

IDEO SHOPPING TROLLEY

Organisation	IDEO
Trigger	<ul style="list-style-type: none"> The IDEO shopping trolley was developed at the behest of ABC television to showcase the process of innovation and product development.
Objectives	<ul style="list-style-type: none"> To radically improve upon the existing design within five days. To reduce the number of trolleys that go missing. To enhance the reputation of IDEO.
Tools/techniques	<ul style="list-style-type: none"> Ethnographic market research, which included interviewing and observing users, as well as talking with purchasers and repairers of shopping trolleys. Secondary market research to determine the need for such a product. Hot teams were used in brainstorming sessions. Fast prototypes were developed, elements of which were incorporated into the final design and demonstrated at a grocery store.
Enablers	<ul style="list-style-type: none"> Reputation and publicity were the primary enablers of the project.
Tensions	<ul style="list-style-type: none"> Trade off between time and innovation.
Impact	<ul style="list-style-type: none"> This product is still at the prototype stage.
Lessons	<ul style="list-style-type: none"> Even mundane products can be radically improved upon, in a short time period, if the environment is conducive to innovation. Reducing the use of trolleys for other purposes makes them less likely to go missing.

Synopsis

This case concerns IDEO, an industrial product design firm, presented with a challenge by ABC News to redesign the common shopping trolley in only five days. While not the only criteria involved in determining the new design, theft was an issue the team quickly identified and determined to address in the creation of their prototype. The model they unveiled at the end of the five-day period was radically different from the traditional shopping trolley. The central basket, coveted by thieves, was replaced by five removable baskets whose portability not only reduced the attractiveness of a shopping trolley to would-be thieves, but also served to make grocery shopping a more efficient and enjoyable process for shoppers.

Background to IDEO Shopping Trolley

Shopping trolley theft is a fairly common occurrence in the United States. *Insight for the People*, a U.S. government publication, reports that over 1.8 million trolleys are stolen in the U.S. every year. With prices running from \$100 to \$300 per trolley, the cost to stores, and ultimately to consumers, runs to \$175,000,000 annually. Thus, theft has become more than just a mere nuisance to many businesses. Byerly's, the Twin Cities grocery chain, has elected to prevent trolleys from being taken outside. When a customer checks out at a Byerly's grocery store, the 'bag boys' load all scanned items into paper bags and then load these paper bags into large plastic bins. Each bin has a number prominently displayed on its side. Every time a plastic bin is filled, the customer is given a sheet of plastic, about the size and thickness of the cover of a typical hard-back book, with a number on it that corresponds to the one on the plastic bin. These bins are then taken by the 'bag boys' and loaded onto a ramp comprised of a series of rollers and sent outside. The customer simply walks out to his or her car and then drives to a covered loading area next to the building where other 'bag boys' wait with the grocery bins. Upon presentation of the plastic sheets, the 'bag boys' identify the appropriate bins and then take the groceries from these bins and load them into the customer's car.

The IDEO case from the United States presents an alternative, design-led solution to the problem of shopping trolley theft. In 2000, the ABC News Show approached the design firm IDEO with a proposition. They wanted to see an example of how the design process actually works. The item they selected for redesign was the ubiquitous shopping trolley found in grocery stores and mass merchandisers around the world. The challenge of this project was that it had to be completed in only five days. This case was chosen because it demonstrates the ability of designers to improve the crime resistance of everyday products. The analysis was conducted through phone and email communications with Scott Underwood, IDEO Headquarters, and through viewing the ABC News show *Nightline's* episode entitled, 'The Deep Dive'. Further information was gained from case study information provided by David Kelley (2001) in his book on innovation.

Design Process

Research

The design team approached the project by first observing grocery trolleys in use, as well as watching, meeting and speaking with those who use, buy, and repair shopping trolleys. According to David Kelley:

"The trick is to find these real experts. The people who are really getting the info are out in the field meeting with people." (David Kelley).

This identified categories of problems associated with the traditional designs:

- *Safety* - over 22,000 individuals a year, predominantly children, are involved in shopping trolley related accidents that are serious enough to require hospital attention.

- *Shopping practices* - rather than pushing the trolley up and down narrow crowded aisles, some consumers elect to leave their trolley at the end of an aisle, select an item, return to their trolley and then move on to the end of the next aisle.
- *Paying for purchases at the checkout* - standing in line consumes a lot of time.
- *Searching for products* – customers spend a lot of time searching for particular products, making it necessary for shoppers to communicate with store personnel to find out if items are in stock, on sale, or where they are located.

Another issue, though not a primary problem identified by the design team, was that of shopping trolleys going missing. The IDEO design team identified two primary reasons for theft. Firstly, homeless people frequently use trolleys as rolling closets. The deep basket and the mobility of the shopping trolley make it an attractive and affordable way for homeless people to transport their worldly goods. Secondly, the metal grating in the basket of the trolley make for a convenient barbecue grill. The challenge thus became how to eliminate this unintended functionality without rendering the shopping trolley less effective for its intended users, namely store customers.

The anti-theft issues had to be integrated, however, with the other major design criteria. David Kelley said that designers were looking for an idea that was "*wild and buildable*". Any new design that reduced a trolley's mobility would negatively impact on the potential solution to one of the other issues. Thus, rather than focusing on how to keep the trolley from physically being able to be stolen, the design team determined to reduce the appeal of the new trolley to would-be thieves. The solution the team came up with was to make the basket of the trolley separable from its frame. The was surmised that:

"There's no value in this cart without the basket because you can't carry anything in it."
(Peter Skillman, designer).

Concept

Rather than the single large metal or plastic basket found on virtually all shopping trolleys in use today, the team developed a trolley that comprised a series of plastic baskets with handles. These baskets were similar in size to the smaller hand-held baskets shoppers use at grocery stores when picking up just a couple of items. These new baskets were designed to fit into the frame of the trolley.

The prototype design featured a trolley whose sides were constructed of heavy-duty steel tubing and whose open interior provided space for five shopping baskets. The baskets were designed to be of a uniform and stackable size and shape, and the shopping trolley was designed to accept two baskets on a top level and three more on a second level. Beneath the second level of baskets, steel tubing in the shape of a 'W' connected the two sides of the trolley together. This space was available for storing bulky items such as large packages of toilet paper (see figure 1).



Figure 1: New shopping trolley design
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Impact

The trolley is currently at the prototype stage and plans for full-scale commercialisation have not yet been released. Part of the beauty of this design is that it satisfied multiple design concerns simultaneously. For example, the removable baskets allowed shoppers to leave their trolley at the end of an aisle, select several items, place these items in the basket, and then return to their trolleys and reattach the basket. This design also helped to take away the functionality desired by would-be thieves. At checkout, the baskets were unloaded as the groceries were scanned. The empty baskets were then set aside and stacked together. This created a new problem though, in that customers still had to get the bagged groceries out to their cars. The solution to this problem was to design a series of 12 hangers on the inside of the trolley frame. Groceries bagged in plastic bags were subsequently hung over these hooks through the opening in the plastic bag that served as its handle. Shoppers now had no need to take anything but the frame of the trolley outside. In its reduced state, the newly designed shopping trolley would neither serve as a good storage device nor a good barbecue grill.

Lessons Learned

This case demonstrates that innovative solutions to problems of theft and shopping can be developed relatively quickly. Being based on an analysis of the problems, the process appeared fairly clinical and rational. However, David Kelley argues that: "*It's not organised, it's focused chaos*". It is also about a willingness to take risks or, in his words "*Trying stuff and asking for forgiveness*". When evaluating new designs, the designer has to keep asking himself/herself: "*What needs should they optimise their solutions to?*" This means trailing new ideas in collaboration with colleagues. In Peter Skillman's opinion:

"Enlightened trial and error succeeds over the planning of the lone genius" (designer).

References, Related Case Studies and Further Reading

David Kelley (2001) '*The Art of Innovation*'. US.

U.S. government (2001) *Insight for the People*. United States.

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Classification Index

Eklom's crime classification	Misappropriation
BCS crime classification	Theft
DAC	Protecting profits
Primary motivation	Product protection
Type of designer	Industrial
Approach	Problem-solving
Sector	Retail
Location	Grocery Shops and Supermarkets
Author	Eric Olson

DAC IDEO shopping Cart