

NEW PRODUCT DEVELOPMENTS FOR

SHOPPING TRANSPORTATION



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INTRODUCTION

Following up from the last stage of the product development process (“Assignment2” available in Appendix D for reference) our “New Product Development Team” has continued to find innovative new products that facilitate shopping and shopping transportation and satisfy customer needs identified previously.

Considering the diverse and sometimes ‘new’ nature of the products suggested we assume the identity of a start-up as no current company is presenting sufficiently similar operation to identify with. This has limited us in our choice of screening models but allowed us a wider range of products to consider.

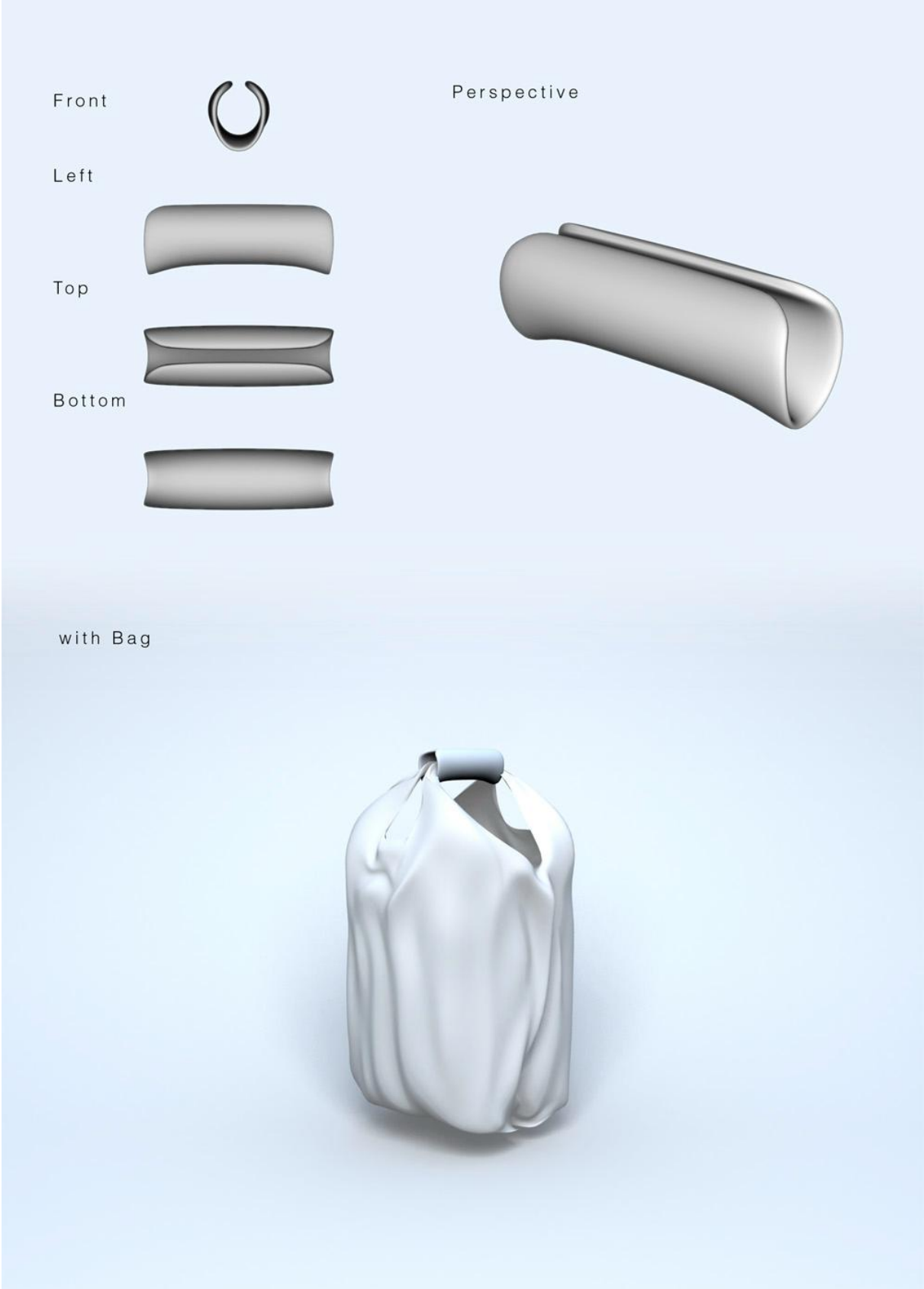
The Concepts presented all contain a description and an essential list of their advantages and disadvantages concluding with a short estimate of a possible target market and positioning for each product. Each concept generation process is described and for further reading the rough drawings of each concept are attached in Appendix F.

We are aware of internet shopping and that it eliminates the transport of shopping altogether, but still a great majority of shoppers physically visit (and want to visit) the stores. Our product should target that market.

All concept drawings were created by our team and © by ANDiDAS.COM 2003.

CONCEPT 1: SHOPPING BAG HANDLE

CONCEPT BLUEPRINT



DESCRIPTION & CONCEPT GENERATION

The “Shoppingbaghandle” is a most simple concept. As can be seen from the blueprint opposite it is a u-shaped hand sized grip that allows all kinds of shopping bags to be ‘hooked’ onto it. The concept primarily builds on the readily available plastic bags that lay out for free in grocery stores, therefore it can only be used in conjunction with another bag. But even several bags could be ‘bundled’ that way and facilitate the handling for more than one bag.

The materials suitable are hard plastic or light metal, possibly with a soft cushion underneath where the hand is exposed to the greatest load.

The Concept was generated from empirical shopping experiences of the Product Development Team; It was noted that ordinary plastic shopping bags are comfortable to carry only up to a certain degree of weight, but that a higher weight (e.g. water bottles) causes sever strain on the hand when a longer period of carrying is necessary. This led to practical DIY improvements for our own shopping that we felt could be marketed to a mass market.

PRODUCT ATTRIBUTES

The concept’s main benefit is the increase of comfort for carrying heavy or many plastic bags. While it cannot replace a shopping bag or be used on its own, it is intended to be rather a tool that is used when necessary. It is small enough to be placed inside a pocket. In addition to this, the short list gives a quick overview of the product advantages and disadvantages.

- **Positives**
 - Cheap
 - Reusable and small
 - Quick and easy to use
 - Possibly available in store (if a deal with supermarkets can be negotiated)
 - Reduces strain on hands

- **Negatives**
 - Does not provide more benefits than ordinary plastic bag
 - Other products provide more benefits
 - Needs plastic bag

TARGET MARKET & POSITIONING

The handle is targeted at people who mainly use the provided plastic shopping bags out of convenience and are not prepared to change to a dedicated shopping bag (e.g. see later concepts). This might be either because they are not prepared to pay for something that comes for free from the shops or because they do not like the designs of the alternative shopping bags (unfashionable, see focus group analysis, Appendix D). With the handle, they can increase the shopping comfort considerably, for a very small price while relying on their trusted shopping bags.

CONCEPT 2: COTTON BAG

CONCEPT BLUEPRINT



DESCRIPTION & CONCEPT GENERATION

This product is a simple fabric bag, although the material can easily be changed. It has a square base and two strong (but light) wooden (or metal or hard plastic) sticks that function as the handle. At the same time they keep the fabric in place and the bag in a fairly stable state.

There is one planned option: because of the squared base there will be the opportunity to stabilize the bottom half of the bag with an inlay grid (similar to the cardboard inlay, see concept #4), this would stabilize the bottom of the bag and allow sensitive goods (e.g. glass bottles) to be transported more safely. Goods would experience a low degree of ‘turmoil’ or fall over, but stay as deposited in the bag to a high degree.

When the bag is not needed the fabric can be wrapped around the wood to reduce its size, yet it might not be small enough to put it into a pocket (big pocket maybe).

The concept was derived from observation. In other words it is copied from an existing product. Yet, market examination suggests that this product has not been mass marketed and leaves scope for the introduction of a similar product. Furthermore we have added own improvements and suggestions.

PRODUCT ATTRIBUTES

This type of bag satisfies a number of needs that have been brought up in the focus group. Essentially it is a combination of the shopping bag handle (#1) and the cardboard (#4) inlay incorporated into one product.

- **Positives**
 - Keeps goods in original state, goods can be separated
 - Comfortable to carry
 - Strong, resistant, not-breaking, rigid bottom

- **Negatives**
 - Similar product exists
 - Luxury shopping bag, expensive
 - Has to be taken to each shopping
 - Can be deemed unfashionable
 - Only one bag per hand, not suitable for big shopping
 - People may forget taking it with them to shop

Afterall, further enquires would have to be made into the intellectual right of this design considering that a similar design already exists so as to avoid legal conflicts.

TARGET MARKET & POSITIONING

To avoid an unfashionable image, we would recommend an up-to-date design, with fashionable fabrics and patterns (e.g. Union Jack). Branding would also help.

Because it has competition from free plastic bags it is a “luxury” shopping bag, and requires a fairly high price (relative to free). Therefore this bag would be targeted at the upper market, maybe almost as a fashion item. Consequently the market size would shrink (compared to other concepts), but probably yield a high margin per unit.

CONCEPT 3: NETTING BAG

CONCEPT BLUEPRINT



DESCRIPTION & CONCEPT GENERATION

Through discussing the different ideas of how to fulfil the customer needs and the different devices that can be used we came up with the idea of a Netting Bag. The concept came from a bag currently provided in 'Superdrug Stores' and is only used in-store as a basket.

As can be seen from the concept drawings, the main part of the bag is made from a fine netting or plastic film material, held together by three plastic rings, and extended foldable arms that are used to give additional strength. There is a double layer of netting at the bottom of the bag to give extra strength to take the weight of objects placed in the bag. A Plastic handle is used to carry the bag.

PRODUCT ATTRIBUTES

The focus group made positive comments about the rigidity and structure of the 'Superdrug' bag which allows goods to be placed in the bag easily. Other factors are summarized below.

- **Positives**
 - Light, small when collapsed
 - Easy to pack
 - Structured
 - It can be stored upright.

- **Negatives**
 - Structured, but wobbly
 - Difficult to carry more than one bag on one hand
 - Not suitable for very heavy goods
 - Unfashionable
 - People may forget taking it with them to shop

If we refer back to the customer needs for a shopping transportation device out of the 11 needs applicable to this concept it only fulfils 3, those being;

- It holds shopping for transportation
- It's reusable
- It's easy and quick to use.

We can conclude from this, that the concept does not fulfil enough of our target markets needs in order to be considered further. As for the needs that it does fulfil it is clear to see why even with a modified version using supporting arms that the bag simply does nothing more than replace an in store basket.

TARGET MARKET & POSITIONING

We struggle to find a potential target market for this product. Probably to employ it as an in-store basket to spice up the retail experience is the best use for this product. Given the disadvantages this product would not provide sufficient benefits in a hectic shopping exercise, especially when free plastic bags are laying out in the stores.

CONCEPT 4: CARDBOARD INLAY

CONCEPT BLUEPRINT



DESCRIPTION & CONCEPT GENERATION

A piece of cardboard or plastic that can either be placed into the plastic bag or be incorporated within the bag (see self-explanatory blueprint). A possible improvement to keep the inlay in its form would be to attach self adhesive lashes by the sides so that when in an upright position, the walls stay up. This would almost enable this box to be used without an additional bag.

The concept generation process consisted of a focus group and a brainstorming session with all members of the team. In the focus group the point was made about food and drink in the carrier bags moving around in the boot of his car whilst driving. During the brainstorming session, one of the members of the team explained how he had experienced difficulties both when packing the bags, and when putting the bags down on the floor after arriving home in the kitchen. These comments were instrumental when leading to this concept generation process.

PRODUCT ATTRIBUTES

A major need identified in the focus group was shopping bags moving around in the car whilst driving home. It was also pointed out that carrier bags collapse whilst both packing and unpacking. This product could be available in-store at the checkout and would either be very cheap or free. It would only be reusable if made out of plastic and would certainly help to keep goods in their original state.

Advantages

The advantages of this concept are that people will experience less difficulty when packing and unpacking their shopping. It would save time and reduce the likelihood of food and drink being damaged in some way. For supermarkets, it could be likely to speed up the process through the till which in turn would lead to more satisfied customers.

Disadvantages

The potential problems faced with this concept would be largely associated with its design. Cardboard would be cheaper than plastic but is not as strong, so it is less likely to remain rigid. Also, a decision would have to be reached regarding whether or not to incorporate the concept into existing shopping bags.

TARGET MARKET & POSITIONING

This concept would have a broad target market since all people who shop in supermarkets have to pack and unpack their goods. Not everyone drives to a supermarket but large proportions do. Even those walking, or using public transport who value structure in their bags can use this product, or use it on an occasion where a structure in the bag is essential.

CONCEPT 5: RUCKSACK

CONCEPT BLUEPRINT



DESCRIPTION & CONCEPT GENERATION

The concept of a duffel bag on wheels was generated from the focus group, as they discussed the topic of drag bags (granny trolleys). They acknowledged how practical they are whilst also identifying the stigma surrounding them, as they are seen to be old fashioned and mainly used by the elderly. Thus it was suggested that they could be made more 'trendy' to attract younger users, opening up a whole new concept to shopping for the younger population.

The concept design has combined a normal duffel bag with certain features of a drag bag, as for example evident from the inline-skate-wheels at the bottom and the handle at the top allowing for the bag to be pulled/dragged. The decision made to use a duffel bag instead of any other bag was through distinguishing the appeal of these bags to the younger generation. The Keynote report, 'Hand Luggage and Leather Goods', August 2003 identifies this as it states:

"young travellers tend to favour informal sports bags and rucksacks, rather than old-fashioned leather satchels and luggage."

The duffel bag was also chosen because users can carry the bag on their backs when they have light loads whilst also being able to drag the bag when heavy, reducing the strain on the back and shoulders.

The features of the bag include the use of strong tear ballistic nylon, making the bag resilient to heavy loads and all types of weather. The handle will be made out of resistant rubber, with a one-hand push button operation, which extends to around 3 feet, allowing for ease of dispatch. In addition the handle will be moulded to suit a normal hand shape, relieving comfort and strain on the hand when pulling. The bag will contain moulded layers of plastic covered in foam to allow for structure, durability and comfort. The inline skate wheels at the bottom of the bag can be folded inwards helping to increase comfort and so they do not become an obstruction when carrying. The other features of the bag are the un-clipable (or tuck-away) shoulder straps as they can be removed when dragging so that they do not get tangled up in the wheels.

Inside the bag will consist of compartments allowing for certain shopping goods to be positioned in a particular area; for example, there would be a compartment for soft goods such as eggs helping to avoid breakages, this will also assist in improving the efficiency of shopping as it should hopefully make unloading easier.

The zip will go completely around the bag, enabling the ease of exit and entry of goods, whilst also helping to improve the inconvenient aspects of shopping goods transportation mentioned by the focus group. The other feature of the bag is the extra compartment on the front which was added to allow for personal and small belongings to be kept separate from shopping goods.

The outside design of the bag is a very important aspect to consider because this factor can determine the success of the drag bag. However, the Keynote report must be considered in mind as it recognises that because of the *'highly fragmented industry it encourages competition and innovation in style, colour and material.'* A good design will be needed to attract young customers and to overcome the bad image ('unfashionable') of drag bags. Keynote also goes on to explain that due to well-known brands such as Louis Vuitton, the profile of luggage as a fashion accessory is increasing, implying that this could be a good market to divulge into.

PRODUCT ATTRIBUTES

There are many other features to the concept design, which can either lead to a positive or negative effect in reaching customer needs.

- **Positives**
 - Enables comfortable transport
 - Holds heavy loads
 - Easy to use
 - Minimises strain on hand
 - Reusable
 - Keeps goods in original state, well protected
 - Minimises lifting
 - Flexible (as doesn't just have to be used for shopping can be used for a variety of activities)
 - Allows to separate different kinds of shopping

- **Negatives**
 - Can be deemed unfashionable
 - Expensive
 - Not available in-store
 - Ease of dispatch
 - Duffel bag industry - 'Highly fragmented competitive market'
 - Can be slow to use

TARGET MARKET & POSITIONING

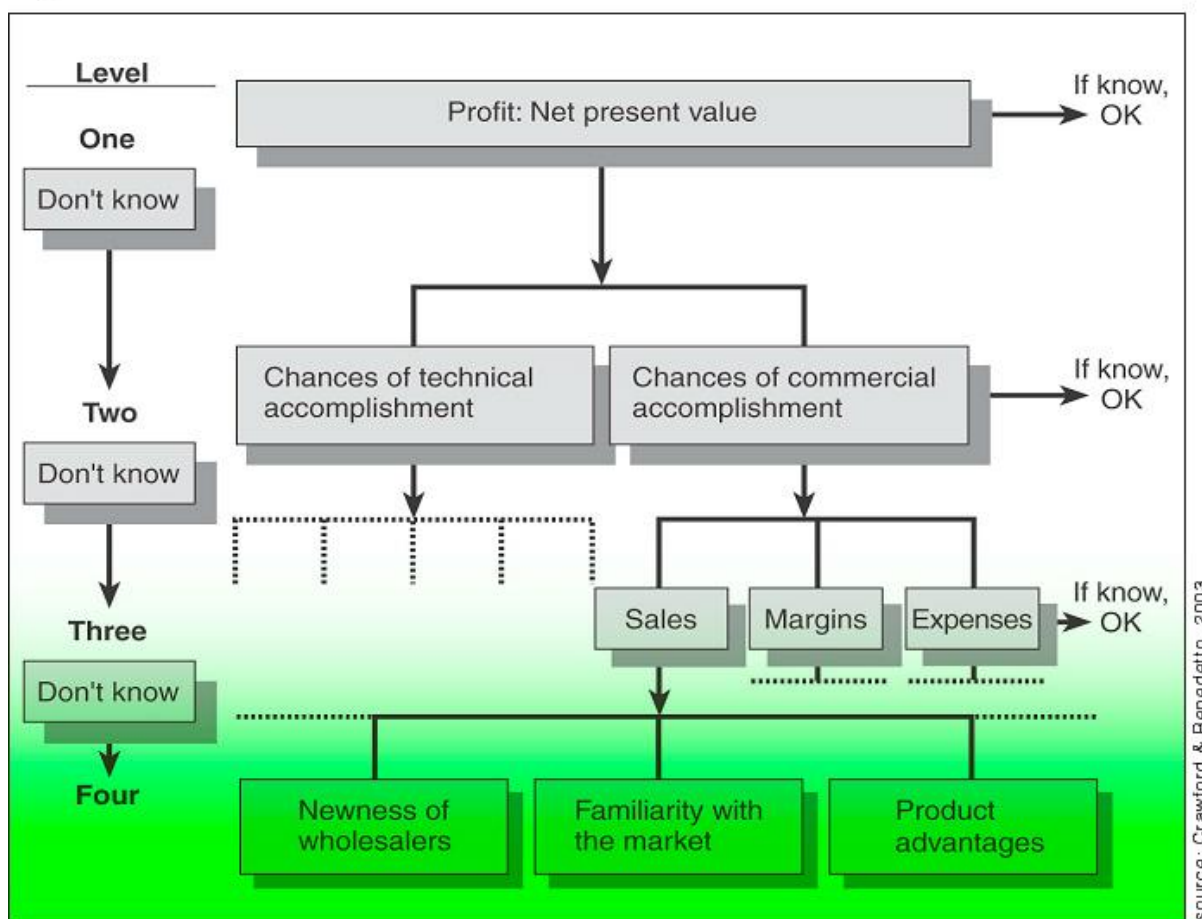
To avoid the bad image of drag bags this design can be styled to look like a totally normal rucksack, but can provide the comfort of a drag bag by unhinging the wheels and extending the handle. As pointed out this bag has many uses, not only for shopping. Therefore this bag would appeal to everyone who travels a lot with heavy items but has to walk or use public transport. Also this product will have to command a higher price and therefore probably will not be used only for shopping anyway.

SCORING

After reviewing the literature and several methods of scoring we found the “Scoring Model for Full Screen” the most appropriate one.

Figure one (below) explains the factors that we have to take into consideration: Because we don't know the NPV of a concept at this stage we have to look at more subtle factors that will indicate the likely commercial (& technical) success of each product. In fact we have to progress to level four (here marked grey) before we can start to make judgements for our products.

Fig. 1



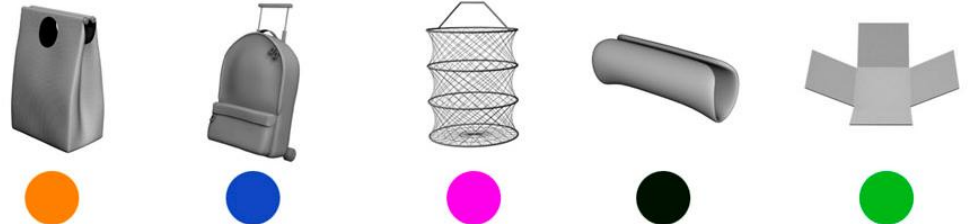
Other models such as the GE/McKinsey Matrix, Analytic Hierarchy Process or IRI Scoring Model and NewProd Screening Model all required a fairly high amount of information about a company's current activities and competitiveness. As stated in the introduction our business is better represented by a start-up and therefore those models can't be used.

Consequently you will find our “Scoring Model for Full Screen” on the following page. We have also created profiles from our unweighted scores to illustrate each product's strength graphically.

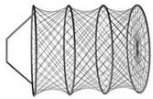
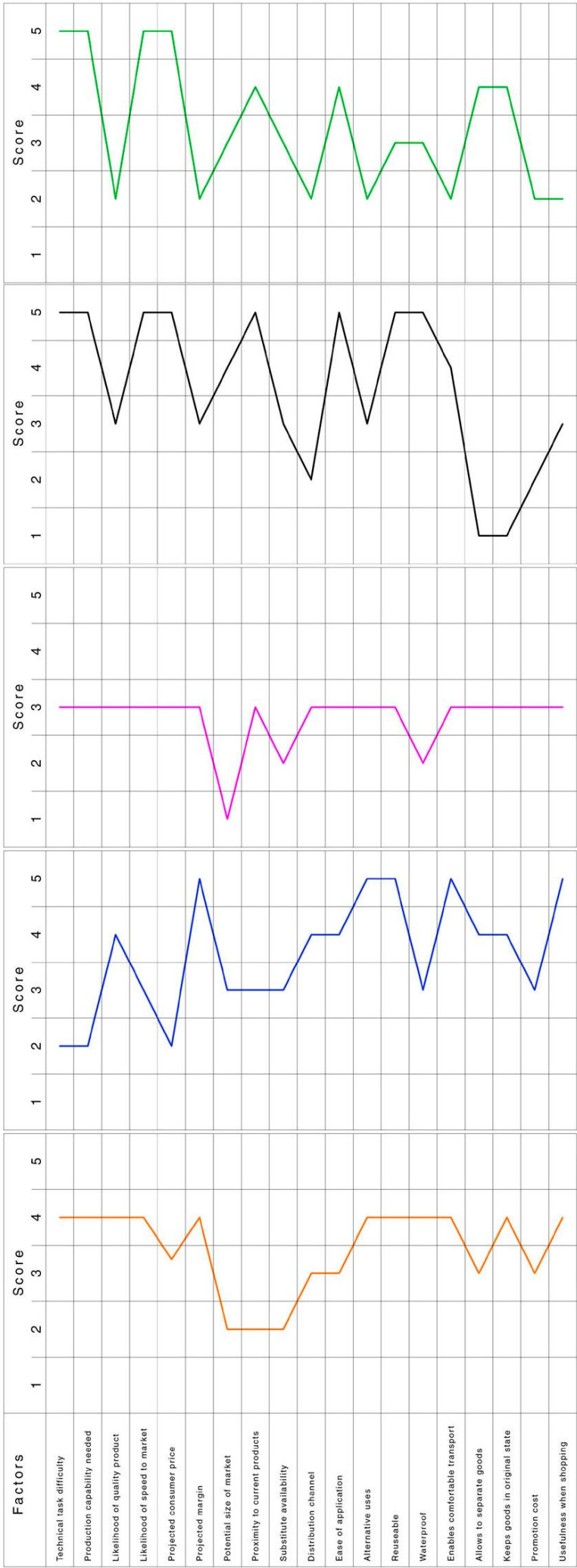
The scoring itself was conducted by the members of the new product development team, because we were the most familiar with the concepts. We did not find it necessary to employ the Olympic method for example, rather scores were agreed through group discussion and most commonly the mean or mode was taken forward.

Factors	Score				
	1	2	3	4	5
Technical task difficulty					
Production capability needed					
Likelihood of quality product					
Likelihood of speed to market					
Projected consumer price					
Projected margin					
Potential size of market					
Proximity to current products					
Substitute availability					
Distribution channel					
Ease of application					
Alternative uses					
Reuseable					
Waterproof					
Enables comfortable transport					
Allows to separate goods					
Keeps goods in original state					
Promotion cost					
Usefulness when shopping					

Legend



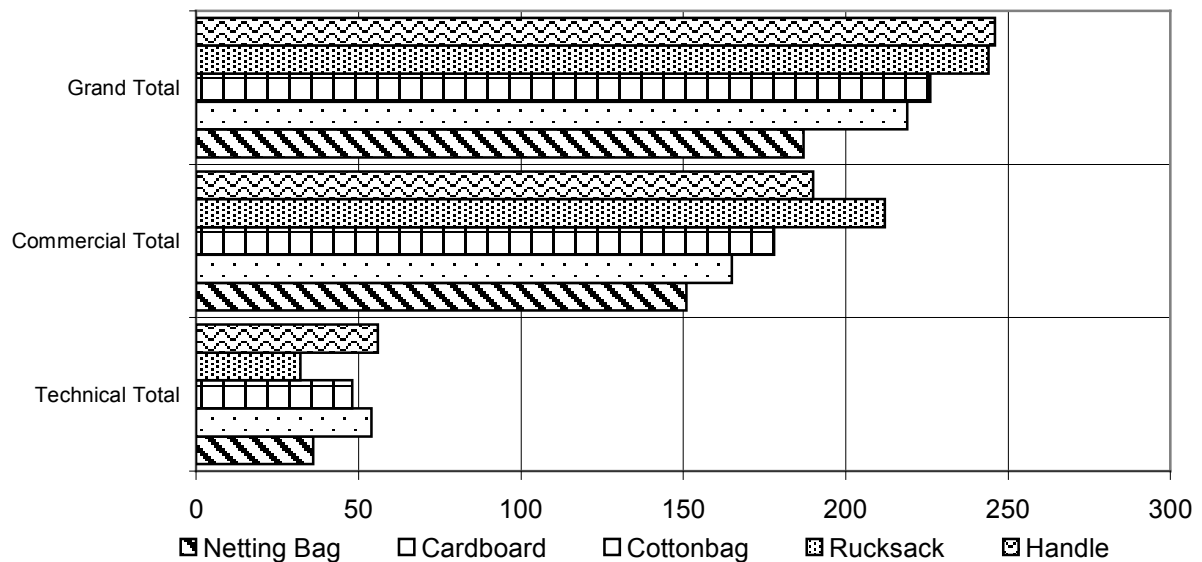
- Orange circle: Shopping bag
- Blue circle: Rolling suitcase
- Pink circle: Wire basket
- Black circle: Roller bag
- Green circle: Shopping cart



DISCUSSION OF SCORING MODEL

Chart 1 shows the results of the scoring process; the handle and the rucksack are the two top products. Cotton bag and the cardboard are fairly close; the netting bag seems least promising.

Chart 1: Scoring Results higher score = better



It is interesting to notice the different performances of the concepts in the technical and commercial categories. The rucksack achieves the highest score for commercial but the least in technical. This seems to suggest that, while this concept holds the greatest profits it is also the most difficult one to manufacture. The handle can claim the highest technical score and also a second place for commercial factors, some distance behind the rucksack.

The little amount of overall points that we allocated to the technical and the larger share for commercial factors also represents their relative importance. None of the products that we propose will pose a big technical challenge.

The Scoring strongly supports the handle and the rucksack as the two top products to give further thought to.

DISCUSSION OF PROFILES

The profiles show the unweighted scores that we allocated in the scoring model. The profiles are useful to see if a product's score is evenly distributed or if a concept has strengths and weaknesses (volatile). Therefore weaknesses can be identified and it is possible to look for improvements.

The netting bag appears as a fairly average product, all scores are three or lower. The handle and the cardboard have very volatile scores indicating that they have many strengths, few weaknesses and possible room for improvement. The rucksack's profile reinforces what has been shown in chart 1, low technical scores and above average score for commercial factors. The cotton bag is averaging at four but shows great weakness in innovation and available substitutes.

Profiles are the better to determine strengths and weaknesses rather than to use them to make a decision on which product to take forward.

CONCLUSION

After conducting the scoring, the two concepts that we think offer the biggest chance of success are the shopping handle and the rucksack. This decision has not only been favoured by our calculations but also experience and common sense tell us that these are the most

promising products. Yet, at this stage it should be pointed out that analysis through mathematical models can be misleading without looking at the bigger picture. Therefore if these concepts are taken forward more research has to be undertaken, looking at the consumer, market and environment.

APPENDIX

APPENDIX A: REASONS FOR THE INCLUSION OF EACH SCREENING FACTOR

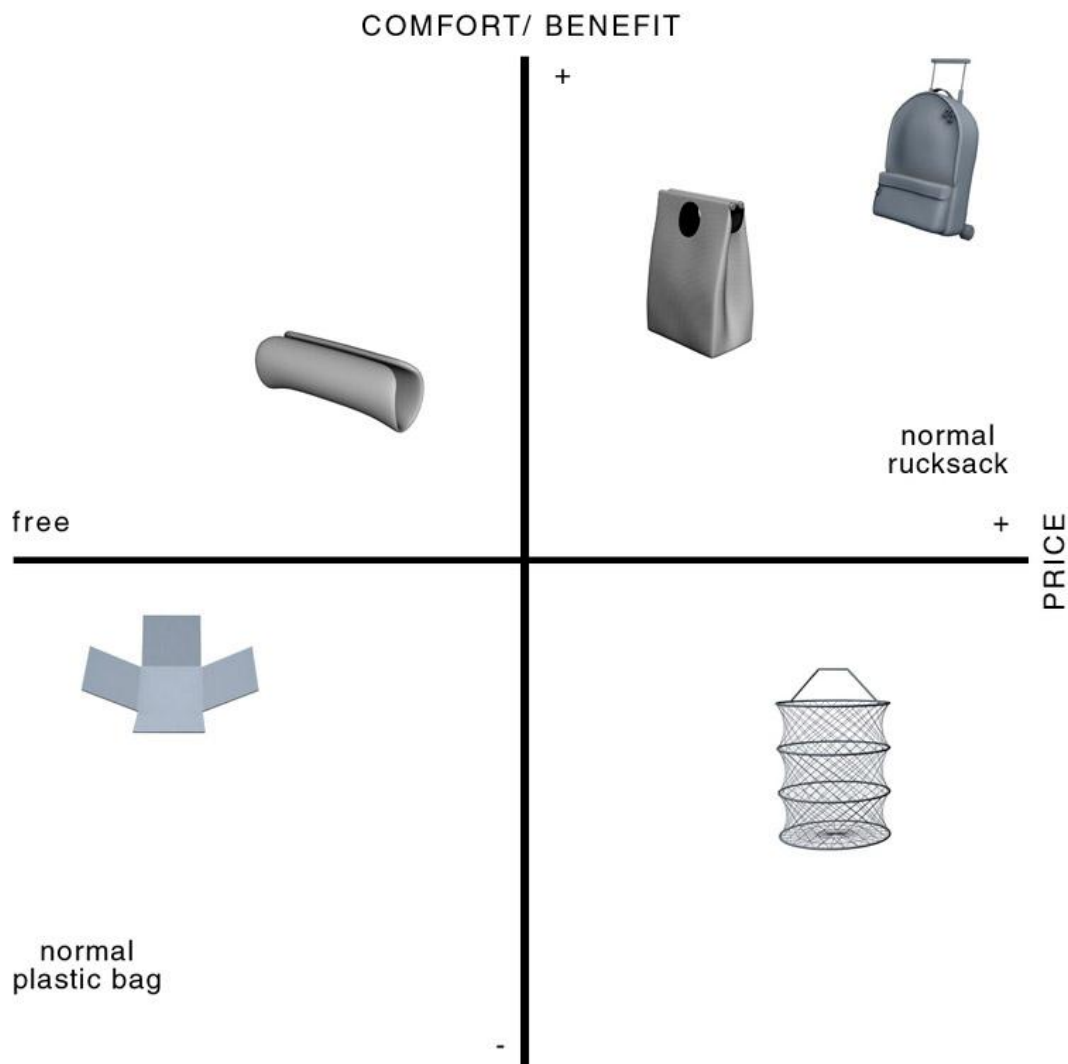
- Technical task difficulty
 - *the product must be technically feasible*
- Production capability needed
 - *A more technically complicated product demands more sophisticated manufacturing possibilities*
- Likelihood of quality product
 - *Does the concept have the prospect of being of high quality*
- Likelihood of speed to market
 - *How long it takes to take a product to the market is an important cost factor*
- Projected consumer price
 - *A high price might reduce the potential market size as plastics bags lay out for free in the shop already*
- Projected margin
 - *Major financial aspect*
- Potential size of market
 - *Estimated target market size, the larger the better*
- Proximity to current products
 - *The newer a product the better its*
- Substitute availability
 - *Few substitutes would give a first mover advantage*
- Distribution channel
 - *Some product are suitable for direct distribution with supermarkets (handle), such a deal would be desirable, but it is uncertain if this can be negotiated.*
- Ease of application
 - *It should be possible to stow away the shopping as quickly as possible, to avoid being the reason for a queue at the till*
- Alternative uses
 - *More alternative uses increase the attractiveness of the product*
- Reusable
 - *If money is paid it should be reusable, and will increase the attractiveness to the customer, and the calm the environmentally conscious*
- Waterproof
 - *Normal plastics are waterproof, therefore any replacement should be*
- Enables comfortable transport
 - *Major shopping factor*
- Allows to separate goods
 - *Voiced as a factor by the focus group*
- Keeps goods in original state
 - *Voiced as a factor by the focus group*
- Promotion cost
 - *Additional cost that has to be taken into account*
- Usefulness when shopping
 - *Summarizing factor for the overall usefulness of the concept while shopping*

Appendix B: The Bothersomeness Technique of Scoring Problems

	<i>Frequency</i>	<i>Bothersomeness</i>	<i>F x B</i>
Strain on hand	78%	92%	0,72
No structure to bags	73	88	0,64
Bags splitting	52	97	0,50
Difficulty separating different items	67	68	0,46
Trolleys with dodgy wheels	34	70	0,24
Availab. of diff. sized Bags	72	45	0,32

In the brainstorming session, the team members drew up the table above (adapted from Burton) based on the results of the focus group and their own discussion. This helped in their decision as to which two concepts should be taken through to the next stage of new product concept positioning and refinement. As can be seen above, the strain on your hand whilst carrying shopping bags received the highest score.

APPENDIX C: PERCEPTION MAP



Because it was not possible to create a GE/McKinsey matrix we thought we could draw similar information about market opportunities and market competition from a perception map. But we are not so sure about the outcome.

Introduction

As stated in Assignment One our group has decided to look into ways to improve the transport of shopping goods. This comprises primarily the way from shop to home. Conventional shopping bags cause strain on hands and do not offer much comfort and choice in packing the goods, trolley are only available within shops and the parking space. Pedestrians and public transport users cannot rely entirely on those.

To further understand the possible customers and markets of a new product we have conducted a focus group discussion. Accordingly we invited several people who are frequent shoppers and use different means of transport as well.

Insights

Summary of Insights from the Focus Group Analysis:

Analysis of views on shopping experiences predominantly regarding transportation of goods from the checkout to the home with the view to designing a new product that will be of some help and assistance.

Focus group

Moderator

xxx

Focus Group

xxx,	Age 26,	Employed
xxx,	Age 22,	Student
xxx,	Age 20,	Student
xxx,	Age 50,	Housewife
xxx,	Age 21,	Student

Analysis

We examined four main areas, which allowed us to gain and encapsulate the opinions of our focus group in the following areas:

- ÿ Shopping Patterns
- ÿ Problems experienced whilst shopping, regarding the transportation of goods
- ÿ Trolley and shopping bag usage
- ÿ Practical demonstration of product concepts

Summarising the shopping patterns has allowed us to observe that most of the focus group carried three bags or more which was generally a heavy load, ruling that any idea for the assistance of shopping would have to be able to carry quite a heavy load of multiple bags/items.

The focus group identified many problems that they have experienced whilst shopping, the main ones being the strain of the bag which tends to cut into the hand, whilst also having no structure to them resulting in goods falling out especially whilst driving and on the bus. In

addition, depending on the strength of the bag, occasional breaking of either handle or bag bottom was an issue. Other factors acknowledged were:

- Grouping bags together
- Loading and emptying
- Paper bags and boxes breaking in the wet
- Boxes only having handles on the side
- Difficult to pack items into the bag at times (depending upon shape and size)
- Plastic bag have not structure, goods will get shaken

From the problems spoken about round the table and in later conversation in the meeting came many ideas and suggestions to improve the transportation of shopping. It was suggested that a more rigid lightweight bag could be designed which had more structure but was also lightweight with rubber handles. From this idea it was brought to light that Superdrug have a similar device but it is only used in store as a basket. It was also mentioned that to improve the bags a change in handles was needed as a particular problem identified was that the plastic layers come away weakening the strength of the handles. A suggestion made was to combine fabric and plastic for the handle, helping to increase the strength and durability, although it was recognized that Harrod's already have a similar design in place. Another idea mentioned was to improve the design of boxes as there are only handles on the side making it hard to carry boxes and shopping bags at the same time, a recommendation by the focus group was to maybe design a handle in the middle/top of the box easing the trouble of carrying both. A final suggestion that was made was to include a cardboard support for bags (to be placed inside) that could be collapsed and re-opened when needed helping to improve the structure and strength of the bag.

The discussion topic on trolley and basket usage provided us with the insight that on the whole few of them used trolleys. From this the focus group also talked about the drag bags (granny trolleys), they acknowledged how practical they were but found that there was too much stigma around them because they are seen as too old fashioned and used by the elderly. A suggestion made was that they could be made more 'trendier/fashionable' to attract younger users. The topic also brought across the discussion on 'bags for life', stronger bags provided by the supermarket which have to be purchased. The group agreed that the problem with these is to remember to bring these bags with them every time they shop, and that the bag does not offer enough benefit as opposed to normal bags to pay for it.

The practical demonstration of concepts that we generated so far (see appendix for drafts presented to the focus group), allowed for suggestions and improvements to our idea to be made, this consisted of proposals such as making the handle out of foam, rubber, or gel which could be especially shaped for the fingers helping to increasing comfort, in addition attention was paid to the length and the shape of the bag holder device as it was thought that if made longer and rounder it would not only reduce the pressure on the handle but increase the stability of the bag. The product demonstration was deliberately placed at the end of the discussion in order not to influence the group in their answers to possible improvements.

After the focus group had officially finished an after discussion took place, other issues were highlighted as it was documented that the group felt brakes were needed on trolleys, whilst they also asked who would we aim this kind of product at, the supermarket or the public. The group agreed that a handle should be provided by the supermarkets at the point of purchase, instead of having to buy one separately for themselves.

The most inconvenient aspects of shopping-good transportation as pointed out by the group:

- ÿ The bags falling down
- ÿ Loading and unpacking
- ÿ The bags straining the hand
- ÿ The strength of the bag/ bags breaking.

Everyone in the group felt that the transportation of shopping goods is a problem or at least an unpleasant activity that is in need of improvement.

Attributes

Attributes are defined as “features, benefits or functions” of a product. The following list represents various attributes that are generally used by consumers to describe shopping-transportation-devices. These include primarily all types of shopping bags, trolleys, basket and to a lesser extent boxes, rucksacks, etc.

- Features
 - plastic or paper shopping bags
 - handle
 - provided for free in shops
 - different kinds of bags available
 - wheels, basket, baby seat, hook (trolley)
- Functions
 - hollow, holds shopping
- Benefits
 - Positive
 - § waterproof
 - § flexible
 - § light
 - § holds shopping together
 - § can be used as toboggan
 - Negative
 - § plastic bags easily collapse, no structure, therefore difficult to pack
 - § shopping gets mixed up in bag, not well protected
 - § not environmentally friendly, littering the street
 - § strains hands when carrying
 - § paper bags break in rain
 - § not right size available
 - § trolley with dodgy wheels, no brakes
 - § drag bags are deemed unfashionable

Customer Needs

A list of needs for a shopping-transportation-device/ service that

- holds/ transports Shopping
- allows to separate different kinds of shopping (frozen/ unfrozen, hard/soft, fruit/boxes)
- keeps goods in original state,
- cheap
- available In-store
- reusable
- strong, resistant, not-breaking

- waterproof
- easy to dispatch, quick to use
- enables comfortable transport, e.g. minimize strain on hand
- minimise any lifting or bending down
- better counter design at check out
- in case of trolleys: brakes, no dodgy wheels

APPENDIX F: ROUGH DRAWING OF CONCEPTS

See following pages