Restaurant Plate Waste

Relationship between Menu Items, Product Engineering and Profit

Mike von Massow
“Food waste isn’t considered problematic because, for the most part, it isn’t considered at all.”

Bloom - 2010

- Plate waste an important component of restaurant food waste
- No opportunity for rescue
- Costs us twice
- May also be a reflection of unhappy customer
- Has received very little attention
Plate Waste

• Estimates have ranged from 5-13%

• Some suggestion that increasing portion size contributes
  – Almost 40% increase in plate size between 1960-2006
    • Wansink 2007
  – “consumer plate loss may be on the rise at restaurants due .
    . . upsizing of portions.”
    • Kantor et al 1997
What is being wasted?

• Little attention to what has contributed to the waste
  – Hospitals and cafeterias

• Reduction strategies depend on understanding what is contributing
  – Easier said than done – particularly in a commercial restaurant.
So what did we do?

• Collected all plate waste from lunch service at PJ’s

• Used sales of individual menu items daily to estimate contribution of each item to total waste
  – Linear programming model
  – Easy to apply – used Excel
    • Real tool that can be implemented in a commercial restaurant
So what did we find?

- Average daily waste was 11.3%
  - Daily minimum was 5.0%
  - Daily maximum was 18.8%

- High degree of variability
  - Not every plate
  - Depended to a degree on the special
So what did we find?

<table>
<thead>
<tr>
<th>Menu Item</th>
<th>Standard Weight (gms)</th>
<th>Average waste (gms)</th>
<th>% waste</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fish and Chips</td>
<td>702</td>
<td>36.9</td>
<td>5.3</td>
</tr>
<tr>
<td>Clubhouse with Fries</td>
<td>512</td>
<td>109.7</td>
<td>21.4</td>
</tr>
<tr>
<td>Pulled Pork with Fries</td>
<td>618</td>
<td>173</td>
<td>28.0</td>
</tr>
<tr>
<td>Trout and Beet Salad</td>
<td>297</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pesto Primavera</td>
<td>361</td>
<td>56.0</td>
<td>15.5</td>
</tr>
<tr>
<td>Side of Fries</td>
<td>252</td>
<td>61.4</td>
<td>24.4</td>
</tr>
<tr>
<td>Spinach Salad</td>
<td>73</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
So what did we find?
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- Plates with lots of carbohydrates generated more waste
- Link to portion size was there but not strong
- Garnishes often led to waste
- Some outliers in the specials
So what can you do?

- **Think about plate composition**
  - When fries were made optional waste was reduced BUT so was revenue
    - TGIFridays approach
    - Option to downsize?
    - Think about Margin
  - Other sides?
    - Still likely cost issues
    - What are implications for demand?

- **Offer choice on potion size**
  - Revenue management implications – sustain the margin

- **Learn!**
  - Garnishes
  - Specials
To reduce plate waste we need to understand what’s causing it—We have a practical approach to doing that.

Thinking about margin rather than revenue will also be key.

We have a significant opportunity for improvement.