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Aroma Consumer Products Co.: Managing Capacity for a Growing Company

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Introduction

It was the month of April, and Mei Xu, founder of Chesapeake Bay Candle based in Rockville, Maryland, had just closed a deal with Target. With Target's nearly 800 stores, this deal was the biggest deal in her company's history. She was ecstatic about this success, but she knew her company had a real challenge in the months ahead—the order was larger than any other the company had dealt with before, and holiday season deadlines were unforgiving.

The company had experience of working with well-known retailers, such as Bloomingdale's and Nordstrom, selling premium candles in a few locations to a more upscale segment. However, Target, which was looking to sell large volumes of candles to a broader market at a lower price, was a different game for Xu and her company.

Working harder wouldn't be enough—they would also have to work smarter, and she realized that this would mean making significant changes to her company's primary production facility, which was run by Aroma Consumer Products in Hangzhou, China. Changes would likely include expanding capacity to successfully fulfill this order. Chesapeake Bay Candle was the first major US client for Aroma Consumer Products Co., so it was imperative for Aroma to meet its needs.

The Candle Industry in the United States

Candles fall into two key product categories—home décor and air care. In the United States, candles are often an easy and common choice when it comes to decorating and elevating a personal space. They are small, affordable, easy to incorporate in a home environment, and come in many varieties. In fact, candles are the most popular item in the home décor category (followed by pillows and rugs or doormats), and the second-most sought out subcategory in

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air care (after aerosols) where users most commonly use them to mask or eliminate odors and to add seasonal ambience¹ (see Exhibit 1). Candle sales are also driven by seasonality, particularly for holiday celebrations (e.g., the smell of Christmas) and for other gift giving events such as birthdays and other social or ceremonial gatherings.

The candle industry in the United States saw a very rapid growth that exceeded 10% per year between 1995 to 2000. This occurred largely due to the transformation in the industry. As put by Xu, a new trend was emerging, where fashion and design were beginning to be applied to home décor.² This was in contrast to the traditional perspective that home goods were fairly standard and less driven by trends. The new shift was also reinforced by the general popularization of upscale scented candles. From 2000 onwards, however, downward price pressure driven by private label candles (priced at the lower end of the market) and cheaper air care alternatives such as fresheners caused the market to shrink despite a growth in volume (see Exhibit 2). Despite this trend, scented candles remained a staple of the American home—in some sense, the downward price pressure could be seen as a sign of a market entering a more mature, stable phase. By the end of 2020, total US retail sales of candles by leading companies and brands were \$1.8 billion; an increase of 26.6% compared to the prior year.³ Over the years, the industry had witnessed many mergers and acquisitions due to the perceived profit opportunities and rapid growth.

Manufacturers

Manufacturing of candles was divided into three main groups: premium, mid-tier, and private label candles. Founded in 1969, Yankee Candle was an American manufacturer that specialized in premium scented candles, home décor, and accessories. With a wide portfolio of scents and presentations, the company marketed its products principally in upscale stores, including its own branded store, The Yankee Candle Store, with its flagship in Deerfield, Massachusetts. The bulk of production (more than 70%⁴) took place in manufacturing facilities in Massachusetts, giving the company more control of its operations, quality, and overall supply chain.

In terms of the mid-tier category, the largest manufacturer was SC Johnson, a privately held leading household supplies multinational company known for its Glade brand of candles and air freshener products. It targeted the broader segment of the market with a strategy that focused on large volume with accessible prices. The company's largest manufacturing facility was in Mt. Pleasant, Wisconsin. The complex (also known as Waxdale) comprised 2.2 million square feet, equivalent to the size of 36 US football fields.⁵ Glade candles were sold mostly in mass merchandisers, drug stores, and supermarkets given their target segment.

Finally, a key player that manufactured candles for other retailers was MVP Group. The company had a diverse portfolio of products including both owned brands (e.g., Colonial Candle) as well as the manufacturing of products that carried a private label and were sold to global retailers and consumer packaged goods (CPG) companies. Private label candles for mass merchandisers were segmented towards buyers who are price sensitive and strongly

driven by value in their purchases. These candles were made in large batches with minimum design and presentation. Examples of such private labels included Threshold, a candle manufactured for Target. As of 2020, private labels had the largest market share of scented candles in the United States, suggesting that most candle users focused on price as key factor that drove their consumption decisions.⁶

Through Chesapeake Bay Candle's retail partners, Aroma Consumer Products Co.'s initial customers—Bloomingdales and Nordstrom—fell into the high-end market. However, Xu wanted to find a way to bring the premium candle experience to a larger market segment. The new relationship with Target created an opportunity for Chesapeake Bay Candle to position itself as a luxury product that the mass market could access in the mid-tier category due to more competitive pricing.

Distributors

Mass Merchandisers (Target and Walmart)

Supermarkets, drugstores, or discount department stores took a value-based approach to selling candles. SC Johnson and private label companies had a dominant presence within these distributors given their appeal to the mass market through low price tags and discounts. Among low willingness-to-pay customers, this channel was the most popular due to the perception that candles are consumer discretionary goods, and that function (fragrance) is more important than fashion (aesthetics).⁷ At Target, a Chesapeake Bay Candle could sell for between \$6 and \$16,⁸ while the supermarket private label can go for \$3. In mass merchandisers, candles faced strong competition from air fresheners in aerosols, which could be more appealing because they had a longer life span, and users perceived them as more essential goods than candles.⁹

Specialty and High-End Shops (Yankee Candle, Bath & Body Works, Bloomingdales)

Given their more niche focus, specialty shops that focused on candle and air care products carried a much wider product offering and at different price levels. These stores focused on providing a significantly more sensory shopping experience to customers looking for both a more refined scent and piece of home décor that exhibits craftsmanship, compared to an average private label candle. As a result, specialty shops had superior display and in-store customer service capabilities than supermarkets or other mass merchandisers. They leveraged their position to market candles as lifestyle products—developing repeat customers and driving recurring revenues. The growth of e-commerce, which emphasized the attribute of convenience in the shopping experience, made the market more competitive and expansion less viable for incumbent players. However, there were still lifestyle users who still preferred the high-touch customer experience. The Yankee Candle Company had over 300 company-owned stores, and the customer network expanded to over 14,000 authorized Yankee Candle retailers across the United States.¹⁰

Many working within the packaged goods industry believed more value per dollar could be achieved with higher volumes. Because of the way the mass market could temper brand appeal, the quality of the ingredients and raw materials of products sold at a large chain, such as Target, could exceed that found in high-end stores, such as Bloomingdale's, but would still need to be sold at much lower price points.

Aroma Consumer Products Co.

MEI XU—EARLY DAYS AND CAREER

Xu grew up in Hangzhou, China, in a family of four—her father, mother, elder sister Li, and herself. At age 12, Xu attended an elite language immersion boarding school, Hangzhou Foreign Language Middle and High School, a school designed to prepare China's future diplomats. She later went on to finish her education in diplomacy at the Beijing Foreign Studies University.

Proficient in English, Xu then moved to the United States to begin graduate school at the University of Maryland College Park. After receiving her master's degree, she moved to New York to work for a medical company that exported equipment to China. Xu found her job uninteresting, and in her free time, she found herself gravitating towards Bloomingdale's stores, where she browsed and shopped for fashion items in bright colors and textures. This rekindled her childhood interest in fashion and design.

At Bloomingdale's, she also noticed the stark contrast between the bright and bold color patterns in the clothing department and plain and dull offerings in the home goods section. She thought to herself that there must be a way to bring the modern and fresh style of American fashion to home furnishing and decor as well. This idea transformed into a dream—to become a designer creating fashionable homes.¹¹

COMPANY BACKGROUND

Dissatisfied with meager salaries and positions, Xu, and her then husband, David Wang, quit their jobs to become entrepreneurs. They wanted to try their hand at the import business and test some Chinese-made products. They travelled to China and explored the diversity of products manufactured there, bringing back several different types of home goods that they thought might resonate with Americans.

They decided to showcase their products at a gift show in Charlotte, North Carolina (see Exhibit 3). The visitors sifted through their 10 different product categories but gravitated to only the candles. Over the four-day fair, to their surprise, they received large candle orders. After the show, they connected with more stores, and by the end of the year, they secured over USD \$500,000 worth of orders.

The high of the initial success, however, was short lived. After the rush of the holiday season, customers showed little interest in their candles. At the New York International Gift Fair, Xu realized that more than 200 booths offered different arrays of candles. They all had similar appearances, but they all came fragranced. This made Xu realize that consumers did not

purchase candles just because they were beautiful, but also because the scent appealed to them. She realized that candles were affordable luxuries, and to be truly successful, she needed to improve her product design—candles that could elevate one’s mood, status, and energy. A visit to a global trade show in Germany proved to be an inspiration for Xu, and it further added conviction to her instincts. The show was lively, bright, and colorful, and Xu realized that the future of her business rested on contemporary candle offerings based on a refreshing and invigorating set of fragrances, bold color palettes, and fresh and crisp labels. More importantly, she wanted to add design-based innovations to the candles, marrying textures to colors.¹² Xu felt this would set her products apart from other candles in the market which did not focus as much on the quality and artistry of the candles and their scents.

On returning to her home in Maryland, Xu visited a fragrance oil vendor called Peter French, gaining insights on the art and science of candle coloring and fragrance infusion. At home, Xu started making candles with Campbell’s soup cans as molds—an experiment that eventually led to the birth of her new company, Chesapeake Bay Candle.

STRIVING FOR GROWTH

Within a year of founding the company, Xu closed a deal with Bloomingdale’s. This success led to further deals with major retailers such as Nordstrom and Bed Bath & Beyond. After successfully growing the business to reach over \$2.5 million in wholesale, Xu—determined to grow further—started to look for a new potential client. She wanted a client that supported her philosophy of ‘design-for-all.’

Target was a large retail company that catered to a less exclusive market while maintaining a strong focus on style and design. Xu realized that Target could transform her candles into an everyday American item and became determined to land them as a client. She knew working with Target would mean selling her candles at a much lower price than what she was charging at high end stores like Bloomingdale’s, but she was convinced that gaining access to a greater retail customer base through a more affordable product would be worth it.¹³

Xu tried to reach out to Target’s candle buyer on phone but could not get through to her for over six months. For the next several weeks, Xu would leave a message for her every week. After multiple unsuccessful attempts, Xu’s persistent effort finally bore fruit as she was able to connect with a buyer named Jennifer Schock

On arriving in Minneapolis to meet Schock, Xu debriefed her on her candle business, which had all production managed by its overseas partner, Aroma Consumer Products Co, while Xu handled the unique designs. Schock inquired about pricing, complimented the 10 colors Xu had featured that day, and started to arrange the products on mock shelves.

She then asked Xu, “How soon can you deliver them?” Xu was surprised and asked, “You mean in 200 stores?” Xu had heard of Target’s new vendor testing practices and assumed Schock would want to test her product in some stores before adopting them throughout the chain. She thought that she was being provocative and trying to subtly reveal how well-

educated she was about Target's modus operandi. Schock countered by saying, "No, all 800 stores."¹⁴

Xu could hardly believe what she'd just heard—this would translate to a \$1 million seasonal order, by far her largest order to date. Along with her excitement, she was starting to feel some anxiety—she was already expecting the enormous challenge of having to cut her price by four while keeping similar production volumes. Instead, she was now faced with the problem of cutting the price while also massively increasing the quantities she would have to produce, all in a very short timeframe.

Xu's company worked with Aroma Consumer Products Co., which was founded and run by her sister Li Xu, to produce the candles. Aroma's manufacturing facility was based in China, and even if the Chinese factory immediately ramped up the production, did she really have the people, the machines, and the capacity to deliver on this magnitude?

MANUFACTURING

A candle consists of five key elements—wick, wax, fragrance, color, and vessel. For an optimal output, all these five elements needed to interact perfectly with each other during manufacturing. As Xu remarked, "People think about candles as only art, but it's actually both art and science."¹⁵

When Xu had initially started selling candles in the United States, her sister Li Xu had started a factory to manufacture candles for her (see Exhibit 4). To support Xu's vision of manufacturing and selling scented Chesapeake Bay Candles at scale, Xu's sister upgraded the Aroma Consumer Product Co's manufacturing facility in Hangzhou to produce the desired candles. Xu's family members chipped in their money to fund operations. In the early days of production, they quickly realized a significant amount of work would be required to adapt the complex process of candle making to mass production. They conducted various experiments to test the ways variations in the manufacturing process would affect the finished product—the interaction of wax with fragrance oils and dyes, the candle's burn behavior, the biochemistry of wax batches, etc. (see Exhibit 5). Over time, after conducting several experiments and learning from their mistakes, they created standard operating procedures for manufacturing candles and began shipping batches of candles to the United States.

While they had successfully delivered candles for retailers such as Bloomingdale's, Nordstrom, and Bed Bath & Beyond, they had no experiencing manufacturing and shipping candles at the much larger scale that would be required for the Target contract.

PROCESS FLOW

The manufacturing of candles at Aroma Consumer Products Co. included a typical assembly line process (see Exhibit 6). Solid rocks of wax were melted and kept in a large tank. As orders came in, the appropriate quantity of molten wax was decanted into a smaller tank and mixed with adhesives, color, and fragrances. This simple-sounding step was more finicky than might be expected—fragrances were some of the more expensive ingredients in the candle, and their behavior was highly heat-dependent. If the mixing occurred at excessive temperatures, much

of the fragrance would evaporate. The process was therefore constantly supervised by six workers, each able to mix wax for 900 candles per hour (for a combined total of 5,400 candles per hour).

While the wax mixed, the molds were heat-treated to remove all traces of humidity. This step was important because humidity could cause air bubbles that would damage the surface of the wax during the cooling process, and make the candle look unattractive. Depending on the conditions, each worker could prepare between 750 and 1,000 containers per hour, averaging 850 containers per hour. Five workers were dedicated to this step.

Once the containers were prepared, a gluing step was performed. In the gluing step, a wick was firmly glued to the bottom of each mold. Quality control was crucial—a wick that was too long would result in excessive flame size leading to overheating and reducing the fragrance, whereas a wick that was too small would not burn the wax on the sides, resulting in “tunneling” and reduction of burn time.¹⁶ Most critical to safety was that the wick needed to be glued properly in the center; otherwise, the candle could burn unevenly, which would lead to sooting and even the risk for fire.¹⁷ This task was done entirely by hand and was a slow and very laborious process. Twenty-four workers, each with a capacity to handle 125 candles per hour, were tasked with this critical step.

The mixture created was then poured in these containers and cooled. The pouring step was also labor intensive—each worker could handle an average of only 400 candles per hour. Eleven workers were dedicated to pouring. The cooling was done using a machine that had capacity to cool 3,200 candles per hour. As the cooling happened, the mixture contracted and refilling was therefore required with leftover wax, to ensure that the candles were levelled and looked even. This step was undertaken by six workers, each refilling 750 candles per hour.

After a few hours, the candles were labelled and wiped for any residual dust to ensure a clean, shop-ready look. Labeling was the most labor-intensive step with over 45 workers per shift, each processing 90 candles per hour. The candles were then packaged before being sent for distribution.¹⁸ Cleaning required 13 workers, each with a capacity of 352 candles per hour. Packaging required 14 workers with each worker handling on average 312 candles per hour.

For a total of 301 days out of the year, the production line ran smoothly for 12 hours a day. Workers were rotated in scheduled shifts to ensure that required number of workers were present for each step throughout this 12-hour duration. The hourly wage of each worker was \$6.10. Each candle required \$1.10 in material costs, while each candle generated a revenue of \$3.40 for the company.

Looking Forward: Expanding Process Capacity

Xu knew that the Target opportunity could make or break her nascent company. Through painstaking effort over many years, she had grown the Chinese production facility to be able to produce around 3,000 candles per hour, which satisfied demand from her existing clients. She would now have to figure out how to increase this capacity to 3,500 candles per hour, without compromising quality, to meet Target's requirement. Instead of hiring more workers, Xu decided to explore the option of adding new machines (see Exhibit 7). The challenge was immense, but she was ready to attack it with her usual enthusiasm and verve.

Discussion Questions

Help Xu identify where the bottleneck is in the current candle manufacturing process. Verify that current operations can handle the current demand of 3,000 candles per hour.

Put yourself in Xu's position: what would you do to increase capacity to meet Target's demand?

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Exhibits

Exhibit 1

Annual Survey

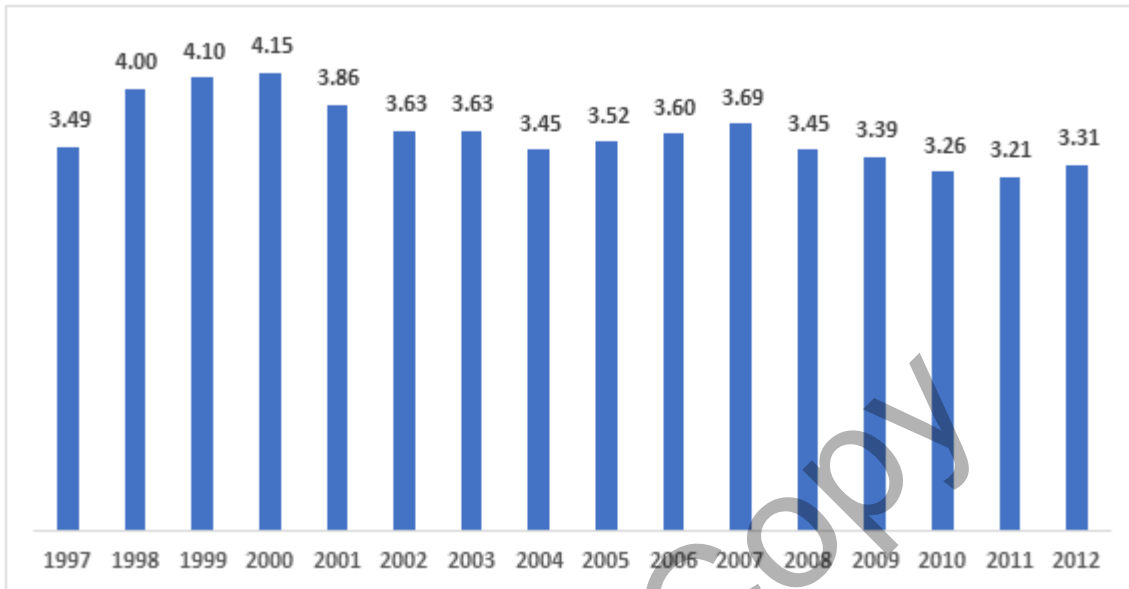
"WHAT HOME DÉCOR ITEMS HAVE YOU PURCHASED IN THE PAST 12 MONTHS? PLEASE SELECT ALL THAT APPLY" (SAMPLE SIZE: 2000)

ITEM	2012	2016	2020
Candles	42%	29%	41%
Pillows	22%	36%	40%
Rugs/doormats	29%	31%	38%
Seasonal décor (e.g., Halloween, winter décor)	30%	32%	37%
Blankets	22%	34%	36%
Wall décor (e.g., art, clock)	21%	29%	29%
Picture frames	36%	37%	28%
Lighting accessories (e.g., lamps)	24%	32%	27%
Decorative containers (e.g., baskets)	13%	20%	21%
Other, please specify	1%	3%	1%

Source: Mintel consumer reports for Home Décor (2012, 2016, 2020).

Exhibit 2

Total US Sales of Candles, at Inflation-Adjusted Prices (\$Bn)



Source: Mintel consumer reports for Candles (August 2003, 2007, 2012, 2013).

Exhibit 3
Product Examples



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Exhibit 4

Sisters and Business Partners: Mei and Li Xu



Exhibit 5

Engineers Monitoring the Candles at the Chinese Factory



Exhibit 6
Pictures of the Manufacturing Facility



Exhibit 7

Cost of Machines to Perform Different Steps at the Manufacturing Facility

Step	Cost per unit (USD)	Capacity for each unit (candles/hour)	Number of workers required for each machine
Mixing	1,200,000	6,000	1
Preparing Containers	1,600,000	8,000	1
Gluing/Wicking	3,100,000	5,000	2
Pouring	N/A	N/A	N/A
Cooling	1,900,000	3,200	0
Refilling	1,200,000	12,000	2
Labeling	900,000	3,300	0
Cleaning	1,000,000	4,000	2
Packaging	900,000	3,200	3

Endnotes

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- ⁴ Jon Chesto, “Yankee Candle CEO: It’s Business as Usual for Employees after \$1.75B Sale to Jarden Corp.,” *Boston Business Journal*, September 3, 2013, https://www.bizjournals.com/boston/blog/bottom_line/2013/09/yankee-candle-ceo-talks-about-sale.html.
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- ⁶ “Leading Scented Candles Manufacturers in the United States in 2020, Based on Sales,” Statista, <https://www.statista.com/statistics/1179693/top-manufacturers-of-scented-candles-us/>.
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- ⁹ “Aircare—US—January 2021.”
- ¹⁰ “Company Profile,” Yankee Candle Company, <https://www.yankeecandle.com/company-profile.html>.
- ¹¹ Mei Xu, *Burn* (Hoboken, New Jersey: John Wiley & Sons, 2021).
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- ¹³ Xu, interview by Guy Raz
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