



Public do not use recycle trash cans properly.

Introduction.

Recycling cans have trash in them. Trash cans have recyclables in them. What goes where? There seems to be confusion about recycling. This is especially apparent at the Science Museum Café. The café sells a variety of packaged and freshly prepared food and drink items. 100 percent of the customers I surveyed want to recycle and understand that the blue cans are for recycling, but the recycle containers always contain mixed trash.

Optimals minus Actuals

The custodians I interviewed stated that every can of recycle contains landfill trash. “Recycle” trash must only contain recyclables or they are subject to rejection by the hauler. The staff must take additional time to sort, or they send everything to the landfill when they are in a hurry. The custodians also stated that every can of landfill trash contains recyclable materials. This is less of a problem because the landfill will accept all materials, but not the optimal situation. The trash in the administrative offices and throughout the rest of the museum is correctly sorted by the custodial staff as it is collected.

State law (AB341) has mandated that all “businesses are required to recycle on and after July 1, 2012.” The law set a statewide *goal* for 75 percent disposal reduction by the year 2020. The actual *mandate* in 2015 is for a 50 percent diversion to recycling. The law allows for a great deal of flexibility regarding enforcement and, at present, there is no enforcement mechanism (penalty or fine structure, warning notices, civil injunctions, financial penalties, or criminal prosecution) in place.

There are two dumpsters that are collected by EDCO, the contract hauler. One is for landfill, and the other is for recycle. If each are filled equally, we have achieved a 50 percent diversion rate. The staff indicated that the landfill dumpster is always full, while the recycle is usually about half-full—an actual 33 percent rate. The overall goal of this project is to increase the amount of recycling, so that the 50 percent diversion is met. This is the primary optimal.

When asked about the kind of specific recycling errors they encountered most, the custodians related that they often found the following items that don’t belong in café recycling: straws, paper plates stained with food, plastic utensils and thin plastic wrappers. When surveyed, the public were unsure or wrong about how to dispose of these items...

Straws	55% of the time.
Paper plates	82% of the time.
Utensils	72% of the time.
Plastic Wrap	36% of the time.

The optimal for these is zero percent; the public would understand these do not recycle.



Sources of Analysis Information and Target Audiences

A 2013 survey commissioned by the Environmental Industry Associations (EIA) shows that 74 percent of Americans will make an extra effort to recycle outside their homes. However, only 22 percent say they are successful in recycling on vacation, out shopping or walking city streets, and only 16 percent are when dining out.

According to a 2011 survey by Ipsos Market Research, people appear to understand the benefits of recycling. In the survey, 81 percent cited helping reduce landfills as an advantage of recycling. But they are confused about what is recyclable. When people are unsure of whether an item can be recycled, half say they just throw the item away, while 18 percent report putting it in recycling.

These results are consistent with the observations I made and the survey I conducted. People are aware of and genuinely interested in recycling, but confused about how to do it. All of the customers I surveyed want to recycle and understand that the blue cans are for recycling. Yet, from their survey answers, they would not use the recycle cans appropriately. Museum Café patrons are also typically family groups that are tired, harassed and distracted. There are often children who cannot read, or international visitors. They are given the following instructions on the top of the recycling containers, (and nothing on the regular trash containers):



Attributing Causes and Crafting Recommendations

Motivation

In the general population, 74 percent want to recycle; in my survey 100 percent want to recycle. More research could explain the 26 percent in general who do not want to recycle, but for this project I assume there will be some amount that are intransigent and could not be persuaded. A small effort in this area may improve the results.



Incentive

People discarding trash receive no feedback from the receptacle. There is a certain amount of social pressure to do the right thing, but also social understanding for parents with many small children. It takes more time to recycle. An effort here might require additional staff to monitor or assist patrons, and is not feasible. There are currently no penalties, fines or warnings issued by government jurisdictions for not recycling, though there is the legal framework and likelihood for them to be developed in the future if the goals are not met.

Environmental

No signage on regular trash. If you only look at the regular trash container, you will not be aware of the adjacent recycle can. Some additional way to boost awareness may help.

Fatigue. Many patrons have spent a long day with small children and are too tired or distracted to separate a tray full of mixed trash into its recycle and landfill components. It is unlikely our efforts can affect this.

Time. There is a short time-frame for the decision to happen, and the sign contains a lot of information. It may be possible to provide information ahead of time to remedy this.

Skills & Knowledge

Different Rules. Many patrons may be aware of the rules for recycling at their home, but not aware that the rules can be different for a commercial enterprise. This sometimes wrong knowledge can cause patrons to dismiss the signage, since they perceive that they already know what to do. Noting this situation in the job aid may be an “attention getter.”

Vague or Incomplete Information. Current signage includes items not usually sold in the café such as cardboard and Styrofoam, and does not include enough detail about some of the common items (such as which parts of the soda cup is recycled). We should provide information that is relevant, complete and concise.

Language barriers. While all of my survey respondents understood English – the survey is in English, and I could only explain it in English – about 20 percent of the population in San Diego speaks English “less than very well” according to the San Diego County Health & Human Services Agency. Add in international tourists, and the Museum may have greater than 20 percent of the visitors that do not speak English. The current signage is in English without any international symbols. Many small visitors cannot read or see the current signage on the top of the container. Making some adjustments for non-English speaking patrons may give them the information they need.


Job Aids

I recommend three job aids to address the vague and incomplete information and language barriers issues, and increase awareness of the benefits and nature of recycling at the Science Museum Café. The objective is to improve correct recycling by 50 percent.

1. Improve the signage on the containers
 - Use symbolic or iconic signage that can communicate in any language.
 - It should be mounted so that anyone can see it.
 - Only include items that are sold in the café.
2. Provide a colorful tray liner with some interesting persuasive info about recycling, the same information as the new signage, and maybe a fun game to help pre-sort the trash.
3. Add information to the sticker attached to food items prepared in the café. The sticker currently has the item name and some ingredient, nutrition and allergy warnings. Add a couple of lines in a green box such as, “Send this dirty tray and wrapper to the landfill,” or “Recycle me please”. Include graphics, if possible.



Appendix A: Survey

Recycle Survey Results			
	Y	N	?
1. Do you understand English?	100%	0%	0%
2. Do you know that the blue can is for recycling?	100%	0%	0%
3. Do you want to recycle?	100%	0%	0%
4. Do different cities have different rules on what is recycled?	55%	9%	36%
5. Do private trash collectors, such as WasteManagement (WM) and EDCO, have the same rules as the City of San Diego for recycling?	27%	27%	45%
6. Can you put straws into the recycling container?	0%	45%	55%
7. Can you scrape food off paper plates into regular trash and then recycle the paper plate?	64%	18%	18%
8. Can you recycle plastic spoons with the  Symbol molded into it?	36%	27%	36%
9. Can you recycle the clean plastic wrapper from your bagel?	27%	64%	9%
10. Can you recycle the metal lid from your juice bottle?	27%	18%	55%



Appendix B: References

(2015). *Recycling*. *Edcodisposal.com*. Retrieved 12 July 2015, from <http://www.edcodisposal.com/san-diego/business-waste-management/commercial-waste-service/service-detail.php?service=88>>

(2015). Retrieved 12 July 2015, from <http://waste360.com/research-and-statistics/eia-survey-shows-americans-want-recycle-need-more-options>>

(2015). Retrieved 12 July 2015, from <http://www.call2recycle.org/recycling-surveys-offer-some-surprising-results-waste-recycling-news/>>

(2015). Retrieved 12 July 2015, from <http://plasticsmakeitpossible.com/2014/11/new-survey-half-of-americans-say-they-recycle-75-percent-or-more-of-recyclable-items-many-want-better-information-about-what-to-recycle-particularly-for-plastics/>>

(2015). Retrieved 12 July 2015, from <http://www.sandiego.gov/environmental-services/pdf/recycling/recyclingfaqs.pdf>

City-data.com,. (2015). Retrieved 12 July 2015, from http://www.city-data.com/county/San_Diego_County-CA.html

The Huffington Post,. (2015). *INFOGRAPHIC: What Do You Know About Recycling?*. Retrieved 12 July 2015, from http://www.huffingtonpost.com/2012/04/26/recycling-survey-results-infographic_n_1455906.html>