community. To make sure that everybody respects the products the local authority is responsible for the usage of the furniture. At night the products will be saved in a storage room at the local authority. Here stays is the furniture also clean and dry.

Scenario 4 (Workshop wood)

Workshop wood will produce the chair. After the Bobo bike and the Baggo Collector the people who work at the workshop are getting more and more educated and their skills are improving.

Scenario 5 (Workshop wood)

Akim and Skaj from the workshop will give a demonstration to show how the modular chair can be used in every different way. This last event will bring the community together and will stimulate talks about the chair.

Scenario 6 (School)

At the school the children will try to produce art with different compilations of the chair. This will be put in the community centre for the rest of the village to watch and be inspired by.

Scenario 7 (School)

The children will make pretty drawings in class which will be used to pimp the chairs and make them pretty.

Scenario 8 (School)

The chairs can be used in the school and can be stored there as well. When there is an event people can go and get the chairs from the school.

Scenario 9 (Media center)

From the moment the mobile furniture started to appear in the slum, the media center is using this new mobility of people to bring information to them in new ways. Since people can now sit throughout the whole slum, news can be spread in different ways than before. Posters can be put up through the slum and because it is a lot more comfortable to sit at the water basin nowadays, this is a central position from which news and promotion is brought to the people.

Scenario 10 (Media center)

Last week the media center installed a large screen on the edge of the field next to the water basin. On this screen members of the slum can watch the newest movies at night. To sit comfortable, they take their mobile furniture and put them in the field in front of the screen.

Scenario 11 (SEDG)

The SEDG came up with the idea of mobile furniture a couple of weeks ago. They try to find out if it is a suitable project for Bobo and they are planning to really implement it in the slum. They will also be the

Scenario 12 (Water basin)

Alima discovers that she is out of water. She needs it to cook, so she picks up her bucket and starts her walk towards the water basin. It's quite a far walk so she is happy when she can have a seat at one of the beautiful chairs at the water basin. Her friend Lisam is there as well and they have a chat before they both walk back to their homes with a filled bucket.

Scenario 13 (Community centre)

The community center can rent the chairs. People will communicate with each other to make this possible which increases the social cohesion.

Scenario 14 (Community centre)

In the community center activities will be held where all people will want a chair. An example of this could be a movie or theatre night.

Scenario 15 (Supermarket)

Today is Amir's big day; he saved enough money to buy the furniture at the supermarket. With this furniture he can sit comfortable when there is a movie night in Bobo or when there is a music night and he is tired of dancing. Of course it will be really useful in his house as well!

Scenario 15 (Supermarket)

The supermarket always is the centre to exchange parts of furniture. Atis starts to become bored of the design of the back support of his furniture so he takes it with him to exchange it there. First they perform a check on it to see if its quality is ok. They say it is fine, so now he can choose one of the other pieces and take that one home. He picks a really pretty one and smiling he walks back to his house. His wife will love it.

Scenario 16 (Supermarket)

With a whole group of people Patik is preparing everything for the movie for tonight. He is in charge of the seats, so together with some friends he goes to the supermarket where they are stored. He is glad that this furniture is so easily moveable; carrying all those pieces would have been too heavy.

Scenario 17 (Supermarket)

Kalis, the owner of the supermarket, is really happy with the pieces of furniture that the SEDG putted in front of his shop. These chairs and couches are so comfortable that people are coming to the supermarket more often to sit there, have a chat with friends or to play a game. He likes it to have so many people around and of course his sales increased as well.

Methodology

To combine these scenarios into one final scenario we chose which scenarios were most appropriate for the product system. These scenarios are combined into a final scenario below.

Final scenario

Malika is a woman who works in the atelier. She will be the person to paint the drawings on the chairs; these drawings will be of her own design. Pongwa, her husband, works at the atelier and has been working on the chairs for several weeks now. When the chairs are all finished Pongwa will be in charge of repairing the chairs when that is necessary. Some of the produced chairs are already painted by the atelier, and some still need to be done.

Malika also attaches the strings to the chairs in the atelier. She does this together with the other people working there. Some chairs will only be painted; these chairs will be put in the community center without strings so that they will only be used to sit on. The chairs with the strings on will be sold in the supermarket. Malika's colleagues are producing bags for on the chair, which can function both as a bag and as a cushion for when they sit on the chair.

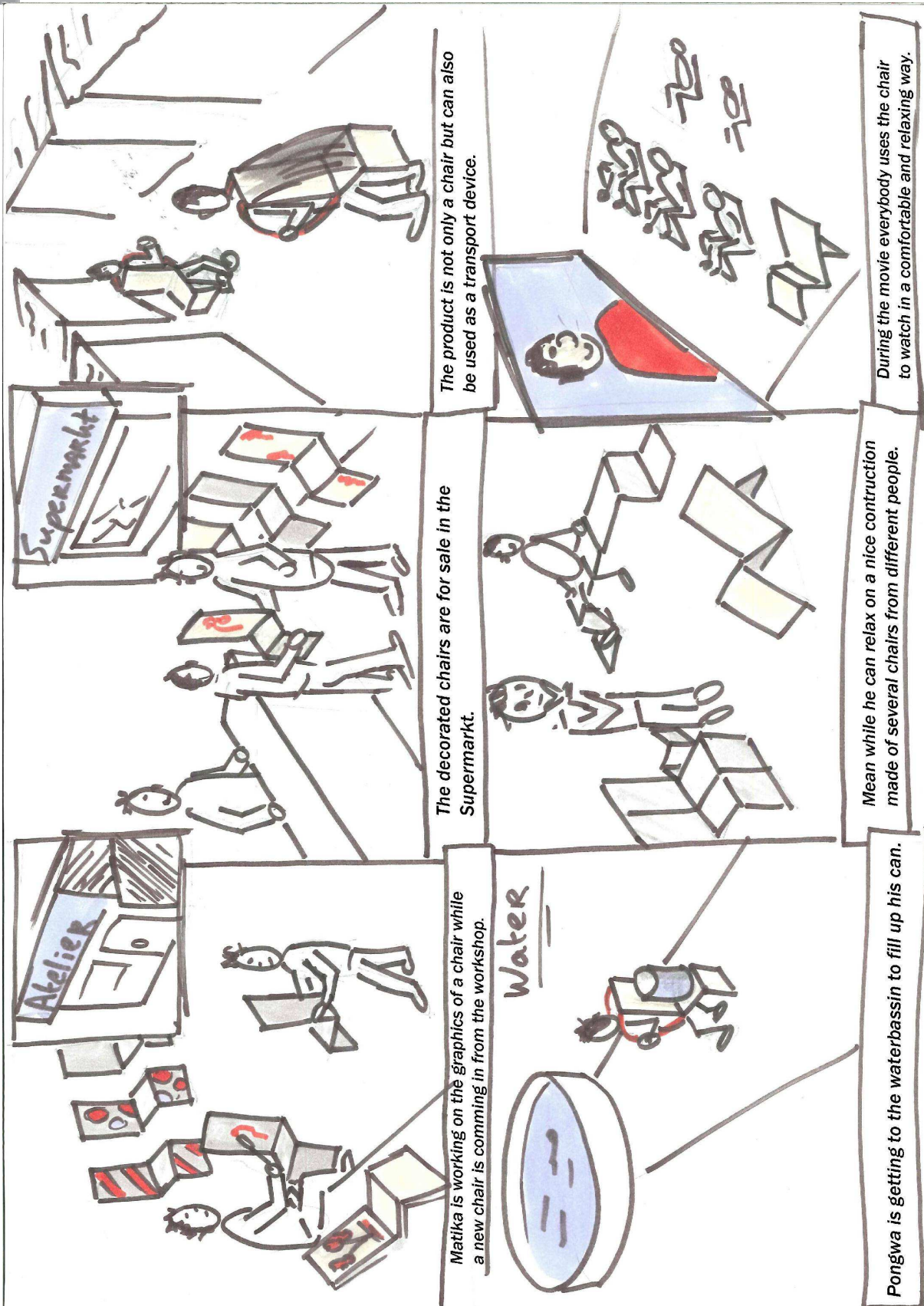
People who want to be able to sit anywhere and would like an aid to carry things or people around the slum will be the potential buyers. The people who buy the chair will have an advantage over the other people in the slum so Malika and Pongwa have been saving to buy one. They are on their way to buy a chair of Malika's design because they both like that. They choose a green bag with that design.

Now that Malika and Pongwa have the chair and the bag, they can use it to transport for instance water from the water basin. Pongwa goes to the water basin, where other people from the slum are, and uses his chair to enjoy the company of these people. Before he sits down he

makes a nice construction with the chair of a neighbor and his own chair. Together they can sit happily. After sitting a while he fills the bag with water, ties the bag to his chair and goes home with the chair and water on his back. When he is back home, he wants to rest. He takes the water from the chair and puts it on the water- spot of their house. After that he puts the shelf they got with the chair to the back of the chair and sits down to rest.

That evening a theatre night is planned at the community center. Malika and Pongwa have a ticket to sit close to the screen. They got this ticket when they bought the chair and bag. Many people bring their own chair and the chairs from the community center will be used. People will combine the chairs so that there will be more seats available. Before the movie starts some local news is played on the screen. The media center has organized this all together with the community center.

Scenario sketches



Integration

The final concept has to meet several requirements:

- People need to be able to sit on it
- It should stimulate social cohesion
- It should be fun
- It should be transportable
- It should stand solid on the ground
- It should be recognizable

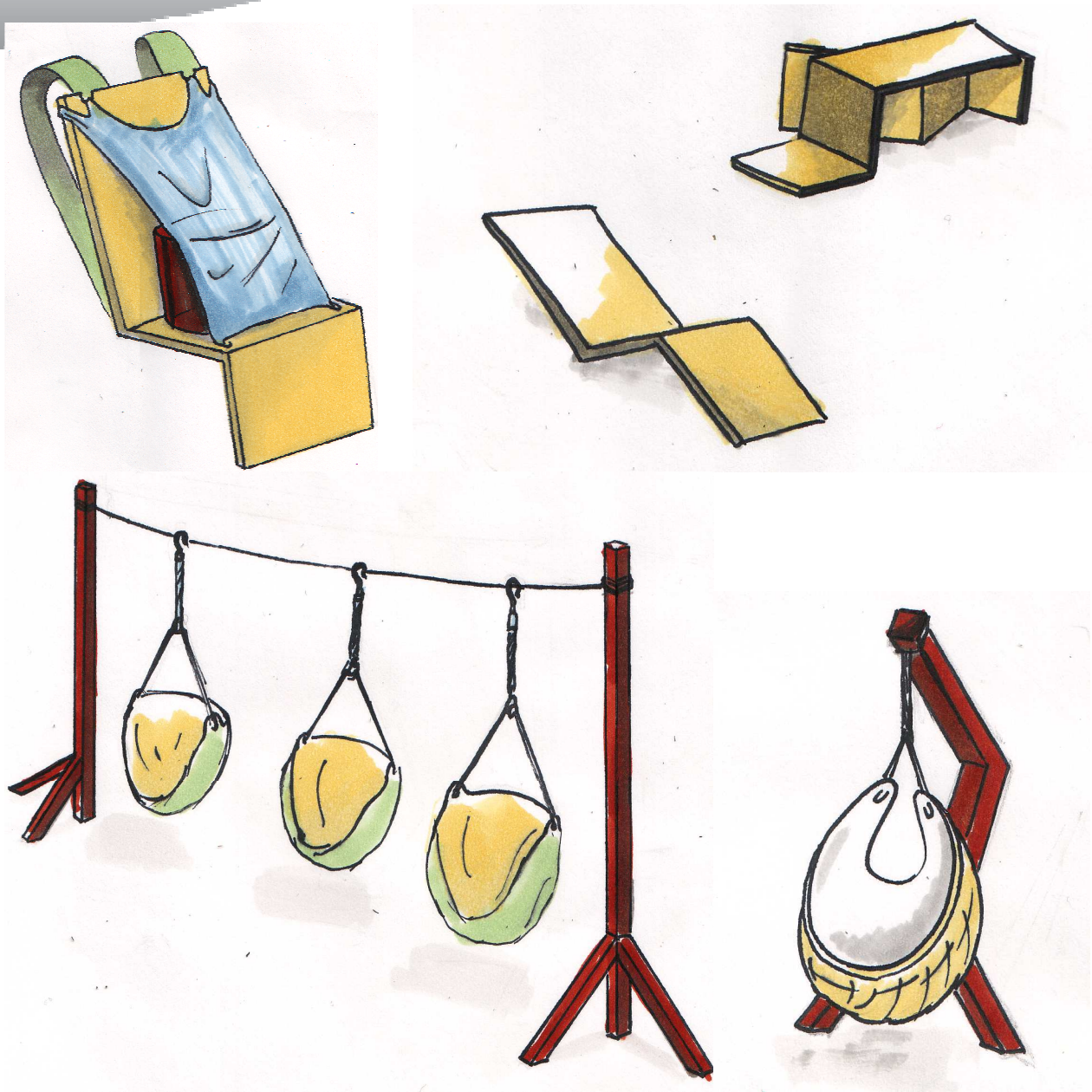
Concept design

In this chapter the concept design of our mobile furniture is discussed. First is described what different concept designs we thought of.

For our final concept is described how to make the product interesting for our community to use. Afterwards the ergonomics and the technological specifications of the concept are pointed out.

First concept designs

The example given in the project description gives the impression that mobile furniture only can be created by attaching a wheel to furniture. Attaching a wheel is not the only solution, we think. First of all we have tried to think of furniture that improves the social cohesion of the people using it. That must be the essence of the product. If you think of the combination of furniture and several people you properly think of some kind of sofa because it is designed for more than one human. We choose for a different approach. How cool would it be if you have your own product that can transform in a larger product if you combine it with someone else his product. The first concept we came up with is some kind of hang chair. This chair is hanging in a triangle frame of wood. To make this product portable the whole triangle must be transported and that would be very heavy. To get rid of this problem another concept is given, the chair can also hang on a cable that is already in the slum. Everybody with a chair can attach his product to a cable and hang together to enjoy the free feeling of social cohesion. To make this concept work some practical problems must taken care of. First of all the whole slum must be provided with heavy steel cables trough it to carry the weight of the chairs and her users. This will be a large improvement and will not be realistic. To stay with the concept of a single chair we designed another concept. This concept is shown in the second picture and is a very simple and clever design. It is a chair who can be used in a lot of different ways, not only in a way of furniture.



Concept sketches

Four

Four is a mobile chair made out of wood. This chair can not only be used as furniture but also as a carrying device. One single chair can be used as a stand alone lounge chair. When the single chair is attached to another model, a larger model of furniture can be made such as a sofa. When a table is needed the chair can also be positioned in a way that it can be used as a table. A pair of straps is attached to the back of the chair to make it comfortable to carry. While carrying, the chair can also be used as a carrying device to transport a child or a bottle of water for example.

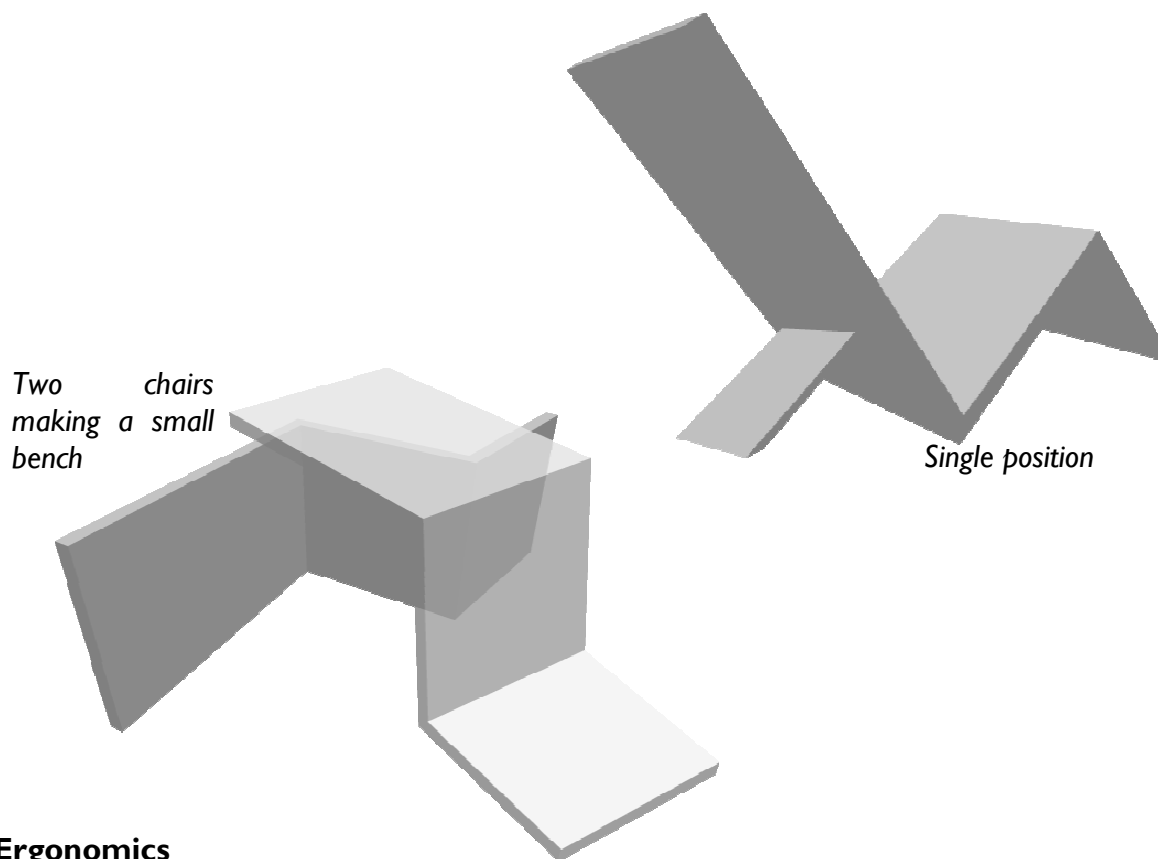
Usage

The furniture will be in the form of a very basic chair. The chair will be designed in a way that it can be used when placed in different positions. When with more people owning the same chair, a larger piece of furniture, like a bench, can be built out of it. This way, the chair is basically multiple pieces of furniture in one.

A very special feature of the chair is that it is very mobile. People are able to carry it on their back using two straps attached to the chair. When you carry the chair on your back, you are able to transport goods with it. The goods can be secured using a piece of fabric that can be stretched over the back of the chair. At the same time the piece of fabric is a cushion that can be put on the seat to make the chair more comfortable.

When the chair is used in single position, the risk that the chair will tumble over is present. To prevent this from happening, a piece of wood comes with the chair. This piece can be placed in a cavity on the back of the chair to function as an extra support.

The chair is also very convenient for elderly people. When the chairs are setup like a bench, it is very comfortable for elderly slum members to sit on. It is also very easy to get up from the chair.

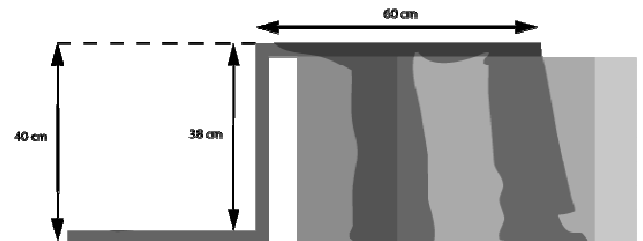
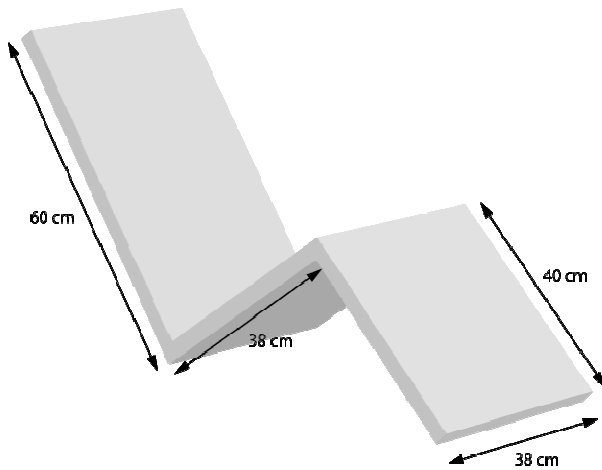


Ergonomics

The chair has to be comfortable to sit on, in every possible way the chair can be used. Therefore the furniture is dimensioned in a way that, no matter how the chair is used, the sitting height is always 40 centimeters. And so will be the depth of the sitting, in case there is a back in that position. The back (in the single position) will be 60 centimeters long and the chair will be 38 centimeters broad. According to ergonomics these are comfortable dimensions for

both people in slums (measures taken from Indian and East African datasets) and western people.

In the images below the dimensions of the chair can be seen in different positions.

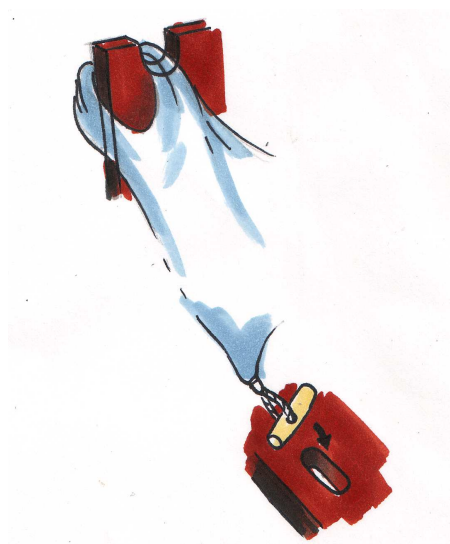


Dimensions

Technology

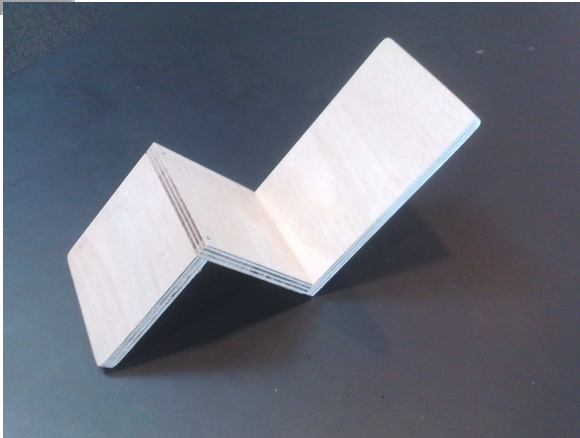
The furniture will be made mainly out of wood and some steel. The wood and steel workshops will manufacture the chair. As mentioned before the risk that the chair will tumble over is present in the single position. The extra support will slide into a cavity on the back to secure it. That way it will not fall out when you stand up.

The fabric used to secure goods will be made of a slightly stretchable fabric and on one side attached with toggle-fastenings, stretched over the goods and on the other side loops strung around the corners. This can be seen in the image below. No notable technology will be implemented in the chair.

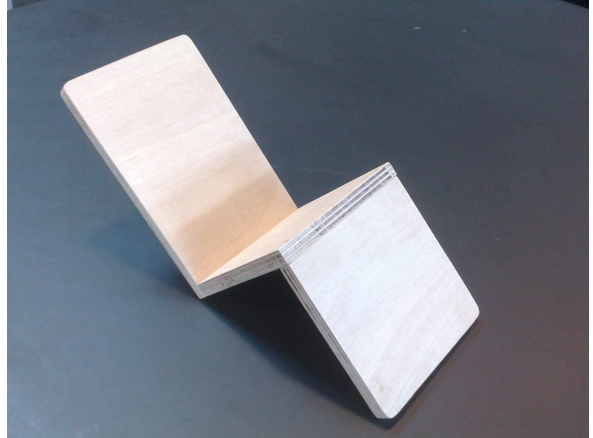


Toggle fastening

Mock ups



Mock up model



Implementation

Branding

The chair is named by 'Four' this name came up after a form analysis of the product. The product has an abstract form relative to the number four. At the same time this chair is also the fourth product after the Bobo bike, The Baggo and The Baggo Collector. Besides the fact that this chair is designed for a slum community it is also a design icon for De Bijenkorf in The Netherlands. All this facts together are used to make the logo for Four.



Logo Four

The logo of Four contains the contours of the chair it self followed by the text 'Four'. This is underlined by a yellow and green line to illustrate the fresh and minimalistic design of the chair. For this chair only natural materials are used, for that reason one part of the underline is green. One of the psychological meanings of the color yellow is making money by labor. This is one of the keys of the concept of this product because this chair is sold up North to make money for the South. The buyer in the Bijenkorf will buy the chair not just because it is an style icon, there will also be some charity reasons involved because the profit will be used to upgrade the slum. The chairs are produced in a small amount and for that reason a high price is asked for the product because it is a very exclusive chair for charity the people in Holland will pay for the product. When the Four is sold in the Bijenkorf in Holland a label is attached to the product to give the customer an idea about the origin of the product. This label is used as promotion material.



Product label

Community workshop

Similar to the other products that have been implemented in slum Bobo, this project starts with a meeting with the local people. They are the ones that will need the *Four* for their movies nights and other events and the people that will be involved in the production and maintenance of the chair, so their opinion is really appreciated.

Before the meeting, a mail is send to the local authority with the question to inform the workshops and the local artist, the people who work at the community centre and people from the media centre about the meeting and they will be asked to attend it to give their opinion about it. The goal of this meeting is to present a model of the *Four* and to get their input on how to produce this chair best with the available techniques and materials. The artist is also asked to give his opinion about the appearance of the chair and about how he would improve this with some colourful paintings or engraved art. Further it is important that some civilians will come to represent the rest of the inhabitants of the slum. The members of the SED group will invite them by going from door to door. Also in the community centre a note will be posted on the note board to invite people.

The meeting will be organized inside the school. Here one or two members of the SED group will give a presentation about the *Four*. In this presentation the model is shown and the multiple options with it, the possibilities for a loan and the way it will be involved in the community. Especially the exporting of the chairs should make the locals very enthusiastic about the whole concept.

During the presentation any question will be answered and discussion is welcome. Everybody will be informed about that before the presentation starts. The SED group will also prepare questions, to evoke more questions and discussion, which will be asked during the presentation.

Promotion plan

To make the CIPS (Community Integrated Product System) work in this environment, the several community elements integrated in this CIPS have to be taken into account. How do we implement the product in the community center and in the slum itself? How do we convince the population of the slum of the advantages of the product? Several steps have to be taken to get these different elements operational and working. These steps will be dealt with in this next chapter.

The system takes several elements of the community into account. These elements are elaborated below after which the different steps that have to be taken are discussed.

The Bank

The bank plays a crucial role in the whole system. It is our goal to convince the bank to accommodate us with a loan. Therefore the success of the project is important. Besides this loan for the continuation and extension of the project, the bank is also used for small loans for the inhabitants of the slum.

Workshop wood and steel

The workshops will be responsible of making the mobile furniture. This will be done with the metal and wood found around the slum. Metal can be taken from the nearby garbage belt and taken to the slum with the Baggo Collector. The wood found on the garbage belt will probably not be of very good quality, but in and around the slum grow trees that can provide good quality wood. If these trees are not present, the wood has to be bought from a local source.

Atelier Fabric

In the atelier the straps and the bags, used to secure goods, will be made. The atelier will also decorate the chairs. Every side of the chair will get a different design so when two neighbors built a bench out of the chairs the seats will match, but when one of them builds a larger piece of furniture together a friend from the other side of the slum the backs of the chair will match.

Community Center

At the community center several public chairs will be placed. This way it will be a lot more comfortable for elderly people to go to the community center and attend the weekly small festivals featuring the Bobo bike. Elderly people might not be able to carry the chair all the time, so the fact that there are some chairs at the community center is very convenient for them.

Media center

In the media center, the promotion of the chairs will take place. By radio and pamphlets the chair will be made familiar to the public. The media center will also take international promotion for its account.

Supermarket

The supermarket will sell the chairs that are not exported to the north. Also the bags used for transporting goods are sold here. These bags do not come with the chair but are sold separately.

Now the elements involved in the system are clear, the steps needed to get these elements operational can be looked at.

Step 1, Knowledge of the project

First of all, the SED group needs to show the idea of the product to the inhabitants of the slum. They need to be convinced of the advantages of the mobile furniture. These advantages are not only for themselves, but also for the whole community and the social cohesion within.

We, as a design group, have the advantage to be in the slum itself while implementing the system. Therefore, our first step will be to make the people aware of the idea by using pamphlets and just spreading the word. These pamphlets need to be visual and clear and show the core idea of the product. And by telling people about the new product, the whole slum will know about the chair within no time because word spreads fast in small communities like the slum we operate in.

Step 2, Demonstration and the making of the mobile furniture

After these pamphlets have been spread, the awareness of the product will increase and the need for it will occur. To let them see the real advantages of the product compared to the

way they used to sit and transport goods, a small demonstration will be held. This demonstration will feature a couple of prototypes of the chair. That way people will be able to see how a stand-alone chair can be used as transportation method for goods and how multiple chairs can form a larger piece of furniture. The prototypes will be made by the workshops with help of the SED Group. This way the workshops will learn how to manufacture the chairs. Because the chair is a very simple product, this can be done within a very short amount of time.

Step 3, The making of the mobile furniture

When the people of the slum are enthusiastic about the product, chairs need to be manufactured in the workshops. The production will start up fast, so people can see the result of the project.

The right tools to make the chairs are already present in the slum. The chair is very easy to manufacture and the tools purchased for making the Bobo bike and the Baggo Collector can be used and will be sufficient to produce the chairs. After the workshops are done with the chair, the atelier will decorate them by painting them. The straps will be attached at the atelier too. After this the chair will be finished. Furthermore, the atelier will make the fabric that will be used to secure goods while transporting them and is used to sit on.

Step 4, Introducing the mobile furniture in the slum

Immediately after the first chairs are finished, sales at the supermarket will start. Here, the bags made by the atelier to transport goods with the chair will be sold too. People will start walking around the slum, carrying goods and building benches out of them. Everyone in the slum will notice the brightly colored chairs moving through the streets and see how useful the chairs are.

Step 5, Promotion of the chair by the media center

The media center will start promotion in the slum right after the first chairs are finished and start working on an international promotional campaign. When the chairs are more in a mature phase they will go international with the promotion. With every chair will come an informative flyer telling more about the origin of the chair and featuring an image of the drawing on which the bag is inspired. Also a free download of the music made by the Bobo bike will be included.

Step 6, Exporting the chairs

When the project proves to be successful and the capacity for making more chairs is present, production for export can be started. This will be as soon as possible. The workshops will have learned from the production of chairs that are sold in the slum itself, this way they can filter mistakes out and perfection the design. The chairs will be exported to foreign countries in the north and be sold in shops like *de Bijenkorf*. The chairs will be given an exclusive image and have a separate stand in the shop. People in the north will be made aware of the chairs by the promotional activities of the media center in the slum as well as by *de Bijenkorf* itself.

Prototyping

In order to produce the Fours, the workshops will be provided with the needed knowledge by us. This knowledge is gained by visiting wood factories in Holland, both large scale producers

and smaller scale producers. It will be investigated what kind of knowledge they already have and how this can be improved to be able to produce the Fours.

The needed machines are already property of the workshops and these machines will be used for the production. The people who work in the workshops know how to handle these machines and what possibilities it has. The design of the Fours is adapted to these machines and it is expected that this will give no problems.

Wood will be fabricated in the wood workshop. The wood is purchased or collected at the dumping ground. With the use of saws the wood can be transformed into the required shape, followed by polishing so that it does not contain splinters. The Fours will be painted at the atelier by the local artists.

Business plan

To start up the project, a micro credit of \$1000,- dollar will be provided by the micro finance institution in the slum settlement. There will be no sponsor with this project, because the product can be made very cheap. To succeed the project, no extra sponsor is needed.

Month 1

In the first month we will start by producing three chairs and bags with which we can demonstrate the project idea. These chairs will cost \$4,75 each and the bags will cost \$2,50 per bag. Besides making these chairs for the demonstration, pamphlets will be made and spread among the inhabitants of the slum. This will be done before the demonstration to create awareness of the project and will cost \$15,-.

This will leave us with \$963,25 dollar from the start budget.

Month 1: ☐ Produce chairs and bags for demonstration (3) ☐ Give demonstration ☐ Promote with pamphlets in slum	Start Budget: \$1000,00 Costs Chairs & Bags (3): $\$7,25 * 3 = \$21,75$ Costs promotion Slum = \$15,00
	Over: $\$1000,00 - \$21,75 - \$15,00 = \$963,25$

Month 2 – 5

In the second month we will startup the project in the workshops by producing the chairs and bags. The project will start with 67 chairs for the slum, this means that there will be 70 chairs available for the inhabitants of the slum after month 5. These chairs need to be purchased, as well as the bags. They can be bought in the slum for the cost price of the product. The profit will be made with selling the chairs in the Bijenkorf in the west.

In the beginning of month 2, there will also be a start up of the promotion campaign for the Bijenkorf. This will again be made by the workers of the media center in the slum. Because they are already educated in the previous project there is no need for extra money for education.

In the atelier, also 67 bags will be made that can be bought together with the chairs. For the Bijenkorf we will start making 40 chairs and bags. These bags will have some adjustments to make them more suitable for the western world to make them function as a pillow.

The total costs of these 107 bags and chairs we will be making is \$775,75 dollar. For the promotion campaign in the Bijenkorf \$180,- dollar will be spend. This will leave us with \$7,50 dollar from the start budget.

By selling the chairs and bags in the Bijenkorf for \$270,- dollar we will earn \$9.567,50 dollar after the transport costs are paid (\$6,- per bag and chair) and we paid the loan back. This means that our break even point will be after the fifth month.

Month 2-5:

- Start making and designing promotion for the Bijenkorf
 - Start producing chairs for whole slum (67)
 - Start producing chairs for the Bijenkorf (40)
 - Start producing bags for whole slum (67)
 - Start producing bags for Bijenkorf (40)

Rest Budget: \$963,25
Costs Chairs & Bags (107): $\$725 \times 107 = \$775,75$
Costs promotion Bijenkorf = \$180

Over: $\$963,25 - \$775,75 - \$180,00 = \$7,50$

Transport Costs = $40 \times \$6,00 = \$240,00$
Loan = \$1000,00
Income selling chairs & bags in Bijenkorf = $(40 \times \$270) - (40 \times \$6,00) - \$1000 + \$7,50 = \$9.567,50$

Breakeven point

Month 5-12

After we have reached our break even point in the fifth month, more chairs for the slum will be made. To provide most of the people in the slum with a chair, 30 extra chairs will be made. We assume that not everybody will want a chair; therefore we will make 100 chairs in total for the slum. In the 5th to 12th month, 80 extra chairs for the Bijenkorf will be made. The total cost of making these chairs and bags will be \$797,50 dollars. This will leave us with \$8.770,- dollars. After deduction of the transport cost, we will earn \$21.120,- dollars which gives us a total of \$29.890,- dollars.

Month 5-12:

- Produce more chairs for whole slum (30)
- Produce more chairs for the Bijenkorf (80)
- Produce more bags for whole slum (30)
- Produce more bags for Bijenkorf (80)

Rest Budget: \$9.567,50
Costs Chairs & Bags (110): $\$7,25 \times 110 = \$797,50$

Over: $\$9.567,50 - \$797,50 = \$8.770,00$

Transport Costs = $80 \times \$6,00 = \$480,00$
Income selling chairs & bags in Bijenkorf = $(80 \times \$270) - (40 \times \$6,00) = \$21.120,00$
Total in bank = $\$8.770,00 + \$21.120,00 = \$29.890,00$

Year 2

In year two we will introduce the project into a new slum, for which we will make 100 chairs and bags. These chairs and bags will be sold in another slum for \$1,- dollar. This will give us one dollar extra profit from each bag and chair sold in the other slums. There will also be 80 extra chairs and bags for the Bijenkorf. This will earn us in total \$50.485,- dollars after the second year. In this year we made in total 100 bags and chairs for our own slum, 100 chairs and bags for a second slum and 200 chairs and bags for the Bijenkorf. After this second year we can expand the project to the other slums and more stores in the Netherlands or Europe.

Year 2

- Producing chairs for new slum (100)
- Produce more for the Bijenkorf (80)
- Producing bags for new slum (100)
- Produce more for Bijenkorf (80)

Rest Budget: \$29.890,00
Costs Chairs & Bags (180): $7,25 \times 180 = \$1.350,00$

Over: $\$29.890,00 - \$1.350,00 = \$28.540,00$

Transport Costs = $80 \times \$6,00 = \$480,00$
Income selling chairs & bags in new slum = $100 \times 8,25 = \$825,00$
Income selling chairs & bags in Bijenkorf = $(80 \times \$270) - (40 \times \$6,00) = \$21.120,00$
Total in bank = $\$28.540,00 + \$21.120,00 + \$825,00 = \$50.485,00$

Pilot

While the project is up and running the feasibility of the project needs to be considered. There are some periods of time after which we, as a design group, would like to check if the project is running correctly and is successful.

In the first five months the project is being set up. As a checkpoint, we want to check whether after five months 70 chairs are produced. This will be done by counting the amount of chairs which is being produced. After the same five months, chairs should be transported and sold in the west. This can be checked by the budget at the time, which should be around \$ 9.500 to have sold enough chairs in the west.

After a year there is another checkpoint. Here the project is up and running and should be generating income from the chairs sold at the Bijenkorf. This income is something which can be checked. The total amount of money the SEDG will own after a year should be \$ 50.000. Another thing which should be tested is the amount of chairs in the slum. There should be at least 100 chairs in the slum.

Upscaling & planning

The project is being set up in the first year, the second year up scaling already starts. It is intended to produce 80 chairs a year for the Bijenkorf and to introduce the Four into another slum. Like this about \$20.000 is earned each year per productive slum so in five years time \$100.000 is made each year and five slums will have access to the Four.

