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Predicting Consumer Tastes with Big Data at Gap

In January 2017, Art Peck, Chief Executive Officer and HBS MBA '79, was struggling to turn around Gap Inc. following two years of declining sales in an environment where many brick-and-mortar retailers were under pressure. Peck took over as CEO in February 2015, after serving as President of Growth, Innovation, and Digital, when he envisioned and implemented Gap's digital strategy using an analytical approach. (See Peck's resume in **Exhibit 1**.) Gap's troubles were not new to Peck; the company had been struggling to regain its footing since 2000.

One way he hoped to improve operations was to eliminate the position of creative director for each of the firm's fashion brands and to replace them with a more collective creative ecosystem fueled by the input of big data. Creative directors were the visionaries of a fashion brand, serving as guardians of its image and providing its taste inspiration and its wellspring of ideas. These designers, such as Karl Lagerfeld for Chanel and Christopher Bailey for Burberry, established a design direction for each line, created a small number of inspiration pieces, and oversaw and approved the designs of other products in the line. Their personal vision established and reinforced the look, feel, tone, and spirit of the brand.

However, Peck was critical about the amount of power this concentrated in one individual. Many creative directors with top-notch design experience had come and gone during his tenure without making a significant mark to boost sales. Labeling creative directors "false messiahs,"¹ Peck reflected, "We have cycled through so many, and each has been proclaimed as the next savior."² Instead of betting the future on the next savior, he replaced creative directors with a decentralized, collective process that no longer required the approval of a creative director. Rather than relying on a single person's artistic vision, Peck pushed the company to use the mining of big data obtained from Google Analytics^a, Google Trends^b, social media, and the company's own sales and customer databases as the backbone to inform the next season's assortment. Ideas could thus arise anywhere, even from Gap's external vendors, and would no longer have to be vetted by a creative director serving as maestro of the collection. Once a trend was spotted, it could be immediately and simultaneously incorporated into all three of the company's brands, hitting stores within three months. "There is now science and art, and they can come together [in this new process]," proclaimed Peck.³ With the elimination of his creative directors, he was upsetting the delicate balance between creativity and commercialization, between designers and merchants, that existed at most fashion brands and that had supported Gap Inc.'s fashion cycles for decades.

^a Google Analytics is a Google web analytics service that tracks, measures, and reports website traffic to gain customer insights.

^b Google Trends is a service that shows how often specific search-terms are entered on Google across different regions of the world.

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Peck was also considering expanding online distribution by selling Gap's brands on Amazon, an online retailer. His previous role at Gap taught him the importance of e-commerce and digital, and he expressed his opinion that Gap could be at a disadvantage if it didn't consider the Amazon opportunity. Selling on Amazon could provide an additional data about customer behavior to inform Gap's decision making.⁴

Company Overview

Gap Inc. was founded in 1969 by Donald and Doris Fisher; their son, Robert Fisher, was chairman of the board in 2017. Gap was one of the creators of specialty retailing, in which a retailer focused on a particular product category rather than carrying a wide assortment and produced its own private-label goods. It remained the largest example of the genre, with 135,000 employees and 3,659 company-owned and franchised retail locations in 50 countries, accounting for 36.7 million square feet of selling space, which generated global sales of \$15.5 billion.⁵ (Also see **Exhibit 9**).

Gap Inc. managed five brands: Gap, Banana Republic, Old Navy, Athleta, and Intermix, and had historically been the authority on American casual style. The Gap brand offered female and male consumers casual, classic, clean, comfortable basics—including jeans, khakis, button-down shirts, and pocket tees—at accessible prices. Some called it democratic fashion, “ordinary, unpretentious, understated, almost lowbrow,” while others labeled it iconic: “They elevated incredible basics to not just an iconic status in terms of clothing, but also a spirit—you felt like there was such a strong attitude, so much energy.”⁶ In 1996, Gap was at the height of its cool; actress Sharon Stone wore a Gap turtleneck on the red carpet of the Academy Awards.

In 1983, Gap Inc. acquired Banana Republic, moving into a higher price/quality tier. Luxurious materials were combined with detailed craftsmanship to support more expensive price points and attract a higher-income consumer. In 1994, Gap Inc. created a new brand, Old Navy, to compete with discount department stores and mass merchandisers such as Sears and Target, ushering in a period during which it became chic for consumers of all income brackets to shop for a bargain. Offering “wardrobe must-haves” at “prices you can't believe,” embedded in a fun shopping experience, Old Navy was an immediate success with families, becoming the first retailer to reach \$1 billion in annual sales within four years of its launch.⁷ Two acquisitions followed: Athleta (2008), a women's fitness apparel brand, capitalized on the shift in women's fashion from a jeans-based foundation to activewear, and Intermix (2012), a multi-brand retailer of luxury and contemporary women's apparel, offered consumers the “most sought-after styles” from a carefully curated selection of “coveted designers.”

In 1983, Millard “Mickey” Drexler became CEO of Gap Inc. During his tenure, sales grew from \$480 million to \$14 billion in 2000 and Gap's market cap swelled to \$42 billion. Drexler, described as “a visionary executive [who] helped transform Gap from a grab-bag of styles into a trend-setting machine that made simple clothes look great, even elegant,”⁸ was dubbed “the merchant prince” for his trendspotting, design instinct, and merchandising prowess. However, after being one of the first to predict the rise of business casual in the 1990s, Drexler lost his magic touch, as he attempted to inject more fashion into Gap to attract younger shoppers who were migrating to edgier competitors. After eight consecutive quarters of declining sales, Drexler left Gap in 2002. Fashion writers explained:

Clothing companies . . . depend upon the vision and taste of just one person. . . . Everything at Gap depends upon Drexler's eye; it isn't like making turbine engines. If he's off the mark . . . if he approves a line of clothes in colors that aren't just right, sales collapse and so does Gap's stock price. That is why Gap can never really be like Coca-Cola—there is no Gap formula hidden in some vault; there's only Mickey Drexler.⁹

Two CEOs followed but were unable to restore Gap's success in what the *New York Times* called "a remarkable comedown for a chain that once seemed to dictate how America dressed."¹⁰ (See **Exhibit 2** for sales and net income since Gap's IPO in 1976 through 2016.)

Every season, Gap produced hundreds of unique products, each offered in a variety of colors and sizes. While the company website typically offered the entire product assortment, each brick-and-mortar store, with an average footprint of 10,000 square feet,¹¹ was somewhat limited due to space constraints and offered a carefully curated subset of the product line. Gap's assortment in each of its primary categories (women, men, children, and baby) consisted of two types of products: basics with styles that endured across seasons and more fashion-forward items that captured the spirit of a particular season. Creative directors influenced the full product line, but their touch was most heavily felt on the latter group, where more fashion innovation was desired.

Digital and Big Data at Gap Inc.

As President of Growth, Innovation, and Digital, Art Peck invested heavily in digital capabilities to address consumers' shift to omnichannel shopping, focusing on dissolving the wall between the physical and digital channels. He observed, "Our customers are omni today and that is a fundamental reality. Many of our customers begin their journey with our brands on their phone and they finish it in our stores. Many of our customers begin their journey with our brands in our stores and they finish it on their phone."¹² He digitized the company's entire product inventory and introduced retail services, such as "reserve in store," "find in store," and "ship from store," which made it easy for customers to browse, purchase, and receive their items seamlessly across channels.

Peck promoted data-driven decision making and pushed his team to utilize big data to learn more about customers' behaviors, and thereby deliver a better customer experience. "There's lots of talk out there about big data—to me, big data, personalization is focused on an outcome of relevance. That's what we're working on," he explained.¹³ As the company moved into digital, Peck pushed his managers to continuously test and refine its new features as it listened to customers via its "voice of the customer" initiatives, which tracked customer feedback and usage. A surprising finding arose: "Despite the explosive popularity of shopping not just online but via smartphones and tablets, 80% of Gap Inc. customers still preferred to visit a store to try on the clothes."¹⁴ As a result, Gap was working with Google and Avametric to develop an augmented reality app that allowed shoppers to test out different looks in order to improve their online and mobile shopping experiences.

Data-driven decision making required that customers be trackable, and Peck lamented that customers were identifiable online but anonymous when they shopped in a store. He searched for ways to have customers opt-in to self-identify when they shopped in a store. He elucidated:

It is an opportunity to bring our personalization capabilities and customization relevance to bear in a store environment. . . . At the moment 60% of people visiting the website are recognized as unique visitors, enabling Gap to personalize experiences based on things like browsing and purchase history. Doing so is providing movement on numbers like conversion, time on website, click-through-rate. . . . Good things happen for the customer if they're willing to self-identify and tell us who they are at the beginning of a shopping experience. They do on the website, they don't in our stores. If you come into our stores today, we won't recognize you until you tender, if we recognize you then. This . . . is about providing . . . the opportunity to self-identify in order for the company to create a much more relevant set of experiences compared to when they shop anonymously.¹⁵

Gap developed email programs to provide relevant, personalized messages to consumers. These included rules and conditions that, when run through a series of algorithms, triggered an email to certain consumers. For example, if a consumer abandoned her cart, an email was sent to remind her of her forgotten goods. If it was a consumer's birthday, a personalized greeting and a promotion were offered. Gap also used personalization in its efforts at "geosniffing," a term used to describe a company's ability to determine the physical location of particular consumers and to send them relevant localized information in real time. Information gleaned from clickstream analysis allowed Gap to reach out to consumers who had visited one of its websites, with customized messaging based on what they were searching previously, or to deliver a different landing page based on a consumer's browsing history and/or IP address. Peck recognized the importance of allowing customers to opt-in to this type of digital tracking. "[T]he company is carefully walking the line between personalizing a customer's experience in a way that's relevant and helpful without creeping them out. . . . Privacy is a huge concern for us," he avowed.

Managing the closing of underperforming stores (200 in 2011, 175 in 2015, and 75 in 2016) was another arena in which Gap used data-driven decision making. The company used the collection of insights from consumers' online browsing activity and engagement in social media platforms to help understand why consumers were not buying as much from Gap's physical stores. Peck proclaimed:

Visits to good malls are not down, but the number of store visits inside a mall are down, which says to me that people are planning their store visits as a function of their engagement with the brand, oftentimes expressed on a smartphone. I would argue that nobody's figured out what exactly the aspirational, holistic, emotional expression of a brand . . . looks like when it shows up on this device right now.¹⁶

This insight drove him to further develop Gap's digital and mobile e-commerce platforms to drive customer engagement. According to *Fast Company*, Peck had Silicon Valley developers "camped out at Gap, Banana Republic, and Old Navy stores, incorporating customer and salesperson feedback into code in real time."¹⁷ Peck's performance and his analytical nature were key to his selection as CEO.

Peck as CEO: The First Two Years

Peck was appointed CEO in October 2014. He faced some key challenges:

1. Slow growth in core markets: Gap Inc. competed in the \$3 trillion global apparel industry, which accounted for 2% of the world's gross domestic product (GDP). The U.S. and Canadian markets accounted for over \$340 billion and were expected to grow annually by 2% through 2025.¹⁸ These two markets accounted for 84% of Gap's sales. Millennials were spending less on apparel. Speaking to investors at a retail conference, Peck claimed that "there are no compelling [fashion] trends driving the business" and lamented that there had been a change in consumers' buying habits such that there was a lack of need to replenish their closets.¹⁹
2. Competition: The mid-tier apparel landscape (see **Exhibit 3**) was fragmented and overcrowded.
3. Rise of e-commerce: Consumers were shifting their purchasing from brick-and-mortar stores to online channels. In the U.S., 19% of apparel was sold through online channels in 2016,²⁰ and in 2015 clothing became the best-selling online sales category, driven by Amazon's increasing strength in apparel. Amazon, the world's largest multi-line, multi-brand Internet-based retailer, was on track to become the largest seller of apparel in the U.S. by the end of 2017. As online sales grew, brands did not need the same number of storefronts. Empty stores lined the American shopping malls, as

both specialty retailers and department stores simultaneously faced pressure to close locations. Gap had over 3,000 physical stores. By 2017, Gap Inc.'s online sales exceeded \$2.5 billion.

4. Rise of Fast Fashion: New competitors, such as H&M and Zara, compressed supply chains, delivering low-priced looks knocked off from luxury fashion runways within weeks of their unveilings. With an average product cycle time of 10 months, Gap lagged competitors such as Zara that could deliver products to stores within four weeks due to their consumer-responsive and decentralized buying process, which allowed individual stores to order small batches of product, wait to see how consumers responded to it, and then airlift additional products to backfill the store's inventory within days. The speed and pace of the fashion cycle was dizzying, with new styles appearing in stores on a weekly basis in a constantly renewing fashion cycle.²¹
5. Heavy and frequent discounting: Clothing was increasingly commoditized as consumers viewed the lower-quality fast fashion offerings as disposable, yielding a need for low prices and heavy discounting. Retail analysts were concerned about an overabundance of price promotion at Gap, where 40% discounts were common.
6. Gap's size and ubiquity were transforming from asset to liability: Consumers looking to forge a unique identity were moving away from Gap's classic offerings.

Given these challenges, Peck believed that product assortment was key and that Gap's model for selecting the right assortment was failing. The market seemed to agree. In January 2015, a retail analyst commented, "They flip flop between a little trending, a little Euro, a little strip, whatever. It just gives you a headache. . . . They've been redesigning the clothes for a decade because there is a total lack of clarity around who they are designing for. Who do you think their shopper is? I think it depends on the week."²² The flagship brand was struggling to find its place, wedged in the awkward middle between competitors' value and premium brands (see **Exhibit 4**). Consumers, particularly millennials, were cooling to Gap's brands (see **Exhibits 5** and **6** for brand descriptions and **Exhibits 7** and **8** for brand considerations).

While Peck knew that he was facing a 15-year-old problem that could not be fixed overnight, the results for 2015 and 2016 were disappointing. (See **Exhibits 9, 10, 11, and 12** for Gap Inc.'s recent financial performance.) Comparable sales^c had declined for eight quarters before growing by 2% in Q4 2016 to deliver a 2% sales decline for the year, despite a 4% increase in marketing expenditures. Gap Inc.'s market cap had dropped to \$9.2 billion,^d and the board was looking for longer-term solutions.

Peck's Product Strategy: Big Data In, Creative Directors Out

Even before becoming CEO, Peck was skeptical of Gap's creative directors. Creative directors were tastemakers, classically trained in design and using their unique eye, attitude, and personality to shape tomorrow's fashions. As arbiters of taste, they provided legitimacy and credibility to new trends with their stamp of approval. "The creative director is God," proclaimed a major fashion brand executive.²³ Rather than sensing or spotting existing trends, creative directors imagined and birthed them. Daniel Marks, Chief Creative Officer at The Communications Store, said: "Creative directors are there to bring the magic to brands and product, and the magic to the consumer experience. . . . They are the conjurers of that incredible feeling we get when we buy something in a store or online that we really don't need or didn't know we needed until we saw it."²⁴ Without them, a company risked its brand asset. Retail consultant Garret Bennett

^c Comparable sales include the results of company-owned stores and sales through online channels. A store is included in the calculations when it has been operated by the company for at least one year.

^d As of January 31, 2017.

declared: “You knew what Gap stood for when Mickey Drexler was running it. . . . When you don’t have a creative visionary leading a company, you can’t really establish a consistent look over a period of time and reinforce a brand’s purpose.”²⁵

One of Peck’s first moves when he was appointed president of Gap North America in 2011 was to fire Gap’s head of design, Patrick Robinson. Robinson, who had designed for Giorgio Armani, Perry Ellis, and Paco Rabanne, led the design team from 2007–2011. He was a fashion insider, a friend of Anna Wintour, *Vogue*’s Editor-in-Chief, and a bit of a celebrity himself, dispensing advice in *Glamour* and *Teen Vogue*. He had been excited for his new role at Gap, saying, “We needed to redefine all those American classics . . . for today. Not for 15 years ago. Not for 10 years ago.”²⁶

After Robinson’s designs missed the mark, he blamed the poor retail execution of the company’s merchants. Compared with creative directors, merchants, or merchandisers, in the fashion industry were closer to the market, with more of a commercial orientation. They were responsible for selecting products to craft a coherent assortment for each store to reach a particular target consumer at a particular price position. Peck explained the difference: “Design’s job is to push creatively and merchandising’s job is to counterbalance that with a commercial orientation.”²⁷ Merchants were market-responsive, while creative directors were market-leading. Gap’s head of merchandising, Michelle DeMartini, elaborated: “I am representing the consumer, and [the creative director] is representing the future. And sometimes that creates conflict about what risks we want to take.”²⁸

Robinson’s replacement, Rebekka Bay, was hired in 2012 following her successful launch of Cos, a modern, upscale brand designed for H&M, a leading fast fashion retailer. The Gap team had high hopes that Bay would bring her Scandinavian minimalist aesthetic and understanding of fast fashion to bear. Bay was a traditional designer, governed by her gut rather than by market research. Steve Sunnucks, Global President for the Gap brand, was excited by what she had to offer: “Her great skill is that while she is a trained designer, her experience in trend prediction means she takes a much broader view and thinks about the brand, the product, and the customer experience holistically.”²⁹ Said Bay, “I’m intrigued by the process of fashion, the collective mind, how we all suddenly have a taste for the same things.”³⁰ She explained her approach as head of 160 designers at Gap: “My role is to balance creativity and commerciality. Good design is less about taste and more about integrity. . . . You need a very strong foundation. You have boundaries, and you can only – and I’m kind of rigid about this – you can only work within them. First, you design the most iconic piece. Then you can maybe create a seasonal version of that. If anyone is going to go beyond that, I have to agree to it.”³¹

In January 2015, as Peck transitioned into his CEO role, he dismissed Bay, judging her design aesthetic – unadorned, simple, structured with a loose, ultramodern fit and a somber black-and-gray palette – to be inconsistent with Gap’s optimistic brand. Bay saw it differently, claiming, “Gap is not a design-led company and thus I had very little say in what ended up in the store.”³²

At Banana Republic, Creative Director Marissa Webb, owner of her own eponymous fashion label, was hired in April 2014 to leverage her sensibility and credibility with younger consumers. Peck was disappointed by her first effort, saying, “It’s had a couple of very positive impacts in terms of reestablishing some fashion credibility for the brand, but we didn’t get it 100% right. . . . The color palette was pretty stark. . . . [W]e’re still working to buy an assortment that is both commercial and fashion-oriented.”³³ Webb stepped down in October 2015 after only 18 months on the job.

Neither Bay nor Webb was replaced. Instead, Peck’s solution was to eliminate the position of creative director and spread the responsibility for design of the brand’s seasonal lines to a collaborative team informed by hard data. He formulized his approach in what he called Product 3.0 (detailed below). At an investor conference, he explained his decision:

We need great design. We need great creative talent. But we need that talent to be part of a highly collaborative team every season. . . . Where we have gone wrong oftentimes as a company is when we have put the burden of running these brands season after season on the shoulders of an inspired individual. That's not the model for success. . . . These are businesses, global in scale that require a highly collaborative team to be success.³⁴

Two former employees voiced disapproval. "Anything that has to become a consensus is an equation for dilution. . . . Without a distinct point of view, you become like everyone else," said Todd Oldham, a creative director at Old Navy.³⁵ "There are not many retailers with more resources than Gap to create the next trend. . . . In this retail environment, you have to take risky bets to even have a chance," said Rajiv Malik, Vice President of Gap Global Product Operations. Retail analysts were skeptical. "There's really no fashion direction. . . . Right now, they're a ship without a captain," said one.³⁶ Others mentioned Zara, which seemed to be the only fashion brand that had no creative designers and instead utilized a collaborative, decentralized, data-driven model successfully.³⁷

Big Data and Predictive Analytics in Marketing

Digital data streams allowed companies to observe their consumers' purchase journeys and collect a detailed trail of data about their online behavior. The mining of big data could yield many actionable insights to inform managerial decision making, such as identifying consumers who were more loyal to brands, matching consumers to products they might prefer, or predicting the behaviors or characteristics that could cause consumers to churn. By uncovering patterns in past customer behavior, companies could develop heuristics or algorithm-driven protocols to customize how they treated future customers to maximize satisfaction and/or profitability. It allowed "remarketing" or "retargeting": as companies observed that a particular visitor viewed an item online but failed to purchase it, they could immediately serve up customized digital advertising that appeared as customers surfed other websites to entice them to return and complete the purchase. As digital data streams became more accessible and robust, companies were exploring how to use data-mining and machine-learning to induct consumer preferences and predict future behaviors.

Using predictive analytics to sell existing products E-commerce companies, such as Amazon and Netflix, used predictive analytics to mine data to generate personalized product recommendations for their users. These suggestions were often based on aggregate data from other users, usage patterns of similar users, or a user's own purchase history or expressed preferences, generally gathered through reviews of existing purchases or through preference polling. Offline retailers used purchase histories, accessed as customers swiped a loyalty card at checkout, to drive algorithms that determined which consumers should receive coupons or promotions. For example, in 2012, to the dismay of her father, a teenage girl received coupons for baby clothes from Target. The retailer's data algorithms had predicted that she was pregnant even before she herself knew that she was.³⁸

Amazon had recently patented "anticipatory shipping." The idea was to move beyond merely providing recommendations to consumers, and instead anticipate, based on the consumer's historical behavior, when the consumer would need an item. Using information such as previous orders, product searches, wish lists, shopping-cart contents, returns, and even how long an Internet user's cursor hovered over an item, Amazon would preemptively ship products to a distribution center close to the consumer, in anticipation of an incoming order. This would reduce the time lag between ordering and receiving a package to dissuade consumers from feeling the need to visit physical stores.³⁹

Using predictive analytics for new product development Beyond making recommendations to viewers, Netflix used data to make decisions on which new series and movies to develop. However, its

CEO, Reed Hastings, cautioned, “We start with the data but the final call is always gut. It’s informed intuition. Data science simply isn’t sophisticated enough to predict whether a product will be a hit.”⁴⁰ Stitch Fix, an online styling service that delivered a personalized shopping experience by curating outfits for consumers based on their expressed preferences, aggregated all of its consumer preference data to learn which fashion elements were popular and then used that insight to design its own private-label fashion products.

Some companies used secondary data to anticipate market trends. The cosmetics giant L’Oréal Paris analyzed data from Google searches, social media sites (YouTube, Facebook, and Instagram), and fashion magazines to create a new product, the Do-It-Yourself Ombré hair coloring kit, which leveraged the ombré trend that was surging in popularity. Cranberry juice maker Ocean Spray used Twitter streams to unveil flavors consumers traditionally associated with cranberries to inform novel flavor combinations.

Predicting Consumer Preferences

Predicting consumers’ future fashion tastes was a difficult proposition. Traditional market research methods, such as surveys, focus groups, and interviews, were often inadequate, as consumers were notoriously poor at predicting their future behaviors. Consumers were often unable to imagine changes in fashion, so conducting research with them was futile. Automotive pioneer Henry Ford proclaimed: “If I had asked people what they wanted, they would have said ‘a faster horse.’” Or, as the innovative chef Ferran Adrià put it: “Creativity comes first. Then comes the customer.”⁴¹

Relying on past purchase behavior was also problematic as research in consumer psychology showed that consumers’ preferences were constructed rather than revealed, subject to marketers’ manipulation, unstable over time, and therefore unpredictable. While most consumers believed that they were cognitively in charge of their decisions and thus master of their own tastes and preferences, countless experimental manipulations demonstrated that one’s choices could be swayed by elements of the decision or social context, information framing, and the knowledge, ability, goals, biases, and emotional state of the decider.

While “taste” was defined as an individual’s attitude toward an aesthetic object, “fashion” was defined as a social construct that relied on collective behavior of many people carrying out the same or similar tastes at the same time. A consumer’s individual tastes developed within the context of social influences, including the tastes of others around them, their membership in a variety of subgroups, and the prevailing fashions of the time.⁴² Distinctions in taste helped mark members of different social classes, and people who occupied the same group tended to share aesthetic preferences.⁴³

What was in and out of fashion was constantly changing, driven both by a self-dynamic process and by tastemakers. Changes happened naturally as people craved newness when yesterday’s fashion had become boring or commonplace. Because people relied on fashion to both fit in with and stand out from others, as soon as a fashion trend broadly permeated society, it stopped being fashionable.

Sociologists theorized a ratchet effect in tastes, in which persistent movements in one direction were suddenly and unexpectedly reversed and followed by movements in the other direction.⁴⁴ In the short term, new tastes were generally based on existing tastes; thus, year-to-year shifts in fashion were often modest. But, suddenly and unexpectedly, the taste changed significantly, ratcheting in a non-linear step change to another direction. Hemlines were an illustrative example. Women’s skirts might get progressively shorter as each season embraced the miniskirt but tried to make it look different from the previous season. However, once miniskirts became ubiquitous, short skirts appeared unfashionable, so the next season’s look might suddenly feature long, floor-sweeping skirt lengths.

Fashion cycles were often initiated by designers, artists, fashion innovators, and other creative gatekeepers. These tastemakers constantly swept the culture looking for inspiration and ideas to combine in new ways. Their creative inventions often became the raw materials for changing fashion.

Product 3.0 at Gap

The place where Peck was hoping big data could make the biggest difference was in feeding the new product development right from the beginning. Like most retailers, Gap used data analytics to inform its rebuys: after products were designed and placed into stores, real-time sales data was analyzed to determine which items to reorder and which to abandon. However, with the firing of his creative directors, Peck was betting on a new role for big data—as the initial creative spark for a new line—predicting what the new fashion would be in the upcoming season. In a strategy he dubbed Product 3.0, Peck promised to combine “a clear brand vision with a common operating model.” He elaborated:

The new brand vision governs every decision in design, merchandising, inventory, and production so that [Gap Inc.] can identify trends, make them relevant to its customers, test them in stores, and respond to demand—buying more of those that sell and quickly moving away from those that don’t with a goal of fewer fashion misses and markdowns.⁴⁵

In imitation of his fast fashion competitors, Peck wanted Gap to increase its competence at “combining spotting trends with reading real-time performance and acting faster on that,” using real-time data from its registers and e-commerce purchase data to inform what the company produced for inventory going forward, not just for rebuys but for new season releases. Peck clarified: “[We need to] move forward very quickly in how we bring product to market and the speed that we bring it to market and the flexibility in our inventory . . . being able to be more predictive and demand driven . . . [being] more commercial around things that are starting to move up the curve, or [getting] out of a product that is no longer relevant to the customer.”⁴⁶ This new process was fundamentally different from the traditional process, which included creative directors, explained Stefan Larsson, Global President of Old Navy. Larsson explained:

The old school variety of designing was to send [the designer] over to Europe, and have them buy samples high end . . . come back, and then a year and half later you would see it in our stores. . . . [T]his doesn’t work anymore. . . . [W]hat we do [now] is that no one creates chance. So no one in our brands believes that they are trend creators. And so what we have design do is to work in a very systematic way to funnel down all of the trends. . . . And then once you have funneled down the trend, you apply unique design.⁴⁷

In place of a creative director, each brand’s vision statement served as a filter so that trends could be incorporated consistent with the brand’s image. Jeff Kirwan, Gap Inc.’s Global Brand President, explained how these filters guided the choice of products:

What are the questions that we are going to ask about every single piece of product that goes into a Gap assortment . . . which are anchored back to who we are as a brand and what our lifestyle is . . . and the authenticity of who we are as a brand? If they don’t get through those filters, they don’t show up in the store.⁴⁸

In this way, each trend cascaded through the entire brand portfolio, showing up in Banana Republic, Gap, and Old Navy simultaneously but interpreted through each brand’s unique prism. Managers across the brands were encouraged to share trend information across the portfolio. Peck described the processes as follows:

It starts with what we think is a really good process right at the beginning which filters trend, really systematically across a wide variety of sources, filters trend down to the right ones that we feel are brand right and appropriately commercial. . . . It's allowed us to be in trends that are happening at the same time in the designer and the premium contemporary space, it's allowed us to be into those trends in Old Navy.⁴⁹

According to Larsson, transforming trends into saleable products quickly was essential in the new marketplace: "You see aspirational trends becoming aspirational much, much faster. . . . [S]uddenly the value customer is more on trend than any of the brands out there."⁵⁰ Via an "in-season open program," Gap tried putting a small quantity of goods into stores, waiting to see how customers responded to them, and then quickly producing significant quantities of well-performing products to get them into stores before the end of the same season. Peck clarified:

We . . . have traditionally bought the year one season on a grand reveal at a time. And that means making large commitments well in advance of when the product is going to be in the store and well in advance of knowing what the consumer really wants. . . . [W]e have been re-engineering the front end of the business, so that we can buy on a much more continuous basis . . . every month versus on a quarterly basis. . . . We remain "open" as we get closer to the season and can pivot to buy it to the most meaningful trends.⁵¹

Product 3.0 relied heavily on the analysis of customer purchase data. According to Peck, "[W]e've also substantially increased our testing of product whether that's crowd source testing, which we now have validation results in better commercial outcomes, or testing physically in our stores, oftentimes in stores that are seasonally ahead of where we are so that we can that to inform our buys."⁵² Google Analytics data was also a source of inspiration. A recent fashion trend, men's jogging pants, was identified early, as Gap's managers noticed that customers were using the search term on its websites, and its progressive adoption across North America was predicted based on the geolocations of various people using the search term.

To implement Product 3.0, Peck shifted some manufacturing from Asia to the Caribbean to receive items faster. He implemented fabric platforming, buying large quantities of fabric and holding it in inventory so that designs could be quickly created in response to of-the-moment trends. He shortened the time it took for items to go from design to stores and postponed making the final decision on orders until he could incorporate the most recent data trends from limited-quantity early releases designed to test the waters. Cutting the development cycle down to 8-10 weeks in some categories enabled Gap to be much more nimble and responsive to consumer purchasing data.⁵³

While everyone at the company agreed that the use of big data could vastly improve Gap's supply chain responsiveness and inventory management processes once a new line had been designed and when reordering and stock replenishment decisions were being made, the question still remained as to whether big data could replace the artistic vision of a creative director to feed the process from the beginning. (See **Exhibit 13** for a comparison between the traditional design process and the proposed process.)

Through the changes, Peck was listening closely to data from the "voice of the customer" program. He explained: "I spend a lot of time reading reviews of our products online. And our customers are very clear in telling us what we're doing well and what we're not doing well. . . . And those are the things the teams are acting on in both Gap and Banana [Republic], to get the product back to where it needs to be."⁵⁴

Peck's vision to reinvigorate Gap was first and foremost focused on fixing the product. Time and time again, when questioned about the amount of money the company was spending on marketing, he emphasized that the best marketing was a good product. As the company struggled to get its product offering right, he cut back on television advertising and store-window merchandising, and increased the

investment in the company's digital platforms, explaining, "When you are not proud of our product, you are not going to go out there putting a lot of marketing behind the business. . . . [W]e've pulled back and we will continue to do that until we feel like there is an opportunity to really tell the story."

He tightened inventory as a way to reduce the need for deep discounting. "The second worst place to be in this business is over-bought [in inventory]," he explained. "The first worst place to be in this business is over-bought with product that she [the customer] is not responding to and that yields too many 40% offs. . . . [T]o reduce the promotional expense of this business, the promotional depth and frequency, we will start with product that we buy tightly that she loves."⁵⁵ He continued, "Scarcity is a good thing . . . the simple reality of pulling the promotion needle out. . . . [Y]ou have product that she loves and then she finds out that if she didn't buy it when she went in, it's no longer available." However, he recognized the risks: "When you start tightening up on promotion, you are playing a game of chicken with your customers and they try to wait you out."⁵⁶

Even once he felt the product had improved, Peck was slow to open the tap on traditional advertising, believing that a discovery process was imperative to Gap's success: "We don't plan on making huge marketing investments. . . . I think that's imprudent. You improve your product, the customer discovers it, you start to see conversion move on the basis of the traffic that you have in the store. Word of mouth, these days, it's a super powerful form of marketing. If you just think about Instagram and Pinterest and the other social media, that's a very powerful form of marketing. And that will start to bring traffic in."⁵⁷

Shifting the Distribution Model

Another key decision that was on the horizon was whether to partner with Amazon and allow it to sell Gap's branded products through its online platform. In 2016, 55% of online shoppers started their product search on Amazon,⁵⁸ which offered over 350 million different products on its platform, about 10% of those in the apparel category.⁵⁹ In addition to well-known brands, Amazon also owned and sold products from dozens of Amazon private label brands. Amazon traditionally charged its third-party sellers a commission rate of 15%; however, given its size and brand strength, Gap might be able to negotiate a lower fee.

Manufacturers typically had two alternatives if they wanted to sell their product on Amazon. The first alternative was to become a third-party seller on Amazon's marketplace. In that case, the manufacturer controlled pricing and the customer relationship, but it could choose to either ship the product directly from its own warehouses or provide inventory to Amazon and have Amazon fulfill the orders. The second alternative was a wholesale model, in which manufacturers would sell items to Amazon and then Amazon would decide how to sell, price, and fulfill the products to consumers.

Gap Inc. historically sold its branded products via its own retail stores and digital storefronts, eschewing a wholesale model to sell directly to consumers. The company did not franchise in any country where it operated company-owned stores in an attempt to protect its direct distribution. However, this was not the first indirect distribution partnership that Gap had considered. In an effort to expand Gap's international reach and build awareness of its brands in new geographies, Gap had forged partnerships with Europe's largest online fashion retailer, Zalando (since 2014), and China's Taobao Mall (since 2011) and JD.com (since 2014). Zalando allowed Gap to host its dedicated online shop, a virtual store-within-a-store. Selling through a locally trusted, well-established third-party online retailer rather than physically entering new markets and investing in capital-intensive brick-and-mortar store locations made economic sense. Another benefit was sharing risk while learning the local tastes. Stefan Laban, Senior Vice President at Gap, explained, "A collaboration such as this one naturally provides interesting information about the market and the products that are popular here."⁶⁰

According to Bloomberg, Peck told analysts, “To not be considering Amazon and others would be—in my view—delusional. . . . We are always considering all of the opportunities beyond our traditional mix of channels and stores. Amazon is certainly one, and there are others as well.”⁶¹ He later clarified:

We are committed to making sure that we are where our customers are. And today, our customers have obviously moved in digital, very significantly to a mobile experience. And we are running as quickly as we can to make sure that we run alongside them every day. Amazon’s presence in ecommerce is undeniable in this country, and therefore, to not fully consider all the options of distribution for us would be to not be thinking about things that were important to us, so no way was I previewing a partnership, I’m just previewing the fact that we want to make sure that we’re very situationally aware of what is going on around this with our customers and in the world.⁶²

Randy Antin, a former senior marketing manager at Gap, was cautious: “Retailers have always been a bit wary of ‘Frenemy’ Amazon. Do we play with you when your game plan is to have everyone buy through you? Who owns the customer? Are we willing to give up control to utilize this giant distribution channel?”⁶³ But he saw the appeal, as Amazon could provide Gap with access to customers when they weren’t shopping on the company’s own platforms. “The problem is that most retailers know what’s happening on their own ecommerce sites,” Antin said, “but they don’t know what’s happening the other 99% of the time their customers are somewhere else, browsing and buying on other sites.”⁶⁴

Looking Ahead to the Future

The significance of the right product assortment was indicated by the first “Risk Factor” that Gap provided to investors in its 2016 Annual Report: “**We must successfully gauge apparel trends and changing consumer preferences to succeed.** Our success is largely dependent upon our ability to gauge the tastes of our customers and to provide merchandise that satisfies customer demand in a timely manner. However, lead times for many of our design and purchasing decisions may make it more difficult for us to respond rapidly to new or changing apparel trends or consumer acceptance of our products. The global apparel retail business fluctuates according to changes in consumer preferences, dictated in part by apparel trends and season. To the extent we misjudge the market for our merchandise or the products suitable for local markets or fail to execute trends and deliver product to market as timely as our competitors, our sales will be adversely affected, and the markdowns required to move the resulting excess inventory will adversely affect our operating results.”⁶⁵

Peck was betting that market intelligence fueled by big data could outperform a creative director at predicting the future fashion tastes of consumers. Could data-mining replace the artistic vision of a creative director? Was this the right approach to fashion development for all three of Gap’s brands? Selling Gap’s products on Amazon could open up a whole new data stream to Peck and his managers, providing insight into the shopping habits of existing customers when they weren’t shopping on the company’s own digital platforms or in their stores, and providing access to new customers not currently attracted by the company’s distribution efforts. Should he allow Amazon to sell his brands?

The company was at a crossroads, and Peck saw an opportunity. “We were in an industry that was changing dramatically,” he said. “And looking back on it now, I think we probably all underestimated the magnitude and speed of the changes taking place. . . . [W]e are in a market that is in significant disruption. . . . A time of disruption means that market share becomes more fluid.” He continued, “We’ve been doing business the same way for 40 years, and there are very few 40-year-old business models that are successful forever. . . . Periods of disruption are periods of disproportionate opportunity. More money is made during disruptive times—but is also lost—than is made during times of stability.”⁶⁶

Exhibit 1 Excerpts from Art Peck's Professional Resume

President and CEO, Gap Inc., 2/2015–Present

President Growth, Innovation, and Digital, Gap Inc., 11/2012–2/2015

President North America, Gap Inc., 2/2011–11/2012

Executive Vice President: Strategy, and President Outlet Division, Gap Inc., 10/2008–2/2011

Executive Vice President: Strategy/ Acting President: Outlet, Gap Inc., 2/2008–10/2008

Executive Vice President: Strategy & Operations, Gap Inc., 5/2005–2/2008

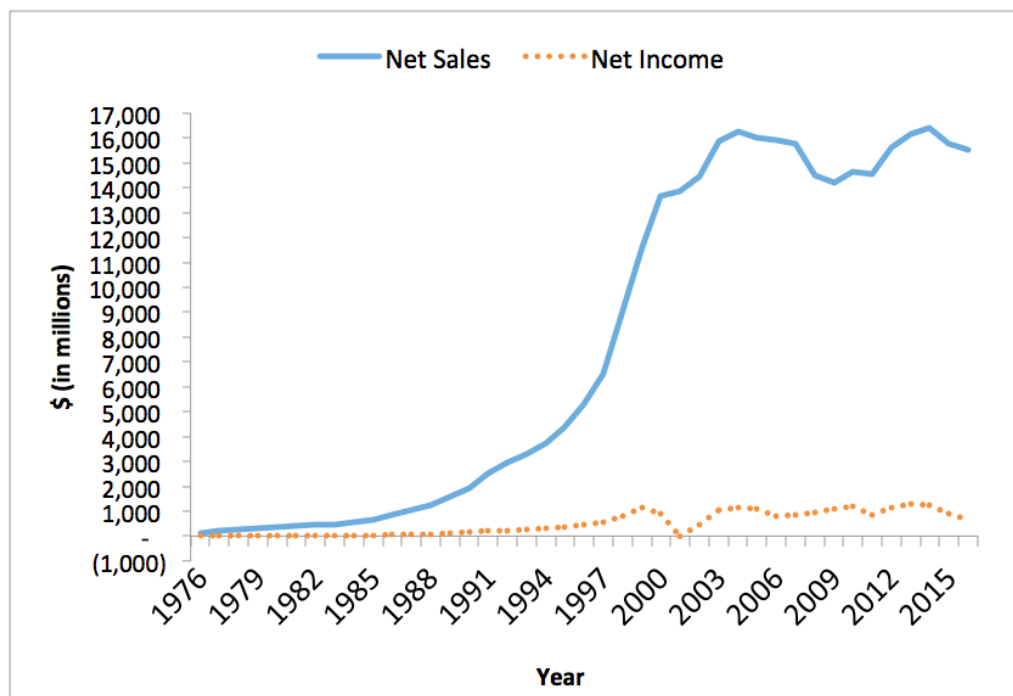
Senior Vice President (Prior: Director, Senior Partner, Consultant), Boston Consulting Group, 1982–2005

Finance and Marketing, Avery Dennison, 1979–1982

MBA, Harvard Business School, 1979

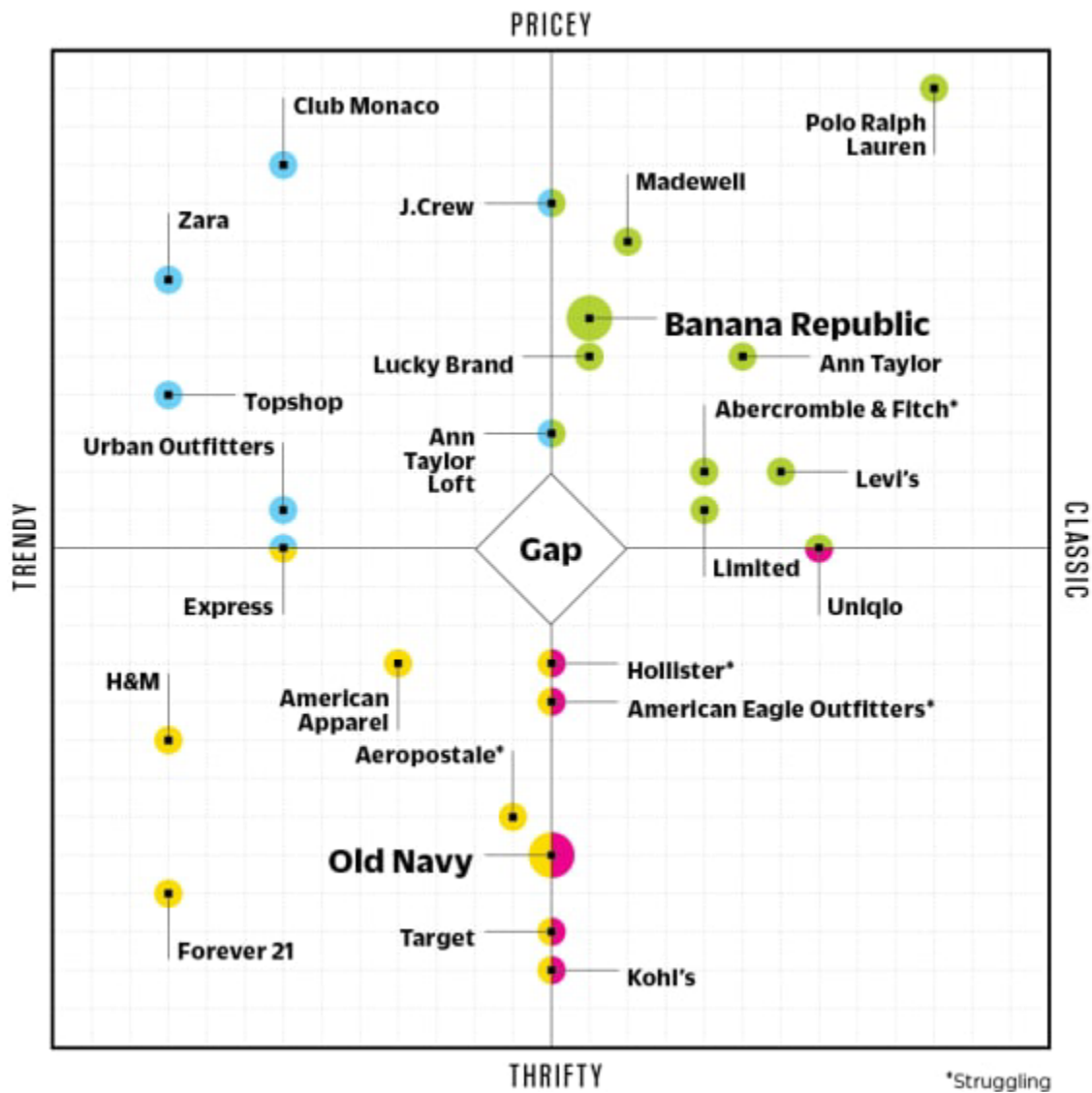
BA, Occidental College, 1977

Source: Casewriters, data pulled from Gap Inc. (2017), "Our Leadership," <http://www.gapinc.com/content/gapinc/html/aboutus/gapincexecutives/gapincexecutives.html>, Bloomberg, Gap, Inc., <https://www.bloomberg.com/research/stocks/people/person.asp?personId=25090258&privcapId=274265>, accessed 05/06/2017.

Exhibit 2 Gap Inc.'s Sales and Net Income (\$ in millions)

Source: Casewriters, data pulled from Gap Inc.'s Annual Reports.

Exhibit 3 Gap Inc.'s Competitive Landscape

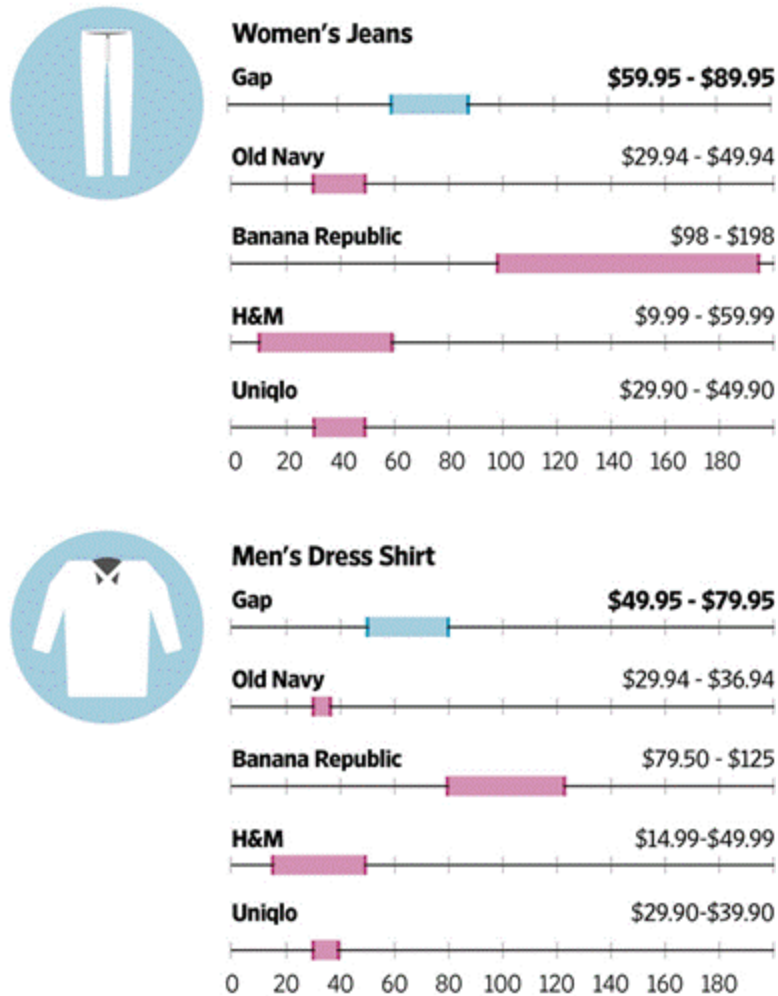


Source: Sacks, Danielle (2015), "GapQuest," *Fast Company*, April 2015, p. 94.

Exhibit 4 The Gap Brand's Mid-Market Position

An Awkward Fit

Gap isn't able to command a premium for basics, and it lacks the low-cost advantage of other brands — including sister chain Old Navy



Source: Company websites

THE WALL STREET JOURNAL.

Source: Safdar, Khadeeja (2016), "As Gap Struggles, Its Analytical CEO Prizes Data over Design," *Wall Street Journal*, November 27, 2016, <https://www.wsj.com/articles/as-gap-struggles-its-analytical-ceo-prizes-data-over-design-1480282911>, accessed 03/27/2017.

Exhibit 5 Gap Inc.'s Brand Descriptions

Banana Republic. Acquired with two stores in 1983 as a travel and adventure outfitter, Banana Republic is now a global apparel and accessories brand focused on delivering versatile, contemporary classics, designed for today with style that endures. Banana Republic offers clothing and accessories with detailed craftsmanship and luxurious materials. Customers can purchase Banana Republic products globally in our specialty and Banana Republic Factory stores, online, and in franchise stores.

Banana Republic competed in the high-end specialty segment.

Gap. Gap is one of the world's most iconic apparel and accessories brands anchored in optimistic, casual, American style. Founded in San Francisco in 1969, the brand's collections continue to build the foundation of modern wardrobes - all things denim, tees, button-downs, and khakis, along with must-have trends. Gap is designed to build the foundation of modern wardrobes through every stage of life with apparel and accessories for adult men and women under the Gap name, in addition to GapKids, babyGap, GapMaternity, GapBody, and GapFit collections. Beginning in 1987 with the opening of the first store outside North America in London, Gap continues to connect with customers around the world through specialty stores, online, and franchise stores. In addition, we bring the brand to value-conscious customers, with exclusively designed collections for Gap Outlet and Gap Factory stores and websites.

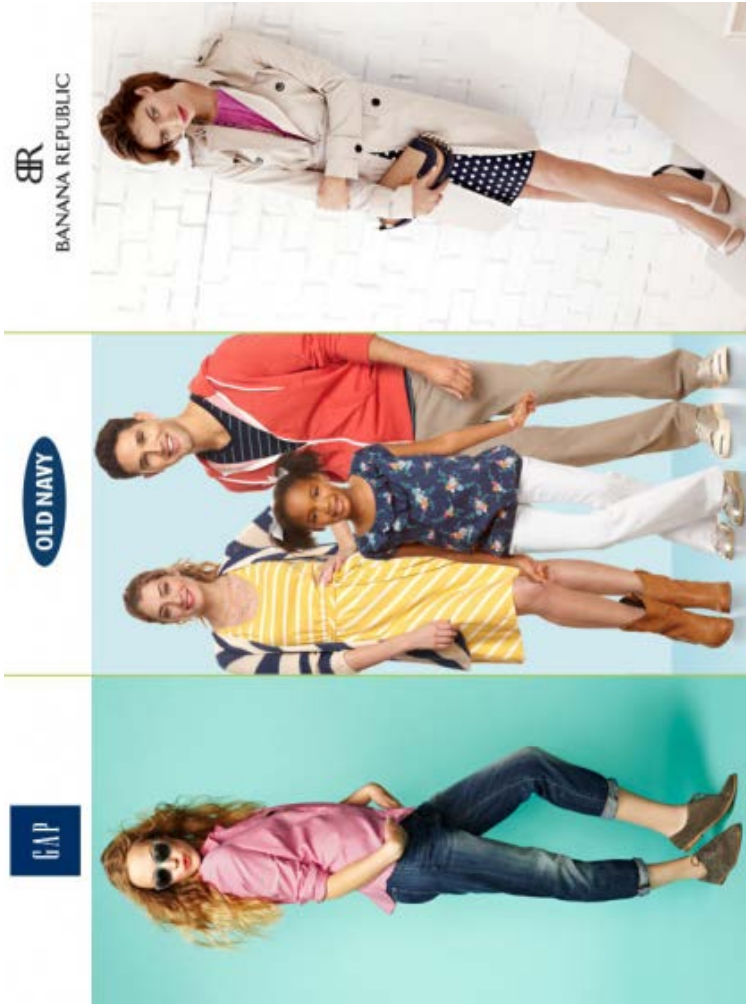
Gap competed in the mass-specialty segment.

Old Navy. Old Navy is a global apparel and accessories brand that believes in the democracy of style, making high quality, must-have fashion essentials for the whole family, while delivering incredible value, and fun, unique store experiences. Old Navy opened its first store in 1994 in the United States and since has expanded its international presence with Company-operated stores in Canada, China, and Mexico, as well as franchise stores in seven countries. Customers can purchase Old Navy products globally in Company-operated and franchise stores and online.

Old Navy competed in the fast-fashion, discount segment.

Source: Casewriters and Gap Inc. 2016 10-K, <http://investors.gapinc.com/phoenix.zhtml?c=111302&p=irol-SECText&TEXT=aHR0cDovL2FwaS50ZW5rd2l6YXJkLmNvbS9maWxpbmcueG1sP2lwYWdlPTExNDc5MTE0JkRTRVE9MCZTRVE9MCZTUURFU0M9U0VDVEIPTI9FTIRJkUmc3Vic2lkPTU3>, accessed 04/06/2017.

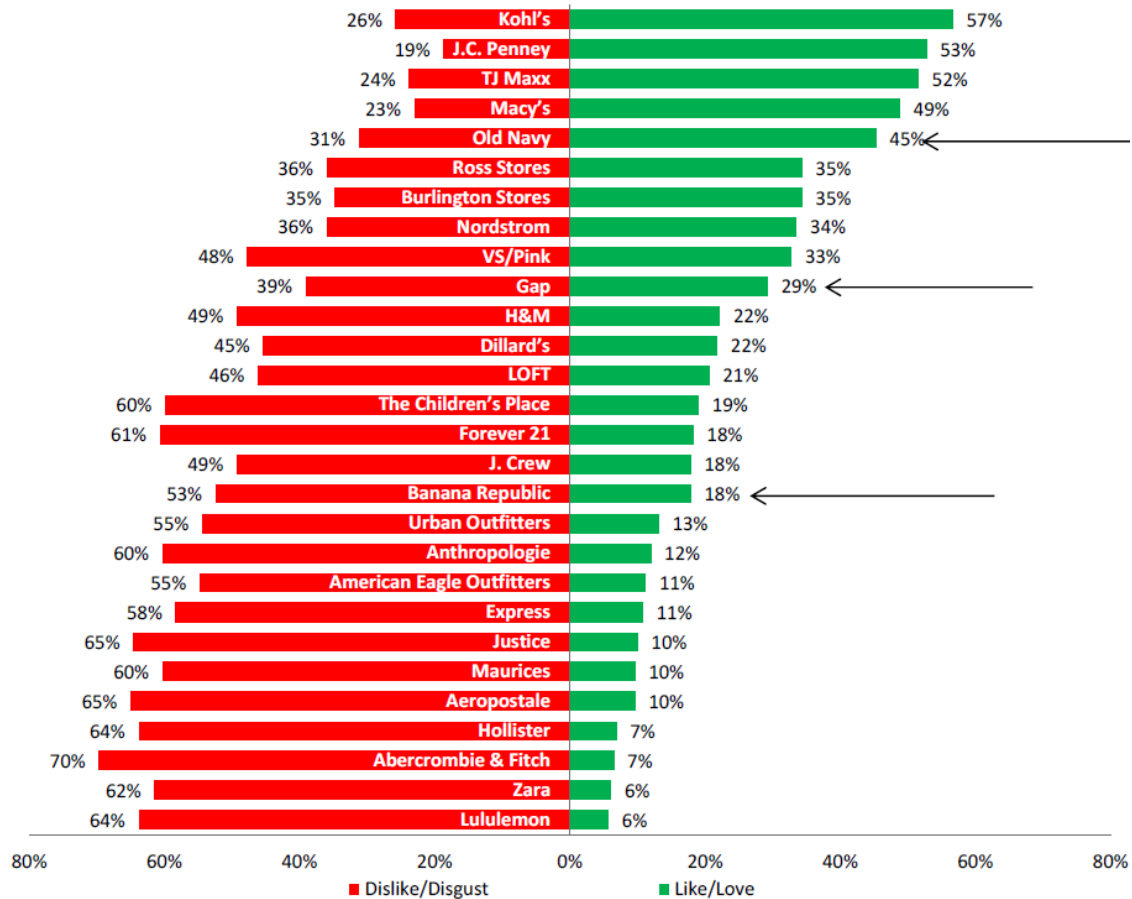
Exhibit 6 Gap Inc.'s Brand Representative Designs



Source: Fabulessly Frugal (January 2012), https://fabulesslyfrugal.com/30-off-old-navy-gap-20-off-piperlime/#.WpV_JxPwZTY, accessed 02/27/2018.

Exhibit 7 Brand Consideration among Non-Millennial Consumers

Old Navy had among the highest brand consideration (+45%), while Gap was above average at (+29%), and Banana the lowest (18%).



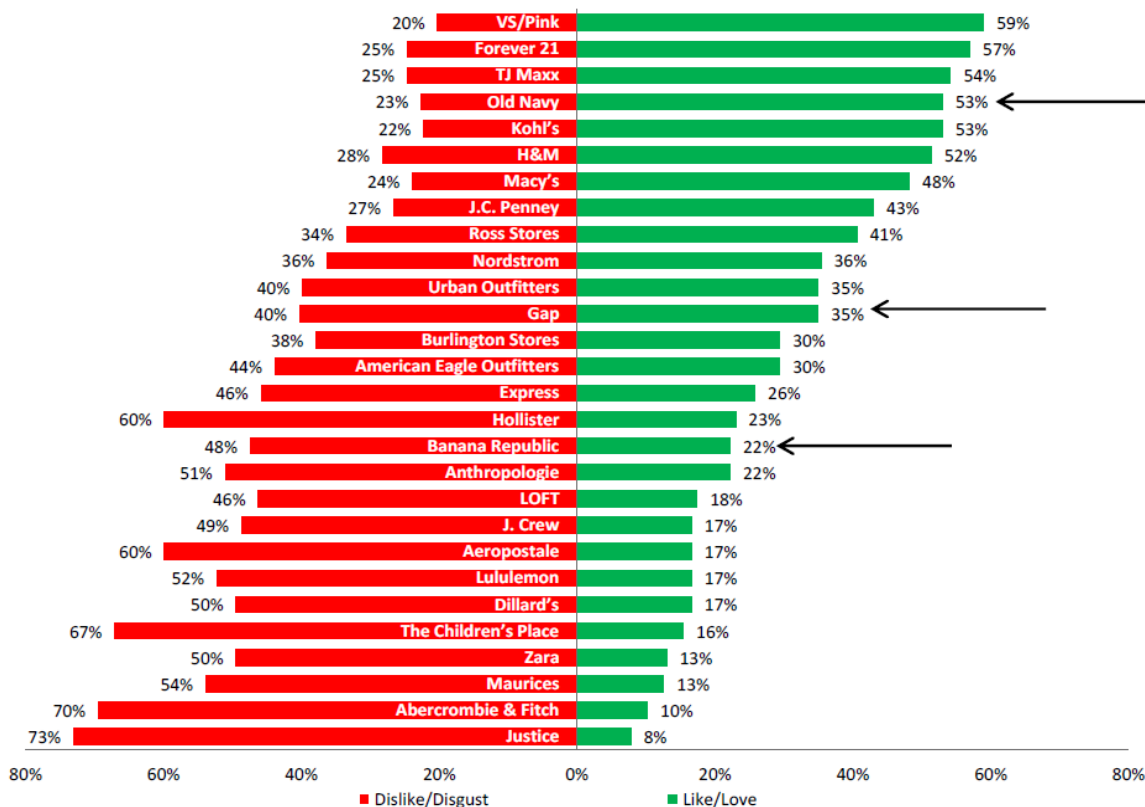
Source: SurveyMonkey, RBC Capital Markets; N=255

Source: Tunick, Brian, and Kate Fitzsimons (2016), "The Gap, Inc.: Survey Says? Takes from our GPS Consumer Survey," *RBC Capital Markets Equity Research*, September 13, 2016, p. 5.

Note: Non-Millennials were consumers (99% women) ages 35+. Responses were to the following question: "How willing are you to shop at each of the following retailers in the next six months?"

Exhibit 8 Brand Consideration among Millennial Consumers

Old Navy had among the highest brand consideration (+53%), while Gap was above average at (+35% vs. group average at 31%), and Banana the lowest (22%).



Source: SurveyMonkey, RBC Capital Markets; N=250

Source: Tunick, Brian, and Kate Fitzsimons (2016), "The Gap, Inc.: Survey Says? Takes from our GPS Consumer Survey," *RBC Capital Markets Equity Research*, September 13, 2016, p. 5.

Note: Millennials were consumers (99% women) ages 14–34. Responses were to the following question: "How willing are you to shop at each of the following retailers in the next six months?"

Exhibit 9 Gap Inc.'s Financial Performance (\$ in millions)

Fiscal Year (number of weeks) ¹	2012 (53)	2013 (52)	2014 (52)	2015 (52)	2016 (52)
Net Sales	\$15,651	\$16,148	\$16,435	\$15,797	\$15,516
Cost of Goods ² Sold	9,480	9,855	10,146	10,077	9,876
Gross Profit	6,171	6,293	6,289	5,720	5,640
Marketing Expenses	653	637	639	578	601
Operating Expenses	4,229	4,144	4,206	4,196	4,449
Operating Income	1,942	2,149	2,083	1,524	1,191
Net Income	1,135	1,280	1,262	920	676
Gross margin (% of sales)	39.4%	39.0%	38.3%	36.2%	36.3%
Operating expenses (% of sales)	27.0%	25.7%	25.6%	26.6%	28.7%
Operating income (% of sales)	12.4%	13.3%	12.7%	9.6%	7.7%
Number of total store locations	3,407	3,539	3,709	3,721	3,659
Square Footage (in millions)	36.9	37.2	38.1	37.9	36.7
Sales per Average Square Foot	364	365	361	337	334

Source: Casewriters, Gap Inc. 2016 10-K, <http://investors.gapinc.com/phoenix.zhtml?c=111302&p=irol-SECText&TEXT=aHR0cDovL2FwaS50ZW5rd2l6YXJkLmNvbS9maWxpbmcueG1sP2lwYWdlPTExNDc5MTE0JkRTRVE9MCZTRVE9MCZTUURFU0M9U0VDVEIPT9FTIRJUkUmc3Vic2lkPTU3>, accessed 04/06/2017.

¹ Gap's Fiscal Year is a 52- or 53-week period ending on the Saturday closest to January 31. Fiscal 2012 consisted of 53 weeks.

² Cost of Goods includes occupancy expenses.

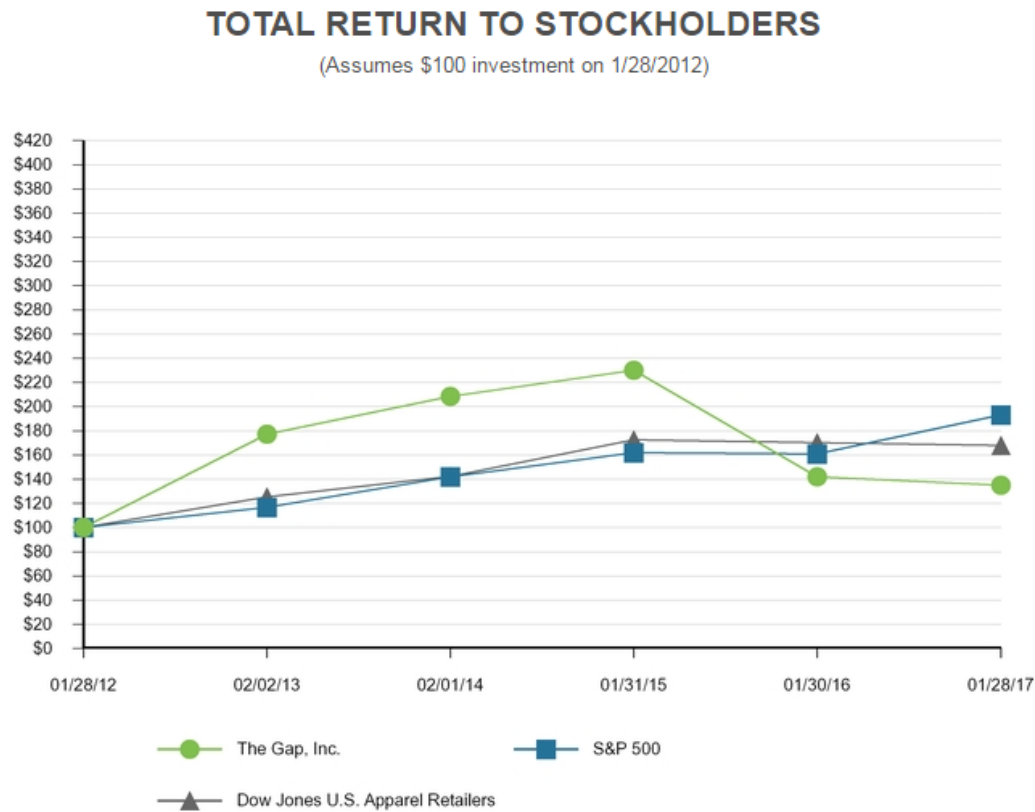
Exhibit 10 Gap Inc.'s Segmented Net Sales (\$ in millions)

Fiscal 2016	Gap Global	Old Navy Global	Banana Republic Global	Other ²	Total	Percentages of Net Sales
US ¹	\$3,113	\$6,051	\$2,052	\$773	\$11,989	77%
Canada	368	490	223	3	1,084	7
Europe	630	--	59	--	689	5
Asia	1,215	220	109	--	1,544	10
Other Regions	129	53	28	--	210	1
Total	5,455	6,814	2,471	776	15,516	100%
Fiscal 2015						
US	\$3,303	\$5,987	\$2,211	\$712	\$12,213	77%
Canada	348	467	229	3	1,047	7
Europe	726	--	71	--	797	5
Asia	1,215	194	112	--	1,521	10
Other Regions	159	27	33	--	219	1
Total	5,751	6,675	2,656	715	15,797	100%
Fiscal 2014						
US	\$3,575	\$5,567	\$2,405	\$725	\$12,672	77%
Canada	384	500	249	4	1,137	7
Europe	824	--	93	--	917	6
Asia	1,208	149	145	--	1,502	9
Other Regions	174	3	30	--	207	1
Total	6,165	6,619	2,922	729	16,435	100%

Source: Casewriters, Gap Inc. 2016 10-K, <http://investors.gapinc.com/phoenix.zhtml?c=111302&p=irol-SECText&TEXT=aHR0cDovL2FwaS50ZW5rd2l6YXJkLmNvbS9maWxpbnmcueG1sP2lwYWdlPTExNDc5MTE0JkRTRVE9MCZTRVE9MCZTUURFU0M9U0VDVEIPT9FTIRJkUmc3Vic2lkPTU3>, accessed 04/06/2017.

¹ US includes the United States, Puerto Rico, and Guam.

² Other includes Athleta and Intermix throughout the entire period, Pipeline through the first quarter of 2015, and Weddington Way starting the fourth quarter of 2016.

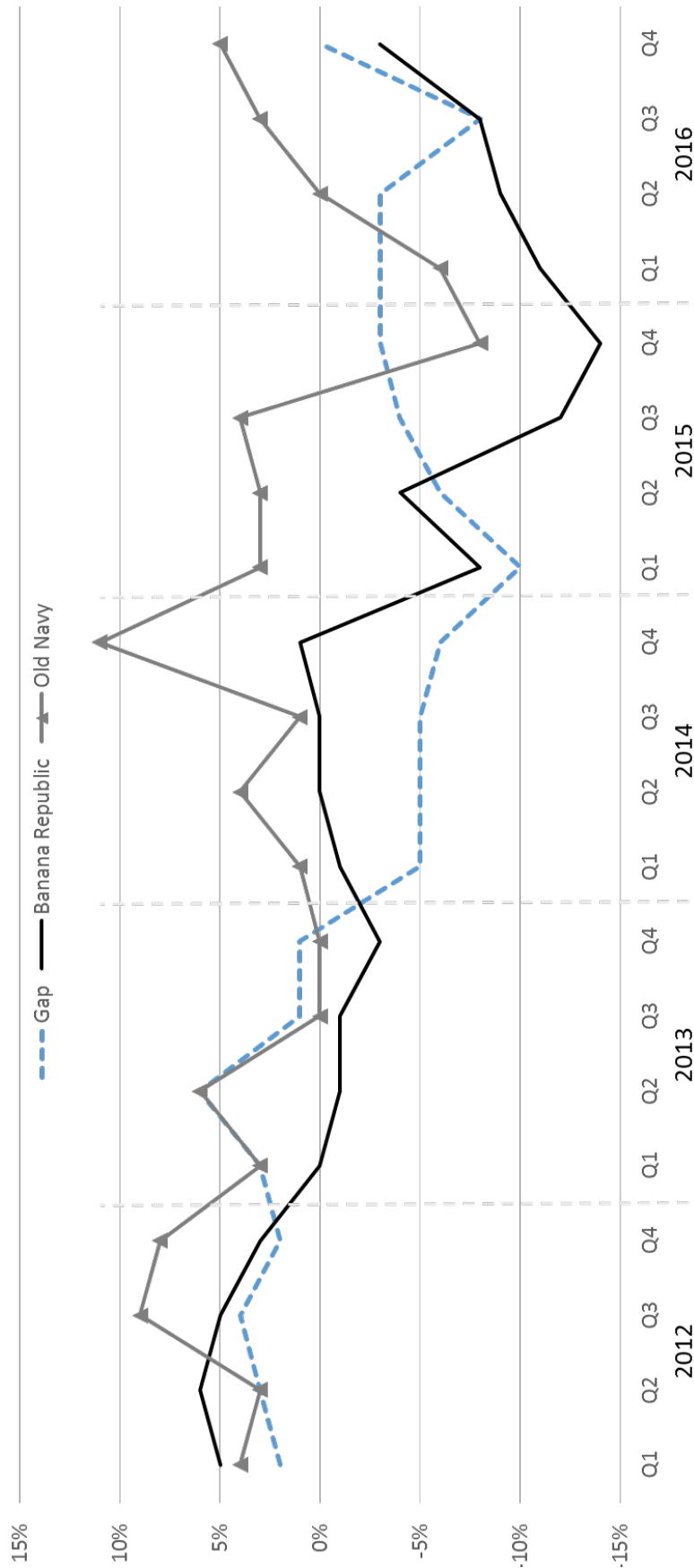
Exhibit 11 Gap Inc.'s Total Return to Stockholders, 2012–2017

Source: Gap Inc. 2016 10-K, <http://investors.gapinc.com/phoenix.zhtml?c=111302&p=irol-SECText&TEXT=aHR0cDovL2FwaS50ZW5rd2l6YXJkLmNvbS9maWxpbmcueG1sP2lwYWdlPTExNDc5MTE0JkRTRVE9MCZTRVE9MCZTUURFU0M9U0VDVEIPTI9FTIRJUKUmc3Vic2lkPTU3>, accessed 04/06/2017.

Note: The graph above compares the percentage changes in Gap Inc.'s cumulative total stockholder return on its common stock for the five-year period ended January 28, 2017, with (i) the S&P 500 Index and (ii) the cumulative total return of the Dow Jones U.S. Retail Apparel Index. The total stockholder return for the common stock assumes quarterly reinvestment of dividends.

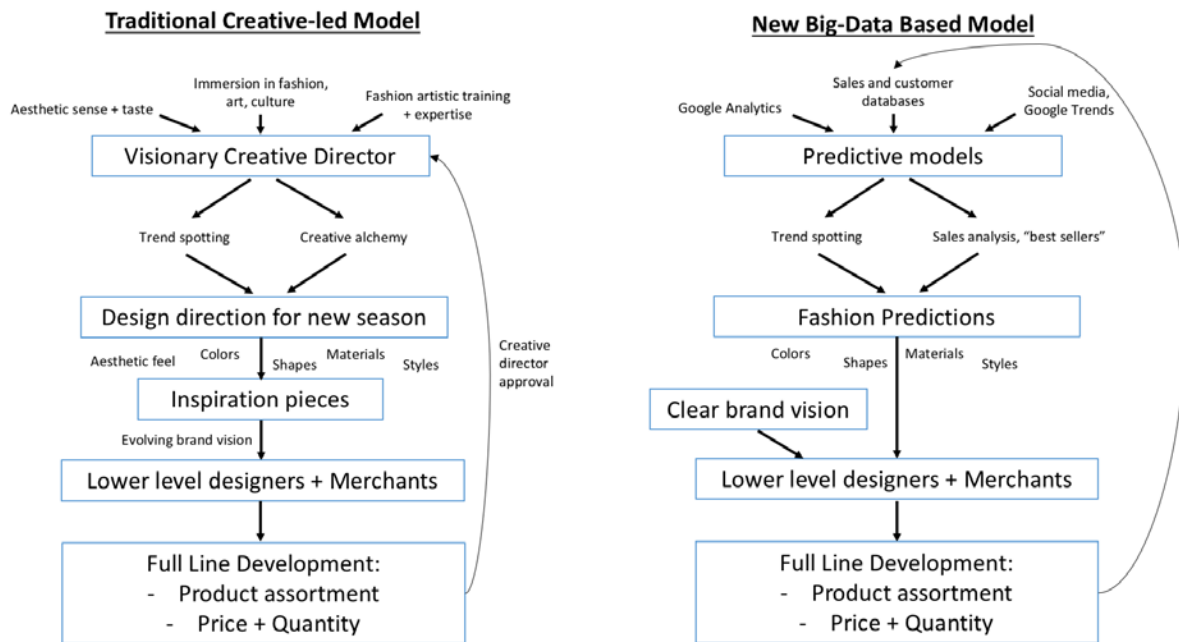
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Exhibit 12 Gap Inc.'s Comparable Store Sales Growth



Source: Casewriters, compiled from information contained in Gap Inc. (2017), "Gap Inc. Quarterly Financial Summary Q4 2016," http://www.gapinc.com/content/attachments/gapinc/GPSEarnings/QFS_External.pdf, accessed 04/06/2017.

Note: Comparable sales include the results of Company-owned stores (but not franchised stores) and sales through online channels where we have existing Comp store sales. A store is included in the Comp sales calculations when it has been opened and operated by Gap Inc. for at least one year and the selling square footage has not changed by 15 percent or more within the past year. Beginning in February 2013, the Comp sales calculations for Gap Inc. include Athleta stores and online sales. Beginning in December 2013, they include Intermix stores and online sales.

Exhibit 13 Gap Brands' Design Process

Source: Casewriters, based on facts presented in the case.

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¹⁷ Sacks, Danielle (2015), "GapQuest."

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