

Reducing Single-Use Waste in the Dining Halls at HBS

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Upon arriving at HBS, we were shocked by the amount of single-use packaging used on a daily basis by students. The ubiquitous three-stream waste sorting stations around campus were constantly full of coffee cups, clamshells, and cans – and while much is recycled or composted, we wondered whether HBS really needed to generate so much waste in the first place. We decided to focus our SSA project on analyzing and mitigating the impact of single-use packaging in our dining halls.

We first set out to understand the recent and current packaging-related initiatives across the University. After speaking with Operations and Sustainability team members from Harvard College, Harvard Kennedy School, and Harvard Business School, several areas of focus emerged:

- Materials & Supply: substitute traditional packaging with compostables
- Behaviors & Demand: encourage students to switch to reusables (coffee mug discount, communications via social media)
- Proper Disposal: educate students on how to sort waste at the three-stream station
- Specific Pilots: investigate reusable coffee cups or clamshells provided by 3rd party

While each school had taken tangible steps toward reducing waste overall and increasing the proportion of compostable packaging, we found a lack of coordination across initiatives driven by scarcity of data on how much of each type of packaging was being used. With this

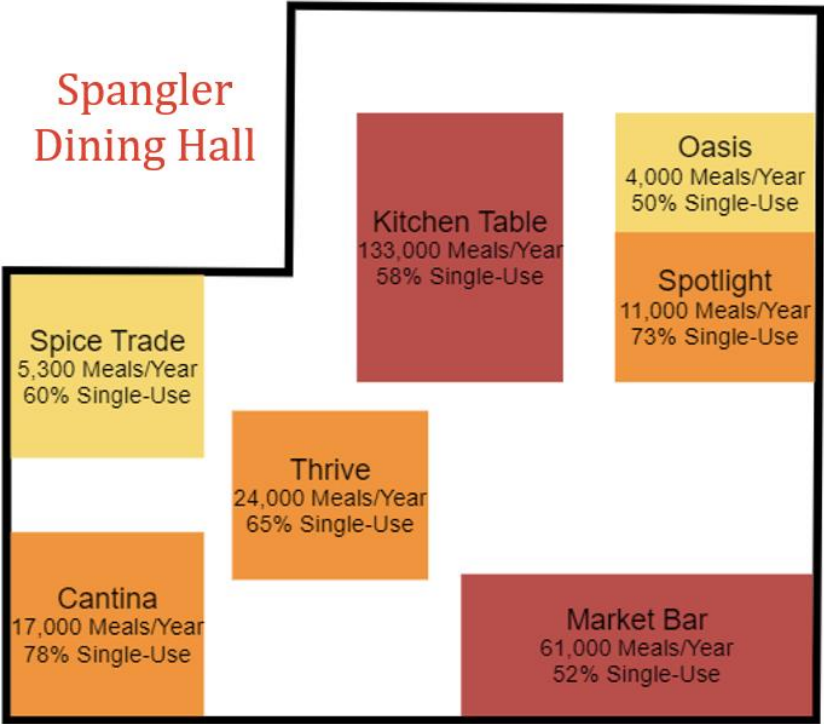
in mind, we decided first to identify the dining locations and packaging SKUs generating the most waste, then study how and why students chose this single-use packaging, and finally to prioritize pilot initiatives to reduce usage.

Restaurant Associates acted as an incredible partner throughout our project, and they were key in our data collection phase. Data exported from the points of sale at Spangler, The Grille, and Thrive helped us identify the largest source of packaging waste: to-go meal containers. HBS uses 160,000 containers annually, outweighing coffee cups at 100,000; 85% of these containers are used upstairs in Spangler, and roughly 70% are used at lunch.

Having identified our key focus – to-go containers in Spangler at lunch – we set out to collect more granular data. Students eating in Spangler have several options:

- Self-service at Kitchen Table (hot meals) or Market Bar (salads)
- Staff service at Cantina, Spice Trade, Spotlight, or Oasis
- Click-and-collect through Thrive

By observing the frequency with which students used china vs. to-go containers at the staff service stations, we enriched the point-of-sale data to understand the total number of meals and containers per year per station. Broadly speaking, self-service stations generate the most waste – 100,000 containers per year – because they serve the highest number of customers; staff-service stations, on the other hand, have the highest proportion of container usage, averaging 71%. Finally, two-thirds of click-and-collect meals used a container.



This data was astounding: over 50% of Spangler meals are served in to-go containers, but we knew from experience that students were not taking all of those meals outside of Spangler. To quantify this behavior, we defined proper and improper usage of to-go containers: actually leaving the dining hall with the meal vs. taking a to-go container and then eating inside Spangler. By observing how many people left the dining hall with to-go containers over the course of several lunch periods, then subtracting that number from the total who had purchased to-go meals, we backed into an estimate that 50-60% of to-go containers are improperly used inside the dining hall.

Exploring the point-of-sale data and conducting observations in the dining hall gave us a very clear target: **at least 80,000 to-go containers each year that did not need to be used.** In parallel, we conducted a student survey on the use of packaging within the dining halls, which provided several complementary insights:

- Two thirds of respondents indicated that they take their meal to go because they like to eat outside (courtyard or lawn) or because they have meetings to attend or cases to read in other buildings
- 42% of respondents admitted taking single-use containers but ended up eating within Spangler walls at least 25% of the time. 15% said this happened “practically always” (over 75% of the time)
- 3 main reasons for doing so are: changing their minds about eating outside Spangler (56%), staff at the stations served them in containers without them noticing (17%) and grabbing the first vessel they see without paying attention (15%).
- 58% of respondents felt it would be fair to charge up to \$0.50 per container at the checkout, in an effort to reduce single-use container waste.

Based on our quantitative and qualitative research, we have shortlisted potential interventions that may reduce the amount of single-use packaging stemming from Spangler. Several revolve around shifting student behavior: with codified data in hand, we may nudge students to reconsider reaching for a clamshell by communicating the scale of waste; charging for single-use containers (similar to how grocery stores charge for bags) or offering discounts to china users should also cut down on improper container usage.

Some other interventions would require operational changes in partnership with Restaurant Associates. China usage is proportionally higher at self-service stations, so perhaps we could increase china usage at full-service stations if students picked up their preferred vessel and handed it to staff. Introducing a dine-in option in Thrive could also help students ordering ahead cut down on packaging. Finally, the possibility of having a few used china collection points closer to the Spangler Café hall, the Spangler back courtyard and even Schwartz lawn (especially in warmer days) could be explored.

In our EC year, we plan to continue actively engaging with the HBS Operations team and Restaurant Associates to put these ideas into action.