In the fall of 2014, Greg D’Alesandre was busy packing his bags for a trip to Guatemala. As “Chief Sourcerer” at Dandelion Chocolate, Greg had spent the last few years building relationships with cacao farmers in Central America and West Africa. Dandelion’s chocolate was made from only two ingredients: cacao and sugar, and the company prioritized sourcing the highest quality, ethically farmed cacao. Since Dandelion’s founding, several members of the Dandelion team had traveled to farms in Belize, the Dominican Republic, and Madagascar to hand-select cacao beans. Their dedication to quality extended to other aspects of the company, including the rigor of their production process, their attention to detail in packaging, and their desire to consistently improve their product.

So far, this dedication had paid off. In its first two years, Dandelion had succeeded in garnering loyal customers, numerous awards, and a reputation for being one of the finest chocolates in the world. Dandelion was now poised to take its next big step - a new factory in San Francisco that would increase its production capacity by a factor of ten. The rapid growth in demand for Dandelion, demonstrated by the 450+ wholesalers on their waiting list to sell their bars, necessitated the expansion. How to expand their supply of beans was less obvious. With some of its suppliers at capacity, Dandelion faced an urgent need to look for new sources of high-quality cacao. Transparency and knowledge about its suppliers was a critical component of Dandelion’s values, requiring in-person trips to investigate whether farmers adhered to their principles. Guatemala was a new frontier for Dandelion. As Greg made his way to SFO, he pondered the upcoming Guatemala trip and the fate of sourcing for Dandelion in the upcoming months.

Dandelion’s early days

Todd Masonis and Cameron Ring had been friends since their undergraduate engineering days at Stanford. In 2002, they co-founded an Internet company called Plaxo, along with Sean Parker of Napster fame, which sold for an approximate $170M to Comcast in 2008. In 2010, Todd and Cameron left their jobs at Plaxo to start making chocolate. Despite having no prior experience in the chocolate industry, both engineers felt a burning desire to try to create their own brand of high quality chocolate.

Todd and Cameron’s new endeavor initially took roots in a mutual friend’s garage in Mountain View, CA, where they created their first batch of chocolate. They found recipes and basic production instructions on trade websites such as chocolatealchemy.com. For equipment, they assembled common household products such as hair dryers and duct tape along with parts purchased online. Initially, Todd and Cameron produced chocolate bars under the name of “The Brower Avenue Chocolate Factory,” the street that their garage was located on. After getting a warm reception from buyers at local farmers markets, the

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1 Prakriti Mishra and Professor Elizabeth Pontikes prepared this case, developed solely as the basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation. This case was made possible by the generous support from the Polsky Center at the University of Chicago Booth School of Business.

2 http://techcrunch.com/2008/05/14/confirmed-comcast-bought-plaxo-deal-closed-today/
two friends decided to take their venture to the next level. In early 2012, they formally created a new company, gave themselves the humble titles of “Chocolate Makers,” and transitioned to their own production space in the industrial Dogpatch neighborhood of San Francisco. They relied on savings from the sale of Plaxo, along with support from family and friends, for their initial investment. It was in this phase of their company that they chose the name “Dandelion Chocolate.” Todd comments:

“We went through a whole naming process, and eventually we settled on Dandelion. It seemed like there were a lot of chocolate companies that were trying to be overly fancy, with fake French names and that sort of thing. We wanted a name that was real and grounded, something that had childhood nostalgia, that was beautiful and simple. Dandelion is an upstart and a weed, so it fit the vibe we were going for.” - Todd

In 2012, Todd met Greg D’Alesandre at a “Chocolate 101” educational event in San Francisco. Greg had always wanted to start a chocolate company of his own. He used to make chocolate for himself, often entered cooking competitions, and even made truffles for his friends’ weddings. A Google employee at the time, Greg took a 3-month sabbatical from his Product Manager position to assist Dandelion’s operations, with the goal of ultimately starting his own chocolate shop. After his “internship,” he decided to buy into Dandelion and stay on full-time. In order to make gourmet chocolate, it was critical for Dandelion to have access to the highest quality cacao beans. Greg joined as “Chief Sourcerer,” with the charge of sourcing high-quality cacao beans from all over the world. Interest at local markets indicated there was demand for Dandelion’s chocolate. Their next challenge was discovering the best way to grow.

The US chocolate industry

Mass chocolate
The global market for chocolate is predicted to be worth $117 billion by 2015, up 6% since 2014. Americans are the largest consumers of chocolate, having purchased $15.6 billion in 2006. Mass-produced chocolate constitutes up to 87% of the American market, and premium chocolate makes up the remaining 13%. The two main players in the American mass market for chocolate are Hershey and Mars. In 1998, these two companies controlled 70% of market, followed at a distance by Cadbury (9%) and Nestle (6%). By 2013, Hershey and Mars controlled 88% of all the chocolate consumed in the US. This effectively duopoly was characterized by intense competition based on new product launches, expansion into new customer segments, and marketing.

The latest frontier for mass producers is gourmet, or premium, chocolate. The premium chocolate market has grown at a rapid pace of 9% per year over the past years. Hershey and Mars entered the premium chocolate market primarily through acquisitions. In the mid-2000s Hershey acquired a number of premi-
um chocolate makers including Scharffen Berger, Joseph Schmidt Confections, and Dagoba Organic Chocolate. In 2006, Cadbury bought Green & Black’s.

Craft chocolate
Critical to the growth of the premium chocolate market is “craft chocolate,” comprised of smaller producers who use artisanal methods to create high quality chocolate. This market includes chocolate makers and chocolatiers. Chocolate makers produce chocolate in small batches from fermented and dried cocoa beans. Chocolatiers use fine chocolate produced by chocolate manufacturers and add ingredients to create unique products and confectionery.

Craft chocolate is characterized by the “bean to bar” movement, which requires involvement in the entire supply chain: from sourcing the beans to selling the bars. The process is different from that of mass producers, who buy beans of any quality from large suppliers at the lowest possible price and add ingredients that mask the bean’s original flavor, striving for consistency. Craft producers seek out the highest quality beans and directly work with smaller farmers. They believe that each type of bean has its own flavor, and that this distinctive flavor should be the defining feature of each chocolate batch. Production is more time-consuming: they process each bean varietal separately and conching periods are extended. (Conching is a process that aerates the chocolate mass and creates a smooth liquid by coating cacao and sugar particles with cocoa butter, the fat naturally found in cacao.) Craft chocolate typically has a lower proportion of sugar and does not to include sorbitol, a sweetener with preservative properties that is often found in mass chocolate. Craft chocolate is sold at a higher price point than mass-produced chocolate. For example, Dandelion’s standard 2 oz, 70% chocolate Venezuelan bar sells for $9, while a 3.5 oz “Intense Dark” Ghirardelli bar can be bought for $3-$4, and a 1.55 oz Hershey’s milk chocolate bar sells for less than a dollar.

Craft chocolate’s burgeoning popularity has coincided another major trend in the chocolate industry: the rise of dark chocolate. Traditionally more popular in Europe than in the US, dark chocolate has gained traction since the early 2000s. Some analysts point to the health benefits of dark chocolate as a reason for its increasing popularity. Chocolate contains minerals such as calcium and magnesium, and has been cited as a factor that reduces heart and depression-related diseases. Dark chocolate has an especially high antioxidant content and uses vegetable fats instead of milk fats, which adds to its favorable perception. Chocolate companies have taken note of this trend, with Hershey’s introducing dark chocolate Kiss-es in 2001 and a dark chocolate Kit Kat bar in 2002. While dark chocolate made up only 25% of Godiva’s sales in the 1970s, that number was up to 55% by 1998. In 2007, Hershey CEO Rick Lenny declared that “premium and dark chocolate” was the “most promising platform” for growth in the chocolate industry at the time.

Scharffen Berger is widely recognized as the first craft chocolate maker in the US. Founded in 1996 by a retired doctor and his wine enthusiast acquaintance, Scharffen Berger used “small-scale European artisanal methods” to produce unique, high-quality chocolate. It experienced a growth of over 60% for the next five years and received over $4 million in funding by 2004. In 2005, Hershey acquired Scharffen

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10 Scharffen Berger Chocolate Maker, Stanford Graduate School of Business, Case OB-46, 10/19/04.
12 Scharffen Berger Chocolate Maker, Stanford Graduate School of Business, Case OB-46, 10/19/04.
Berger for a rumored $20 million, twice Scharffen Berger's annual revenues.\textsuperscript{13} Scharffen Berger’s acquisition was seen as a sign of the viability of the craft chocolate market, and it precipitated the entry of dozens of small-batch chocolate makers.

Most craft chocolate makers are similar in that they emphasize sourcing high quality beans and building relationships with farmers. They differentiate in terms of their vision, goals, branding, and product delivery.

**Theo Chocolate Factory**

Established in 2006 in Seattle, Theo Chocolate is the first organic, fair-trade certified cocoa producer in the US. The name “Theo” comes from the Theobroma cacao tree. Theo’s emphasis is on “creating amazing flavors,” incorporating nuts, dried fruits, and flavorings (“inclusions” in Theo’s language). Its 10 classic bars are all named by flavor, including “Spicy Chile”, “Toasted Coconut,” and “Mint.” Theo produces an annual holiday line of 4 holiday flavor bars - “Salted Toffee”, “Nutcracker”, “Peppermint Stick”, and “Gingerbread”. In 2014, Theo launched “Violetamine,” the first functional cocoa powder product that can be used in beverages, pills, or food for health benefits.\textsuperscript{14} Since its inception, Theo has grown rapidly and now sells in 4,000 stores across the world, with sales rising 40% annually and surpassing $12 million in 2013.

**Mast Brothers Chocolate**

This Brooklyn, New York chocolate manufacturer formally began operations in 2007 when two brothers, Michael and Rick Mast, experimented with chocolate after stints in pickles and cured meats.\textsuperscript{15} The brothers now produce around ten flavors, from a blend of almond and sea salt to the popular salt-and-pepper bar. Each is wrapped in gold foil and thick Italian paper in vintage-inspired floral, paisley, and patterned prints.\textsuperscript{16} The packaging is one of Mast Brothers’ most distinguished features, with a Vanity Fair article extolling their unique prints: “Its [packaging] designer, Nathan Warkentin, a 33-year-old former menswear designer, tries to evoke an individual abstract palate alluding to the chocolate bar’s country of origin. The design of the sea-salt bar, which contains sea salts from Maine, speaks to American ties and pocket squares with its preppy pale-blue stripes.”\textsuperscript{17} Mast Brothers chocolate is used in New York’s Michelin star restaurants Eleven Madison Park and Per Se. Their newest frontier is a chocolate store in London, which opened in 2015.\textsuperscript{18}

**Taza Chocolate**

This small-batch chocolate maker from Somerville, Massachusetts, founded in 2006, was among the first U.S. companies to widely distribute stone-ground Mexican-inspired chocolate. The company emphasizes the unique texture and flavor of its beans. Taza uses similar methods as other craft makers in terms of roasting and shelling, but instead of conching the chocolate to gain a smooth texture, Taza grinds its chocolate mixture with stone disks to create its signature gritty texture.\textsuperscript{19}

\textsuperscript{13} http://www.latimes.com/local/obituaries/la-me-steinberg28-2008sep28-story.html
\textsuperscript{14} http://www.businesswire.com/news/home/20141015006510/en/Theo-Chocolate%E2%80%99s-Innovation-Division-Introduces-Functional-Ingredients#.VQ1iADTF-Hw
\textsuperscript{15} http://www.bonappetit.com/people/chefs/article/bearded-mast-brothers
\textsuperscript{16} http://nymag.com/listings/stores/mast-brothers-chocolate/
\textsuperscript{17} http://www.vanityfair.com/culture/2015/02/mast-brothers-chocolate-wrappers
\textsuperscript{18} http://www.slate.com/articles/life/food/2015/03/against_mast_brothers_why_chocolate_experts_hate_the_best_known_craft_chocolate.html
\textsuperscript{19} http://www.bostonmagazine.com/restaurants/blog/2013/11/19/supply-chain-going-bean-bar-somervilles-taza-chocolate/
Askinoise Chocolate
Based in Springfield, Missouri, Askinoise Chocolate was founded in 2005 by Shawn Askinoise, a criminal lawyer. Shawn was returning from a funeral when he had an epiphany that chocolate was his destiny. Ten years later, Askinoise’s chocolate bars can be found in stores across the US. Shawn, who personally sources directly from farmers on 4 continents, insists upon building relationships with farmers to create a sustainable business model. "I pay them directly. We pay them above-market prices. Then I go back with my financial statements, translated in whatever language they need, and profit-share with them." He argues that prioritizing financial transparency allows Askinoise to create long-term traction with farmers, which in turn motivates them to test and perfect their drying and fermentation methods, which have a “huge influence on chocolate flavor.”

Vosges Chocolate
Vosges is a chocolatier. Rather than making chocolate from cacao beans, they buy single-origin chocolate from premium chocolate makers such as Valrhona, Felchin, and Belcolade. Their added value comes from unique recipes, which use “exotic” spices and flavors, for example from India or Morocco. Created by Katrina Markoff in her hometown of Chicago, Vosges Chocolate sells through 2,000 outlets worldwide, and in eight dedicated boutiques. In 2011, Vosges made $30 million, up 50% from the previous year. Vosges is currently testing a two-brand strategy, coupling its premium line with a mass-market line titled “Wild Ophelia.” Wild Ophelia will bring Vosges to the lay chocolate consumer through chains like Walgreens and Target.

Just Good Chocolate
Nichole Warner and her husband Drew co-founded their company in 2012 under the name “Just Good Chocolate” to emphasize their passion for creating products that were “socially just” and also “good for the earth and good for people.” Nichole describes JGC as a “tiny” company that has been directly assisted by companies like Dandelion, which actively help out smaller craft chocolate makers. Although JGC didn’t start producing chocolate bars until September 2014 (previously they made chocolate nibs and hot cocoa mix), it now sells its single origin chocolate bars online and through wholesalers. JGC is slated to open its own factory and retail space by 2016. Nichole anticipates that the space will likely be located in their hometown of Leelanau County in Northern Michigan, because the County is already dotted with wineries, hops farms, and craft breweries, providing a craft-friendly community.

Dandelion Chocolate
Dandelion Chocolate has three main goals. The first is to make chocolate that celebrates the unique flavors of cacao beans from around the world. Their chocolate is “single-origin,” meaning that cacao beans in each batch come from only one region or country. Dandelion uses only two ingredients in their chocolate: cacao and cane sugar. They believe this showcases the individual taste and aroma of each cacao bean. Dandelion is a proponent of the “bean-to-bar” movement, and places special emphasis on cultivating long-term, sustainable, and transparent relationships with farmers. In addition to displaying the names of farmers and farms on each chocolate bar’s packaging, Dandelion also works towards improving their capabilities.

21 http://www.vosgeschocolate.com/faq#11
22 http://chicagoist.com/2012/05/06/vosges_chocolate_founder_to_launch.php
Dandelion’s second goal is to enhance its customers’ chocolate experience. It strives to achieve this through transparent operations and its education department.

Their third goal is to be a profitable and financially sustainable company. But for Dandelion, finances take a back seat:

“We think about our strategy in terms of priorities. For a lot of companies, the priority is finances. And I feel like those companies do really well, because to succeed in business you need to do that. But those companies reach only the local maximum, where they peak early. For our company, the third goal is profit. We need to do that, we need to make sure we don’t mess it up, but it’s not the driving force behind the business.” - Todd

Supply Chain

Sourcing

In 2014, Dandelion purchased 35 metric tons of cacao from farms across the world, from Madagascar and Tanzania in Africa, to Ecuador in South America, to Belize in Central America. Sourcing begins by visiting farmers in these tropical countries. By the end of 2015, Dandelion will have visited every country it sources from except Liberia. With these visits, Dandelion scouts for the highest quality cacao and ensures that the farms it purchases from have fair labor practices.

Dandelion’s sourcing team identifies and cultivates relationships with producers. They focus not only on finding high quality beans, but also on building relationships with farmers who grow the beans.

“A lot of people often assume that sourcing is about finding the right flavor. And I do think there’s a flavor component, but for us you can bring back beans and have lots of people taste them to figure out the flavor. … the most critical aspect for us is building relationships. So much of the supply chain is based on figuring out who you trust and who you want to work with.” - Greg

Chocolate starts with the cacao tree, which produces a cacao pod. Through experiments, farmers in different regions identify preferred genetic profiles based on taste, the ability to withstand disease, and productivity. They cultivate these profiles through a process called grafting, whereby they cut branches from trees with preferred genetics, cut out bark from the trunk of another tree, and tie the branch to the bark. The new branch will fuse into the existing tree and produce pods with preferred genes (Exhibit 1 shows photos of cacao pods, wet beans, and grafting). Craft chocolate farms are proponents of agroforestry, a cultivation philosophy that encourages planting cacao trees along with other crops in the same farm. Because cacao trees need partial sun and partial shade to grow, higher quality beans are produced when other trees such as mahogany and cedar are planted alongside the cacao. The underbrush of these trees host midge insects that pollinate the flowers. Agroforestry, as opposed to mono-cropping, ensures the replenishment of a wide range of nutrients in the soil, which promotes a healthy ecosystem. In Belize, cacao farmers proudly post the slogan, “chocolate will save the rainforest.”

As Maya Mountain Cacao of Belize states:

“Cacao is particularly important as a driver of economic development because it grows organically and under shade cover in diversified “agroforestry” systems that replicate the ecosystem services of natural forests. By maintaining forest cover, agroforestry systems
Craft chocolate makers stay away from high-yielding but bad tasting cacao clones, the most famous being the CCN-51 varietal. CCN-51 grows quickly and thrives with mono-cropping, but has a bad taste and degrades the quality of the soil (its taste has been described as “acidic dirt”). Mass chocolate producers prefer the CCN-51 crop because it can be grown at a lower cost, due to high disease resistance and high productivity.

Once cacao pods are mature, farmers harvest them and remove the beans from the pod. The next step in the process is fermenting and drying, which is either done at the farm or at a centralized facility.

Dandelion sources its beans directly from farmers or from trusted suppliers who operate under direct trade principles.

**Sourcing Example: Maya Mountain Cacao**

Dandelion sources Belizean beans from Maya Mountain Cacao (MMC), a cacao export company that has a network of over 200 certified organic farmers in the southern Toledo and Stann Creek districts of Belize. In 2013, MMC sold 30 metric tons of beans, a 50% increase from the 20 metric tons sold in 2012. MMC sells directly to a handful of American craft chocolate makers in addition to Dandelion: including Taza Chocolate, Mast Brothers, and Ritual Chocolate. Some of these companies, such as Taza, re-sell the beans to other smaller players, such as Just Good Chocolate. MMC eventually plans to expand operations to do all selling direct. Currently, there are 90 companies on MMC’s wait list for cacao beans.

MMC was created because one of its co-founders, Alex Whitmore from Taza Chocolate, was unable to buy Belizean cacao beans from the Toledo Cacao Growers Association (TCGA), an existing co-op. TCGA, started in the 1980s, is a locally run organization that operates on Fair Trade principles. Fair Trade mandates that beans be sold at a certain price above commodity prices. It does not mandate the price to the farmers. Often, farmers receive the commodity price and the co-op retains the markup, which is supposed to be reinvested in the community. This is problematic if an association becomes corrupt. The founders of MMC suspected corruption in TCGA, and were also frustrated with Fair Trade’s disconnect from quality control. Fair Trade mandates that all workers needed to be paid fairly, but has no considerations for bean quality. So TCGA would not sell to Taza, but regardless, Taza was not comfortable with the quality and practices of TCGA. As a result, MMC was born.

MMC was founded on a principle of “direct trade.” There is no direct trade certification; rather, direct trade relies on transparent processes to establish fairness. Buyers have first-hand or trusted information about the beans and the farm’s practices before purchasing. They often pay well over market price and above the fair trade price (sometimes 3x more) for the beans. This price is agreed upon at an annual association meeting that includes all farmers. Buyers do not need to enter in direct talks with farmers for their purchase to be seen as “direct trade” – they can also use a trusted intermediary. Sourcing directly from farms facilitates the direct transfer of information, while using an intermediary allows buyers to access smaller scale farms. Ultimately, the goal is to create a set of trusted relationships between farmers, buyers, and any intermediaries. Some of Dandelion’s beans are sourced directly: for example, their Ecuador beans

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23 Maya Mountain Cacao (MMC) website
come from the Camino Verde farm. In Belize, Dandelion relies on MMC as a trusted intermediary. Dandelion has traveled to Belize to investigate MMC’s practices and to visit its farmers.

“From my perspective, it’s our responsibility to go and visit [the farms]. on our own dime. Then we have more direct knowledge and understanding of what’s going on, and it saves them an enormous amount of money [because certification is costly]. The downside is that customers often look for certifications... but it hasn't been that big of a deal for us.” - Greg

For many buyers, the ideal policy would be to practice “estate direct” trade, such that they know the exact farm the chocolate is from. Dandelion’s goal in the future is to have a bar code on each bar, which would indicate the exact location where the cacao beans were grown. MMC is single origin but not “single estate” in Belize because of the country’s large geographical expanse and because it purchases from many small-scale farmers.

One of MMC’s innovations was to buy “wet beans” – straight from the pod. It set up facilities to ferment and dry the beans. Fermentation and drying are difficult and critical for quality. Ideally beans will be around 90% fermented; under or over fermentation adversely affects taste. Beans that are not dried correctly can mold. MMC ferments and dries the beans, experimenting with optimal processes (Exhibit 2 shows pictures of fermentation and drying equipment). In the old model, farmers were responsible for the entire process, requiring them to become experts not only at farming and genetic selection, but also at fermenting and drying. MMC explains the benefit of this division of labor, which allows farmers to concentrate on improving the growing process:

“Each of MMC’s farmers has an average of 1200 cacao trees grown naturally under the shade of mahogany, fruit, and palm trees. MMC provides organic certification (USDA NOP), technical assistance programs, affordable cacao seedlings, and loans to the farmers in its network. Once pods are collected they are split open, the sticky beans are scooped out by hand and the shells are discarded to compost. The beans at this stage are sweet like a tropical mango-flavored candy to suck on but bitter when bitten into! MMC only buys freshly cracked pods to ensure good flavor and continuity for when the fermenting process begins. Once the wet cacao is bought it is transported to the MMC centralized fermentation and drying facility where the fermentation magic begins.”

Eladio Pop, a farmer in Belize that sells to MMC, explains that he prefers to focus on the growing process as opposed to managing both growing and fermentation. According to Eladio, farmers that sell to TCGA sometimes spend the day walking in the heat to TCGA’s location, only to have their beans rejected because of problems related to fermentation and drying. MMC’s model eliminates this uncertainty and reduces the probability of bean rejection. Since MMC’s founding, TCGA has started buying wet beans, but it does not have a fermentation facility yet. Recently, a new buyer entered the Belizean market with the same model as MMC, who is offering farmers a higher price per pound.

**Production**

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25 MMC website
"We have probably sampled 250 beans in the past two years, and about 12 of them have made it into our bars..." - Greg

Dandelion’s chocolate factory is located at 740 Valencia, in the “hip” Mission neighborhood of San Francisco (relocated from Dogpatch). This space serves as a combined factory and retail café. The entire chocolate making process is located behind the retail counter, visible to patrons of the café. Exhibit 3 shows the Valencia café and factory.

Process and equipment
A bean makes it way into a bar by first getting roasted. Dandelion uses a modified coffee roaster for this step, because currently there are no manufacturers that produce this equipment for small-scale chocolate production. Dandelion conducts ten to twenty test roasts on each set of beans before locking in a specific profile. This testing process can take anywhere between two weeks to a few months, and involves varying roast temperature and duration, followed by blind taste tests to finalize a recipe for the set of beans. The roasted beans are then placed in a cracker to separate the outer shell from the nibs. Nibs are placed on vibrating screens that sort by size. The sorted nibs next go into a winnower, which separates the nibs from any remaining shells by blowing air over the cracked beans. The next step involves a melanger - a large drum cylinder with granite stones that grinds nibs and sugar for three to four days to reduce the size of the chocolate particles. It is important for the size of the chocolate particle to be limited to under 20 microns to create a silky texture. This semi-solid mixture of sugar and chocolate is saved as blocks and sequentially tempered. Tempering, which involves heating and cooling chocolate several times, gives the chocolate bar its snap and shine. Once tempered, the chocolate is molded in Dandelion’s signature molds and wrapped with foil and wrapping paper. The wrapping paper comes from India and is made using recycled cotton fibers from the garment industry. The wrapping machine is a vintage 1950’s German machine that Dandelion had restored. Dandelion produces a brochure that outlines its chocolate making process (Exhibit 4).

Experimentation
Dandelion relies extensively on experiments to increase the quality of its chocolate. By changing specific steps in its production process and retaining a “control” process, the production team at Dandelion creates new batches of chocolate every day. A group from the staff then conducts blind taste tests on each new batch and ranks the batch on a scale of -2 to 2. Batches that get the most favorable responses are produced at a larger scale.

"We applied a scientific method, stuff that we saw in engineering...Assuming we know nothing, how can we get really good flavor?...We envisioned our chocolate as having a flavor function within a search space. This is a concept adapted from genetic modeling or other problem solving methods. We define a search space of time and temperature. And then we have different strategies for searching that search space. We do blind taste tests with a lot of people, because what you are tasting is an analog of taste. After we test, we measure, and then test again." - Todd

Greg and other members of the Dandelion team took a month-long excursion to Italy and Denver in the winter of 2014. Dubbed internally as “Le Grande Experiment,” the Dandelion team was investigating what equipment should be used in scaling up production. They tested a variety of equipment, including newly made Italian equipment and vintage machinery owned by a friend based in Colorado as the control. The results from this experiment informed the equipment they purchased for their new factory.

Product and Packaging
Greg, along with Minda Nicolas, Dandelion's Flavor Manager, assign one person within the Dandelion team to be the “keeper” of each chocolate origin. The keeper is responsible for shepherding the bar from start to finish: developing the recipe or “profile” of the bar and creating a written description that is printed on the wrapping. This description includes details such as flavors of the bean, the location of the farm, and suggested pairings.

“In the text, we always like to name people by their names if we can. We are not trying to hide where our beans come from. In fact if you go down to some of these farms and you show them a bar made from their beans with their names on it, they get pretty excited. It’s all part of the process.” - Todd

For example, the description of their Mantuano, Venezuela chocolate from the 2012 harvest reads:

“These beans come from a female-run co-op nestled in the tropical hills of the Caribbean coast of Venezuela. For Norah’s first batch, she chose a roast profile inspired by a coffee roasting technique: higher temperature for a shorter time. We taste notes of fudge brownie and espresso with a lovely cinnamon finish.”

Exhibit 5 shows examples of Dandelion bars, featuring such descriptions.

Expansion: New Factory

Amidst growing demand and increased confidence in their ability to scale, Dandelion raised its second round of funding in 2014 to build a new factory. Located a ten minute walk from its Valencia location, on Alabama Street, the new 34,000 square foot space will be housed in what used to be a printing company. Greg, who lives in the Mission, believes the proximity of the original and the new factories allows for a more seamless transition for the staff. Employees on the product and packaging teams will permanently relocate to the new factory, and so he hopes being close to the original Valencia space will preserve the cohesion of Dandelion’s culture and operations. The new factory, which is slated to start operations by the end of 2014, will house new wrapping and production machines, and will give Dandelion the ability to produce 10 times as much chocolate every day. Exhibit 6 shows the floor plan for the new factory.

Todd explains that scaling from producing 650 bars a day to 6500 will be gradual, to mitigate concerns that changes in the production process may affect quality. He acknowledges that there might be a “natural ceiling” for Dandelion, beyond which quality would have to be compromised for continued growth. Members of the Dandelion team are cautious not to let the expansion hurt Dandelion’s quality and image. There are two main concerns: first that the taste of the chocolate could be degraded. Dandelion will not change core aspects of its production process, such as reducing the number of tests performed or time in the melanger. In fact, Dandelion believes the new factory will lead to even better taste because it will allow them to expand experimentation using new types of equipment. Their second, more pressing, concern is that expansion might erode of Dandelion’s small-batch, artisanal feel. The trade-off between efficiency and identity is illustrated by Norah’s frustration over how to retain Dandelion’s characteristic packaging. Currently, each keeper hand-initials every bar that is packaged. For Norah, this is how different members of Dandelion take ownership of the finalized product. This is especially important for employees that are part of administrative departments who do not directly work with the cacao beans. One of Norah’s (and Todd’s) concerns is the preservation of this special ritual as Dandelion expands production:

“The more we grow, the more machinery we get - now we have large printers and dye cutters and actually a machine that puts labels on our bars - the less we can put personal effects on a bar. For example, the initials on the back of each bar are right now hand-
written. But when we ramp up our scale and start using our machines, we won’t be able to do that anymore. We haven’t figured this issue out yet - Todd doesn’t want to do print initials. It’s one of the things I’m really worried about. If we take that away, we have to replace that with something that is just as special. But I haven’t figured that out so I don’t have an answer yet. It’s very difficult and challenging to scale up and still have that craftsman feel.” - Norah

Company structure

The first official department in Dandelion was production. From a humble team of 4-5 employees, the team has grown to 12. As Dandelion grows it continues to add teams: for retail, sourcing, product, community, and HR (Exhibit 7 shows Dandelion’s organization chart). Jenna Nicolas, Head of Retail, describes Dandelion’s growth of specialized departments as “organic” changes stemming from needs that arise. HR is the latest department to be spun out. Dandelion is developing an HR strategy to aid employee recruitment and retention. One step in this process is an employee handbook described as a “culture document.” While it will include HR staples such as benefits disclosures and equal opportunity statements, the handbook’s main goal is to aid employees in understanding Dandelion’s strategic goals and the relevance of each employee’s work toward these goals.

To create cohesion and facilitate knowledge flows across departments, Dandelion’s employees meet for a staff-wide “all-hands” meeting every 5 weeks. In these meetings, every department states its top-level goals for each quarter, and employees are encouraged to bring up their individual opinions and ideas. Another initiative involves “brand training” that every employee receives as part of an onboarding process. Dandelion’s staff is encouraged to retain and enhance three attributes of the Dandelion brand: “intimate, craftsman, and exquisite.” According to Norah Hernandez, the Product and Brand Manager who personally delivers brand training to each new employee, this is one of the most important steps in establishing Dandelion’s culture.

“The brand right now and always will be our 3 elements - it’s intimate, it’s craftsman, and it’s exquisite. It’s thinking about when we become larger, how do we continue to still be those 3 elements, because it’s very easy when we’re small to keep up on all of them. Every new employee gets a brand presentation, and these 3 elements are explained to them so they understand. Whether you are a cafe employee or office worker or production person, you should still understand our brand and understand that those 3 elements create our brand. It’s one of the most important elements of Dandelion, one of the elements that makes us so special. Making great chocolate and understanding the brand go hand-in-hand.” - Norah

Sales

Dandelion currently sells its chocolate and merchandise through its Valencia store, a kiosk in San Francisco’s Ferry Building, its website, and around 150 wholesalers, mostly specialty foods stores, wine and cheese retailers, and high-end supermarkets. Dandelion chocolate is sold as bars or as ground chocolate. There are currently 4 buyers of ground chocolate, all local coffee shops and restaurants in San Francisco. These buyers use Dandelion’s ground chocolate to make chocolate-based drinks. Each week around 1200 chocolate bars get sent to Dandelion’s store, 750 to the Ferry Building location, and 900 to wholesalers.
Dandelion anticipates building out a new sales team with its increase in production. According to “Chocolate Keeper” and Head of Wholesale Cody Curran, managing relationships with wholesalers will become a critical aspect of Dandelion’s operations. From a new internal inventory management system, to account management software that will systematize relationships with different wholesalers, to internal fulfillment systems to handle ordering and delivering within Dandelion, Cody believes Dandelion will have to go through a major overhaul of its inventory and sales process once the new factory opens. Below she articulates her vision for standardizing inventory management between production and the café kitchen:

“Our ground chocolate program used to be ad hoc - whenever the factory noticed that the kitchen was low on chocolate, we used to give them some chocolate. That’s another thing we’ve been trying to systematize a little bit more. It involves a lot of forecasting, based on last year’s sales, and the growth we’ve seen over the last year. Given that our sales are so seasonal, and that our kitchen’s menu keeps changing, it involves a lot more communication with the production team and the pastry team. If we have a new pastry that uses a chocolate we haven’t used before, that’s going to change up our whole schedule. I would thus say that we need to have a lot better forecasting systems in place, and prioritize that aspect moving forward.” - Cody

The wholesale process begins when an inventory manager from a wholesaler submits an order over email or phone to Cody. Bars are sold by the case, with 10 bars per case, plus a sample bar. The sample bar gives wholesalers the opportunity to provide tastes to their customers and employees, with Dandelion bearing the cost. Wholesalers are charged $4.5 per bar, and are recommended to sell them for $8. There is currently a waiting list of over 450 wholesalers for Dandelion’s chocolate. In choosing wholesalers, Cody notes that Dandelion wants to work with companies that share Dandelion’s brand and mission. Dandelion would not sell at a CVS or a Duane Reade, because it would directly conflict with Dandelion’s aspirations to be seen as an “exquisite” and “craftsman” brand. At the same time, Dandelion takes wholesalers on a first-come, first-served basis, and as of yet has not turned down a wholesaler due to poor brand fit. Dandelion has an international presence through wholesalers in Japan, Canada, London and the Netherlands. Below, Cody describes how Dandelion will need to change its sales process once its new factory is up and running:

“Once we grow and produce more, there will be a lot of strategy around whom we sell to in the market. I think that a lot of our sales initially were through inquiries from people who wanted to buy the chocolate. We haven’t put a lot of thought into how to actively create a list once we start expanding. I would imagine it would be expanding to the types of stores we already sell in now. There’s also a potential to sell our bulk chocolate more, but we haven’t thought too much about it yet, even though we have tons of customers interested in buying our nibs or non-packaged, non-ground bulk chocolate.” - Cody

Dandelion also sells its retail products, including chocolate bars and merchandise, online through its website. Online sales, which have gone up consistently over the years, generate revenues of roughly $6000/month.

Education
Dandelion provides educational programming, including classes, tours and events:

- Chocolate 101: This hour-long class, priced at $50 per student, offers a general introduction to chocolate, with capacity for 12 students. Every new Dandelion employee takes this class.
• Chocolate 201: Students learn how to make chocolate using Dandelion’s facilities. Capped at 6 participants and at a price of $150 for this 4 hour session, the goals of Chocolate 201 are for participants to make their own chocolate and understand how chocolate production can stay true to the “essence of the bean.”

• Chocolate 300: Dandelion offers a set of 300-level classes, where a group of 6-8 students, along with several members of the Dandelion team, fly to farms that Dandelion sources from (each location has a different number, for example the 301 class is in Belize, 302 in Hawaii). Participants are given unique access to farmers, co-op policies, and sourcing policies. Participants pay roughly $1300 (excluding flights) for this trip.

• Factory tours: Dandelion also offers 20-minute-long, free factory tours for groups of 5-6 people. Offered 4 times a week, these tours are led by volunteers within the Dandelion team. Participants are shown how the “bean-to-bar” movement manifests in the factory.

Cynthia Jonasson, transitioning to manage the new Education department at Dandelion, under their “Community” division, sees the company’s educational efforts as supplanting the need for a marketing department. Because of Dandelion’s high price point, Cynthia feels that it is necessary for consumers to become educated about the production process in order to understand the work that goes into creating a product of such high quality. As a result, classes and factory tours are operated at a loss. These losses are seen as part of the marketing budget.

“When buying a bar at a higher price, people want to understand all the work that goes into making it at that quality. In 80% of the tours I do, somebody at the end says - ‘Oh, that’s why it’s so expensive’.” – Cynthia

According to Todd, Dandelion does not have a marketing or sales department because it has never been Dandelion’s policy to “push” sales. He recalls a “big debate” in the summer of 2012 surrounding whether they should hire a part-time PR representative. The Dandelion team was concerned that PR firms’ perspectives on Dandelion’s media campaign would not match Dandelion’s desired profile. They saw PR firms as sales-focused instead of product-focused. Ultimately, they hired a PR representative who showed great passion for Dandelion’s chocolate, who continues to represent Dandelion.

Cynthia envisions adding new programming to enhance and expand Dandelion’s efforts. For example, she wants to collaborate with a chemist acquaintance, and hold events where he educates Dandelion’s staff and other chocolate enthusiasts on the chemistry of chocolate. She is exploring collaborations with universities and research centers, to provide Dandelion as a venue for showcasing and presenting their studies. Lastly, she wants to expand Dandelion’s classes to the farmers:

“I would love to have us have a portable Chocolate 101 or Chocolate 201 so that the farmers understand what the market is like here, and what people here are interested in. I would love to connect them more to the process. This is my passion project that I’ve been trying to start for a year and a half now.” – Cynthia

Retail Cafe
Traditionally, craft chocolate makers interacted with customers by selling chocolate from their production facilities and giving classes and tours. Dandelion augmented this model by also creating a cozy cafe space in its Valencia location, where patrons can not only peruse Dandelion’s retail products (chocolate bars, merchandise), but also can sit down with coffee (mochas), hot chocolate, and pastries made using Dandelion’s chocolate. Exhibit 3 shows a photo of the Valencia café. Lisa Vega, the Pastry Chef at Dan-
Lisa delion, joined the chocolate company after working at Gary Danko, a Michelin star restaurant in San Francisco. Lisa describes the pastry menu as a unique blend of palatable desserts that stay true to the cacao's original flavors:

“I wanted a menu that people could approach. Because most people aren’t familiar with what our chocolate tastes like - it’s very intense and very pure - one of my goals was to make pastries and desserts that were approachable. One of the most popular items on the menu since my first day has been the s’more, which is generally familiar to most people. I’ve done really high-end pastries and chocolates in previous jobs, but this is a warm, cozy environment. I wanted to focus on a balance, such that people could come in and get a hot chocolate and a pastry and not feel like they were overwhelmed with chocolate.”

-Lisa

The new factory will also have a cafe space, but the goal is to establish a “grab and go” culture instead of the sit-in atmosphere of the Valencia cafe. The Alabama factory will also feature a chocolate salon, a special sit-down, petit-four experience for customers who want to indulge in Dandelion’s custom-made bakery treats. Because of this new service, the pastry team is expected to triple from 3 to 9. Lisa and her team are experimenting with additional menu items for the new factory. These include ice-cream, cocktails, and a signature breakfast pastry that will embody Dandelion’s brand. While she hasn’t finalized the recipe yet, Lisa excitedly proclaims that the new pastry, which will be a cinnamon bun with cream on the inside, will be called a “nib-bun.”

Finances

Dandelion’s investors are primarily friends and family of the founders. They are committed to Dandelion’s goals and are not pushing Dandelion to sacrifice quality in order to achieve a quick pay-out. Greg describes how Dandelion is not only bringing back a craft process, but also is using on an older investment model. Investors are partners interested in an investment that will yield long-term dividends, rather than seeking a quick exit. Dandelion’s revenues have grown at a fast pace: year-over-year sales increased by 65% in 2014. Exhibit 8 shows Dandelion’s revenue growth, broken down by channel.

Growing the craft chocolate market

“The craft chocolate industry could go one of three ways. It could either be like coffee, where there are tons of small-batch chocolate roasters on each corner. Or it could be more like microbrew… with a place like Whole Foods carrying most brands. Or it could be like wine - there’s already a $260 chocolate bar from To’ak … you can go to St. Lucia to Hotel Chocolat and plant a chocolate tree in the vineyard…Hawaii is trying to position itself as the Napa Valley for chocolate… Maybe it will be some combination of all three, no one really knows.” - Todd

The craft chocolate industry is nascent but rapidly growing. Dandelion works with other chocolate makers to meet and shape this demand. Dandelion has hosted several industry events in their space, from industry brunches to networking sessions. They are open with other chocolate makers about their processes, even welcoming them in their educational classes. For example, sometimes other chocolate makers join in expeditions with suppliers during Chocolate 300 trips.

Sourcing
Craft chocolate makers source their beans from remote farms in small quantities. Because conducting diligence, audits, and shipping requires a large fixed cost, Dandelion sees value in collaborating with other chocolate makers. For example, after Manoa, a Hawaiian chocolate maker, conducted diligence on a Liberian farm, they approached Dandelion about also buying beans and shipping in the same container. An average container carries 12.5 metric tons of chocolate, which is around a third of Dandelion’s annual purchase. Without Dandelion, Manoa would not have been able to ship from the Liberian supplier. The arrangement benefited both companies by amortizing shipping costs across the beans. In addition, Dandelion did not have to finance a diligence trip to Liberia. Dandelion has similar sourcing collaborations for farms in Peru and Madagascar.

Standards
One question is how to communicate the unique value of craft chocolate to an expanding customer base. There are currently no standard definitions for key concepts in craft chocolate, including “bean-to-bar,” “single-origin” and “direct trade.” Unlike coffee, there is no “flavor wheel” for chocolate. Dandelion has pursued some initiatives to this end.

Industry Associations
Todd is on the board of the Fine Chocolate Industry Association (FCIA), an organized group of chocolate makers, chocolatiers, and suppliers that gather regularly to share information and network. The FCIA is tasked with shaping standards for what qualifies as high-quality, or “fine” chocolate. While it admits that differentiating between fine and non-fine chocolate is a “subjective” process, the FCIA offers the following:

> Fine chocolate is “made under current good manufacturing practices from properly grown and harvested cacao beans plus a small list of additional ingredients and without the use of artificial substances to create a chocolate true to its origins.”

Todd agrees with FCIA’s priorities, but is not optimistic about FCIA’s ability to galvanize members and create objective standards.

> “One of the things the FCIA is good at is being organized, and having meetings and conferences... Last year they asked me if I wanted to be on the board, and I said ‘Sure.’ But I think they are still trying to figure out what their goal or value proposition is... I’ve talked to a lot of people who don’t want to pay a lot of money to be part of the FCIA, when the main value is networking, and that can happen elsewhere. So even internally we are trying to figure out what its role is.” - Todd

Todd is hopeful that the FCIA will be able to organize chocolate makers around creating a mark, or common marketing, that will allow them exclusivity in the market. He believes that coming up with a common standard will allow eligible chocolate makers to be able to more effectively distinguish their product and command a higher price.

Dandelion helped organize a “Chocolate Maker UnConference” in 2014, the goal of which was to “help friends find good beans.” The two-day-long UnConference was held in Seattle and saw participation from chocolate enthusiasts across the nation.

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26 FCIA website
“The 2014 Chocolate Makers UnConference provides space and time for professional Chocolate Makers to engage with others in their industry to talk about the topics that are important and relevant to them. The conference does not feature talks or lectures but rather an “open space” format that focuses on inclusive engagement with round-table style sessions and open dialogue to accomplish what the group determines to be their goals. Topics may range from: the best way for new chocolate makers to get small quantities of quality beans; working through a design for a new winnower; putting together an agreement for more effective direct trade; designing a tasting structure that fits the craft chocolate tasting goals.” - Dandelion’s website

One of the accomplishments of the UnConference was creating consensus on some often-used but commonly misinterpreted words within the chocolate industry. Greg and Norah were involved in this terminology discussion that resulted in the following six definitions:

- Single Origin: from one location
- Single Estate: from one farm.
- Craft: controlling the whole process, not necessarily by hand
- Artisan: making a product by hand
- Cacao: unprocessed seed of cacao tree
- Cocoa: fermented and dried cacao seed.

Absent from these collective endeavors are the Mast brothers. One of the largest craft chocolate makers, Mast Brothers Chocolate is not associated with the FCIA and was not at the UnConference. Mast Brothers has strong connections with other types of craft makers and with restaurateurs, but has not forged relationships within the craft chocolate market.27

Awards
Dandelion received a silver medal in 2013 from the International Chocolate Awards. Founded in 2012, the International Chocolate Awards only considers chocolate made with natural sugars and vanilla, and with minimum standards of cocoa solids. Dandelion was also a recipient of the Good Food Awards in 2012, 2013, and 2015. The Good Food Awards only considers chocolate that is made without artificial ingredients, and in addition requires chocolate makers to know the cacao farmers and their farming practices.

Dandelion envisions, in the future, that chocolate makers might establish their own awards. Dandelion currently runs taste-test experiments to benchmark the quality of their chocolate against other chocolate makers. But because producers have unique molds, it is impossible to conduct completely blind tests (this is also true for third party awards). One idea is to engage chocolate makers in a process of peer review, where each company produces their chocolate in a standard mold, and then conducts blind taste tests for pre-determined chocolate categories, overseen by a neutral third-party.

Transparency
Dandelion believes transparency is central to promoting the goals of the craft chocolate market surrounding quality and ethical production of “bean-to-bar” and “single-origin” chocolate. Inspired by Taza Chocolate’s “Transparency Report,” Dandelion released its first “Sourcing Report” in 2015, which that details the

http://www.slate.com/articles/life/food/2015/03/against_mast_brothers_why_chocolate_experts_hate_the_best_known_craft_chocolate.2.html
Dandelion is hopeful that over time more companies will follow their and Taza's lead and that transparency reports will become an industry norm.

Other Craft Products
Dandelion sells products from other small-batch, artisanal producers at its Valencia store. Some examples include products from Le Dix Sept, a patisserie in the Mission District, and Four Barrel Coffee, which also buys ground chocolate from Dandelion. Additionally, Dandelion hosts collaborative events, such as a “Product and Pairing Chocolate and Wine” event with Bluxome Winery, or a “Storytime with Sweet Coco” event with writer Jake Perez.

Dandelion’s future
With its new factory expected to open by the end of 2015, Dandelion will have capacity to increase its production by a factor of 10. Dandelion anticipates a slow ramp-up to capacity, and both Todd and Greg emphasize the importance of checking quality over time to ensure that increased production does not compromise flavor or taste. The goal for 2015 is to produce a run rate of twice as many bars and three times as much ground chocolate as 2014.

Dandelion does not have plans to open additional factories or cafés in the US. According to Todd, “We’d love to open up more cafés and shops, but we can’t even think about it ‘til we make more chocolate and make it more efficiently.” Greg believes that the next frontier for retail expansion will be overseas.

Dandelion’s owners want to begin investing directly in farmers and farms, with the strategic goal of gaining sustainable and possibly exclusive supply to their beans. One of Dandelion’s suppliers, a farm in Madagascar that currently provides a third of Dandelion’s beans, is at capacity and will not be able to meet Dandelion’s growing need. Camino Verde, an Ecuadorian farm that is featured prominently on Dandelion’s bars, has already started cutting off customers. Greg visited Guatemala in early 2015 to find additional farms that adhere to Dandelion's standards for quality and production.

Dandelion’s future will also depend on the trajectory of the craft chocolate market. Todd feels that having a common identity will be crucial for craft chocolate's growth: “Clearly there is a need for an industry association, and we want to be part of it… If you look at coffee or cheese, there are some great organizations that have either done marketing for everyone or defined standards. We definitely want to do something around that.”

Amidst rumors that some craft chocolate makers are positioning themselves for acquisition, Dandelion faces the question of what shape and structure both their company and the craft chocolate market will take in the next several years.
Exhibit 1: Cacao pods on a tree (left), Cacao pod with wet beans inside (upper right), grafted tree (lower right).
Exhibit 2: MMC’s Fermentation boxes (left), Drying racks (upper right), fermented beans (lower right).
Exhibit 3. Outside and inside Dandelion’s factory and retail café at on Valencia Street in San Francisco.
Exhibit 4: Dandelion’s production brochure.
Exhibit 5. Dandelion bars. Each bar features its origin and a description created by the bar "keeper."
Exhibit 6. Floor plan for the new factory on Alabama Street in San Francisco.
Exhibit 7: Dandelion’s Organization Chart. Grey boxes indicate a person is temporarily filling the role.
Exhibit 8. Dandelion’s revenue growth over time.