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Sustainable Industry Creation

A Case Study of the Birth of the Organic Cotton Industry and its Implications for Theory

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This paper examines how Patagonia, which *Fortune* magazine called ‘The Coolest Company on the Planet’, pioneered organic cotton and helped to establish a whole new industry. Based on documents and interviews with some of the key players, Part 1 describes this innovation and how it spread. Included in this section are the challenges the innovation faced, both within Patagonia and in the other key companies involved, and how these challenges were met. Part 2 of the paper examines whether organic cotton was a disruptive technology and the extent to which both traditional theories and newer perspectives on innovation and change are capable of explaining the creation of this new industry. The paper concludes with the implications for practice.

- Change management
- Corporate social responsibility
- Crossing the chasm
- Diffusion of Innovation
- Disruptive technology
- New industry creation
- Organic cotton
- Sustainability
- Tipping point

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TWO TERMS IN THE TITLE of this paper deserve definition at the outset. 'Sustainable' refers to environmentally responsible processes and products that meet the needs of the present generation without compromising the ability of future generations to meet their needs. A 'case study' is typically associated with teaching and exploratory research but, as Yin (1984) has pointed out, it can also be used as a research design for theory development and testing via analytical generalisation:

Critics typically state that single cases offer a poor basis for generalizing . . . *This analogy to samples and universes is incorrect when dealing with case studies.* This is because survey research relies on *statistical* generalization, whereas case studies (as with experiments) rely on *analytical* generalization. In analytical generalization, the investigator is striving to generalize a particular set of results to some broader theory (Yin 1984: 39, original emphasis).

In this paper we first describe how the actions of key individuals and key companies led to the formation of the nascent organic cotton industry, and then examine whether this research case study can be analytically generalised to a range of traditional and newer theories that are available to explain this phenomenon. Traditional theories include those of Beer *et al.* (1990) and Kotter (1995) on change management as well as those on the diffusion of innovation by Rogers (1962, 5th edn 2003) and the extension of this work to 'crossing the chasm' by Moore (1991) and to 'tipping point' by Gladwell (2000). The newer perspectives include system-wide design for sustainable development by Pearson (2006) and the work on corporate redesign (2008). Finally, we consider intentional change theory by Boyatzis (2006) and conclude with the implications for practice.

We begin with a brief introduction to the problems of conventional cotton versus the promise of organic cotton, followed by some background information on the organic cotton market and its key players.

Conventional versus organic cotton

The environmental damage from cotton as grown traditionally has been well documented. As summarised in the *Directory for Organic Cotton and Organic Cotton Products* (PAN Germany 2007):

Cotton provides about half of all global fibre requirements . . . It is an important source of income for millions of small farmers and contributes significantly to the national economy of many developing countries . . . Conventional cotton is very prone to insect attacks and large quantities of the most toxic insecticides are used in its production. Cotton accounts for about 25% of the global insecticide market by value and about 10% of the pesticides market. The intensive use of toxic insecticides and other toxic chemicals in cotton has caused serious health and environmental impacts, including farmer and farm worker poisonings, water contamination, and bird and fish kills.

The first serious attempt at organic cotton production began in Turkey in the late 1980s by a European cooperative called the Good Food Foundation (Myers and Stolton 1999: 5). As these authors explain:

Many define organic farming by a simple formula: No synthetic fertilizers + no synthetic pesticides = lower yield × higher price. Such an approach, experience has shown, can still lead to unsustainable farming systems. Organic farming is better defined by a formula such as: The use of locally adapted varieties + the reduction of nutrient losses + the use of locally available organic material and green manuring + a wide rotation + fostering natural balances + mechanical and manual weed control = no need for synthetic inputs (p. 22).

Transforming a cotton crop into a textile fabric involves many stages of processing, often in a number of different countries, with a variety of skills and technologies . . . There are environmental impacts at each stage of the cotton textile lifecycle which vary according to how the fibre is cultivated, the way the fabric is made and how it is used . . . all these factors must be taken into account and plans made to reduce the total environmental impact (p.45).

Given the size of the global cotton industry's US\$300 billion environmental 'footprint' (Gunther 2006), the interest in organic cotton and the growth of this nascent industry has been supported by farmers trying to avoid toxic chemicals, enlightened companies striving to be environmentally responsible and seeking competitive advantage from using organic cotton, and informed consumers calling for greater social and environmental accountability.

Organic cotton market and players

The Organic Exchange (OE), a non-profit organisation whose mission is to spur the adoption and use of organic cotton, estimates that global retail sales of organic cotton products grew 83% in 2007 to US\$1.9 billion, and 63% in 2008 to US\$3.2 billion. Despite these impressive growth estimates, the organic cotton industry is still only about 1% of the conventional cotton industry. According to OE's research, the top five brands and retailers with the largest organic cotton programmes in 2008 were: Wal-Mart (USA), C&A (Belgium and Germany), Nike (USA), H&M (Sweden) and Zara (Spain). The top ten brands and retailers accounted for 67% of all global retail sales (Organic Exchange 2008a, b).

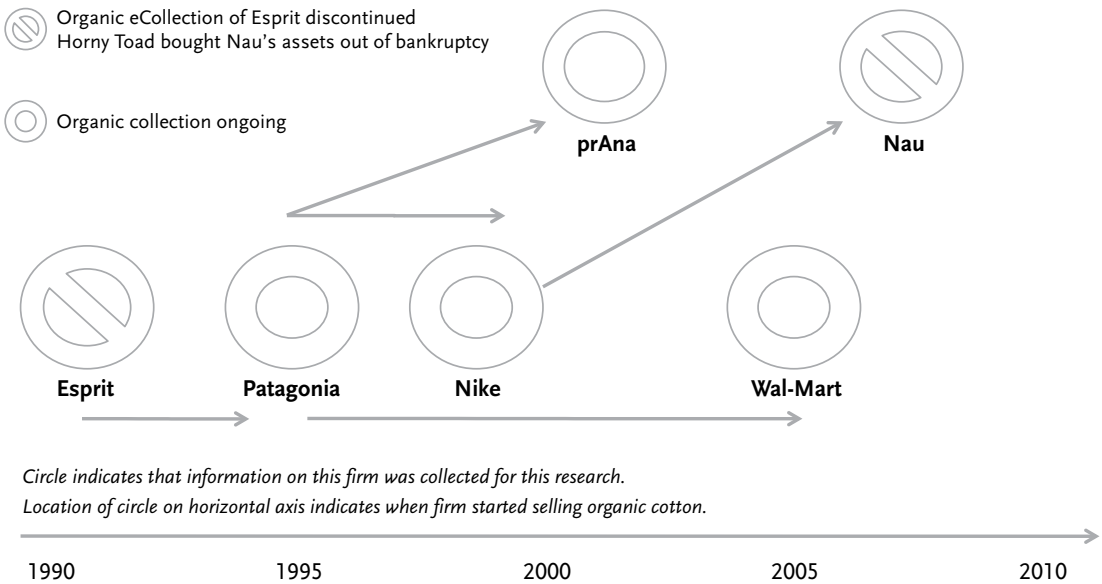
OE's reports for 2008 also indicate that the top five countries producing organic cotton were: India (51%), Syria (19%), Turkey (17%), China (5%) and Tanzania (2%). The top five accounted for 94% of the world's organic cotton production.

Cotton grown organically is more labour-intensive. Instead of mechanical picking after an aerial spray kills all the leaves, organic cotton is picked by hand in some growing areas. In the US, even though organic cotton is mechanically harvested, there is more labour involved with weeding and watching for increasing bug populations. But organic cotton does not require expensive pesticides. That is why the top producers of organic cotton today are the developing countries (those with the right soil and weather conditions) because their labour costs are relatively low and farmers cannot afford to buy or finance the purchase of expensive productivity-boosting pesticides.

The documents and interviews for this research indicate that Patagonia was a pivotal company in the development of the organic cotton industry, particularly in the USA. Coop in Switzerland appears to have similarly influenced the development of this new industry in Europe, but we did not investigate this.

Our coverage of market developments in the USA is not comprehensive, but we were able to learn how Patagonia became interested in organic cotton, how it committed to using organic cotton in its products, and how it influenced others to do the same (see Fig. 1 for a schematic of the influences we were able to trace). We also encountered two companies that made organic cotton products but failed, and their experience offers a valuable contrast.

Figure 1 BIRTH OF THE ORGANIC COTTON INDUSTRY IN THE USA



Part 1: Research case study

In this section, we quote extensively from the documents we collected and the interviews we conducted for this research case study.¹ The reader thus has access to the primary data for this research and can judge whether or not the inferences and conclusions we draw from these data in Part 2 of the paper are persuasive, and can also ask whether better explanations are available for these findings.

Events prior to Patagonia’s switch to organic cotton

Heidi McCloskey, Director of Communications at Organic Exchange, spoke about her experience with organic cotton at Esprit prior to Patagonia’s switch to organic cotton:

I joined Esprit in 1992. eCollection had just been launched and it was an amazing concept—organic only, minimal processing, focused on social and environmental innovation. It was the first stylish collection of knits and wovens with organic cotton. In those early days for organic cotton, there was us and then there was Patagonia. Owear had been sold to Vanity Fair but then they closed that line. There was Coop in Switzerland but we did not deal with them.

There was consumer interest in organic cotton, but it was more of a flash trend. It seemed cool, but people got tired of seeing the same colors. We were not able to produce the kind of fashion pieces the market wanted. So people got bored. And that was it. So there was a quick upsurge in the market with farmers planting organic and then, when the trend went away, they had to sell all that organic cotton at conventional cotton prices. And I think there was a *huge* amount of mistrust between the farming communities and business—big or small, everybody was big business and no one could be trusted.

¹ The full case study is available from the first author.

Patagonia's switch to organic cotton

As *Fortune* reported in 'The Coolest Company on the Planet', a cover story on Patagonia and its founder Yvon Chouinard (Casey 2007: 67):

Conventionally grown cotton was especially heinous. Heavily dependent on noxious pesticides, insecticides and defoliants, it's an environmentalist's nightmare crop. 'To know this and not switch to organic cotton would be unconscionable,' Chouinard says. In 1994 he gave his managers 18 months to make the change. Given that organic cotton, rare at the time, cost between 50% and 100% more, and that a fifth of Patagonia's business came from cotton products, this was no small risk. There was pushback from the ranks; suppliers defected. Chouinard delivered his ultimatum: Do it, or we will never use cotton again. The gamble paid off. Patagonia's cotton sales rose 25% and, more important, established an organic cotton industry so that other companies can cross over. Demand grew and prices decreased, leading to even more demand.

The challenges Patagonia faced in switching to organic cotton are documented in a published case study on the company (Reinhardt *et al.* 2003: 25-27):

Organically grown cotton had the same environmental impacts (as conventionally grown cotton) in all stages, except for the cotton growing stage . . . Many of Patagonia's fabric vendors refused to switch to organic cotton, citing lack of supplier alternatives and skepticism about the market potential. Patagonia's staff had to go back to the beginning of the supply chain to identify cotton brokers with access to organic cotton . . . Patagonia's fabric sourcing specialists found that little certified organic cotton was grown either within or outside the United States . . . Farmers wishing to grow organic cotton faced considerable obstacles. Growing organic cotton required more labor and additional skills; for example, a farmer had to monitor plant and soil health more closely.

Yvon Chouinard offered his perspective for our research:

How did we hear about organic cotton? Well, Owear first tried it and it was then acquired by Vanity Fair, which gave it the funds to develop the concept, including organic dyes. It was a radical idea and it sort of looked like macramé. It failed. Then my good friend Doug Tompkins, CEO of Esprit, tried it. They also tried to eliminate chemical dyes. It was a small subset of their line (the eCollection) and it was 'hippie like.'

Back then no one knew the damage caused by conventional cotton. We went to California's Central Valley to see for ourselves. We were shocked to see the guys with shotguns at the water pools shooting to keep the birds from landing on the toxic pools. Nothing was alive out there. High cancer rates for workers—it was terrible. I came back to the company and mandated that 18 months later we would go 100% organic.

We had to change everything. We didn't know how to do it. Basically we had to learn to make clothes again. This was 1993–94. We had to buy futures from farmers, basically guaranteeing their crops. We had to learn how to clean the gins and to spin the yarns (which were not as clean as those for conventional cotton). Quality was not good in the beginning. One group learned to freeze the fibers so the sticky bugs would fall off.

25% of our revenue was cotton so we were taking a big leap. It took a few years to regain the loss of revenue and profit. We had to drop many styles because we could not get the quality we needed with organic cotton.

Jill Dumain, Patagonia's Environmental Analysis Director and Chair of the Board of Organic Exchange, also offered her perspective for our research:

I got together with Heidi McCloskey to learn from her experience with organic cotton at Esprit and we exchanged notes . . . There was quite a discussion in 1994–95 about how to market organic cotton. The organic movement was still really small. We almost called it non-industrial cotton! Patagonia did a survey around then with our customers and we found out that consumer awareness was very low. Some of the comments were along the lines of 'Why *organic* cotton? I don't eat my jeans!'

One of the authors of this paper (Michael Crooke) was CEO of Patagonia from 1999 to 2006, and he described how Patagonia employed ‘shock marketing’ to educate its customers about the environmental impacts of conventional cotton:

Patagonia (before my time) decided to tell the real story about toxic effects on the landscape and the workers in the cotton fields. ‘Shock marketing’ (my term) involved the graphic use of actual photos on the farm. Aerial spraying, denuded landscapes, polluted ponds and rivers, and cancer were all documented. Catalog images and in-store displays were used to ‘shock’ or gain the attention of the consumer because the differences between organic and pesticide cotton are impossible to see at the point of purchase.

The reach of Patagonia’s catalog and the breadth of their international distribution was key. The stores in which the majority of the products were sold were small specialty shops where the employees were regularly taught (in ‘clinics’) by company sales reps. This ‘influencer’ strategy was very important in gaining the trust of the core customer, the grassroots ‘dirtbags’—word of mouth marketing took over after that.

Influence of Patagonia and others on the nascent organic cotton industry

According to the published case study on Patagonia (Reinhardt *et al.* 2003: 27):

To encourage other apparel firms to use organic cotton rather than conventionally grown cotton, Patagonia shared information with other apparel firms on the organic cotton business. According to VP of Production Julie Ringler: ‘We are extremely open with anyone who wants to find out more about organic cotton, offering advice to Marks and Spencer and Nike, for example. It goes with our mission statement. We are not large enough to sustain the business . . . We need more people doing organic, to bring the other companies on board so that there will be more growers’.

Patagonia’s Jill Dumain mentioned the impact of a network conference that she helped to organise:

Patagonia hosted one of the initial Organic Exchange conferences in the early 2000s where we invited suppliers and competitors. The idea was to get the sourcing information out to as many people as possible for environmental reasons. Many companies, such as prAna, first learned how to make organic clothes, and learned of the sources, from this conference.

Nike

Nike was the third largest user of organic cotton in the world in 2008, behind Wal-Mart and C&A. Heidi McCloskey, Director of Communications at Organic Exchange, recalled how she helped to introduce organic cotton while at Nike:

There was *no consumer pull at all*. To sell organic cotton products, I had to get over my idea that people should buy organic for this reason or that reason—because it was good for the planet, because it did provide farmers with a living wage, because it did clean up water and communities et cetera. I had to stop thinking like a zealot and figure out where people were in space and meet them there. If they were thinking about women-owned farms, or social benefits, that’s the aspect I would use to educate them about why organic cotton made sense. If it was about environmental issues and pesticides, I met them there. It’s like there are all these different layers of consumers, with different reasons for doing what they are doing. And you have to meet them where they are.

According to Michael Crooke, former CEO of Patagonia:

When I was at Patagonia in 1999, we were the largest users of organic cotton in the world. And the next year Nike did a half of one per cent organic cotton blend (with 99.5% conventional cotton). Other companies went into organic cotton and did not sustain it. Then, the next big thing as I know it—one person’s view of the world—is that Target started doing organic cotton. And that’s when Wal-Mart took notice. And once they do it big time, that’s when it becomes mainstream.

Wal-Mart

According to Gunther (2006), a Wal-Mart buyer named Coral Rose discovered that the company's working-class and middle-income customers were willing to buy organic cotton products, so long as they were affordable:

A native of southern California, Rose buys organic food, wears organic clothes and uses all-natural cleaning products for her home. 'I've lived an organic lifestyle for about 15 years,' says Rose. Both her parents died of cancer; that will get you thinking about chemicals in the air, water and food . . . In the spring of 2004—before Wal-Mart launched its sustainability initiative—she placed an order for organic cotton yoga outfits for Sam's club . . . The pastel colored yoga tops sold for less than \$10, the loose-fitting pants for less than \$14. They were a big hit—about 190,000 units sold out in 10 weeks. That got (CEO) Lee Scott's attention.

As reported in the published case *Wal-Mart's Sustainability Strategy* (Denend and Plambeck 2007a):

[CEO Lee] Scott initiated a review of Wal-Mart's legal and public relations challenges in 2004. One area that the company wanted to evaluate was its environmental impact. 'They were looking for help defensively from a strategic standpoint—"where are we vulnerable?"' explained Jib Ellison, founder of Blu Skye Sustainability Consulting. However, Ellison had bigger ideas for how Wal-Mart could profitably reduce environmental impacts, which he pitched to Scott in June 2004. The basic proposal was that Wal-Mart could differentiate itself from the competition, maintain a license to grow, and remain consistent to its commitment to serving customers through everyday low prices by pursuing an offensive strategy. 'Sustainability represents the biggest business opportunity of the 21st century,' said Ellison. In addition, he asserted that Wal-Mart and its complex supply chain could become more efficient by making its operations more environmentally friendly. Intrigued by the idea, Scott hired Blu Skye to perform an environmental impact assessment and to consult with Wal-Mart on how it might launch such an initiative. Ellison recalled, 'I said to Lee, "If you really want to take on sustainability with a capital S, it's not just the environment. It's healthcare, it's wages, it's ethical sourcing, it's globalisation. Everything." And he said, "Yes, but let's start with the environment"' (pp. 3-4).

We interviewed Jib Ellison for this research and he described how a key player at Wal-Mart was influenced by a field visit:

Very early on at Wal-Mart, the woman who really took the mantle and drove it was the head of apparel, Claire Watts, and her engagement came when we did the cotton tour. She was on a trip to Europe and we took her to Turkey—to see a conventional cotton farm and an organic cotton farm. She saw and smelt the differences, which are stark and significant, and she left that visit somewhat missionary in her orientation saying, 'This is unacceptable. If we can make a difference, we should'.

The published *Teaching Note for Wal-Mart's Sustainability Strategy* (Denend and Plambeck 2007b) indicates that the company's consumers were not willing to pay more for environmentally friendly products unless they perceived direct personal benefits:

In Wal-Mart's experience, even if customers indicate on surveys that they are willing to pay more for environmentally friendly products, that behavior does not materialise at the check stand. (Some of Wal-Mart's customers, particularly mothers, will pay more for environmentally friendly products when they perceive health benefits, as in the case of the organic cotton baby clothes.) (p. 4)

To continue with what Jib Ellison told us:

I cannot obviously speak for Wal-Mart but there is definitely a mandate to do this. Definitely the new CEO [Mike Duke] is as committed as Lee Scott. As to whether they will take a margin hit is a very difficult question for a company where the core value proposition is everyday low prices. They have certainly demonstrated a willingness to pay more for the raw commodity—the organic cotton they brought to market was more expensive

to purchase than conventional cotton—but what I agree with about their approach is that if they can't figure out a way to innovate to get the scale required to get organic cotton *close* to price parity with conventional cotton, they are only going to sell to a relatively small segment of their customer base, therefore the tipping point won't be reached.

Patagonia's influence on Wal-Mart is mentioned in the *Fortune* cover story (Casey 2007):

In 2006, Wal-Mart became the world's largest purchaser of organic cotton. You would think this would make Chouinard [Patagonia's founder] happy. And it does, to a point. He's ecstatic over Wal-Mart's green initiatives. But when executives from Sam's club came to Ventura last month to meet him, he told them they needed to go further. 'Even organic cotton is bad,' he says. 'It is better to make clothes out of polyester if you can recycle them into more clothes—like we do with aluminum cans' (p. 67) . . . Chouinard has the ear, and respect, of Wal-Mart (p. 70).

Failure with organic cotton: Esprit's eCollection and Nau

Why did some companies fail with organic cotton? Beaver Theodosakis, co-founder of prAna, offered his perspective:

Either the product wasn't right, or the supply [of organic cotton] wasn't there or it did not come down from the top. For prAna it was a heavy-handed initiative from the founders. It wasn't something that some designer thought about. This was important to Pam [co-founder] and I. This business walks in harmony with our lives, and this is what prAna is, period. It wasn't a marketing campaign.

We can push as hard as we want but for organic cotton to be successful it is the *consumers* who have to make the decision to buy. It is our job to educate them and inspire them to buy organic. But the number one thing that consumers look for in our products (yoga clothing) is style. Number two, I would have to say, is fit. Sustainability sneaks in there possibly at number three, but it sometimes gets pushed to number four because of price or color. So it is really about people looking good and feeling good in our product, and the supply chain side of it (sustainability) has been an add on for us and not a headline. There are other companies that use organic as a headline, but they are talking generally to a small audience that is very concerned about that.

Michael Crooke, former CEO of Patagonia, added this:

At the LOHAS (Lifestyles of Health and Sustainability) conferences, we found over the years that 50 per cent of those who attended the prior year had gone out of business! Those were all the companies that had sustainability as the headline in their value proposition, but they didn't have the right color, or the right style or the right fit that their customers were looking for. You got to have the best product and then, oh by the way, if it is eco-groovy, then you have a compelling story.

Heidi McCloskey, Director of Communications at Organic Exchange, explained why she thought Esprit's eCollection failed:

There were only a few vendors for organic cotton in those days and a lot of them are not in business any more. There was very little that was known experientially about growing and processing organic cotton. There were tons of quality issues and there were a lot of things we did wrong. There were a lot of technical glitches that had to be solved and the chemistry wasn't there to support what we wanted to do. We had restrictions on the colors that we could create, the dyes that we could use, and the machinery that was available.

Chris Van Dyke, former CEO of Nau, told us he was shocked to see the environmental damage caused by conventional cotton and explained why the firm he founded with sustainability in mind went bankrupt:

I didn't really understand the impact of traditionally grown cotton until I got on the bus and went to the cotton fields in southern California on a Patagonia tour and saw first-

hand the lunar landscape that exists around industrially grown cotton because of the pesticides and herbicides and the chemicals that are used. I mean it is the most horrific thing you have ever seen. That had a real impact on me personally. It is another thing to read about it.

We founded Nau as an experiment in a different way to create wealth. We imposed on ourselves as individuals and also inserted into our bylaws the requirement that we think about the impact that wealth creation has on the community and on the environment. So the triple bottom line was memorialised in our legal structure.

Nau closed because the institutional investor that had agreed to fund us through several funding rounds (they were already our largest investor at about \$11 million) pulled out of the deal in the 11th hour. They are a very large east coast hedge fund that took significant losses from their sub-prime loan involvement. Even though Nau's performance had significantly exceeded projections, we were unable to secure new financing on a very short timeline in an investment climate that was rapidly going to hell.

Is organic cotton at tipping point?

Jib Ellison, founding partner of Blu Skye Sustainability and a consultant to Wal-Mart, offered his perspective:

Companies need to generate enough pull from the consumer and, as we know, the consumer can be heavily influenced by the seller. So I think it does start with the big brands telling the customer this is a better thing and working with the supply chain in such a way that the price can come down. If somehow you can't get the price to come down, it's not going to tip. I don't know of any R&D or any concerted effort at any company to see if we can bring the cost of organic cotton down to the cost of conventional cotton.

Chris Van Dyke, former CEO of Nau, said it was hard to get a price premium in a tough economic climate but he was encouraged by the growing environmental awareness:

The economy is putting pressure on anything that is even slightly more expensive. So it will be difficult to get people to pay 15% more for organic cotton, at least in the short term. At the same time, people are becoming increasingly aware just how environmentally detrimental traditional industrial cotton farming is.

A report in *The Economist* (2009) echoes the same theme:

As firms grapple with a brutal economic downturn . . . cutting back on CSR (corporate social responsibility), or 'sustainability' as it is sometimes known, would seem to be a quick and relatively painless way to save money . . .

So the preliminary results of the CSR stress-test are encouraging. Many firms really do seem to have found ways of making the world better while making money at the same time . . . Another reason for optimism is that consumer interest in companies' sustainability credentials remains strong in spite of the recession.

These views are consistent with the main finding of a rigorous analysis of data on organic cotton sportswear sales at Patagonia (Casadesus-Masanell *et al.* 2009): these customers were willing to pay a significant premium because of the perceived environmental benefits of organic cotton, even though these products provided no demonstrable personal incremental benefits.

Part 2: Analytical generalisation

In this section of the paper we explore whether traditional theories and newer perspectives on technology, innovation and change are *capable of explaining* the creation of the organic cotton industry as described in the research case study presented in Part 1.

We use the phrase *capable of explaining* because this research does not provide all the data necessary for a comprehensive test of all these theories. However, we can ask whether each theory has the focus and reach to explain the data that we have been able to collect. We can also ask whether the theory being examined is consistent rather than inconsistent with our data. A theory that passes these tests may be accepted tentatively as a plausible explanation of the process of sustainable industry creation, pending further scrutiny in future research.

Disruptive technology

Christensen (1997) distinguishes between two very different types of new technology. **Sustaining** technology is new technology that is needed by existing customers in known markets. **Disruptive** technology is new technology that is not desired by existing customers, because it is currently inferior in terms of the performance dimensions most valued by these customers. However, disruptive technology is attractive to a new set of customers who value the new dimensions of performance that this technology makes possible—typically products that are smaller, cheaper, more reliable or more convenient to use.

Christensen provides compelling evidence that ‘good management’ in several industries disregarded disruptive technology because the firm’s existing customers did not currently value it. This was generally a fatal mistake for the incumbent firm because the disruptive technology pioneered by non-competing firms in new markets eventually improved and invaded the incumbent’s home market, where customers who initially rejected the disruptive technology now found its improved price/performance irresistible. This led Christensen to the important conclusion that the attacker’s advantage enjoyed by a new firm derives from strategy and human psychology, not from technology. An incumbent firm that properly executes the strategy to pursue a disruptive technology, even though it is ignored or even discouraged by existing customers, can gain the attacker’s advantage.

The ‘new dimension of performance’ that the technology of organic cotton provides is that it is environmentally friendly. This was a disruptive technology for Patagonia because their consumers did not initially value it (‘I don’t eat my jeans!’). However, the company launched a ‘shock’ marketing campaign to convince the end-users of the environmental benefits of organic cotton. At Nike, too, there was ‘no customer pull at all’, but the company persevered and prevailed. At Wal-Mart, there was customer interest in organic cotton products if they were affordable (e.g. yoga outfits) and a willingness to pay a higher price if there were direct personal benefits (e.g. perceived health benefits of baby clothes), but it remains to be seen whether the company will be successful with organic cotton more broadly.

The evidence in this research case study indicates that these companies have not fallen into the incumbent’s trap of ignoring a disruptive technology—they have pursued it as Christensen recommends. How they did so is examined next using available theories of change management and diffusion of innovation. What these theories need to explain, specifically, are the four key steps (and the sub-steps) observed in the creation of this new industry.

Four key steps in the creation of the organic cotton industry

- ▶ Step 1. After early attempts by others, founder Yvon Chouinard of Patagonia decided to switch to organic cotton

Step 2. For Patagonia to be able to source and sell organic cotton products, three key sub-steps had to be successfully completed:

- Step 2A. The farmers had to grow organic cotton, and the fibre producers and fabric makers had to produce organic cotton products, in sufficient quantities and at acceptable quality and price levels
- Step 2B. The Patagonia organisation had to source and sell these products
- Step 2C. The end-users—the consumers—had to purchase organic cotton products in sufficient quantities and at high enough prices to allow Patagonia to continue to source and sell these products

► Step 3. For organic cotton to move from niche markets to the main market, key individuals at big companies such as Wal-Mart (CEO Lee Scott, executive Claire Watts, buyer Coral Rose) had to decide to source and sell organic cotton products

Step 4. For big players such as Wal-Mart to be able to source and sell organic cotton products, three key sub-steps had to be successfully completed:

- Step 4A. The farmers had to grow organic cotton, and the fibre producers and fabric makers had to produce organic cotton products, in sufficient quantities and at acceptable quality and price levels demanded by big companies such as Wal-Mart
- Step 4B. The organisation at companies such as Wal-Mart had to source and sell organic products to the main market
- Step 4C. The end-users—the consumers—in the main market had to purchase organic products in sufficient quantities and at high enough prices to allow big companies such as Wal-Mart to continue to source and sell these products

We will now examine whether the theories in question can explain the four key steps (and the sub-steps) as summarised above.

Theories of change management

The works of both Beer *et al.* (1990) and Kotter (1995) are prescriptive and applicable to *organisational change* rather than *individual decisions*. Although neither of them is a fully articulated theory, in the sense that the reasons *why* it should work are not completely clear, each proposes a sequence of actions that leaders need to facilitate or take to achieve successful change within an organisation. Thus, each seems to be suited to explaining steps 2B and 4B in the creation of the organic cotton industry. Each theory also seems to be suited to explaining steps 2A and 4A when the farmers, the fibre producers and the fabric makers are *organisations* rather than individual entrepreneurs.

Beer *et al.* (1990)

These authors state:

While in some companies, wave after wave of programs rolled across the landscape with little positive impact, in others, more successful transformations did take place. They usually started at the periphery of the corporation in a few plants and divisions far from corporate headquarters. And they were led by the general managers of those units, not by the CEO or corporate staff people.

This theory seems to apply most directly to a large, multi-unit company such as Wal-Mart. For the case of organic cotton, buyer Coral Rose at Wal-Mart was at the ‘periphery’ so this data point is consistent with the theory. But action item #4 of their theory is inconsistent with our data: ‘Spread revitalisation to all departments without pushing it

from the top'. Former CEO Lee Scott was the pusher-in-chief at Wal-Mart and current CEO Mike Duke seems to be doing the same. At two other companies that successfully adopted organic cotton (Patagonia and prAna), it was again the CEO who pushed for its adoption.

The theory of Beer *et al.* may explain organisation-wide change that begins with grass-roots efforts, but that is not how the companies in this case study adopted organic cotton.

Kotter (1995)

The eight sequential action items of Kotter's prescriptive theory are:

1. Establishing a sense of urgency
2. Forming a powerful guiding coalition
3. Creating a vision
4. Communicating the vision
5. Empowering others to act on the vision
6. Planning for and creating short-term wins
7. Consolidating improvements and producing still more wins
8. Institutionalising new approaches

We do not have data on all of the eight action items for all the companies in the case study. For example, we have little or no relevant data on Nike. But the data that we *do* have do not *contradict* these eight action items for successful change. It appears that Esprit and Nau failed at action item 6 or later, whereas Patagonia, prAna and Wal-Mart went through to action item 8.

Theories of the diffusion of innovation

Both Moore (1991) and Gladwell (2000) acknowledge their intellectual debt and theoretical lineage to the diffusion of innovation theory of Rogers (1962, 5th edn 2003), so we begin there and consider the two derivative theories later.

Rogers (1962, 5th edn 2003): key elements of the theory

Successful adoption of an innovation—defined as an idea, practice or object that is perceived as new by an individual or other unit of adoption in a social system—depends on a number of factors, but the two most important are **relative advantage** and **compatibility** (2003: 17).

The **innovation-decision process** is the process through which an individual (or other decision-making unit) progresses from a lack of awareness of an innovation up to its adoption. There are five distinct stages in this process (2003: 169):

1. **Knowledge** occurs when an individual or unit is exposed to an innovation's existence and gains an understanding of how it functions
2. **Persuasion** occurs when an individual or unit forms a favourable or unfavourable attitude towards the innovation
3. **Decision** takes place when an individual or unit chooses to adopt or reject an innovation
4. **Implementation** occurs when an individual or unit puts a new idea into use

5. **Confirmation** takes place when an individual seeks reinforcement of an innovation-decision already made, but he or she may reverse this decision if exposed to conflicting messages about the innovation

Rogers describes three different types of innovation-decision process (2003: 403):

- ▶ **Optional** innovation-decisions. Choices to adopt or reject an innovation are made by an *individual* independent of the decisions made by other members of a system
- ▶ **Collective** innovation-decisions. Choices to adopt or reject an innovation are made by *consensus* among members of a system
- ▶ **Authority** innovation-decisions. Choices to adopt or reject an innovation are made by relatively few in a system who possess *power*, high social status, or technical expertise

Rogers (1962, 5th edn 2003): case evidence concerning the theory

The case study does not provide the data required to examine whether Rogers' theory of the diffusion of innovation can explain why suppliers provided organic cotton products (steps 2A and 4A in the process of new industry creation) and why consumers bought them (steps 2C and 4C). However, data are available for the other steps.

Step 1. The optional innovation-decision process can explain why Chouinard decided to switch to organic cotton. He acquired *knowledge* about the innovation from Owear's failed introduction and also from his good friend Doug Tompkins, CEO of Esprit. He was *persuaded* to switch after his visit to the cotton fields.

Why did Chouinard *decide* to make the switch? According to the theory, relative advantage and compatibility are two key drivers. There were in fact economic *disadvantages* in switching to organic cotton, but the social benefits outweighed them in his mind. And the innovation was clearly compatible with the strategic positioning of Patagonia, the firm he founded, as being 'environmentally responsible'.

To go deeper into the motivation to adopt a new innovation, as Rogers has recommended, Chouinard's desire for Patagonia to be a *model* of an environmentally responsible company that other companies would emulate, as well as his *personal values* ('To know this and not switch to organic cotton would be unconscionable'), were among the key motivators for him.

Step 2B. As founder-owner, Chouinard had the power to decide that Patagonia would switch to organic cotton, so it was an authority innovation-decision per Rogers' theory.

Step 3. The other companies in this case study adopted organic cotton because key individuals in these companies (co-founder Beaver Theodosakis at prAna; CEO Lee Scott, executive Claire Watts, and buyer Coral Rose at Wal-Mart; CEO Chris Van Dyke at Nau) decided to do so. The case study indicates that the field visits provided *knowledge* and *persuasion* for both Claire Watts and Chris Van Dyke.

Step 4B. Key individuals who were persuaded to adopt organic cotton in step 3 (Beaver Theodosakis, Lee Scott, Chris Van Dyke) also had the power to get their organisations to implement their decision, so the authority innovation-decision process explains step 4B per Rogers' theory.

Summary. The case study data on why founder Yvon Chouinard of Patagonia decided to switch to organic cotton (step 1) and why key individuals in other companies decided the same later (step 3) is explained by the theory's optional innovation-decision process.

The authority innovation-decision process explains how powerful individuals in each company (founder Chouinard at Patagonia, co-founder Theodosakis at prAna, CEO Scott at Wal-Mart) influenced the adoption of organic cotton in their companies.

Moore (1991)

The focus of Moore's theory is on the end-user, so we can examine whether the theory is capable of explaining steps 2C and 4C in the process of new industry creation.

Building on Rogers' theory of the diffusion of innovation, Moore claims that new high-tech products fail to create a mass market because there is a 'crack' between the *innovators* and the *early adopters* and a 'chasm' between the *early adopters* and the *early majority* (Moore 1991: 19). For example, the early adopters of commercial high-tech products are motivated to get a jump on the competition whereas the early majority wants to buy a productivity improvement tool for existing operations (1991: 20). Thus, Moore's prescriptive theory (unlike Rogers' descriptive theory) claims that a new high-tech product needs to be redesigned to cross the chasm.

What does the research case study data suggest about whether or not there is a chasm per Moore? Organic cotton products do not need to be redesigned in terms of end-user functionality because consumers cannot tell the difference between traditional and organic cotton except by looking at the 'organic' label. What needs to be redesigned is the *process* by which organic cotton is produced in order to bring its cost down to parity with conventional cotton. What also needs to be 'redesigned' is the consumer's *knowledge* of the environmental benefits of organic cotton over conventional cotton in order to increase the chances that they would be willing to pay a premium for these products if price parity with conventional cotton products cannot be attained.

Gladwell (2000)

Rogers (2003) offers support for Gladwell's concept of a 'tipping point':

The critical mass is thus a kind of 'tipping point' (Gladwell 2000) or social threshold in the diffusion process. After the critical mass is reached, the norms of the social system encourage further adoption by individual members of the system. As the tipping point is approached, just a few more adopters of the innovation suddenly make a big difference, as the rate of adoption rapidly escalates (Rogers 2003: 352).

Interviews we conducted for this research indicate that the concept of tipping point has intuitive appeal, but people have different parts of the value chain in mind—farmers, fibre producers, fabric makers, retailers and consumers—when they refer to the tipping point for organic cotton. Because the value chain cannot be sustained if consumers do not buy, we will focus on whether organic cotton is at a tipping point in terms of the *consumers* of these products.

The case study evidence indicates that organic cotton products are 10–20% more expensive than traditional cotton products at consumer retail prices. Their adoption will approach critical mass and tipping point only if their prices come down to equal or below the prices of traditional cotton products, *or* if consumers in the mass market perceive their environmental benefits as compelling personal benefits for which they are willing to pay extra.

While buyers of organic cotton sportswear at Patagonia are willing to pay a premium for its environmental benefits even though there is no personal benefit (Casadesus-Masanell *et al.* 2009), there is no compelling evidence that this is true for the mass market. For example, Wal-Mart customers are willing to buy organic cotton products only if they are affordable (e.g. yoga outfits) and are willing to pay a premium only if they perceive direct personal benefits (e.g. perceived health benefits of organic cotton baby clothes).

With reference to the innovation-decision process (knowledge, persuasion, decision, implementation, commitment), consumers may be approaching critical mass and tipping point in terms of their *knowledge* of the benefits of organic cotton, and even in terms of *persuasion* to buy it, but there is no indication that the adoption process has gone further than that at present.

If the time comes when a tipping point is reached in the consumption of organic cotton products, can the supply chain respond to a sustained surge in worldwide demand? Given the difficulty of growing organic cotton, is there an upper limit on how much of it the world can grow? Our understanding is that it is more time-consuming to grow organic cotton and different techniques have to be used to grow it, but once a farm converts to organic cotton, the yields are very close to those for conventional cotton. The real hurdle is not the yield but the three years it takes to convert the field to certified organic cotton.

Newer perspectives: sustainable development and corporate redesign

Pearson (2006)

The vision for a sustainable future as summarised by Pearson (2006: 10) includes five main characteristics:

1. Runs on clean, renewable energy. Is powered by natural, perpetual flows of energy—principally, like virtually all life on Earth, from the constant energy of the sun
2. Uses all resources productively. Eliminates the concept of waste; emphasises services over products
3. Supports healthy living systems. Maintains and restores the health of people and natural systems
4. Aligns market incentives with long-term social good. Aligns structural incentives to encourage the pursuit of economic, social and environmental ambitions; makes economic systems account honestly for value created and lost
5. Ensures social equity. Generally embodies a broad definition of democracy

As Pearson makes clear (2006: 41-42), what he has presented is not a ‘theory of change’—and not even a particular set of steps to be taken as specified in the work of Beer *et al.* (1990) and Kotter (1995)—so it cannot be evaluated as a theory. Nevertheless, items 3 and 4 above are particularly relevant here. Organic cotton is better than traditional cotton for the health of natural systems, but the market incentives are not aligned with its long-term environmental benefits. The current prices of organic cotton products at retail are 10–20% higher than for conventional cotton. If environmental regulations around the world were to place an appropriate tax on conventional cotton production for the harm it does to the environment, organic cotton would take off. We are not aware of any attempts to design sustainable solutions for organic cotton that do not incur cost premiums.

Corporation 20/20 (2008)

The principles of corporate redesign summarised below are the distillation of two years of deliberations among participants in Corporation 20/20, a project to create the vision and chart the course for the future corporation:

The initiative aims to design corporations that seamlessly integrate both social and financial goals. In this process, Corporation 20/20 includes leaders from business, civil society, finance, government, law, and labour.

Distilling the core aims of diverse efforts, Corporation 20/20 views them through a single lens: that of 'corporate redesign'. We ask: If we were to design future corporations with social purpose at their core, consistent with the financial needs of business, what would such corporations look like? These principles provide a foundation for meeting this critical 21st-century challenge.

The six key principles are:

1. The purpose of the corporation is to harness private interests to serve the public interest
2. Corporations shall accrue fair returns for shareholders, but not at the expense of the legitimate interests of other stakeholders
3. Corporations shall operate sustainably, meeting the needs of the present generation without compromising the ability of future generations to meet their needs
4. Corporations shall distribute their wealth equitably among those who contribute to the creation of that wealth
5. Corporations shall be governed in a manner that is participatory, transparent, ethical and accountable
6. Corporations shall not infringe on the right of natural persons to govern themselves, nor infringe on other universal human rights

The definition of sustainability is identical to the one used by Pearson (2006), and the two sources seem to share the same philosophy and approach—except that Pearson is focused on sustainability whereas Corporation 20/20 has a broader vision of the key principles for the corporation of tomorrow.

In this case study, Patagonia and Nau are the two companies that come closest to operating according to these principles. Patagonia is owned by Yvon Chouinard, whose personal values seem to be compatible with these principles, and the company continues to be successful. Nau went bankrupt, but it is not clear why. Is it because it violated principle 2 by yielding insufficient returns to shareholders? Or would the worsening economy have caused Nau to fail in any case, even if it was set up as a traditional business enterprise rather than according to the principles of Corporation 20/20?

As is true for Pearson (2006), the six principles of 'corporate redesign' are a manifesto for change. The corresponding 'theory of change' is not available for evaluation.

Boyatzis (2006)

Intentional change theory (ICT): key elements

We will draw on a recent special issue in the *Journal of Management Development* to outline the key elements of intentional change theory (ICT), which for many years was called the theory of self-directed learning. As Boyatzis (2006: 607) points out: 'In this paper and this entire Special Issue of this journal, we will describe a theory of change that has produced demonstrable results at the individual level, and, we believe, explains change at other levels of human and social organisation'.

Although most of the work using ICT in the last three decades has focused on individual change, a companion article in the same special issue of *JMD* (Van Oosten 2006: 708-09) provides a summary of the five phases or 'discoveries' in ICT, and how they apply at both the individual and organisational levels:

These discoveries all apply when considering ICT at the organisational level as well. The difference lies in the outward manifestation of each discovery . . . For example, in the first discovery—the ideal self—individuals consider their desired future. A result of that exercise might include development of a personal vision. The first discovery in the

organisational context is a shared vision. Similarly, in discovery 2—the real self—the individual reviews strengths and gaps and synthesises those into a personal balance sheet. At the organisational level, strengths and gaps are those that stand out when compared to the organisation's competitors or marketplace.

In the third discovery—the learning agenda—individuals create a learning plan and organisations create strategic plans. The fourth discovery, experimentation and practice, includes action planning for either the individual or the organisation, including experiments and innovations in any unit within the organisation. Finally, the fifth discovery—resonant relationships—involves the network of trusting people that support an individual's change. At the organisational level, those relationships get manifested into the web of stakeholders (i.e. employees, managers, customers, suppliers, etc.) who share a common fate in the success of the organisation.

Case evidence concerning ICT

Since ICT covers both individual and organisational change, it seems capable of explaining all the steps in the process of new industry creation. Although the research case study does not provide the data to examine this for all the steps, what we do have for some of the steps can be explained by the theory as outlined below.

Steps 1 and 2B. As reported in the case study by Reinhardt *et al.* (2003: 15), in 1991 founder Yvon Chouinard instituted a no-growth policy for Patagonia to limit its harm to the environment:

In Patagonia's Fall 1991 catalog, founder Chouinard published an essay called 'Reality Check'. 'Everything we make pollutes', he wrote . . . Although Chouinard's no-growth policy was later restated as 'slow-growth', he and his executives continued to search for ways to resolve the tension between their business and their commitment to the environment.

Viewed through the lens of ICT, there was a gap between the ideal self (discovery 1) and the real self (discovery 2) for both Chouinard and for his organisation. Ideally, they wanted to do zero harm to the environment. In reality, that was not possible if they were to be in business. Switching to organic cotton provided a way to reduce the gap and the associated tension.

Discoveries 3 and 4 were apparently not needed for Yvon Chouinard because his personal change did not involve any new learning or experimentation as far as we know. He was so shocked by his visit to the cotton fields that he mandated his organisation to switch to organic cotton in 18 months or stop making cotton products altogether. For discovery 5, he had a supportive relationship with Doug Tompkins, CEO of Esprit.

The case study provides data consistent with discoveries 3, 4 and 5 for the Patagonia organisation. They did not know how to make organic cotton products but they developed a plan to do so, experimented and learned how to do it, and created supportive relationships, not only with the supply chain but also with other companies interested in organic cotton, via information exchange and direct contacts including at conferences they held to facilitate the exchange.

Step 3. Wal-Mart buyer Coral Rose had lived the organic lifestyle for about 15 years (real self). When she saw the opportunity to buy organic cotton products for Wal-Mart (ideal self), she reduced the gap between discovery 2 and discovery 1 by doing so. We do not have data on the other three discoveries for her.

When Claire Watts, Wal-Mart's executive vice president of apparel merchandising, visited the cotton farms in Turkey, she was appalled. 'This is unacceptable. If we can make a difference, we should.' This suggests that the visit evoked in her mind a gap between the real self (her role in sourcing harmful traditional cotton for Wal-Mart) and her ideal self (the desire to make a difference by sourcing organic cotton products). We do not have data on the other three discoveries for her either.

Step 4B. A gap had developed between Wal-Mart's real self (its legal and public relations challenges) and its ideal self (good corporate citizen). The research case study provides evidence that Jib Ellison of Blu Skye Sustainability showed the company how to reduce the gap between discoveries 2 and 1 by undertaking system-wide programmes to increase the efficiency of the supply chain while doing less harm to the environment.

The published case, *Wal-Mart's Sustainability Strategy* (Denend and Plambeck 2007a), provides data on the new strategy (discovery 3), on experimentation and practice via the 14 sustainable value networks (discovery 4), and on the use of outside consultants and engagement with stakeholders and NGOs to develop supportive relationships (discovery 5).

Conclusions regarding the theories

The technology of organic cotton was disruptive, but Patagonia, Nike and Wal-Mart avoided the incumbent's trap of ignoring this technology and pursued it instead as recommended by Christensen (1997).

For steps 2B and 4B in the creation of this new industry, the focus is on *organisational changes*, and Kotter's (1995) theory of change management seems to be capable of explaining such changes. The newer perspectives (Pearson 2006; Corporation 20/20 2008) are not able to explain any of the steps in the creation of the organic cotton industry because, even though they offer a compelling vision and recommendations for achieving the vision, the underlying theory of change is not available as yet.

Rogers' theory of the diffusion of innovation (2003) and intentional change theory (ICT) of Boyatzis (2006) both seem to be capable of explaining all the steps involved in the creation of this new industry but we do not have the data required to test this for all the steps. It would be fruitful to collect the data necessary for a head-to-head comparison of these two theories in future research because they seem to be complementary rather than redundant. As Rogers has advised, we need to increase our understanding of the motivation for adopting an innovation; that is, *why* an individual or a social unit adopts something new. Boyatzis's 'discoveries' suggest that the motivation is the desire—conscious or unconscious, individual or collective—to bring the ideal and real self into alignment by changing either one or both.

Implications for practice

As the experience of Wal-Mart indicates, it is difficult to get customers in the mass market to buy 'green' products unless they are affordable (e.g. yoga outfits) and to pay a premium for these products unless they are perceived to provide direct personal benefits (e.g. perceived health benefits of organic cotton clothes for babies). However, the case of Patagonia provides encouraging evidence that field visits and 'shock marketing' can be effective in raising stakeholder awareness concerning the adverse environmental impacts of existing products and services and can help in persuading customers to pay a premium for environmentally friendly products and processes.

Leaders committed to environmentally safe products and technologies should recognise that sustainability may not be among the customer's top buying criteria, which must be satisfied before she or he will consider the new product's advantages in terms of sustainability. As Heidi McCloskey learned when she helped to introduce organic cotton products at Nike, it is important not to think like an environmental 'zealot' and to 'meet the customers where they are' instead. If customers are given products they

want, where they want them, at a price they are willing to pay, *and* the products are ‘eco-groovy’ as well, then the value proposition becomes compelling.

‘Crossing the chasm’ and ‘tipping point’ are useful concepts for calibrating where a sustainable new product or process is in Rogers’ adoption cycle. For example, have buyers crossed the chasm or reached a tipping point in terms of *knowledge* of the environmental benefits of a new product or process? In terms of *persuasion* to buy it? In terms of *decision* to adopt or reject it?

Wal-Mart provides two valuable organisational guidelines for implementing sustainable initiatives successfully. One is the creation of sustainable value networks for specific initiatives led by powerful and respected company executives, with participation from all key stakeholders. Another is Wal-Mart’s guideline for its managers and employees: ‘Business sustainability isn’t something you are doing in addition to your job. It is a new way of approaching your job.’

Finally, the perspective offered by Jib Ellison, founding partner of Blu Skye Sustainability and a consultant to Wal-Mart, is worth keeping in mind:

The sustainability stuff is just a better view of reality. So whether you are running a big company or a small company, fundamentally the more that you align with these principles the more successful relative to the competition you will be. But until recently very few people in leadership positions understood that, to be blunt, and it is still early days as a practical matter of innovating consistent with this stuff and getting it into the business and not treating it as a public relations exercise.

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