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DARA O'ROURKE
ROBERT STRAND

Patagonia: Driving Sustainable Innovation by Embracing Tensions

Without a healthy planet, there are no shareholders, no customers, no employees.¹

If we wish to lead corporate America by example, we have to be profitable.²

—YVON CHOUINARD, FOUNDER OF PATAGONIA

A team of Patagonia leaders and key employees were gathering in a sun-filled conference room in their Ventura, California, headquarters. The morning surf was particularly good that day, which meant start times for meetings were more of a suggestion than a rule. During this meeting the team planned to discuss numerous real-time issues, one of which was a recent Greenpeace study that found traces of perfluorinated compounds (PFCs) in the waters of high-altitude lakes around the world.

For years, Patagonia had urgently sought to rethink the Durable Water Repellent (DWR) treatments derived from PFCs that they used to make high-performance outerwear waterproof. The Greenpeace study illustrated why the project was a top priority. While existing DWR chemicals offered exceptional performance of Patagonia's products, particularly in extreme conditions, and allowed Patagonia gear to last for years, the by-products of these chemicals were

¹ <https://www.patagonia.com/us/patagonia.go?assetid=2386>.

² Yvon Chouinard, *Let My People Go Surfing*, Penguin Press, 2005, p. 160.

Berkeley-Haas Professors Dara O'Rourke and Robert Strand (also Executive Director for the Berkeley-Haas Center for Responsible Business and Assistant Professor at Copenhagen Business School) prepared this case study with Case Writer Victoria Chang, as the basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation.

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toxic and persisted in the environment, and thus made their continued use unacceptable. While using any PFCs fulfilled one aspect of the company's mission—building the best product—doing so failed to uphold the company's environmental commitments, leading to a major tension between quality and environmental harm.

However, related to DWR, shortened life spans of products were of special concern for the company. A rain shell that stopped preventing saturation functionally degraded into a wind shell long before the garment itself wore out. The garment thus needed to be replaced more frequently, which constituted its own environmental problem—every replacement garment came with its own environmental cost in energy and water used, and waste and greenhouse gases generated—so sacrificing garment life was a serious trade-off for the company.

The DWR that Patagonia as well as other high-quality outdoor outerwear suppliers used as a standard for years was a long-chain (C8) fluorocarbon-based treatment that was highly effective and extraordinarily durable. Unfortunately, as mentioned above, its by-products were toxic and persisted in the environment, a combination that made it unacceptable despite its excellent performance.

Patagonia's temporary solution was to switch from a C8 fluorocarbon-based treatment to a shorter-chain C6 treatment, also fluorocarbon-based, but with by-products that broke down faster in the environment and with less potential toxicity over time to humans, wildlife, and fish.

Patagonia's mission statement is to: "Build the best product, cause no unnecessary harm, use business to inspire and implement solutions to the environmental crisis."³ Over the last five years, Patagonia had refused to agree to calls by NGOs to eliminate PFCs from products on the grounds that this would compromise Patagonia's ability to "build the best product"—resulting in more gear tossed into landfills and requiring replacement. This also contributed to Patagonia's decision not to join ZDHC (Zero Discharge of Hazardous Chemicals), an organization focused on leading the industry towards a reduction in the use of hazardous chemicals by 2020.

As the Patagonia team discussed their ongoing path to address the tensions that arose between the company's desires for performance, durability, and their commitment to cause no unnecessary environmental harm, they wondered how Patagonia could most effectively embrace these tensions to drive innovation to solve the DWR challenge, and to "use business to inspire and implement solutions to the environmental crisis."

Patagonia's Background and Early History

Between 2009 and 2013, Patagonia's revenue doubled to over \$500 million, and by 2015 surpassed \$600 million with over 2,000 employees. However, even with this growth, the company was still much smaller than competitors such as North Face and Columbia who had \$2 billion and \$2.3 billion in sales respectively.⁴ Over the past 30 years, the company has given over \$60 million in cash and in-kind donations to environmental causes and over 1,000 organizations. The company also helped launch two other North American business philanthropies—the

³ <http://www.patagonia.com/us/patagonia.go?assetid=2047>.

⁴ Private Canadian competitor, Arc'teryx was smaller than Patagonia.

Conservation Alliance⁵ and 1% For the Planet (launched in 1985⁶), as well as the European Outdoor Group's Association for Conservation and the Organic Exchange (now Textile Exchange) (**Exhibit 1**).

Patagonia was born out of legendary rock climber, Yvon Chouinard's⁷ inability to find high-quality pitons (pegs or spikes used to drive into a rock or crack to support a climber or a rope) for rock climbers. As word spread about Chouinard's pitons, he sold them out of the back of his car and off of a blanket in Yosemite for \$1.50 each. In 1965, he partnered with fellow climbers Tom and Doreen Frost to create Chouinard Equipment and, by 1970, the company was the largest supplier of climbing hardware in the United States. Initially, the company was simply a way to pay their bills and they took turns minding the company while going on climbing trips.

In 1972, the founders developed aluminum chocks that wouldn't damage the rocks since they were wedged in by hand and not hammered into cracks. They next expanded into colorful clothing to support the hardware business; by 1972, the clothing line expanded to become its own venture named Patagonia (inspired by rugby shirts found overseas made from materials durable enough to be used for climbing).

In 1973, the partnership between Chouinard and the Frosts ended and Patagonia was established as its own company. Lost Arrow Corporation was created in 1984 as a parent company for Chouinard's businesses, including Patagonia. In the 1980s, Chouinard Equipment's legal struggles⁸ led to its sale and Patagonia continued to grow its sales from \$20 million to \$100 million, expanding to Europe and Japan.⁹

In 1985, Patagonia began donating one percent of its total sales to environmental organizations through 1% For the Planet. Chouinard said: "You have to get away from the idea that it's philanthropy. I look at it as a cost of doing business. Every business should say, We're polluters, we're using our nonrenewable resources, and therefore we should tax ourselves. Being part of [1% For the Planet] is also good for business....Think of it as a marketing cost."¹⁰

In the early 1990s, the company expanded too quickly and almost went out of business, laying off one-fifth of its employees. Chouinard considered selling the company but instead chose to re-examine the firm's values and move the company in a more sustainable direction to minimize the environmental impacts of its products.¹¹ During that time, Patagonia commissioned an environmental study that showed that large amounts of water, energy, and chemicals were used to make the materials for Patagonia's products and identified its material supply chains as the "most significant contributors to Patagonia's environmental footprint."¹² Patagonia was also part of President Clinton's Apparel Task Force in the mid-1990s. Patagonia's Director of Sourcing testified before Congress on factory labor conditions. This task force led to the creation of the Fair Labor Association (FLA) of which Patagonia was a founding member.

⁵ Founded by Patagonia in 1989, the purpose was to encourage outdoor businesses to contribute to environmental organizations. By 2012, the organization had grown to include 170 businesses.

⁶ 1% For the Planet consisted of 1,200 members in 48 countries who donated 1% of revenues to environmental organizations worldwide.

⁷ "Chouinard was one of the leading climbers of the 'Golden Age of Yosemite Climbing.'" He participated in the first ascent of the North America Wall in 1964 (with Royal Robbins, Tom Frost, and Chuck Pratt), using no fixed ropes....Chouinard became the most articulate advocate of the importance of style, the basis of modern rock climbing." https://en.wikipedia.org/wiki/Yvon_Chouinard.

⁸ Several climbers sued Chouinard Equipment after accidents, although Chouinard said that those suits were baseless and filed by amateurs.

⁹ Forest Reinhardt, Ramon Casadesus-Masanell, and Hyun Jin Kim, "Patagonia," *HBS Case Study*, October 19, 2010, p. 1.

¹⁰ "Patagonia's Founder on 'Why There's No Such Thing as Sustainability,'" *Fast Company*, July 1, 2009.

¹¹ Sarah Suazo, Justin Baca, and Jennifer Sawayda, "Patagonia: A Sustainable Outlook on Business," University of New Mexico, 2012.

¹² "Our DWR Problem," Patagonia Blog, <http://www.thecleanestline.com/2015/09/our-dwr-problem-updated.html>.

In 2011, Patagonia became a B-Corporation.¹³ Through this, Patagonia further solidified its reputation not only for its innovative designs and quality products in the outdoor and everyday clothing, gear, and food industries, but also for its environmental and social conscience.

The company's four core values are: "1) Quality: Pursuit of ever-greater quality in everything we do; 2) Integrity: Relationships built on integrity and respect; 3) Environmentalism: Serve as a catalyst for personal and corporate action; and 4) Not Bound by Convention: Our success—and much of the fun—lies in developing innovative ways to do things."¹⁴ In his book, *Let My People Go Surfing*, Chouinard outlined the company's environmental philosophy: "Lead an examined life; Clean up our own life; Do our penance; Support civil democracy; and Influence other companies."¹⁵

Tensions Between Supply Chain and Sustainability

Patagonia has lived with the tension between performance and environmental impact almost since its founding, according to Matt Dwyer, Director of Materials Innovation & Development: "When they do cross, very magical things happen. If we find something that provides a ridiculous performance benefit and also has a significantly reduced environmental impact, that's the sweet spot for new disruptive innovations." On the mission statement, Dwyer added: "We are explicitly trying to build the absolute best product in terms of durability, functionality, fit, multi-functionality, as well as the design attributes such as being long-lasting, timeless, durable, and doing exactly what we say it will. This is hands down the number one goal. We continuously look for ways to minimize environmental harm while building the best product."

Doug Freeman, Patagonia's COO, said on Patagonia's supply chain strategy: "We chase quality and build products that are responsible. We make decisions in the supply chain that link up raw materials sources close to the factory that we're manufacturing in. We are very good at defining what it is about that product that will make it best available to consumers. We look for partners that are long-term, sophisticated, have deep resources, and have operations in many countries. We like a consolidated supply chain—to be bigger presences in the factories that we are manufacturing in (although we cap our presence at 25 percent of a factory's business because if we were to leave, we would displace a lot of people). We like to know how the people in the supply chain are being managed. We care deeply about our environmental footprint and we want to build the best product that will be used by people for a very long time—we are against fast fashion and landfills, which lead to our CO2 problem. We are very proud that some of our most popular styles such as our Snap-T fleece and Baggies are styles we introduced 20 to 30 years ago" (**Exhibit 2**).

One of Patagonia's supply chain challenges was managing the tensions between the sourcing people (who were focused on price, delivery times, and volume), the quality people, and the compliance people. "It's a tough conundrum," said Freeman. "You're off balance all the time. We are dealing with a factory in the Philippines who makes our climbing gear, which is important to our business. It's about appealing to the factory to do the right thing. It's about bringing the suppliers into the conversation and telling them how our business together will grow while telling

¹³ Patagonia was the first company to become a B-Corp in December 2011. <https://www.bcorporation.net/community/patagonia-inc>.

¹⁴ Patagonia.

¹⁵ Yvon Chouinard, *Let My People Go Surfing*, 2005, p. 200.

them that we see overtime in the workers which we don't like, and people being hired by employment agencies while we would prefer to see them working full-time. Seasonal workers in our industry, where we make 60 percent of our sales in the fall season (versus other outdoor companies that are at 90 percent), are a reality, but we have to appeal to these factories to do the right thing. It takes a lot of time and it's really frustrating."

How Patagonia developed its supply chain strategy and executed upon the strategy was organic, democratic, and decentralized, according to Freeman who joked that the company was the "Socialist Republic of Patagonia." "As a management team, we try to empower people to make good, collaborative, and very transparent decisions around the values of the company. It's unique and unlike any company I have ever worked at in that we treat quality, best product, the environment, and the social issues that affect the people in the supply chain, on an equal level as the business of the company." This meant that a director representing social and environmental responsibility, a quality person, a sourcing manager, and a sourcing director, each had equal say on which factories Patagonia worked with (or didn't work with). Freeman added: "Most conversations in the apparel industry begin and end around price, minimum quantity, and lead time; ours begin and end around quality, social and environmental responsibility, and best product."

On the strategy of sustainability, Rick Ridgeway, Vice President of Public Engagement said: "Central to the evolution of my own position at Patagonia is the strategy of decentralizing and integrating sustainability within the organization. That's a big deal. It's the natural evolution of any company's commitment to sustainability that's genuine. If a company's really going to embrace sustainability issues, then it has to figure out how to integrate it into the warp and weft of the organization."

In that spirit, the BUDs (Business Unit Directors of each area such as surf, sportswear, alpine & snow, fieldwear, fishing, and military), PLMs (product line managers), and designers were sometimes the ones who championed certain new technologies or materials such as Yulex wetsuits and lower impact DWR alternatives. "That's what we hire our BUDs to do," said Freeman. Jill Dumain, Director of Environmental Strategy added that the top was important too, however: "Yvon always said the revolution has to start at the bottom with the people, but then he saw what happened with Walmart and B-Corp¹⁶ and now we're seeing the top and bottom work together and we're getting squeezed in the middle."¹⁷

Patagonia's decentralized culture, however, sometimes led to a "lack of decision making," according to Freeman. "Sometimes it's too democratic, too transparent, and people are afraid to make decisions. Sometimes there are too many people in the room and things take a long time. In these cases, the VPs and I say that we need to make a decision and not be so timid."

Freeman also acknowledged that Patagonia was "short-handed" and was doing the best that it could to deal with the number of environmental and social issues within its supply chain, one of which was PETA's (People for the Ethical Treatment of Animals) exposure in 2015 of Patagonia's sourcing of wool from farms in the Ovis 21 network (who mistreated lambs): "We will get caught flat-footed or on our tails. We haven't gotten to the auditing of our shipping lines.

¹⁶ Walmart and Patagonia have partnered in many ways since 2010. <http://www.forbes.com/forbes/2010/0524/rebuilding-sustainability-eco-friendly-mr-green-jeans.html>.

¹⁷ Jill Dumain, <https://www.youtube.com/watch?v=vVQ6ghRva38>.

We're not getting into how the publisher is treating people within our catalog production. We only have a handful of people dealing with 190 suppliers. We have a toolbox and we opened it up to the industry,¹⁸ but it's naïve to think we have everything figured out."

Patagonia recently invested in sustainability and EHS¹⁹ management software that would help to measure water, energy, waste, and greenhouse gas emissions from a supply chain and at a corporate level. "We're trying to make supply chain decisions that lessen our dependence on water," said Freeman. "A lot of what our team is focused on is new technologies, water-free dyeing, and textiles, as well as bio-based technologies that impart PFC-free finishes on textiles, particularly on waterproof breathables." Freeman hoped that the software tools that Patagonia implemented would help the company decide what areas to invest in through \$20 Million & Change, its new venture arm. "Up until now, deciding what to focus on in the supply chain has been gut instinct and what we've been reading," he said.

The materials group, headed by Matt Dwyer, had two "umbrellas" to help frame projects and initiatives to focus on—environmental issues such as waste, water, energy, and emissions; and high performance, which consisted of projects that focused on performance attributes or new cutting-edge technologies for athletes. Ridgeway acknowledged: "We, to a fault probably, do spread ourselves pretty wide—but our efforts and initiatives are all guided by our mission (**Exhibit 3**)."

Durable Water Repellents (DWR)

By 2015, one of Patagonia's (and the industry's) pressing environmental, health, and supply chain problems was the use of Durable Water Repellents on outerwear such as jackets. Conventional DWR treatments involved the surface application of a long chain of fluorocarbons (such as C8) onto a fabric that were highly effective and durable, but that produced by-products that were toxic and persistent in the environment (in animals and humans).

C8 was a type of fluorocarbon or PFC that was petroleum-based and used in various other consumer products such as nonstick cookware, paints and coatings, and stain-release treatments for carpet. Patagonia was not aware of any links between increased fluorocarbons such as C8 in the body due to skin contact from its clothing. "But because we are concerned about the persistence of these chemicals in the environment, we have been working to find alternatives to two fluorinated compounds: perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA), which was a by-product of C8."²⁰

Companies traditionally used C8 because of its effectiveness—strong, long-lasting surface compounds that allowed rain or water to bead up and disperse, essentially waterproofing clothing and jackets, while allowing the fabrics to remain breathable. As Tetsuya Ohara, Patagonia's Director of Innovation Research explained: "DWR is so important in outdoor gear because people go to inclement weather like snow or rain and if the gear naturally 'wets out,' it reduces human temperature and energy and that can be dangerous."

¹⁸ Referring to the Sustainability Apparel Coalition.

¹⁹ Environmental Health & Safety.

²⁰ PFOS, PFOA, and Other Fluorochemicals," Patagonia, 2013.

Both PFOS and PFOA have been identified by preliminary government-risk assessments as being consistent with a category of a “likely carcinogen.” PFOS levels have been found in wildlife and higher levels of PFOS in humans could lead to chronic kidney disease.²¹ Likewise, PFOA persists indefinitely in the environment and is a toxicant and carcinogen in animals. PFOA has been detected in the blood of more than 98 percent of the general U.S. population. PFOA has been detected in industrial waste, stain-resistant carpets, carpet-cleaning liquids, house dust, microwave popcorn bags, water, food, some cookware, and Teflon.²²

In 2011, a Greenpeace campaign called “Detox” targeted a group of major apparel and footwear brands and retailers around their use of toxic chemicals. In response, the industry came together to form ZDHC (Zero Discharge of Hazardous Chemicals), an organization focused on leading the industry towards zero discharge of hazardous chemicals by 2020. Members included Nike, Adidas, H&M, Gap, Puma, and others. However, none of the major outdoor companies initially joined this organization as they argued their performance standards for their clothing and outerwear were too strict to move away completely from PFCs.

Legislation, however, soon caught up with the entire industry and took over as the key driver of DWR issues. For example, the European Union has banned PFOS and PFOA. In the U.S., the Environmental Protection Agency (EPA) initiated a voluntary industry phase-out of PFOA and the major global fluorochemical companies (eight of them) have agreed to eliminate PFOAs by 2015.²³ In the U.S., the EPA has banned PFOS since 2000 (except for special uses in aviation, photography, and microelectronics). In 2000, 3M stopped making PFOS and eliminated it from its Scotchgard fabric protector. In 2003, DuPont had class-action lawsuits filed against it for its use of PFOA for Teflon on cookware and was in the process of eliminating PFOA from its products.

Australia has issued two alerts on PFOS, recommending use only in essential cases. In June 2005, Sweden proposed a global ban on PFOS. In 2005, the European Commission (EC) issued a proposal for a Directive to restrict the use of PFOS in carpets, textiles, and other clothing. In 2014, Norway banned PFOA in consumer products.

NGOs also had an active role in DWR awareness. In 2012, Greenpeace Germany published a report, “Chemistry for Any Weather,” that summarized the findings of two independent labs it commissioned to evaluate the chemical content of outdoor weatherproof clothes by manufacturers such as Patagonia, The North Face, Marmot, and others. The labs found PFCs in all 14 samples and high concentrations of PFOA/C8 (for water resistance) in all samples. Kirsten Brodde of Greenpeace said: “There are no safe levels for PFCs; they are intrinsically hazardous and should be eliminated completely by the textile industry. An outdoor industry that draws a picture of itself as being green should stay out of the use of all hazardous chemicals and not try to...slow down the process of elimination.”²⁴ At the time of the Greenpeace study, Patagonia was in the process of eliminating PFOA’s from all of its products by 2015 and converting 40 percent of its DWR products to shorter chain C6 technology (see below for discussion of C6).

In 2015, Greenpeace released another study that found traces of PFCs in the waters of high-altitude lakes around the world, from the Torres del Paine National Park in Patagonia, Chile, to

²¹ https://en.wikipedia.org/wiki/Perfluorooctanesulfonic_acid.

²² https://en.wikipedia.org/wiki/Perfluorooctanoic_acid.

²³ PFOS, PFOA, and Other Fluorochemicals,” Patagonia, 2013.

²⁴ Judith Nemes, “Amid Criticism, Patagonia Works to Rid Outerwear of PFCs,” <http://www.judithnemes.com/blog/?p=569>.

the Lago di Pilato in the Apennine mountain range in Italy. Greenpeace said its study proved how slowly PFCs break down in the environment. “It is ironic to think that companies who depend on nature for their business willingly release dangerous chemicals into the environment,” said Mirjam Kopp of Greenpeace. “They need to set short-term deadlines for completely eliminating the entire group of PFCs in production processes.”²⁵ Greenpeace praised Puma and Adidas for their “ambitious elimination targets” for PFCs from its clothing through ZDHC. However, Greenpeace felt that The North Face, Columbia, Patagonia, Salewa, and Marmot were not moving quickly enough.

Freeman said on NGOs: “Greenpeace is really upset that PFCs are showing up in our bodies and the environment. We agree that this is not okay. I’m appreciative of what PETA and Greenpeace bring because they bring awareness and it sparks ingenuity, but it can be a painful process.” Dwyer said: “DWR is definitely an instance where innovation had to happen in the wrong way, where all of a sudden there was extreme scrutiny on a key component of everyone’s product line. In real life, I prefer that we saw this coming and when the legislation happens, we’re already doing the right thing. That’s our strategy today.”

C8 Alternatives

For years, Patagonia has been researching and testing fluorocarbon-free chemistries (a dozen or more) such as waxes and silicones that also allow water to bead up and disperse versus saturating/wetting out. However, according to the company’s blog, waxes and silicones “are easily contaminated by dirt and oil and rapidly lose their effectiveness, reducing the effective lifetime of a garment. The short life span is of special concern. A rain shell that stops preventing saturation functionally degrades into a wind shell long before the garment itself wears out. The garment must be replaced more frequently, which constitutes its own environmental problem. Every replacement garment comes with its own environmental cost in energy and water used and waste and greenhouse gases generated. So sacrificing garment life is not an option.”²⁶

Many fashion companies were also “actively pursuing non-fluorinated applications,” according to Nike’s John Frazier.²⁷ Dow Chemical provided silicone-based treatments and more limited performance solutions such as wax and oil-based finishes. But again, companies such as Nike did not have the same weather performance requirements as Patagonia or North Face. And these treatments were not “new” innovations, but rather recycled ones from decades ago that had been phased out when PFCs first became popular.

Very large chemical companies such as Dow and DuPont (through its Chemours spin-off), along with specialty chemical companies such as Huntsman, were also researching more effective DWR alternatives. To date, however, their solutions have been chemical-based such as shorter-chain fluorocarbon-based polymers like C6 (also sprayed on), but with by-products that broke down faster in the environment and had “less potential toxicity over time to humans, wildlife, and fish.”²⁸ According to Patagonia, the problem was that outerwear using C6 was not as effective and in torrential rains, for example, wet out more quickly.

²⁵ <http://www.ft.com/intl/cms/s/0/ad0b80e6-55a8-11e5-9846-de406ccb37f2.html>.

²⁶ “Our DWR Problem,” Patagonia Blog, <http://www.thecleanestline.com/2015/09/our-dwr-problem-updated.html>.

²⁷ <https://chemicalwatch.com/11701/clothing-brands-look-for-alternatives-to-long-chain-pfcs>.

²⁸ “Our DWR Problem,” Patagonia Blog, <http://www.thecleanestline.com/2015/09/our-dwr-problem-updated.html>.

Robert Buck at DuPont said that companies like his were focused on shorter chain polymers, but acknowledged that questions about their toxicity remained.²⁹ Ohara said: “For chemical companies, this is their business—they have to sell chemicals so the approach to solve problems is to always use chemicals.”

Over the past four years, Patagonia has transitioned its product line to short chain DWRs, and by spring 2016, 100 percent of its line will be transitioned.³⁰ According to Patagonia: “The majority of our current products that are treated with DWR now use C6 fluorocarbon-based water repellents. These are PFOS-free, but PFOA is still detectable on the treated fabric at around 100 ppb (parts per billion). One ppb is comparable to one second in 32 years. It’s a very small amount.”³¹ Martin Foessel, CEO of Beyond Surface Technologies (see below) said: “The problem that I see is that moving from C8 to C6 is not solving the issue. If you’re really concerned about PFOA and if your intent is to go PFOA-free, then your only choice is to walk away from PFCs entirely.”³²

Since switching over to shorter chain chemistries for its DWR treatments, Patagonia has not heard any negative feedback (it’s Torrentshell jacket, for example was switched over to shorter-chain chemistries in the 2014 line), according to Dwyer: “I actually expected to have heard from customers by now, but we haven’t heard many performance-related complaints yet. Part of it is that we spent seven years working with key suppliers on our fabrics at the mills doing the trials with the chemistry to make sure we were sacrificing the least in terms of performance. We’re actually pretty happy with the quality right now.”

Investing in DWR Science: Beyond Surface Technologies

In 2013, Patagonia launched an investment venture arm, “\$20 Million & Change,” which invested in responsible and disruptive startups (in food, water, energy, and waste). For apparel, this meant investing deep within the supply chain in search of disruptive technologies and sustainable eco-innovations. By 2015, the company had made 10 investments. One example was a project in Chile that made skateboards out of discarded fishing nets. Another was an investment in CO2 Nexus, a company that has developed a sustainable method of processing (cleaning, disinfecting, and coating) textiles and garments using liquid carbon dioxide—using zero water, consuming less energy, and generating very little waste. Another investment in 2015 was \$1.5 million in a Swiss company, Beyond Surface Technologies (BST) that worked to reduce the impact of textile chemicals on the environment through natural raw materials. The BST investment was the second largest investment outside \$20 Million & Change’s investment in its solar fund.³³

Phil Graves, Director of Corporate Development, who ran \$20 Million & Change said: “\$20 Million & Change is very different from the traditional VC model that is focused on exits through IPOs or acquisitions, which we believe is a broken model. When VCs get involved, they typically put a spotlight on a startup’s short-term growth and profitability, which makes it difficult for an entrepreneur to stay true to their environmental or social mission. Instead, we

²⁹ <https://chemicalwatch.com/11701/clothing-brands-look-for-alternatives-to-long-chain-pfcs>.

³⁰ PFOS, PFOA, and Other Fluorochemicals,” Patagonia, 2013.

³¹ PFOS, PFOA, and Other Fluorochemicals,” Patagonia, 2013.

³² Elizabeth Miller, “Patagonia’s \$1 Million Bet on Eco-Friendly Water Repellency,” *SNews*, April 14, 2015.

³³ Patagonia entered into an agreement with Kina’ole Capital Partners to create a \$27 million fund that would purchase more than 1,000 rooftop solar power systems in Hawaii where most homeowners relied on coal and oil for electricity and where electricity was 3x more expensive than it was in the U.S. The project would make affordable clean power available to many more people in Hawaii and would benefit the environment.

invest for the long haul and aren't tied to a target rate of return over a set holding period. For each investment, we do the standard commercial, financial, and legal due diligence, but we also spend a lot of time on environmental and social due diligence by examining a company's entire supply chain. We also have annual summits where we huddle up with our entrepreneurs and share environmental best practices." Although some other companies had corporate venture arms like Patagonia's, Graves said that they tended to focus on a single bottom line: profit. Meanwhile, \$20 Million & Change focused on multiple bottom lines: people, planet, profit, etc. So far, \$20 Million & Change has achieved healthy financial returns, although that wasn't the primary goal of the fund.

BST, a textile firm, was founded in 2008 by former Pfersee GmbH, Huntsman, and Ciba-Geigy scientists and employees, and by 2015 it had 20 employees (of which two were PhDs and four were textile chemists, including the CEO himself). With the help of BST, Patagonia hoped to eradicate fluorocarbons related to waterproofing apparel. BST CEO Mathias Foessel³⁴ said: "We started BST to see, within the textile chemical business, whether we could approach it differently and come up with better ideas instead of always starting with crude oil-based raw materials, and come up with new technologies that are based on renewable raw materials that are also cost-competitive." Ohara said: "A smaller start-up like BST can revolutionize the industry, whereas chemical companies cannot."

By 2015, BST had three different bio-based products, of which some were used by Patagonia, Levi's, Mammut, Adidas, Nike, and Puma. Midori Biosoft was a plant seed oil-based wicking finish used on base layers; Midori Biolink was a natural acid-based finish for denim (that doesn't use conventional formaldehyde); and Midori Evopel was a partially natural-based DWR for waterproof-breathable shell fabrics. Biosoft was used in Adidas' products for cycling or running. Biolink was used in Levi's products and those of many smaller companies. Patagonia was interested in all products, but especially in Evopel (which wasn't a commercial product yet) due to its potential impact on Patagonia's DWR challenge. Also by 2015, the company was cash-positive and was generating a profit.

BST used agricultural and algal products as feedstocks/raw material and did not use GMOs. The weakest of the three products was Evopel because it relied on a mix of crude- and bio-based feedstocks (the other products were 100 percent bio-based while Evopel was around 50 to 60 percent bio-based), and Evopel wasn't as reliable as conventional waterproofing chemicals.

Foessel explained: "We needed durability and water-repellency and based our current formulation on an acrylic backbone (similar to C8) and a different mix of hydrocarbons for the water-repellency. The hydrocarbons are the renewable part of the product and the acrylic is the non-renewable. Chemically, with that kind of approach, we can't compete performance-wise with PFCs. The hydrocarbon group has a lower performance and we don't get the kind of branching of the side chains as in PFCs so it's not as robust in heavy rain and during laundering." Graves added: "In the meantime, we suggested to BST to look at commercial opportunities for Evopel in other applications such as baggies and board shorts, which don't require as rigorous science and that's what BST is looking at now."

Moreover, BST was also looking at other options to make the side chains more robust in terms of waterproofing (with a new undisclosed component) as an interim step to reduce the percentage

³⁴ Foessel was on a team that worked at Ciba, a partner of DuPont, to launch the Teflon brand into textiles.

and amount of PFCs used in a particular garment. Foessel explained: “We have talked to Patagonia that we could use some of our new research that we’re working on for a phased approach to significantly reduce the amount of PFCs used (compared to what is used today), but not impact the current performance at all. Maybe we can halve the volume of PFCs needed [due to mixing with the new undisclosed component] without compromising any performance. The question is whether we can get a DWR, at least from a water repellent perspective, to the level of performance that PFCs offer today. It’s a question mark because we’re not there yet.”

According to Patagonia: “The mission of Beyond Surface Technologies aligns well with ours. They [founders of BST] left careers at big chemical companies and now they’re doing business on the premise that we can make textile treatments based on natural raw materials without sacrificing performance or reducing the lifespan of our products. We see great promise in this new partner’s potential to invent ways to make our garments waterproof using safe, fluorocarbon-free chemicals without compromising performance and durability.”³⁵ Rose Marcario, Patagonia’s CEO, added: “This is the tension we feel every day, making the best technical products for our core sports and working to fulfill our environmental commitments. BST has the potential to help Patagonia and our entire industry get to the next level of chemical safety without compromising performance, and we’re very excited to invest in their success.”³⁶

Both Graves and Ohara felt that BST’s founders had strong backgrounds and “could go against anyone,” said Graves. But any project could potentially fail: “Sure, they could fail on DWR, but they are working on other bio-based solutions, such as wicking, anti-microbial, etc. If they hit a homerun in any of these areas—or any other future development—then it’s a good investment for Patagonia and the planet.” Ohara added: “BST is definitely the front-runner, but no one is sure.” Foessel said on competition: “While every textile chemical supplier is working on the DWR problem, I’m not aware of anyone approaching it like we are.”

The BST investment complemented Patagonia’s own internal efforts, which included hiring three materials innovation engineers who had PhDs. He said that competitors such as North Face, Columbia, and Arc’teryx had smaller materials staff. Graves said: “We have a lot of expertise with product design, functionality, and testing. When we work together with our investment partners like BST, we can take their innovations, test them, and work together to refine them.”

Foessel added: “What’s helpful to us is that the sooner we can put a product candidate on a real garment, the shorter our development times will be. We can go to Patagonia anytime to test on real products. If we didn’t have that opportunity, we might do R&D for another six months and discover that it doesn’t work and we would lose six months for nothing.” Both BST and Patagonia had a dedicated representative that coordinated their joint projects and who had monthly or more calls.

Foessel said that they chose Patagonia to work with because they wanted to have certain freedoms: “We have turned down other investors who wanted to take a larger role, and we declined because we felt it was important to keep the freedom of being able to work and test what we want to, and even fail and come back and restart. That’s part of the fun. We have to be independent in our decision making. We have a high rate of failure, and if there was someone in

³⁵ “Our DWR Problem,” Patagonia Blog, <http://www.thecleanestline.com/2015/09/our-dwr-problem-updated.html>.

³⁶ Martin Vilaboy, “Patagonia Invests in DWR Technology Company,” <http://insideoutdoor.com/patagonia-invests-in-dwr-technology-company/>.

the back room trying to veto ideas, we'd not have gotten here."³⁷ Likewise, Graves said it took a "long time" for the BST team to "get comfortable" with Patagonia because they were protective of whom they wanted to partner with. "They were very transparent about how long it could potentially take (one year+) to find a DWR drop-in solution and that they might never find one," said Graves. "I appreciated BST's honesty. The beauty of \$20 Million & Change is that we don't have to return capital to anyone in the near term. Sometimes the solutions you are looking for take time."

Graves said that much due diligence went into selecting BST as a partner, including research, interviewing industry experts, and internal knowledge, "so we can figure out what's greenwashing and what's not." He added: "We only invest in partners that are 100 percent aligned on mission and values. We also have a sweet spot where the company is not only like-minded, but also small enough that our investment would provide meaningful capital to them." Ohara's innovation and research team had initially found BST, conducted the due diligence, worked with Graves in \$20 Million & Change, and "handed over" the project to Patagonia's Materials Innovation Team.

"Blue Sky" Innovation at Patagonia

Beyond Patagonia's investment in BST, the company also focused on long-term "blue sky" eco-innovation projects. In his role as Patagonia's Director of Innovation Research, Ohara "built a vision of long-term radical eco-innovation for the company's product lines and new business."³⁸ He focused on materials and new construction methods. Ohara said that other outdoor companies might have similar roles as his, but most were "gimmicks and marketing-driven to create stories."

Innovation decisions were driven by macro-environment factors such as water shortages, climate change, exchange rates, and oil prices, which all affected Patagonia's business and innovation. "We analyze the past to understand patterns and we predict the future to determine what areas we should focus on such as clean innovation," said Ohara. However, research and innovation choices also needed to meet Patagonia's design philosophy—"simplicity, functionality, and versatility," as well as the mission of the company.

Ohara said that 90 percent of Patagonia's innovation was "sustaining innovation," meaning incremental/tweaking of existing products based on consumer feedback (Patagonia received feedback constantly through its customer service center and during its bi-annual Global Sales Meeting in Ventura where sales people from all over the world shared their feedback). The remaining 10 percent was the blue sky innovation within Ohara's team. Dwyer said on sustaining innovation: "It's about collaborating with partners who are good at what they do and have process and chemistry knowledge, paired with our expertise on end-use, the athlete, product construction, and our product expectations, that's where the sustaining innovation is going to come from—especially now that we're not using C8 anymore and products are more finicky in terms of textile construction and how it's handled and cared for."

³⁷ Mary Catherine O'Connor, "Waterproof, Breathable, and Toxin-Free," *Outside*, April 21, 2015.

³⁸ <https://www.linkedin.com/pub/tetsuya-o-hara/b/738/331>.

Blue sky projects could also develop from Chouinard's international travels and sometimes "he comes back to Ventura and drops a bomb on us," laughed Ohara. "This can be really unpredictable."³⁹

One example of a blue sky project was an eco-innovation project behind Patagonia's Yulex wetsuit that was made from natural rubber made from Guayule, a native Arizona plant that required no petroleum. Ohara and his team researched plant-based options for wetsuits for four years from 2008 to 2012 and partnered with Yulex, an eco-friendly biomaterial company in 2013. Traditional rubber plants and synthetic rubber production both use environmentally harmful solvents and create significant amounts of non-biodegradable byproducts. Yulex's Guayule-based rubber production created only organic byproducts and used only water solvents. The Yulex wetsuit was made up of 60 percent Yulex, 40 percent synthetic rubber. The sustainable wetsuits performed the same in terms of warmth, flexibility, and durability as their petroleum and limestone-based counterparts. However, the Yulex wetsuit retailed at \$529, which was 36 percent more than Patagonia's standard neoprene wetsuit.

By Fall 2016, Patagonia's entire wetsuit line would be 100 percent Yulex. "This is really rare in the apparel industry that usually develops products in six-month cycles," said Ohara. "But we decided that if we do the same things as other companies, we can't differentiate ourselves, so we decided to focus on long-term research."

Another project was R&D behind Merino Air for base layers where merino wool from the Patagonia region was spun using a proprietary process that increased the yarn's heat-trapping ability without increasing its weight. The Merino Air research took two to three years before Patagonia launched its new product.

Blue Sky DWR Research and Innovation: Biomimicry

Foessel, of BST, argued that the apparel industry was an "old" industry "doing what they have always been doing," but that "I'm excited about longer-term blue sky innovations." He said: "There are endless opportunities in textiles for better and smarter technologies. I'm 100 percent convinced that the textile industry needs to change fundamentally soon. The power to change things fast in the textile industry is with the brands such as Nike and Puma. If they lead, the industry will follow."

On blue sky innovation related to DWR, Ohara's team focused on biomimicry. He explained: "We're working with universities, museums, and institutions to understand how nature—plants, insects, and butterflies—learns about hydrophobicity (how a molecule repels from water). It's fascinating how the surface of animals, over the years, has learned how to repel water. We're trying to learn how to apply hydrophobicity to our products. This is a long-term research project that is a radical new approach." Ohara said that biomimicry could be applied to DWR, as well as how to maintain warmth, and other areas, not only on the chemistry side, but also on the structural side such as how birds fly. "We learned how hollow bones that have a lighter structure can perhaps be applied to surfboards, for example," he said.

³⁹ Even though Chouinard did not occupy any official executive position after he retired as CEO in 1999, he still played a role in the direction of the company and strategy. He stated that the board drove high-level change at Patagonia, not the CEO. Reinhardt, Casadesus-Masanel, and Kim, op. cit., p. 3.

Patagonia's interest in biomimicry was sparked by scientists who visited Patagonia 20 years ago to demonstrate their theories on evolution and how nature learns. "We were fascinated," said Ohara, but Patagonia didn't have resources until the last few years. "It makes sense for Patagonia to learn from nature and it's the right time."

Since simplicity was part of Patagonia's design philosophy, Ohara and his team were trying to change the surface of materials without any chemistry by creating uneven surfaces to see if "we can get hydrophobicity without spray treatments." He said: "Nature doesn't use any sprays. This means we need to get special fibers [or] change the fiber structure to create a new weaving structure to see if we can change performance easily."

On the supply chain, Ohara said: "Using our existing supply chain is really important for Patagonia's innovation process. We look for a simple way to solve a big problem—the key component of innovation research."

On the sustaining innovation in DWR, Ohara said: "We can probably improve performance every season incrementally, 10 to 15 percent better than last season. We look back five years and it's amazing. I don't think we can introduce dramatic results within a 12-month period, but we can continue to improve 10 to 15 percent each year and, over time, we will have an amazing product. For biomimicry, it's unpredictable, but we might find something interesting and try to apply it to our manufacturing process."

Scaling Patagonia's DWR Solutions

In line with other environmentally friendly technologies that Patagonia has developed, new technologies related either to BST or Biomimicry that the company could bring to market would be available for use by other companies and even competitors in the industry. Dwyer said: "We want to use business to inspire and this is about proliferating. Nike does in a month for one style what we do in a year—how do we structure our innovations so that they get picked up and scale? A lot of times, we need to spend more money upfront and do more of the work."

Specifically, Patagonia's Annual Benefit Corporation Report stated: "Patagonia may share proprietary information and best practices with other businesses, including direct competitors, when the board of directors of Patagonia determines that doing so may produce a material positive impact on the environment."⁴⁰ Ridgeway added: "I may have some ability to move the SAC [Sustainable Apparel Coalition—see **Exhibit 3** for more details] as an agent that could scale new innovations. Through that position, there's always potential to get companies to scale innovations and advance goals." However, sharing best practices through SAC, Outdoor Industry Association Sustainability Working Group, and FLA could be slow and challenging. "It's also a challenge to strike the right balance between sharing information about our business in response to the many requests we receive and getting the work done."⁴¹

Graves said on DWR: "Given Greenpeace and others, DWR is a hot button issue that other industry players are going to have to address and adopt new solutions. If BST cracks the code with a bio-based DWR that hits the same apples-to-apples performance milestones, other players

⁴⁰ Patagonia Works Annual Benefit Corporation Report, Fiscal Year 2013, p. 10.

⁴¹ Ibid., p. 13.

are going to have to adopt it, unless it is 10x the price. We want to be first to market, but then open source this innovation to the industry in order to amplify the environmental benefits.”

BST had the freedom to set the prices of its products, but was quite aware of cost issues: “If you had a drop-in solution for PFCs, 10 or 15 years ago, if you were one cent per garment more expensive, brands wouldn’t buy from you. That has changed though. If you can come in with a convincing offer, prove you have a product that has a lower impact on the environment, you can get away with a marginal cost increase and still sell, but there’s still a limit, depending on the brand. If you doubled the cost, you would have a very limited market.” He added: “Our approach is that we want to have the same performance, easy implementation for the supply chain, and it should be cost-neutral or marginally higher cost. If we can do that, it should be a no-brainer. We want to make it as hard as possible for brands not to adopt it.”

Foessel acknowledged that because of the importance of DWR, BST would still consider disrupting the supply chain with a new machine or a new process. “With DWR, we’re not limiting our research on 100 percent straight drop-in solutions. That’s our approach for wicking and other things, but for DWR, it’s a whole different category and we don’t want to constrain ourselves with 100 percent drop-ins because we might overlook other approaches.”

Ohara said on Yulex: “We are very open to share our environmental platforms so that as an industry, we can clean up traditional problems. In the case of Yulex, how we laminate our wetsuits or how we incorporate special jerseys (used to line the interior of wetsuits) are our competitive advantages that we don’t disclose. So the platform we share; the special technologies we don’t.” Dumain discussed her views on scaling Patagonia’s initiatives: “We have a long history of sharing information with our competitors. It goes back to organic cotton in the 1990s. I can remember walking around the trade show asking for conversations at different booths to talk about the benefits of organic cotton and why they should adopt it. Now we are doing the same thing with Yulex, the plant derived wetsuit raw material and our Traceable Down. We are willing to talk to anyone about these projects. It is for two reasons. First, to meet the environmental, social, and animal welfare goals, but we also know that these projects need to scale if they are going to be successful.”⁴²

Dumain continued: “We feel like our role as a for-profit company is coming in and starting the conversation from a business perspective and realizing, forget all the environmental arguments, but we’re in a resource-constrained world and there are already starting to be business ramifications from resources being constrained whether it’s draught or fire....For me, even internally, when people ask, ‘What’s the economic case—this all costs more?’ Well, it costs more today, but is it going to cost more in 5, 10, 15 years? Are you going to have to shift your supply chain because you’re not working with vendors that are efficient with their resources? How does that play into it? How do we create what we need versus what we want in our society?”⁴³

In the case of organic cotton, Patagonia was successful internally by having their entire product line use organic cotton, while the external industry did not embrace the shift for a variety of reasons such as cost and decentralized agriculture (**Exhibit 4**). With Patagonia’s bio-rubber wetsuit, Quicksilver announced that it planned to use Yulex in its high-end line of wetsuits

⁴² SNews, “Q&A: Patagonia’s Jill Dumain on Why Brands Should Share Environmental-Friendly Tech with Rivals,” March 3, 2015.

⁴³ Michelle Camp, “An Interview with Patagonia’s Director of Environmental Strategy,” *SAGE*, October 17, 2013.

(although Quicksilver filed for bankruptcy in 2015), and several other companies were investigating the new technology for flip-flops and wetsuits. Graves said: “It does come down to cost. A lot of companies want to do the right thing but are afraid of a negative hit on next quarter’s earnings. When we switched to organic cotton in 1996, it initially hurt our bottom line but it was a great decision looking back. Other companies might not be willing to take the long view.”

Hub Hubbard, Product Developer of Wetsuits said: “Patagonia knew from the get-go that there was no way to make an impact on our own and it would take the entire surf industry to scale this product into a reasonable price. Once we were confident it was ready for commercialization, we produced a small production run for our retail stores and immediately invited other companies to begin testing the material for themselves. The main barrier has been the price, however. The common reason you’d hear for not adopting Yulex is performance, which is a falsehood, because you can’t tell the difference except for the smell (the Yulex suit smells good).” However, once Patagonia won Wetsuit of The Year and Environmental Product of the Year at the 2015 SIMA (Surf Industry Manufacturing Association) image awards, “Yulex’s phone began ringing off the hook,” said Hubbard. “And now that there is a more cost-effective version of Yulex available, everybody is jumping on board. Kind of disappointing when you can’t see past the bottom line in order to make a change.”

Foessel said on DWR: “The textile industry is desperate for something that actually works. I’m 100 percent certain that if we do come up with something that works, companies like North Face would happily adopt the new technology, unless it’s really cost prohibitive. Other brands will follow and all these brands want to change. It’s a lot easier to adopt a chemical finish than something agricultural like organic cotton.”

On scaling, Graves said: “Our model is to open up BST’s solutions to the industry, including our competitors. We love the model because when the big guys adopt these innovations it scales the environmental benefits and enhances our return on investment. We spent a lot of time talking to the founders to make sure that if we invested, we wouldn’t damage BST’s relationships with its existing customers who are our competitors.” Foessel agreed: “Patagonia’s competitors such as North Face don’t have any problems with Patagonia being an investor in BST in terms of working with us and future adoption of new technologies.”

Patagonia has also worked with major chemical companies—often viewed as poor actors in environmental controversies—throughout its supply chain to drive further scaling of innovations. For example in 2014, Patagonia began collaborating with chemical companies through equitable development agreements so that more conservative companies or those with intellectual property would be more willing to “share with us what’s really behind the curtain in terms of their mid- to long-term innovation strategy,” said Dwyer. “For a brand to reach out to a chemistry supplier is kind of a new thing. Until the brands, which place the order and have dollars on the table, insist that a chemistry gets pulled through their supply chain, it’s not going to happen. The idea of going to a chemical supplier and innovating that part of the supply chain is relatively new.”

Examples of collaboration with chemical companies included Yulex, where Patagonia innovated at the raw material level (even before rubber was turned into neoprene); DWR and C6 to work with chemical companies for “so long with so many people to make sure the trials were run and

the project was done;” and Polygiene for Patagonia’s anti-microbial finish. On the latter case, the company worked with Polygiene to co-brand an odor control technology that was on the fabric surface.⁴⁴

The Future

As the team of leaders prepared to launch their meeting on DWR, they watched several Patagonia employees trot past the conference room with their surfboards in tow. They wondered about Patagonia’s DWR efforts that included the company’s own efforts, its investment in BST, as well as longer-term research on cutting-edge areas like biomimicry.

Specifically, they needed to decide what they should do on the DWR issue. Were their current investments and initiatives the optimal ones for Patagonia and the industry as a whole? Was a transition to C6 the right strategy? Or was it actually limiting disruptive innovations? How could Patagonia move beyond incremental improvements? If any of their research streams became successful, how would the company commercialize these new technologies? And how would the company scale the new technology in an industry that was very focused on cost versus environmental responsibility?

⁴⁴ Polygiene permanent odor control is based on silver chloride made from 100 percent recycled silver sourced from photographic and industrial applications.

Case Discussion Questions

1. How would you describe Patagonia's supply chain and innovation strategy? What are the pros and cons of such a strategy?
2. What are the tensions for Patagonia around DWR and who are the stakeholders associated with each of these tensions?
3. Is Patagonia's search for a drop-in DWR substitute an impediment to disruptive innovation?
4. Is Patagonia's focus on quality, in this case water repellency, constraining its ability to rethink its products? Should Patagonia change its quality/durability standards for different products lines (Super Alpine vs. Board Shorts)?
5. What will really change the textile industry to adopt more sustainable solutions? What influence do brands primarily have over global supply chains? What role do consumers have? How can a relatively small company like Patagonia move massive companies like DuPont/Chemours? How can it move the entire ecosystem away from environmentally damaging practices?
6. In what instances have Patagonia attempted to transform its supply chain and the broader industry but did not succeed? Why do you think the company failed?

Exhibit 1: General Company Timeline

1957: Yvon Chouinard begins making climbing hardware in his parents' backyard in Burbank, California.

1966: Chouinard moves operations to Ventura (to be near Rincon and other SoCal surf breaks) and enters into an eight-year partnership with Tom Frost.

1973: Patagonia is incorporated.

Chouinard and Frost convert an abandoned slaughterhouse in Ventura into offices, warehouse, and a mountain shop.

Some of the first "software" includes Foamback Raingear, Stand-Up Shorts, and the Ultima Thule Pack.

1977: New Product: Pile Jacket.

1979: The "layering concept," which Patagonia made famous, is introduced with polypropylene baselayers, bunting fleece midlayers, and Foamback shells.

1982: New Product: Baggies clothing.

1984: New Ventura headquarters opens with childcare center, café, and sand volleyball court. New Product: H2No Plus and Featherweight shells, Reefwalkers.

1985: Tithing program begins: Patagonia donates 10% of annual profits (later 1% of sales) toward preserving and restoring the natural environment.

New Products: Synchronilla fleece, Capilene baselayers, Shelled Synchronilla Jacket, Synchronilla Snap-T pullover.

1998: New Product: Bomber Jacket.

1989: First environmental essays appear in catalog.

Patagonia, along with Keltie, REI, and The North Face, establishes The Conservation Alliance—outdoor business giving back to the outdoors.

New Products: SST Jacket, Retro Pile, Down Sweater.

1991: Life-cycle analysis commissioned on four fibers: cotton, wool, polyester, and nylon.

New Product: One-Piece Suit.

1992: In-house environmental-assessment program begins.

1993: Recycled soda bottles used to make PCR Synchronilla fleece.

New Products: PCR (Post-Consumer Recycled) Synchronilla Super Alpine gear, Super Pluma gear.

1996: Patagonia stops using conventionally grown cotton, adopting 100% organic cotton for all cotton products.

1998: Patagonia included in *Fortune Magazine's* 100 Best Companies to Work for list for the first time.

New Products: 100% Organic Cotton Jeans, snowboard-specific shells.

1999: *Time* magazine names Yvon Chouinard a Hero for the Planet.

Patagonia becomes first commercial customer in California to buy all of its electricity from renewable wind energy.

New Product: Patagonia and Malden launch Polartec Regulator insulation.

2000: Patagonia teams with bluesign® to begin reducing environmental harm, improve consumer and occupational health & safety, and optimize the efficient use of resources in making our fabrics.

2001: Yvon Chouinard and Craig Matthews of Blue Ribbon Flies co-found 1% for the Planet.

2004: New Product: Edge (snowsport) line.

2005: Common Threads Garment Recycling Program launched.

Yvon Chouinard publishes *Let My People Go Surfing: The Education of a Reluctant Businessman*.

Solar panels installed on Ventura campus to offset a portion of electricity use.

New Products: Ready Mix Jacket receives *Outside* magazine's Gear of the Year Award.

2007: Patagonia Reno Service Center receives a GOLD level LEED certification for environmental responsibility, resource efficiency, occupant comfort, and community sensitivity.

The Footprint Chronicles and Patagonia Books launched.

New Products: Primo Down Jacket, Rubicon Rider Jacket, Down Sweater Hoody.

2008: New Products: Better Sweater garments, Re-Tool Snap-T garments.

2010: *180° South* published.

New Products: M10 Jacket & Pants, Torrentshell Jacket & Pants.

2011: *Don't Buy This Jacket* ad runs on Black Friday in *New York Times*.

New Products: Gore Alpine and Snow shells and pants, Ultralight Down Pullover.

2012: Patagonia becomes California's first B-Corp. Patagonia Provisions launches first product: salmon jerky.

Patagonia Books publishes *The Responsible Company: What We've Learned from Patagonia's First 40 Years*, by Yvon Chouinard & Vincent Stanley.

New Products: Powslayer, River Crampons & Rock Grip Aluminum Bar Wading Boots.

2013: Capilene and Merino Performance Baselayer products relaunched with bluesign®-approved fabrics; merino wool sustainably sourced from the grasslands of Patagonia. Snow collection revamped with new and revised designs, best available fabrics and technology, and women's specific fit.

New environmental campaign: The Responsible Economy.

New Product: Untracked Jacket.

Launched \$20 Million & Change Fund to invest in eco-friendly startups.

Created a new holding company called Patagonia Works, dedicated to using business to solve the environmental crisis (included Patagonia, Inc., Patagonia Media, and Patagonia Provisions)."

Source: Quoted directly from Patagonia's timeline hanging on the company's wall, with a few additions by the case writer.

Exhibit 2: Patagonia and Social Responsibility in the Supply Chain Timeline

“1973 to 1990

We try to work with factories that share our values of quality and integrity. Our belief is that ‘you can’t make good products in a bad factory.’ We work with clean, well-run factories that have skilled, experienced workers and a low turnover rate.

1990

As we grow we recognize the need to test these assumptions and begin to formalize our contractor review process. In 1990 we ask our contract managers and Quality team to begin reviewing the factories they visit, both for product quality and working conditions. We make the decision not to work with any factory we can’t visit.

1991

We unveil a ‘contractor relationship assessment’ at our first supplier conference, to which we invite representatives from every factory we work with. The assessment is a scorecard kept with each factory to rate its performance in different areas. We ask factory managers to do the same. If we give a factory a low mark in one area and the factory scores itself high, the difference becomes the subject of conversation and focus. Our approach is informal, but our demands for high quality largely keep us on the responsible side of social compliance.

Mid-1990s

We begin contracting with third-party auditors to visit and assess potential new factories. Though audits are but a snapshot in time, they do give an idea of a factory’s work conditions and management systems. They’re also a good way to initiate discussions about change.

1996

A human-rights organization reveals that Wal-Mart sells Kathie Lee Gifford clothing made under license by a Honduran sweatshop employing 13- and 14-year-old girls who work 20-hour days for 31 cents an hour. The work originally had been contracted to a reputable U.S. manufacturer. But to meet strong sales demand, that factory subcontracted the work to another business that in turn subcontracted to the Honduran factory.

After a public outcry, Kathie Lee Gifford, to her credit, joined the anti-sweatshop movement. Both Gifford and Patagonia were invited to take part in President Clinton’s ‘No Sweat Initiative.’ As a result of what we learned, we created a more formal process for our company and became founding members of the Fair Labor Association (FLA), an independent multi-stakeholder verification and training organization that audits our factories.

Early 2000s

After these several steps forward, we take a step back when we begin sourcing products in new factories that can produce them at a lower cost. The number of factories we work with balloons, and some of these subcontract work to other factories we know nothing about. We lose track of whom we do business with and what working conditions are like in many of our factories. For a while we drop out of the FLA.

2002

We hire a manager of social responsibility to monitor social compliance throughout our supply chain and begin to work again with the FLA. We educate Patagonia employees about factory workplace issues to help them understand how their own actions can unwittingly cause factory workers to suffer longer workweeks, hurry-up pressure and greater stress.

Late 2000s

We expand our brand collaboration efforts in auditing, special engagements (with local third-party experts to help solve specific problems within a factory), and information sharing. Three of our cut-and-sew suppliers (with a total of eight factories) are now FLA members (and thus are held to the same high membership standards Patagonia must meet). We work more closely with our factories and become more familiar with their supply chain. To strengthen individual relationships and increase transparency within our supply chain, we reduce the number of primary factories we work with by 50 percent.

2007

We launch The Footprint Chronicles®, which traces the social and environmental impact of our products.

We ask Verité, an international nonprofit social auditing, training and capacity-building organization, to train the 75 employees who visit our suppliers' factories to fully understand Patagonia's Workplace Code of Conduct. We conduct internal refresher sessions annually for both new and seasoned employees.

2010

We elevate the Social Responsibility Manager position to a high-level Director of Social and Environmental Responsibility. This integrates social and environmental work at the factory level. We identify all subcontractors and now audit close to 100 percent of our cut-and-sew factories, including subcontractor locations.

Patagonia helps gather the top leaders in the apparel industry, non-governmental organizations, academia and the U.S. Environmental Protection Agency for an inaugural meeting to determine the feasibility of working together to create an index of social and environmental performance. As of 2015, there will be more than 100 members of the Sustainable Apparel Coalition, which represent a third of all clothing and footwear sold on the planet. The Coalition's aim: 'An apparel industry that produces no unnecessary environmental harm and has a positive impact on the people and communities associated with its activities.'

2011

We begin auditing raw-materials suppliers in December. We implement a new, cutting-edge human-trafficking detection tool. We hold our first internal training on human trafficking in the supply chain to all of our product supply chain staff.

We launch our California Transparency in Supply Chains disclosure late in 2011.

We launch our formalized Responsible Purchasing Practices per Fair Labor Association requirements of our Sourcing team.

2012

Our audits of raw-materials suppliers reveal that labor brokers charge migrant workers from Asian countries up to \$7,000 to get a job in Taiwanese fabric mills that supply Patagonia. We identify the audit results as red flags for human trafficking. The practice is considered an acceptable part of doing business by our suppliers, though brokers regularly charge above legal limits. Transportation, work visas and other essentials are included. But paying that kind of money for a factory job is an almost impossible burden for workers already struggling to make a living.

In an effort to understand the social and environmental impacts of our supply chain, we launch a revised and even more transparent Footprint Chronicles website.

2013

Early in the year, we strengthen our Code of Conduct, which outlines responsible practices for our supply chain, to include a living-wage component and implement policies to consider the living-wage rate in our costing formulas. These efforts are part of short-, medium- and long-term strategies to address living wages in our supply chain.

We begin to execute our short, medium and long-term strategy to eradicate human trafficking in Taiwan. We host a one-day brand forum in San Francisco to which we invite some 40 brands to talk about human trafficking in the supply chain.

2014

Partnering with Verité, an NGO dedicated to ensuring people around the world work under safe, fair and legal conditions—we conduct in-depth migrant worker assessments with four of our suppliers in Taiwan.

We set out to develop a new standard, institute changes in our supply chain, repay current workers, and share our recommended standards with other companies that want to eradicate similar practices by their suppliers.

In May we begin selling Fair Trade Certified™ apparel. We start small with ten women's sportswear styles sewn in three factories in India owned by Pratibha Syntex. As of spring 2015, we offer 33 styles—21 made in a Fair Trade Certified sewing facility and 12 made with Fair Trade Certified cotton.

For every Fair Trade Certified item produced for Patagonia, we pay a community-development premium. The money goes into an account controlled by the cooperative of farmers or association of factory workers who decide how best to use it. The funds are designated for social, economic and environmental development projects. For example, cotton farmers may choose to use the money for agricultural improvements, rainwater catchment systems or to build a school or a health clinic. Workers in Fair Trade factories may invest in healthcare for their children, bicycles for easier transit to and from work or a cash bonus that can get them closer to a living wage.

All workers in the factories and farms that make our Fair Trade Certified clothing benefit from the funds, whether they work directly on Patagonia products or not.

2015

We are invited to present our work on human trafficking to the White House Forum on Combating Human Trafficking in Supply Chains, led by Secretary of State John Kerry. We require our suppliers in Taiwan to stop charging labor-broker fees for foreign workers hired after June 1. We also mandate that currently employed workers be repaid fees that exceeded the legal amount.

Our factory partners commit to partnering with us to eliminate human rights issues in our supply chain and we are pleased to see their strong overall commitment to doing right by their workers.

Representatives of Taiwan's Ministry of Labor Workforce Development Agency now provide training to our suppliers on the practice of direct hiring.

And, because this form of human trafficking is not confined to the island of Taiwan, we apply our new migrant worker standard to our entire tier 1 (mill level) supply chain (but have not found the same issues outside Taiwan). We also make the standard publicly available to any company that would like to adopt it."

Source: Quoted directly from <http://www.patagonia.com/us/patagonia.go?assetid=67580>.

Exhibit 3: Select Supply Chain and Innovation Initiatives

Recycled Polyester

In 1993, Patagonia began making recycled polyester from post-consumer recycled (PCR) plastic soda bottles, becoming the first outdoor clothing manufacturer to transform trash into clothing. That year, the company was the first outdoor clothing manufacturer to adopt fleece (fleece was made from polyester) made from plastic soda bottles into its line. According to the company: “Using recycled polyester lessens Patagonia’s dependence on petroleum as a source of raw materials. It also curbed discards, thereby prolonging landfill life and reducing toxic emissions from incinerators. It helps to promote new recycling streams for polyester clothing that is no longer wearable. And it causes less air, water, and soil contamination compared to using non-recycled polyester.”⁴⁵ Recycled polyester was one of the industry adoption and scaling successes of Patagonia: “It’s still not as far as we’d like it, but it’s a lot farther than when we started it,” said Dumain. “And that’s okay, because organic food took a long time too—40 or 50 years.”

By 2015, the company was still in the process of searching for a similar success story with recycled nylon (nylon is more difficult to recycle than polyester due to the difficulty of separating the two molecules it is made of).

Third Party Social Audits

In the mid-1990s, Patagonia began to contract with third-party auditors to visit and assess potential new factories. This process was informal until two former Patagonia employees were invited to take part in President Clinton’s “No Sweat Initiative” in 1996. The company then created a more formal process and became founding members of the Fair Labor Association (FLA), an independent multi-stakeholder verification and training organization that audited factories.⁴⁶

Organic Cotton

In 1996, Patagonia decided to only use organically grown cotton, after introducing its first organic cotton clothing in 1992.⁴⁷ In the late 1980s, Patagonia had learned that employees at a Boston store became sick after breathing the air in the store’s basement. The company learned that the finish on the cotton clothes (formaldehyde) caused the illnesses and such pesticides were used to grow cotton. A life-cycle analysis⁴⁸ of the company’s fibers in 1991 led to the discovery that conventional cotton was more environmentally damaging⁴⁹ than petroleum-based synthetic fibers used to make its fleeces.

On the other hand, organically grown cotton used methods that supported biodiversity and healthy ecosystems, improved the quality of soil, and often used less water. Organic farming was more time consuming, required more knowledge and skill, and cost more, however.⁵⁰

⁴⁵ <http://www.patagonia.com/us/patagonia.go?assetid=2791>.

⁴⁶ <http://www.patagonia.com/us/patagonia.go?assetid=67580>.

⁴⁷ Conventional cotton accounts for 25 percent of the world’s insecticide use. Pesticides used on cotton are among the most hazardous and children are particularly vulnerable to pesticide-related health problems. Other issues are soil erosion and ecosystem damage.

⁴⁸ A method used to assess environmental impacts associated with all the stages of a product’s life from raw material extraction through materials processing, manufacturing, distribution, use, repair and maintenance, and disposal/recycling).

⁴⁹ “In the mid-1990s, the cotton industry used 25 percent of the insecticides and pesticides used in worldwide agriculture. In California, the average acre of conventionally farmed cotton required 300 pounds of synthetic fertilizer and 13 pounds of other chemicals during the course of one growing season,” from Chuck Culp and Justin Purnell, “Making the Ecosystem Part of Your Ecosystem: Patagonia Moves to Organic Cotton,” paper, October 6, 2012.

⁵⁰ <http://www.patagonia.com/us/patagonia.go?assetid=2077>.

Sustainable Apparel Coalition/Higg Index

In 2000, Ridgeway helped to found the Sustainable Apparel Coalition (SAC), along with a group of leading apparel, footwear brands, and other institutions such as Adidas, Duke University, Levi Strauss, Nike, Gap, H&M, Nordstrom, Target, Walmart, and the Environmental Protection Agency (amongst others).

The SAC collaborated to reduce environmental and social impacts of apparel and footwear products sold around the world by: “leading the industry toward a shared vision of sustainability built on an industry-wide index for measuring and evaluating apparel and footwear product sustainability; spotlighting promising technological innovations; and identifying opportunities for improving current social and environmental practices throughout the supply chain by collaborating to establish consistent expectations for brands, retailers, and manufacturers.”⁵¹

The Higg Index was the outcome and allowed SAC members to measure and evaluate the sustainability of their products and identify areas for improvement. Ridgeway said on the Index: “It’s web-based and it allows us to see any of the facilities that we select to partner with to manufacture our products and where they are amongst the entire world. So you get immediate benchmarking to measure the sustainability of the social justice effort in the facility. And you can see where they stack up against everybody else. That’s really helped us out a lot...We can concentrate our capacity on the areas where there’s the most harm or where we’re weakest and we can manage and reduce those impacts and the footprints.”⁵² On a practical basis, however, Freeman at Patagonia said that while the company was conducting life-cycle assessment by using the Higg Index and working with SAC, he called the process, “painfully slow.” Dwyer said that the Higg Index was the most robust index in the industry, although it could be “burdensome.”

Dyeing and Finishing: bluesign®

In the 2000s, Patagonia “went deeper into the chemicals that go into the fabrics and trims used in our clothes.”⁵³ In 2007, the company became the first brand to officially join the network of bluesign® System Partners, a Swiss-based company that developed an environmental protocol for dyeing and finishing processes. Patagonia worked with bluesign® technologies to evaluate and reduce resource consumption in materials supply chains and to assist bluesign® technologies to approve chemicals, processes, materials, and products that are safe for the environment, workers, and end customers.

By 2015, there were over 400 brands, manufacturers, and chemical suppliers who were bluesign® system partners. Textile manufacturers that were bluesign® system partners, “agree at the outset to establish management systems for improving environmental performance in five key areas of the production process: resource productivity, consumer safety, water emissions, air emissions, and occupational health and safety. System partners regularly report their progress in energy, water, and chemical usage and are subject to on-site audits.”⁵⁴ Fabric that passed bluesign’s® criteria was labeled bluesign® to indicate that the methods and materials conserved resources and minimized impacts on people and the environment. “They are essentially a third-party that we outsource this work to and they screen our mills and then we can buy bluesign®-certified fabrics,” said Dumain.

⁵¹ <http://www.skollfoundation.org/apparel-industry-leaders-launch-sustainable-apparel-coalition/>.

⁵² <http://www.planetexperts.com/rick-ridgeway-sustainable-apparel-patagonias-renegade-culture/>.

⁵³ “Our DWR Problem,” Patagonia Blog, <http://www.thecleanestline.com/2015/09/our-dwr-problem-updated.html>.

⁵⁴ <http://www.patagonia.com/us/patagonia.go?assetid=68401>.

Common Threads Garment Recycling Program

Patagonia's clothes are "guaranteed for life," or a "de facto way of caring for the environment," according to Dumain. She said: "Looking into the life cycle of products and making things that last longer is good for the environment. Although some might see it as counter-intuitive—after all, most businesses aim to sell more, not fewer products."⁵⁵ This type of thinking inspired Patagonia's "Common Threads Garment Recycling Program" in 2005 with the goal of making all of Patagonia's clothes recyclable within five years. Since 2005, the company has taken back over 82 tons of clothing for recycling.⁵⁶

In 2011, Patagonia launched the "Common Threads Initiative," an extension of the original program as a partnership with its customers to reduce consumption and its resultant environmental harm. The program started out in recycling, but then eventually evolved into the five R's for consumers: Reduce, Repair, Reuse, Recycle, and Reimagine. The program first asked customers to not buy anything they did not need, but if they did need it, Patagonia's hope was that they bought what lasted a long time and to repair, reuse, or resell what they did not wear anymore, and recycle.

As part of this initiative, in 2011, Patagonia launched its "Don't Buy This Jacket" campaign in the *New York Times* on Black Friday to encourage customers to buy fewer, higher-quality goods. The ad told consumers not to buy one of Patagonia's popular jackets because it took so much water and energy to make the jackets and to not buy things that they did not need. Dumain said: "What we're doing is trying to get people to think of the supply chain behind the product. We can make the biggest impact in the countries that make our products."⁵⁷ The company also sold its product with tags that read, "Don't buy this jacket." Patagonia's revenue actually increased 30 percent from its previous year's Black Friday and Chouinard believed that the rise in sales was from new customers that shifted from other brands.⁵⁸

In return, the company committed to make products that lasted and to help repair (at a nominal price) something that broke or needed repair. In 2014, the company mended 24,710 products, for example. The company also formed a partnership with eBay to launch a new marketplace for customers to buy and sell used Patagonia items. This union was the first time a major retail brand actively encouraged customers to buy and sell used products on eBay.

If a Patagonia product could not be repaired, the customer could return it and the company would recycle it into something new or repurpose what couldn't yet be recycled. Patagonia paid for postage or customers could drop the product off at the closest Patagonia retail store.

Transparency: Footprint Chronicles

In 2007, Patagonia launched its Footprint Chronicles, which allowed customers to track individual products from their sources on the company's website via a map with highlighted factories in the company's supply chain and factory audit results. The Footprint Chronicles traced the environmental and social impacts of products, according to Dumain: "When we started to talk about what challenges us as a company, what our obstacles are, it was uncomfortable. It's not easy to be transparent. But being open with our customers has built trust with them like nothing else can; if you only see the good side of all the issues facing companies today, you're not seeing the whole picture. The initial outside feedback to the site was one of amazement that we would publicly call out our own shortcomings and problems. But people liked when we told them about the 'bad' because then they really allowed us to address our problems head-on."⁵⁹ Dumain added: "This was a way to put out there that we are not perfect."⁶⁰

⁵⁵ Jill Dumain, "It is Time to Reimagine a Sustainable World," Patagonia keynote at Doing Good and Doing Well Conference, 2015.

⁵⁶ <http://www.patagonia.com/us/reuse-recycle>.

⁵⁷ Jill Dumain, "It is Time to Reimagine a Sustainable World," Patagonia keynote at Doing Good and Doing Well Conference, 2015.

⁵⁸ <http://groundswell.org/the-bottom-line-patagonia-north-face-and-the-myth-of-green-consumerism/>.

⁵⁹ Michelle Camp, "An Interview with Patagonia's Director of Environmental Strategy," *SAGE*, October 17, 2013.

⁶⁰ Jill Dumain, <https://www.youtube.com/watch?v=vVQ6ghRva38>.

100 Percent Traceable Down

In 2011, Patagonia embarked on a project to examine every link in its down supply chain to verify sound animal welfare. The company completed its Traceable Down Standard in 2014 to ensure that all Patagonia down could be traced back to birds that were never force-fed or live-plucked. The auditing process included physical inspections of the entire supply chain that were performed by an independent, third-party traceability expert. In 2014, the company's entire down supply chain shifted to 100 percent Traceable Down.

Fair Trade Certified™ Apparel

In 2014, Patagonia began to sell Fair Trade Certified™ apparel, starting with 10 women's sportswear styles sewn in three factories in India. By spring 2015, the company offered 33 styles—21 were made in a Fair Trade Certified™ sewing facility and 12 made with Fair Trade Certified™ cotton. According to the company: "With clothing, Fair Trade means cotton farmers and apparel factory workers can improve their livelihoods, and you get great products grown and sewn with care....For every Fair Trade Certified™ item produced for Patagonia, we pay a community-development premium. The money goes into an account controlled by the cooperative of farmers or association of factory workers who decide how best to use it [social, economic, and environmental development projects]."

Denim Supply Chain

In 2015, Patagonia announced that its new denim collection was aggregating many of the company's supply chain practices discussed above by changing the way denim was made and raising the bar for environmental and human rights practices, "using innovative, environmentally friendlier dye, Fair Trade Certified™ sewing practices, and 100 percent organic cotton grown without pesticides, herbicides, or synthetic fertilizers. According to the company: "Typically, denim production involves the use of dangerous chemicals to grow conventional cotton; dyeing it produces millions of gallons of wastewater; and too often, jeans are sewn in factories where workers may not be treated fairly."⁶¹

Instead, Patagonia's new dyeing and manufacturing process used dyestuffs that bonded more easily to cotton, "minimizing the resource-intensive and environmentally destructive indigo dyeing, rinsing, and garment-washing process used to create traditional denim."⁶² By reducing the environmental impact of the denim supply chain, the company estimated that it would use 84 percent less water, 30 percent less energy, and emit 25 percent less CO₂ than conventional synthetic indigo denim dyeing processes. Beyond dyeing, because its jeans used organic cotton, no chemical or synthetic fertilizers, poisonous pesticides or herbicides would be used, as well as no sandblasting, bleaching, and stonewashing jeans. The company launched with six denim styles, while expanding its Fair Trade clothing styles from 33 in spring 2015 to 192 in the fall of 2015. To reach customers, the company launched its "Because Denim is Filthy Business" campaign across all channels.

⁶¹ <http://www.patagoniaworks.com/press/2015/7/29/patagonia-sets-out-to-change-the-filthy-business-of-denim>.

⁶² <http://www.patagoniaworks.com/press/2015/7/29/patagonia-sets-out-to-change-the-filthy-business-of-denim>.

Exhibit 4: Organic Cotton Case Study

In 1996, the company decided only to use organically grown cotton. At the time, cotton products represented 20 percent of Patagonia's \$100 million in sales. And the company was entering into organic cotton as other early companies such as Gap, Esprit, and Levi's began to discontinue their lines of organic cotton clothing because of weak consumer demand. "This was an important step for us," said Dumain, "but not without its challenges: organic cotton represents only one percent of all the cotton grown in the world and it's more expensive."⁶³

Organic cotton farmers couldn't spray their crops with chemicals for weeds or buy expensive harvesters for cotton defoliation (versus using chemicals that do not clog harvesters). Other challenges related to organic cotton were limited financing, no fertilizers in land preparation, and no fungicide-treated seeds.⁶⁴

At the time, NGOs had also approached Patagonia about switching to organic cotton. Patagonia started working with organic fabric vendors but that posed challenges since they weren't up to Patagonia's quality standards. The company then decided to bring organic cotton into its supply chain through vendors that knew how to work with Patagonia.

Patagonia introduced its first organic cotton sweatshirt in 1992, and then evolved into a few more products like socks and belts. The organic cotton sweatshirt failed for many reasons, but the company's Board voted in 1994 that all of Patagonia's cotton products would be 100 percent organic cotton by 1996. In Spring 1995, the company switched all of its T-shirts to 100 percent organically grown cotton and the first time the company took the choice away from the consumer in terms of organic cotton T-shirts.

Dumain recalled: "From 1994 to Spring 1996, we either had to convert the fabric or drop it, so our first selling season of 100 percent organic cotton, we dropped about one third of our cotton styles from production [due to the switch to organic] because we couldn't make them in the same quality we had prior. As a result, our inventory contracted causing an immediate impact, only because we had fewer products to sell. But we were quickly able to rebuild up to where we were before and within three years, we were making better products than we were before. We've developed stronger relationships deep in our supply chain and found we could impact product development in a whole new and exciting way."⁶⁵

Initially, the company lost 30 percent of its cotton sales over a period of two years due to lower sales (the team decided that the retail price of organic clothing would not exceed a two percent increase over conventional cotton products from the prior season).⁶⁶ Some good vendors "walked away from us too," said Dumain. "We gave ourselves time by lowering margins and increasing price a little to recover. Are other companies willing to do that? I'm not sure."

Dumain continued: "We ended up building up these supply chains and we had a ton of product development. That was an unforeseen good consequence of that move—as a very small cotton user, we suddenly could spin whatever yarn we wanted. We were doing blends of all these different combinations for performance attributes, which we could never do in conventional cotton because we were never able to go to a spinning mill to ask them to spin something. That was amazing to get to know our supply chain that far back and have the ability to dictate what they were doing. Our design team also got really good because we were only given 20 colors for organic cotton for our flannels, not thousands like in conventional cotton."

⁶³ Jill Dumain, "It is Time to Reimagine a Sustainable World," Patagonia keynote at Doing Good and Doing Well Conference, 2015.

⁶⁴ Op. cit., Culp and Purnell.

⁶⁵ Michelle Camp, "An Interview with Patagonia's Director of Environmental Strategy," *SAGE*, October 17, 2013.

⁶⁶ Op. cit., Culp and Purnell.

Chouinard said on the cotton shift: “It was a nightmare, but we did it. Since then, we have not used a single bit of non-organic cotton. My company basically exists to put into practice what all the smart people are saying we have to do to save this planet. We can take all the risk, and we can show corporate America it’s really not a risk at all.”⁶⁷ At the time, the company freely shared its information and best practices with other companies such as Timberland, Marks & Spencer, and Nike to help other companies make the switch to organic cotton. “In the early days, we did everything we could,” said Dumain.

Dumain discussed early efforts to scale organic cotton: “We helped start the Organic Exchange [which became Textile Exchange], we talked to competitors, we shared our sources, I physically sent swatches to competitors, and were completely transparent on where our supply was coming from, what spinners were appropriate for what end-uses of product, etc.” Once the Organic Exchange was developed, Patagonia stepped back a little due to bandwidth issues and competitive issues and allowed the Organic Exchange to do the type of work it had been doing.

Some smaller companies adopted organic cotton, and Nike developed a blended model in 1998 where cotton products featured 3 percent organic cotton. However there wasn’t enough supply to fulfill the company’s demand. “This was an interesting model that Nike did to bring more stability to farmers in that blended model and it didn’t shift their margins,” said Dumain. Levis started an Eco Line in 2006 with 100 percent organic jeans but stopped selling the product in 2008. The company continued to use some organic cotton but was “shooting for greater impact,” according to Michael Kobari, vice president for social and environmental sustainability at Levi’s.⁶⁸

Companies such as Levi’s, H&M, Adidas, and Nike joined nonprofit Better Cotton Initiative, which focused on sustainable agriculture techniques, water use, and economic and labor issues. The organization’s initiatives in cotton farms in India and Pakistan have reduced chemical use and water consumption by a third, resulting in a product called Better Cotton, sometimes blended with organic cotton. Kobari said: “We want to shift the way cotton is grown around the world.”⁶⁹

However, organic cotton did not scale in the industry for many reasons. Eric Neuron, Director of Strategic Product said: “Organic cotton is something we celebrate internally and externally, but the reality is that it’s a shrinking percentage of the overall cotton industry globally and it’s shrinking faster and faster and there’s all sorts of reasons like GMOs and how we define what organic is, which makes it shrink faster. From an eco-innovation standpoint, it’s just changing supply—moving industry which is like moving a mountain—that’s the challenge. There’s not a lot of innovation in it.”

Growth in cotton production was mainly driven by the growth in genetically modified Bt cotton which had higher yields and didn’t require as many pesticides as conventional cotton (Bt produces a protein that paralyzes the larvae of some harmful insects, including the cotton bollworm). Neuron said: “Organic cotton became a shrinking percentage of the whole due to the growth in GMO and it’s a function of production yields with GMO—they can grow more on the same acreage of land. If demand goes up for organic cotton, then perhaps production will go up, but at a premium.” Helena Barbour, Business Unit Director of Sportswear added: “With organic cotton, we haven’t shifted a half a percent as the percentage of cotton production worldwide. We’re still at one percent, where we were 30 percent years ago. It’s kind of disheartening.” Dumain, who also felt disheartened, did mention that organic cotton has grown in an absolute number, however, which was a little more encouraging.

However, Dumain and Patagonia still felt that conventional cotton had numerous issues: “For us as a company, we go back to the toxicity issue and conventional agriculture has a lot. When we first started on organic cotton, GMO cotton was 1 percent too, but now its 99 percent. There are two kinds of GMO

⁶⁷ Michele Chandler, “Yvon Chouinard: Patagonia’s Secret Is In its Supply Chain,” *Stanford Graduate School of Business*, December 13, 2011.

⁶⁸ Alexandra Zissu, “In Eco-Jeans, the Green Becomes Harder to Spot,” *The New York Times*, June 5, 2011.

⁶⁹ *Ibid.*

cotton—one that has insecticide in it called Bt Cotton and one that is Roundup ready.⁷⁰ But Roundup is about to be named a carcinogen. Those things start to add up—the toxicity in our environment that people don't take seriously enough." Dumain said that GMO cotton has "won" because seed companies like Monsanto had the money and resources versus decentralized small cotton farmers who did not. Seed companies often gave away their seeds to get people to use it and they provided a lot of technical support.

The key difference between scaling organic cotton versus DWR-related products was the agricultural base of cotton, said Dumain: "With agricultural products, you have a decentralized supply chain—all these little farmers all around the world who are trying to survive. This is different from recycled polyester where you have large fiber companies who have resources that are centralized across a large production range. These cotton farmers just don't and neither did the wool ranchers in Argentina. For recycled polyester, there's some traction and market penetration, but it has taken a long time and a lot of resources from the synthetic polymer companies and we don't have that in agriculture." Another challenge was the commoditization of the cotton industry, which made it difficult to trace where cotton was coming from.

Graves said that there was a consumer disconnect too: "Part of the challenge is that consumers don't think of buying organic cotton for health reasons—even though they should—because we have focused on the environmental issues around conventional cotton." Others externally and internally said that yields were a factor. Freeman said: "Some say it's crop yields—we can't get organic cotton to be as successful economically than conventional cotton. Given the choice, Ralph Lauren will choose conventional cotton. When you look at H&M, Zara, Uniqlo, they have very inexpensive T-shirts—certainly no one is talking about organic cotton there." But Dumain didn't buy the yield argument: "The one thing that drives me nuts is when companies say that there's not enough organic cotton to satisfy their needs. I think it makes companies nervous to market a portion of the line next to the bad stuff. My experience is that consumers don't really care about that—you have conventional lettuce next to organic lettuce. I think there's a way to build a market in terms of supply if there's the demand."

Dumain also felt that companies didn't know their supply chains well enough to implement organic cotton. "There's also complexities with agriculture and subsidies. A farmer is a farmer more so than a cotton farmer. If they can make more money selling peanuts or tomatoes, they might go that direction if they can. The group in Texas that only farms organic cotton that has stayed consistent for 20 years doesn't have options because they are a dryland farmer and can't shift to more water-hungry crops. The Texas co-op has tried to get more farmers to convert but it's a risky notion when you don't have a guaranteed customer." Dumain felt that if a company was committed to organic cotton, they could work with a specific farmer so that the farmer would have somewhere to sell the cotton.

Patagonia stopped working with other companies to adopt organic cotton approximately a decade ago and left most of that work to the Textile Exchange. "The fact that we're coming on our 20 years of organic cotton, we're reassessing it," said Dumain. "We haven't been in that missionary role for a while. I personally got fatigued after a while because I kept on hitting a wall. My role also changed from materials into the environmental department so it shifted my focus away from organic cotton." In the meantime, Ridgeway said that there were two opportunities related to cotton and farming: "One is scaling organic cotton and getting the rest of the industry to adopt and the other which was regenerative farming."⁷¹

⁷⁰ Roundup Ready crops are genetically modified to be resistant to the herbicide Roundup (so that the Roundup can be sprayed to kill weeds, but not the plants).

⁷¹ Regenerative farming is a sub-sector of organic farming focused on regenerating unhealthy soils (through high percentages of organic matter in soils, minimum tillage, biodiversity, composting, mulching, crop rotation, cover crops, and green manures).