

A Tale of Three Bins



A Waste Reduction Case Story through a Systems Thinking Lens

A case study produced for Sabre Holdings by:

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Less to Landfill

Executive Summary

This case study focuses documents the success of Sabre Holdings' "Less-to-Landfill" initiative that began in April 2010 through its results in April 2011. The success of this initiative was made possible through the use of systems thinking¹ⁱⁱ throughout the planning, implementation, and analyses of diverting waste away from landfills and toward more recycling or composting. The initiative was not an insulated event but itself a part of Sabre's broader sustainability and corporate responsibility initiatives.

Analysis includes both the people and processes within the system and how they interact.

Waste Diversion at Sabre

In early 2010, Sabre had made great progress with its sustainability initiatives in energy and water conservation, but found that, when benchmarked against leading companies, its waste diversion average at its corporate headquarters lagged at a mere 36%. In a collaborative effort, Sabre's head of sustainability, the Jones Lang LaSalle (JLL) facility management team, the head of corporate real estate and the local Eco Team² performed an evaluation to ascertain if this diversion from landfills rate could be improved. As a result of the analysis, the team launched "Less-to-Landfill," a cross-campus initiative to increase waste diversion. Originally, the team proposed a target of 60% waste diversion, but the CEO knew they could do better and pushed for 80%. Sabre's headquarters was challenged with the goal of increasing the existing 36% waste diversion to an annual 80% diversion rate, and to do it in just a year's time³.

Sabre's Headquarters Waste System

In researching the existing waste diversion process, the team analyzed the waste management as a system (see Figure 1). Using this method provided insight into the high-impact leverage points⁴ that could be altered to reduce waste and increase diversion. Within the whole waste system, four subsystems were identified: (1) campus materials entry; (2) waste sorting and disposal; (3) compost processing; and (4) waste hauling. The subsystems are delineated in Figure 1 by the gray boundary boxes⁵.

¹ Systems-thinking considers the whole and the interactions of its elements.

² Eco Teams at Sabre include about 60 employees who volunteer their time to share ideas, plan and implement activities and programs at the global locations.

³ For more information about company culture, CR and sustainability at Sabre, see Appendix C and D.

⁴ Leverage points = A place in the system where solutions can be applied to create change throughout the system.

⁵ For a detailed list of system components and subcomponents, see Appendix E.

Sabre Holdings Headquarters Waste System
Pre-Initiative

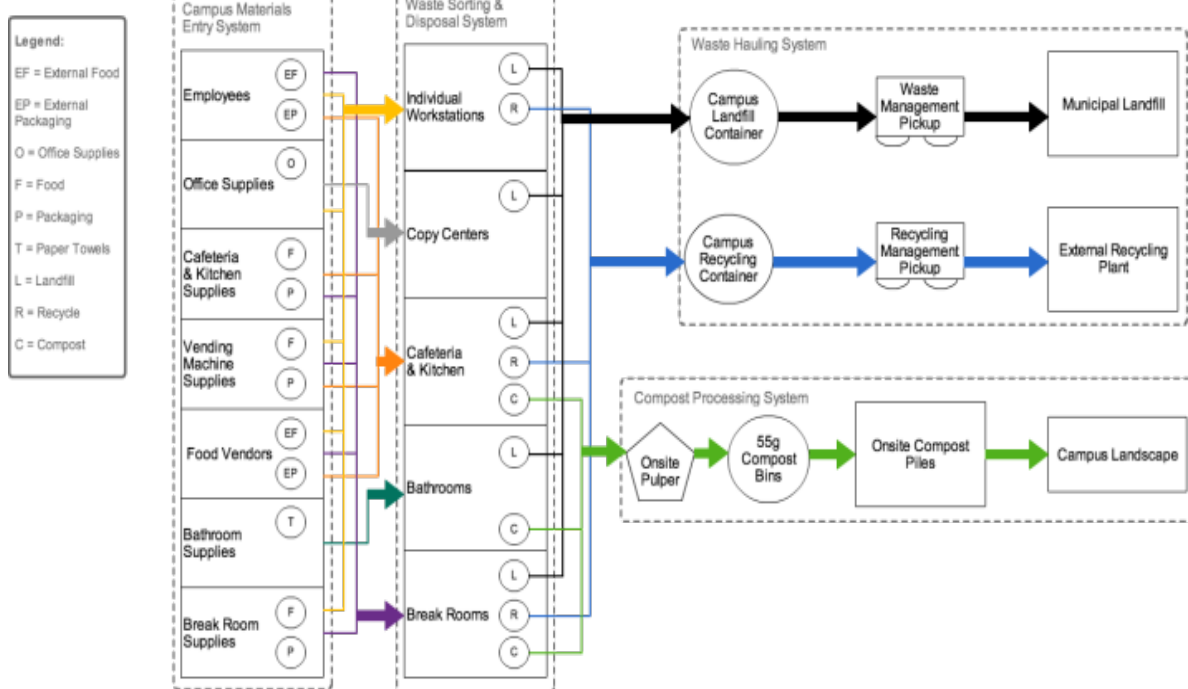


Figure 1: Sabre Holdings Headquarters Waste System - Pre-initiative

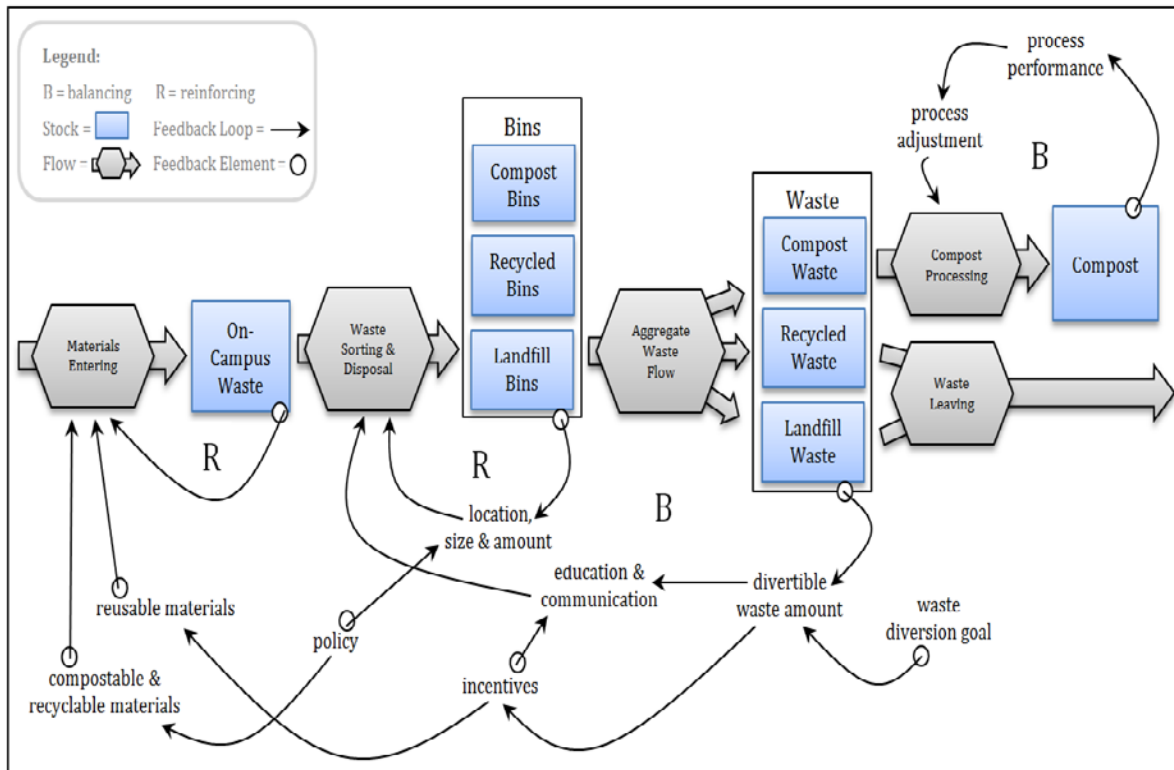


Figure 2: Waste System Feedback Loops

Less-to-Landfill Initiative

The Less-to-Landfill initiative kicked off on April 22, 2010, Earth Day. While the team knew that improvements could be made, they wanted to verify that the ambitious 80% waste diversion goal was achievable, so the evening before Earth Day, the Eco Team retained fifteen garbage bags that were bound for landfill and inventoried their content. They sorted all fifteen bags and discovered that indeed only two actually contained waste that should have been landfill-bound. The waste from the other thirteen bags could have been diverted to recycling and compost.

The Eco Team also realized that one of the primary discrepancies in the system was improper sorting and disposal of waste on campus and decided to address this by adding an education and communication component to the challenge. This included adding signage by waste bins and announcements running on campus monitors. The expectation was that, by providing employees with information about proper disposal of materials used on campus would minimize the landfill-bound waste stream.

Decking out Main Street

On the morning of April 22 2010, employees at Sabre's headquarters walked into work and found the garbage bags with the divertible waste – sorted and with signs marking where the waste should have been disposed – lining the main hall of the building. Known as "Main Street," this hall was the main vein to offices, the cafeteria, the gym, and other campus areas. As the first act of creating awareness around waste diversion and proper sorting, the garbage bags were kept overnight as a symbol for the Less-to-Landfill initiative kickoff.

In addition to the garbage bag display, Main Street was lined with environmentally-themed booths to get employees in the spirit of Earth Day and excited about Less-to-Landfill. There was a "Guess Which Bin" game to teach correct waste sorting and disposal in a fun, interactive way and the CEO participated by encouraging employees to play the game.

The initiative was given a lot of visibility. The CEO made an announcement introducing the project as part of the company's overarching environmental reduction and efficiency goals. The employees were also informed by communications posted across the campus.



Garbage Bag Display on Main Street

Creating games that generate friendly competition is a great way to engage employees. Getting senior management to actively participate increases the excitement around the activity.



Sam Gilliland, CEO, telling employees about the Less-to-Landfill initiative

The Three Bins Debate

Two months later, in mid-June, the team analyzed waste diversion rates and learned that there was no major change. During the Earth Day “dumpster dive” analysis, they had identified the biggest culprit of improperly sorted waste; individual employees’ bins. Employees had two bins at their desks, one for landfill and one for recycling. Many employees who ate at their desks were accustomed to tossing food waste and take-away containers in the landfill bin. The team determined that in order to reach the 80% diversion goal, education and communication alone would not be enough.

Ongoing tracking and analysis of results generate visibility, uncover weak areas and identify opportunities for improvement – measurement

The team had also realized that, given the high percentage of compost waste as a percentage of diverted waste, they need to increase the number of composting disposal bins, and increase the opening of the compost bins at the break stations to accommodate the compostable “clamshell” take-out containers from the cafeteria.

In July 2010, with still only minimal changes to waste diversion rates, a choice had to be made on how to better address the challenge. The first choice seemed obvious: place a third bin for composting at every workstation for the food waste, where employees only had one for landfill and one for recycling. The second option was less conventional: take away the employees’ desk bins all together and replace them with centralized recycle, compost and landfill bins. Sabre headquarters had adopted a “[Flexspace](#)” model two years earlier that organized workstations into “neighborhoods”ⁱⁱⁱ. These centralized bins could simply be placed in convenient locations such as in the neighborhoods’ shared printer locations.

Even with a thoughtful and well-planned strategy for rolling out change initiatives, resistance is inevitable. Some employees were unhappy with the removal of their individual bins. However, through ongoing

A financial tradeoff analysis was also prepared to compare the two options. The centralized bins had a one-time cost of \$20,293 which was higher than the one-time cost of \$10,950 to add a third bin to all individual workstations. However, the bin liners and the housekeeping costs for the additional desk bin would add an additional annual cost of \$49,000, while the centralized bins option resulted in a decrease in the current housekeeping labor costs, saving the company over \$20,000 annually. The centralized bins option clearly presented the better financial return.

Although the financial choice was clear, there was concern that employees would react negatively to the change. Would it impact employee satisfaction and productivity? However, after benchmarking with other companies such as HSBC⁶, the choice of centralized bins was adopted.

Knowing that change management would be an important part of successfully implementing the new centralized bins infrastructure, employees were engaged to usher in the change. “Trash Ambassadors” from the local Eco Team increased the

⁶ HSBC = Global financial organization headquartered in London.

education about waste diversion and posted additional signage that aided proper waste disposal. They created videos and held information sessions to share knowledge about the waste diversion program.

Additionally, infrastructure changes were made to break rooms, copy centers, and other shared areas to assist in waste diversion. The number of compost bins at the break stations was increased and the openings were enlarged to accommodate the compostable “clamshell” containers. A month later in August 2010, these collective efforts led to a rise in the waste diversion rate to 43%. While this was an improvement, they were still a long way from their goal.

Digging deeper

On August 12, 2010, JLL revisited the waste diversion rates, now with the new centralized bins infrastructure. They conducted a comprehensive analysis of the trash received in all neighborhoods and break rooms from both buildings. In order to ensure they had a representative sample, they took the waste after the breakfast and lunch periods on a day when they knew more people were working from the office. The team again found a high percentage, 70%, of the waste in the landfill bags could have been recycled or composted^{iv}. The biggest culprits this time were the landfill, compost and recycle bins from the break rooms. Plastic bottles with liquids, coffee grinds and filters, as well as wet paper towels, were incorrectly disposed.

From these insights, the team generated a number of suggestions for further improvements, which were reviewed with the head of Sustainability and the Eco Team leaders. The majority of the recommendations were further communication improvements: simplify the system by standardizing bin colors, bin positioning, and consistency in the signage; increase internal communications; and display a program goal “thermometer” in a visible place to track and display progress. One of the primary recommendations regarding the signage was to include actual items that came from the campus, not generic sample items. Since microwavable meals-from-home (such as Lean Cuisine, etc.) were one of the primary waste types that consistently ended up in the wrong bin, the team included components of the product packaging such as the external box and the internal tray on all of the signage, as well as yogurt containers, foil-lined milk and soup containers.

They also recommended improvements to the measurement system; both internally with the compost weight and externally with haul metrics from the waste management company. Finally, they recommended incentivizing employees through an awareness class that would earn wellness credits for the health programs.

Knowing which days the offices are most populated and integrating that into calculations is an example of recognizing the patterns within



Typical campus break room



Gateways to On-Campus Waste

Along with the waste sorting and disposal system, the team analyzed the goods and materials that came into Sabre's offices. The materials came from: (a) external food in external packaging from employees who brought their own lunches; (b) office supplies such as copy paper and batteries; (c) cafeteria and kitchen supplies, such as food, packaging, and compostable and washable food containers; (d) onsite vending machine food and packaging; (e) pizza boxes and other external food and packaging from food vendors; (f) bathroom supplies such as paper towels; and (g) break room supplies such as food, packaging, and coffee grounds and filters.

The team discovered ways to improve this system and made changes to the incoming material stream, e.g., material reductions and substitutions. These changes helped reduce the amount of true landfill-bound waste.

For example, in mid-2008, the decision was made to move from Styrofoam and plastics to compostable materials; hot and cold cups, clamshell containers and compostable napkins and cutlery. However, this change led to a rise in operating costs because compostable materials were more expensive. The partners managed this by developing a program that would encourage employees to eat in the cafeteria and choose washable dishes, drinking glasses and cutlery, which reduced waste and helped offset the higher cost of the compostable boxes. The "I Care" program gave employees punch cards that were linked to a discount program. Additionally, a variety of washable dishes were placed conveniently all over the cafeteria to increase use.

The group also made other changes to the materials entering the campus. Also in 2008, disposable beverage cups were replaced with compostable ones. The next year, in 2009, the Eco Team held an "Ugly Mug Contest," which encouraged employees to bring in their old mismatched cups from home to be used in the office, thereby decreasing compostable cup use. That same year, bathroom towels were switched to compostable ones and sent to the compost bins. All of the material changes helped to increase waste diversion from landfill or reduced waste all together.

Compost Processing System

The Less-to-Landfill initiative provided an opportunity to increase utilization of the onsite compost processing system that was already well developed on the Sabre campus. This composting capacity had been installed as part of the campus's original efforts to ensure a LEED certification. Compost from the campus was being processed and used for campus landscaping but the compost generating capacity of the headquarters complex had not been optimized.

The next step is an initiative around educating employees on purchasing products with better packaging.



"I Care" Card Promotion

Aligning incentives with goals is an important driver for successful change

Continued focus on this system surfaced a number of solvable problems. A major discovery from the August 2010 analysis revealed that the wax coating from the compostable cups was jamming the onsite pulper. Since Sabre had the onsite composting system, it never needed to arrange compost-hauling services. Therefore, the immediate reaction to the jamming problem was to divert the cups away from the pulper and to landfill. Upon this discovery, JLL solved this issue by sourcing non-wax compostable cups, but also ensured that any compostable material that could not be processed in the pulper could be picked up by the waste management company.



Onsite compost piles

Another composting system challenge was identified when it was discovered that the paper towels from the washrooms were partially sent to landfill. Although the paper towels were set aside for the compost bins, there were too many of them for the compost piles, which would result in an imbalance in the natural composting process because it would become too dry. Again, since there were no compost-hauling services for compostable materials, there was no other option but to send the extra paper towels to landfill. The team evaluated whether compost hauling needed to be arranged with waste management, but realized that a change in the flow of the paper towels could solve the problem instead. The team reorganized the outflow of the paper towels to join the compost earlier in the process by sending them through the pulper first along with the rest of the compost where the water already being used in the pulper process resolved the issue of dryness from too many paper towels.



Compost on campus

Through ongoing performance monitoring and continuous improvement, the monthly waste diversion rate reached 75% by December 2010. In February 2011, it reached 83% and the team celebrated. By April 2011, exactly a year from their initial kickoff date, Sabre headquarters had reached their goal, an average annual waste diversion rate of 81%.

Maintaining high performance

In June 2011, the diversion from landfill rate had dropped from the peak of 83% to 77%. This was attributed to the influx of new employees who had not been trained in the waste management procedures. In order to address this, the Eco Team offered education to new employees by giving campus tours every Tuesday as a part of New Employee Orientation. The team also communicated to new employees the values of Sabre company culture, including sustainability, health and wellness, and pride in the beautiful campus.

Integrating values and practices in the new employee on-boarding process will preserve the impact of change management initiatives, further institutionalizing it within company culture.

The waste diversion and reduction efforts did not end with the Less-to-Landfill initiative. Sabre values continuous improvement and the team have identified more opportunities. JLL meets with Guggenheim regularly to discover additional ways to

improve the campus materials entry system. For example, in the first quarter of 2012, the group added single napkin dispensers and replaced single-serve packets with bulk ketchup and mustard dispensers. These two initiatives reduced the volume of the initial waste stream. In a third initiative, they instated the practice of providing recyclable bags for coffee grounds in the break rooms in order to reduce the volume of the mixed waste stream. Guggenheim also offers many in-house items such as fresh breads and potato chips, which results in less packaging material waste coming from the kitchen.

Education and communication were critical to their success. As such, the Eco Team continues to create and update signage regularly. Corporate Communications updates employees on the company's sustainability initiatives. The CEO and other senior managers make regular announcements in emails and during town halls about successes and goals to encourage ongoing sustainability practices.

Waste Diversion and Reduction Results

At the end of 2011 Sabre reached an annual average of 80.3% waste diversion; with high months hitting over 85% and lows around 69%. The company sent 44 tons less waste to landfill in 2011 compared to 2010, and diverted waste (recycle and compost) increased by 122 tons, 61% versus 2010. About 55% of the total diverted waste was compost, which added to the cost savings because it reduced landfill-hauling fees, and instead was used for campus landscaping.

Conclusion

Through the application of a holistic, systems thinking approach, identification and use of feedback information sources, and tracking of progress to permit ongoing adjustment and re-adjustment, the sustainability management teams have systematically addressed virtually every factor affecting the waste stream. The Less-to-Landfill initiative was not only an example of success in reaching the goal of waste diversion but also in change management. The combinations of a top-down initiative with senior management support with bottom-up action through stakeholder and employee engagement, collaborative partnerships, ongoing education and communication, and dedication to continuous improvement are key components to the continued success of sustainability at Sabre.



The cafeteria offers meal options made in-house



Centralized bins in neighborhoods

ⁱ Sabre Holdings (Sabre) is a privately held company headquartered in Southlake, Texas. With more than 10,000 employees in 60 countries, the company is a technology leader in providing software to the travel industry through its four major businesses: Sabre Travel Network, Sabre Airline Solutions, Sabre Hospitality Solutions and Travelocityⁱ.

Endnotes

ⁱⁱ Dariush Rafinejad, *Innovation, Product Development and Commercialization: Case Studies and Key Practices for Market Leadership* (J. Ross Publishing, 2007).

ⁱⁱⁱ Sabre Holdings, "Sustainable Business Transformation through Workspace Innovation," http://www.sabre.com/files/Sustainable_Business_Transformation_Through_Workspace_Innovation_full.pdf, accessed January 2012.

^{iv} Sabre Holdings, "Southlake Campus - 'Trash' Under the Microscope."