

Mess Food Wastage Problem Usability Engineering

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This project was presented in the Usability Engineering Course.

Problem - Food Wastage in Mess

- Large amount of unserved and served food goes into trash everyday in college mess - 2 to 3 barrels daily in each mess
- Served food: leftover food in plates
- Unserved food: food left unserved after mess hours are over



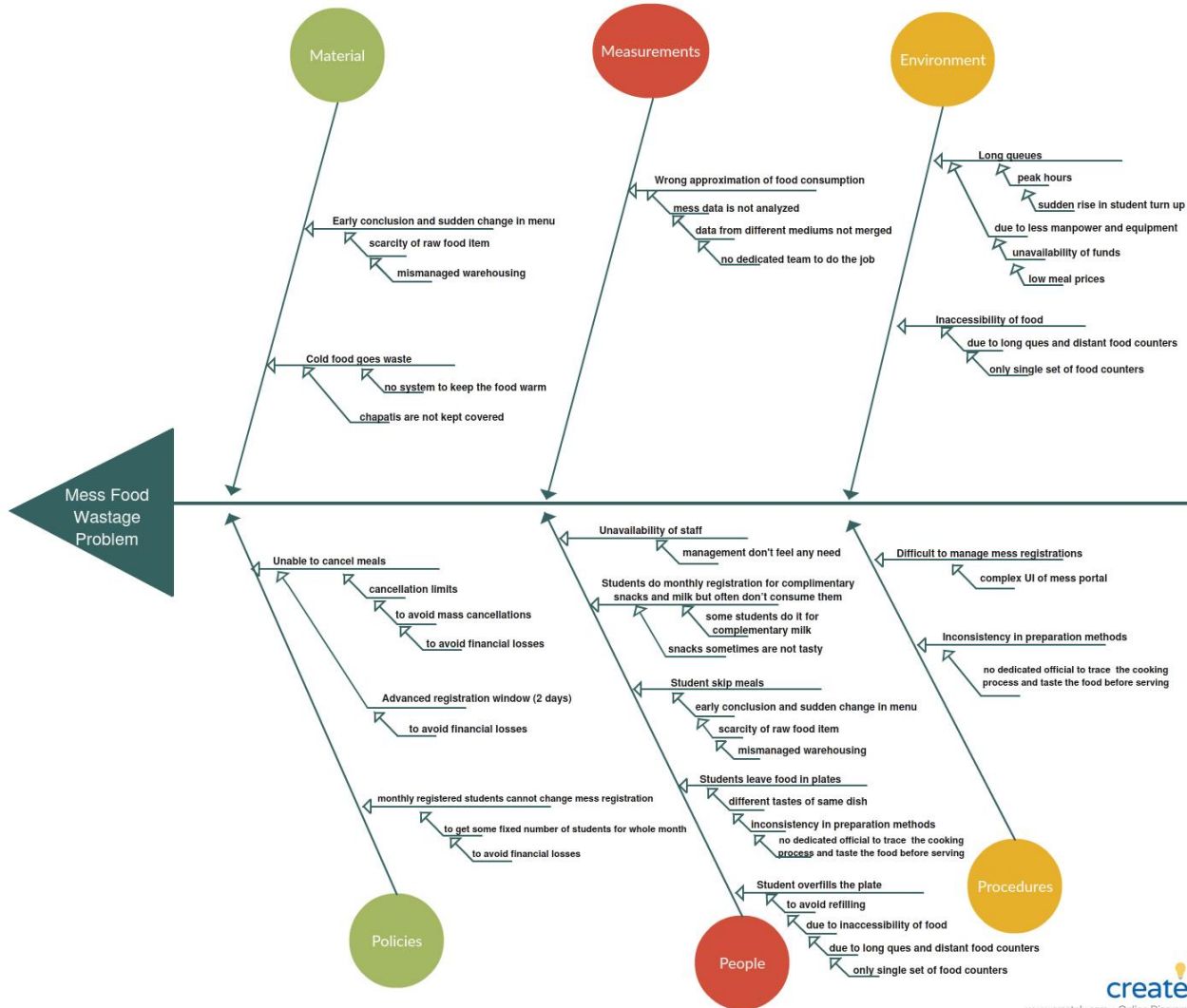
Causes

- Material
 - Quality of food items, choice of items
- Measurements
 - Quantity of food to be prepared, analysis of student data
- Environment
 - Long queues, accessibility of food counters
- Policies
 - Meal registration and cancelation
- People
 - Related to students and staff
- Procedures
 - Food preparation process, mess portal interface

Fishbone

Stakeholders

- Students & Faculties
- Mess Staff
- Mess Administration
- College Administration
- Food suppliers



Pareto: Data Collection

- Google form among IIT students
- 159 responses
- 9 issues

Mess Food Waste Problems

You just need to select the options you feel are right. It won't take more than a minute.

We are conducting a study to analyze the reasons behind wastage of served and unserved food in mess.

Please select the reasons you feel that are contributing to food wastage in messes.

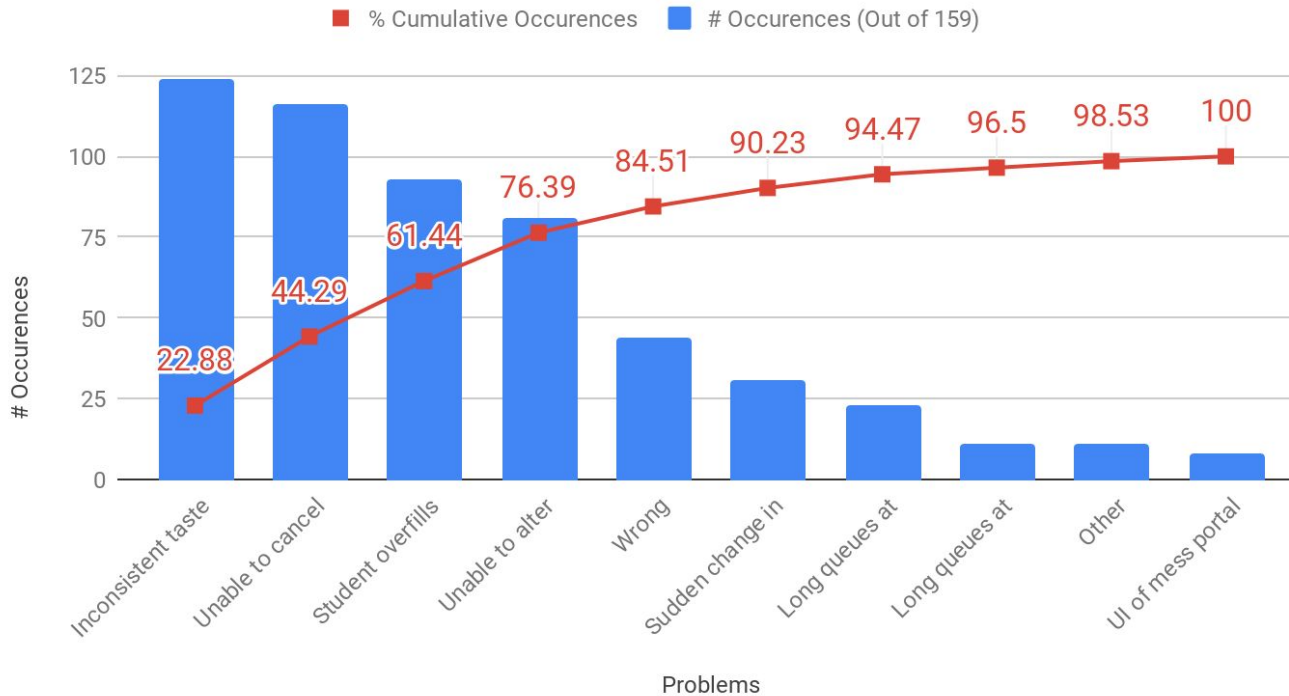
- Long queues at chappati counter
- Long queues at other food counters
- Sudden change in mess menu
- Inconsistent taste of food
- Wrong approximation of food consumption by mess staff
- Student overfills the plate
- Unable to cancel meals due to cancellation limit
- Unable to alter registration due to advance registrations window
- UI of mess portal is complex
- Other: _____

SUBMIT

Metrics

Sr. No.	Problems	# Occurences (Out of 159)	% Occurences	% Cumulative Occurences
1	Inconsistent taste of food	124	22.87822878	22.88
2	Unable to cancel meals due to cancellation limit	116	21.40221402	44.29
3	Student overfills the plate	93	17.15867159	61.44
4	Unable to alter registration due to advance registrations window	81	14.94464945	76.39
5	Wrong approximation of food consumption by mess staff	44	8.118081181	84.51
6	Sudden change in mess menu	31	5.719557196	90.23
7	Long queues at chappati counter	23	4.243542435	94.47
8	Long queues at other food counters	11	2.029520295	96.5
9	Other	11	2.029520295	98.53
10	UI of mess portal is complex	8	1.47601476	100
Total		542		

Pareto Chart



- 80% of problems can be resolved by addressing these 4 Issues:
 1. Inconsistent Taste
 2. Unable to cancel due to limits
 3. Student overfills the plate
 4. Unable to alter registration due to advance registrations window

DMAIC 6-Sigma process

Process Steps	Define	Measure	Analyze	Improve	Control
Strategies	<p>Where we are today: 3 barrels of food wastage</p> <p>Where we want to go: Reduce to 1 barrel</p>	<p>Process:</p> <ol style="list-style-type: none"> To fix a cooking manual and a person to taste Quantitative (lickert scale) Survey to tap each dish 	<p>Finding the root cause by analyzing the quantitative (lickert scale) survey tapping 1 dish at a time</p>	<ol style="list-style-type: none"> Based on dish responses, either replace it or fix a particular method Increase cancellation limits 	<p>Do repetitive survey to track the changes</p>
Tools	<p>Fishbone, Pareto, Data records in mess</p>	<p>Survey & discussion with authorities</p>	<p>Correlational Study to suggest a optimal menu for the day</p>	<p>Testing different models for optimization</p>	<p>Survey</p>

DMAIC 6-Sigma process

- **Define**
 - PROBLEM (where are we today): Mass wastage of food in all the messes
 - GOAL (where we want to be): Half barrel of waste
 - Acc to Pareto Chart, 4 issues need to be addressed as discussed
 - Inconsistent Taste
 - Unable to cancel due to limits
 - Student overfills the plate
 - Unable to alter registration due to advance registrations window
- **Measure**
 - On an average, daily 2 - 3 barrels of food is wasted
 - Present Situation:
 - No check & control over prepared food quality before getting served
 - On an average 10 meals can be cancelled every month
 - Long queues at food counters and no multiple sets of counters
 - Registration can be altered 2 days in advance
 - Monthly registered students cannot change the mess in between the month

DMAIC

- **Analyse**
 - Options/ Suggestions for Improvement
 - (1) A dedicated staff to keep an eye over food preparation & taste
 - (1) Develop standard cooking manuals and use food measuring tools
 - (2)(4) Analyze data of students to track their mess eating habits
 - (2)(4) Ask out students through forms
 - (3) Write on board: Kgs of food wasted
 - (3) Spread awareness through posters/ mail
- **Improve**
 - Propose a solution after thorough discussion with mess coordinators and admin
 - By trying and testing the options, track the improvements
- **Control**
 - A regular controlled check will be required to keep an eye on the changes been implemented