

ITOM CASE COMPETITION



Building leaders, one cookie at a time

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BUILDING LEADERS, ONE COOKIE AT A TIME

Girl Scouts of USA (GSUSA) is one of the most preeminent non-profit youth leadership organizations for girls in the United States and American girls living abroad. It was founded in 1912 by Juliette Gordon Low, who believed that girls should be given the same opportunities as boys to develop leadership skills and self-confidence; with this objective in mind, the organization aims to empower girls and young women to become leaders and make a positive impact in their communities.

GSUSA is a member-based organization, with more than 2.5 million girls and adults participating in its programs across the United States. Girls who are enrolled in the program are known as Girl Scouts. They participate in a variety of activities, including outdoor adventures, service projects, STEM programs, and leadership development. Under its national headquarters in New York City, a pyramid-like organization structure supports 112 local councils, each covering a unique geographical area (e.g., Greater New York, Central Indiana, Northeast Texas). These councils oversee Girl Scout activities in their geographic areas and are responsible for recruiting and training adult volunteers, providing support and resources to troops, and organizing events and programs for girls. The national office, sets policy and standards for the organization, and provides resources and support to local councils. The organization is governed by a board of directors, which is made up of volunteers and professional staff.

Girls can participate in the organization at different levels, depending on their age or grade level. The initial level of scouting is the Daisies, which is comprised of girls in kindergarten and first grade (5-7 years old). Girls in grades 2 and 3 (6-8 years old) transition into the next level referred to as Brownies. Similarly, Juniors are those girls between grades 4 and 5 (9-11 years old). Older girls (12-14 years old) in grades 6 to 8 are called Cadettes, grades 9 and 10 (15-17 years old) are called Seniors, and grades 11 and 12 (16-17 years old) are called Ambassadors. Each level has a different set of activities, challenges, and badges that girls can work on. Girls predominantly participate in the girls scout program as part of a troop, which is a group of girls and adult volunteers who meet regularly to participate in activities and work on projects; however, they can also do that as individuals if they chose to do so.

The Girl Scout Cookie Program

One of the historical and signature activities of the Girl Scout organization is the Girl Scout Cookie Program, which is a major fundraising activity for Girl Scout troops in the United States. It is the largest girl-led business in the country and helps to support the programs and activities of the Girl Scouts of the USA. In addition to raising funds for the different activities organized by the Girl Scout organization, participating in the Cookie Program is also designed to help Girl Scouts build leadership skills, confidence and entrepreneurial spirit. In fact, to quote the Girl Scout promotional materials, the annual cookie sales is one of “the largest financial investment in girls annually in the United States and a powerful entrepreneurship incubator for the next generation of female leaders”.

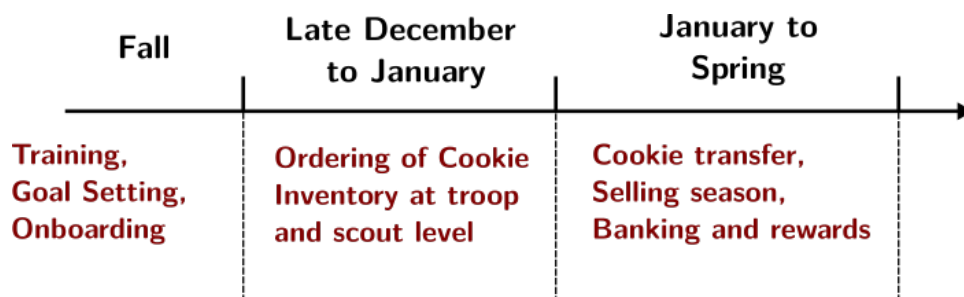
The Cookie Program, which involves girls selling cookies door-to-door, at community events, and online, typically takes place between January and April and lasts for six to eight weeks per year. The program is organized and managed by local councils, and each of the 112 local councils of GSUSA conducts a single cookie sale every year. Given that cookie sales on average, generate more than 60% of the annual operating budget that supports Girl Scout camps, programs and activities in each community, successful planning and execution of this activity is a key element of the success of the Girl Scout troops.

The production and distribution of Girl Scout Cookies is handled through a complex supply chain that involves multiple stakeholders, including the bakeries, ingredient suppliers, local Girl Scout councils, and troops. Cookie manufacturing starts with the procurement of ingredients such as flour, sugar, butter, eggs and other baking staples from a variety of suppliers. GSUSA currently works with two major bakeries - ABC Bakers and Little Brownie Bakers - which are subject to strict production and quality standards of GSUSA. The bakeries also work closely with GSUSA to develop new cookie flavors and products.

Given the short selling season of the cookies and the complexities in the supply chain, production and distribution face a number of challenges. First, the key ingredients should be sourced sustainably and ethically. Secondly, the demand for Girl Scout Cookies can vary significantly from year to year, and the bakeries that produce the cookies need to be able to scale up or down their production accordingly. Thirdly, getting the cookies to customers efficiently and cost-effectively can also be a challenge, particularly if there are issues with transportation or distribution. Finally, keeping up with changing customer preferences and dietary constraints can also be challenging, as also the competition from other organizations and businesses that sell similar products.

The responsibility to navigate these supply chain constraints rests largely on the shoulders of local councils. The councils are also actively involved in the planning, forecasting and the distribution of the cookies during the season. Planning for the cookies season starts early in the fall when Girl Scout and parent volunteers undergo training about the cookie ordering and sales process. Subsequently, the councils communicate the details of a particular season to the local troops, including the timing of the selling season, cookie varieties, and rewards for achieving specific sales targets. Once this information becomes available, each Girl Scout sets her individual sales target/goal for the season.

An illustrative representation of the cookie selling process during the season is provided below:



As can be immediately observed, an interesting feature of these cookies is that they cannot be obtained through traditional retail channels, and are available for purchase only through girl scouts during the cookie season of any year. This has two implications. First, the demand for the cookies is seasonal by design, and unpredictable due to the context. Second, the sales volume generated in any season is highly dependent on the sales initiatives of the girl scouts. The number of girl scouts who are involved in the cookie sales, their time commitment and effort are the main factors that determine the sales volume of a season. Moreover, GSUSA does not promote or advertise cookies beyond conducting troop-level activities to motivate and educate girl scouts. Therefore, the main driver of cookies sales is the effort exerted by girl scouts.

Traditionally, a Girl Scout can get credits for their sales effort in three categories: individual sales, troop-sponsored booth sales, and donated sales.

1. Individual Sales:

Individual sales refer to the sales generated by a Girl Scout through her individual sales effort. These include a variety of methods, such as door-to-door sales in the neighborhood, self-organized “lemonade stand-style” sales, and selling to family and friends. In partnership with their parent/caregiver, Girl Scouts place the orders directly with their local councils between late December and early February. Typically, after placing the cookie orders early in the season, they pick up or receive their orders from their troop cookie manager (usually a dedicated volunteer parent, dearly called “Cookie Mom” or “Cookie Dad”) before the official start of the cookie selling process.

In 2018, GSUSA introduced a new distribution/sales channel through a new Digital Cookie Platform which enabled each girl scout to set up and manage her online cookie business using a variety of digital tools and resources. Through this platform, each girl can create a personalized website to showcase her cookie selection, track her progress and interact with customers. Generally, girls reach out to customers by emailing, texting or sharing on social media a link to their digital store. The platform also allows them to build financial literacy, goal setting and entrepreneurship skills.

Orders that are generated from the the digital platform can be fulfilled in two ways: directly from a centralized distribution warehouse or from the individual inventory of the Girl Scout. The online cookie

orders that are fulfilled from a distribution center are shipped directly to customers who also pay for the shipping costs. Other online orders are hand-delivered by the scout similar to the traditional sales channel, except the payment happens digitally before delivery. All online sales also count towards scout's and troops sales targets and end of season sales awards.

The Digital Cookie platform is available to all levels of Girl Scouts, from Daisies to Ambassadors. It is a way for girls to participate in the cookie program even if they are unable to sell cookies in person, or if they want to supplement their in-person sales with online sales. In fact, the platform has been successful in expanding the reach of the cookie program and make a positive impact in their communities.

2. Troop-Sponsored Booth Sales:

The second category (troop-sponsored booth sales) is participating in the cookies sales organized by an adult troop leader. The adult cookie manager sets up booth sales at public venues, such as supermarkets, restaurants and public events. Girl Scouts can sign up and participate in these booth sales. The cumulative sales generated through any particular booth sale activity is equally allocated across all girls who were involved in that event. However, unlike individual sales, these troop-sponsored sales are not fulfilled from the Girl Scouts' individual inventories ordered directly from the local council, but instead from the cookie inventory that is maintained by the Girl Scout troop. Typically, from February to early spring, the troop cookie manager orders additional batches of cookies on behalf of the troop specifically for such events.

3. Donated Sales:

The final category, "donated sales", or "community cookie" offers customers the opportunity to support the Girl Scouts even though they do not want to receive the cookies themselves. Specifically, if customers do not want to purchase actual cookies, they can donate funds to GSUSA (through the girl scouts), which are then used to purchase and give cookies to first responders, military troops residing abroad and other community charities. The donation amounts from the customers are first transferred to the local Girl Scouts council, who then sends the number of cookie boxes equivalent to the donation amount to the appropriate charity.

Besides building character and learning skills, what are the financial or materialistic incentives for girl scouts to sell cookies? A portion of the sales revenue (15%-20%) generated by the girl scouts is retained by their respective troops, which can be used for fund initiatives and activities at the troop level. The rest of the proceeds goes to the council to cover cookie costs, camping services, and program services. In addition, the girl scouts will also obtain various non-cash rewards depending on their cumulative sales performance during the season. Rewards become more considerable as thresholds rise, including theme park tickets at 600 boxes level, iPad or some all-paid trips at 2,000 boxes level. In addition, troops receive rewards, such as T-shirts and concert tickets for the girl scouts and their parents, if average girl scout sales in the troop exceed certain thresholds. The local council has considerable leeway in determining these rewards and hence the thresholds and rewards may vary from council to council.

Managing the Cookie Supply Chain: Key questions

In this case competition, we collaborated with a local council GSNETX, which serves girls in North East Texas area. Of the two bakeries that are approved by GSUSA, GSNETX contracts with Little Brownie Bakers which does most of its manufacturing and production in Louisville, Kentucky. There are several varieties of Girl Scout Cookies that are produced and sold by GSUSA. The specific types of cookies available can vary depending on the bakery that produces them and the location where they are sold. The bakery that contracts with GSNETX currently makes available 7 regular flavors and 2 specialty flavors. Regular flavors are sold at \$5/box while specialty flavors are sold at \$6/box. In a typical year, the volume split is such that 88% of sales come from regular flavors and the remaining 12% comes from specialty flavors. In addition, there will also be a \$5 cookie sold only through the Digital Cookie Platform in limited quantities for shipping this year.

The current contractual agreement between GSNETX and the bakery requires the council to provide an initial forecast to the bakery at the beginning of August. This number can be revised until December, which then becomes classified as a Firm Order. From that Firm Order forecast, GSNETX is required to purchase at least 90% of the cookies that is forecasted. The bakery also commits to produce up to 110% of that forecast if required.

As described previously, the complex supply coupled with substantial demand uncertainty introduces significant challenges to GSNETX's planning and operations. In fact, coming out of the pandemic, Girl Scouts locally and nationally have experienced several changes and challenges in how to plan and forecast for annual cookie sales. There were challenges in getting cookies delivered due to supply chain issues and depending on the unique circumstances of any season, the potential to end up overordering or understocking with respect to final requirements. Additionally, given the different channels of selling, and heterogeneity in the sales ability of different Girl Scouts, there could be substantial variability across the performance of girls and the troops that they are a part of. As a result, how to engage them with regards to participating in digital cookie channel and other sales methods is also an important consideration.

Given the varying nature of the challenges, GSNETX is looking to develop a forecast model and obtain recommendations as part of the case competition to improve their ability to estimate and plan for different variables and scenarios. Specially, GSNETX would like student teams to explore following questions in their case analysis.

1. What are the key factors that are affecting the demand for cookies in every year? What would be some key indicators that would be useful to assess the demand patterns of cookies sales in any year?
2. Use the available datasets and any other relevant data to build a forecast for the 2023 cookie season. While forecasting, you should also separately determine sales across different channels including 1. Digital cookie shipped platform 2. Digital cookie girl delivered platform 3. Girl scout sales directly to family/friends/neighbors and 4. Girl Scout sales at booth sales located at common retailers like Lowes, Tom Thumb, Kroger's, Sam's Club and other locations

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3. How should GSNETX use the forecasts to build their production planning requirements for the season. In particular, what should their order quantity levels be while accounting for the current contractual obligations with respect to the bakeries. Recall that Girl Scout staff must work with the bakery in advance to predict a minimum floor and maximum sale of 110% of the targeted forecast, as the bakery will only guarantee that number of cookies to be baked due to supply chain, inflation and impacts from the pandemic since 2020. Estimates of how many cookies to initially bring into warehouses and in what varieties for the launch of the sale so that sale of cookies can proceed in an uninterrupted manner is also important.
 4. Suppose GSNETX wants to be in position to be able to sell at least 3mn boxes of cookies. How should the incentives be structured to attain this target. Currently, a key metric that is considered while planning for cookies is a per girl averaged sold or PGA. This is calculated by taking the total number of cookies sold by troop, service unit and/or council level and dividing it by the number of girls selling in those categories. In 2022, 2,691,000 packages were sold in the Dallas market by 9,343 girl scouts resulting in a PGA of 288.

Supplemental Data Sets

To aid the analysis, GSNETX has made available the following cookie program sales data for 2019, 2020, 2021 and 2022.

- Girl Order Data through Digital Cookie Platform reflecting In Hand, Shipped, Delivered and Donated orders.
- Troop cumulative data for end of program outcomes with packages sold.
- Girl cumulative data for end of program outcomes with packages sold.

Some factors to consider while analyzing the data.

- Cookies were priced at \$4 and \$5 during the years 2019.
- Year 2020 was a price increase year with \$5 and \$6 cookies. The Girl Scouts organization also wrapped its cookie sales program before impacts of COVID-19 were felt in the area.
- The Cookie Program was impacted by COVID-19 in terms of membership and sales ability in 2021.
- In 2022, Girl Scouts started to return to more normal selling, but membership is still down versus 2020.

Glossary of Terms in the Datasets

- SU: Service Unit
 - Note that SU Name & SU # are basically the same data, and it is related to the geographic location identifying information.
- Troop #: Unique troop identifier that is used manage troops in the cookie tracking software.
- Troop Boxes: Total number of boxes sold by a troop.
- Level: Program grade level for the Girl Scout.
 - Daisy – K & 1st grade, Brownie – 2nd & 3rd grade, Junior – 4th & 5th grade, Cadette – 6th – 8th Grade, Senior – 9th & 10th Grade, Ambassador – 11th & 12th grade.
- GSUSA ID: Girl Scout's unique membership ID and in theory would follow her through her years with the organization.
- CC: Community cookie.
 - The initial CC columns will always be blank. Additional CC-M is donated cookies for the military. Additional CC-O is for donated cookies to essential personnel and first responders.
- Cookie Varieties: Adventurefuls, Lemon Ups, Trefoils, Dosidos, Samoas, Tagalongs, Thin Mints, Girl Scout Smores and Toffee Tastic are cookie flavors and are column headings in that order.
- Total: Total # of cookies sold by a Girl Scout.
- Paid: Total amount that has been collected by the Girl Scout/family for cookies, including payments from customers through Digital Cookie Platform
- Due: Any remaining balance.
- DOC: Digital Cookie
 - There are tags to delineate the types of cookie order transactions through Digital Cookie Platform eg: Shipped, Donated or Girl Delivered.
- DOC Total: Total number of packages sold through Digital Cookie Platform.