LANDS’ END’S WEB INITIATIVES

Lands’ End, founded in 1963, began as a catalog retailer of sailing equipment. It soon branched out into clothes and home furnishings. The company:

“cruised through the 1980s, ringing up annual sales and profit gains of over 40% by selling traditional threads such as khaki pants and rugby shirts. Stressing quality and value rather than fashion fads, it won loyal customers by setting a new standard for service: Calls to its phone centers were answered within 1.5 rings, merchandise was almost always available and orders were usually shipped within a day.”

Hoovers.com noted that Lands’ End’s

“Traditional, casual apparel for men, women, and children is generally immune to the changing tides of fashion. Lands’ End also sells ac-

1 Jack Rockart was the senior editor accepting this paper. Portions of this paper are adapted from a previously published teaching case study: Ives, B., G. Piccoli, “Custom-made Apparel and Individualized Service at Lands’ End,” Communications of the Association for Information Systems, (11:3), January 2003.
2 In mid-2002, Sears acquired Lands’ End.
cessories, home goods, luggage, and corporate gifts to its primarily middle-aged customers. Lands’ End is expanding its Web presence worldwide, but catalogs continue to be its primary means of marketing.”

The CEO’s letter to the shareholders in the 1999 annual report suggested that Lands’ End had been among the first major apparel retailers to recognize the desirable economics of the Internet:

“More than 40 percent of our operating costs are spent in creating, printing and mailing catalogs. E-commerce selling costs are significantly less than catalog. Processing e-commerce orders is significantly less than taking a phone order ... and unlike the bricks-and-mortar merchants, our investments in the distribution infrastructure are perfectly leveraged through e-commerce. Every e-commerce sale has the potential to be a more profitable sale than through the catalog.”

But, in the following year, the CEO’s letter to shareholders suggested a more synergistic view of the traditional and Internet marketplaces:

“Based on results from fall 1999, circulation tests to Internet buyers confirmed the synergistic relationship of our catalog to the Web. We know that withholding catalogs from Internet buyers does not generate online sales. We believe that a smaller catalog (fewer pages) with sufficient mailing frequency may produce the best results over time. Still, we will continue to refine our tests to determine the optimum frequency and pages for keeping our Internet customers apprised of Lands’ End’s exciting new products. The Internet was the fastest growing source of new customer names to our file last year. It is less costly to bring these customers to the Lands’ End file through e-commerce than through printed media.”

Landsend.com is accessed over 100,000 times on a typical day. For several years, Lands’ End tried different innovative approaches to enhance customer service for its 2 million customers through the site. One example is instant messaging. By clicking on the “Ask Us” button on the Web site, a customer was connected directly to a customer service representative.

The company also tested other innovations, such as a body scanning system that would generate a virtual model of a consumer’s body, an interactive model of a customer on which merchandise could be displayed, a tool that would recommend clothing suggestions based on responses to a few questions, and an online shopping service permitting friends to shop together on Landsend.com.

In 2000, the Smithsonian recognized Lands’ End for “outstanding achievements in leading the information technology revolution to enhance and enable the relationship between company and customer.” But, despite the favorable attention, Bill Bass, Lands’ End’s Senior Vice President for E-Commerce, had strong views about the need for these technologies to be functional:

“I never, ever want anybody on our site to go, ‘Wow, what cool technology.’ I want the technology to be like the oxygen in the air—you don’t even notice it because it works so well.”

Strategy was also on the minds of the Lands’ End electronic commerce team. Prior to each year’s holiday season, usually in late September or October, innovations would be rolled out to Landsend.com. Timing was critical because, by that time, competitors’ Web site designs would be locked down, in preparation for the busy holiday season. The 2001 holiday season revealed Lands’ Ends first foray into customization. By the 2002 holiday season, customers could order custom-tailored chinos, jeans, twill trousers, and men’s shirts.

These investments in Web-based innovations have paid off. From fiscal 1999-2002, merchandise sales at Landsend.com grew from $61 million (1999) to $138 million (2000) to $218 million (2001) to $299 million (2002), increasing from less than 5% to more than 20% of annual revenues.

THE ALLURE OF MASS-CUSTOMIZATION

Mass customization has been long heralded as a potentially dramatic extension of mass production. But it has taken off slowly in the consumer marketplace, even in most apparel categories. According to one expert, mass customization is a “process that uses the

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same production resources to manufacture a variety of similar, yet individually unique, products. “For the most part, consumers are perfectly content with mass manufacturing.”

**Mass Customization in Apparel**

Apparel can be customized by personalization, fit, or design. A monogram is an obvious example of personalization. Customization by fit might require a customer to visit a measuring facility or, as with Lands’ End’s initiative, ask the customer to answer some questions about her size. Design customization involves more direct customer involvement in the design process, for instance, by selecting a collar type for a shirt or a color-pattern combination.

In 1997, market researchers found that 36% of consumers were willing to pay a premium for custom apparel and footwear. Shoe and jeans retailers were among the first to customize apparel, usually targeting the fashion- and technology-sensitive teens. Nike introduced its first version of customized sneakers in 1999, and, by 2002, customized sales accounted for 20% of the sneakers purchased from Nike.com. In 1995, Levi Strauss introduced custom-tailored jeans; customers visited a Levi store to be measured. Levi’s effort to sell merchandise, tailored or otherwise, online exclusively from its own Web site was curtailed in late 1999 when management decided to limit online sales to the Web sites of major retailers.

In late 2001, Brooks Brothers introduced “Digital-Tailoring.” In a matter of seconds, a body scanning system could scan a customer’s body, recording some 200,000 data points that were then converted into 45 tailoring measurements (e.g., neck size). Customers could choose from hundreds of fabrics and a variety of styles for suits, jackets, trousers, and shirts. The store promised delivery in about three weeks. By early 2003, though, the service was still only available in Brooks Brothers’ Madison Avenue store in New York City.

While there was general agreement in the apparel industry that customization could fetch higher prices and, presumably, higher margins, a few industry observers remained unconvinced. Some thought the many choices confronted consumers with too much complexity. Detractors also doubted the demand. One observed:

> “For the most part, consumers are perfectly content with mass manufacturing.”

**The Lands’ End Custom Apparel Experience**

Lands’ End’s custom-tailoring process let customers customize garments by color, fabric, and design. Men designing a customized chino trouser, for instance, could choose between four colors, with or without pleats, with or without cuffs, loose or tight fitting, and with a short, regular, or medium height waist (rise). Customers also provided their measurements for length of their inseam, size of their waist, and self-descriptions of the size of their thighs (slim, average, full), the shape of their seats (four options), and their leg-to-body proportions (five options).

Shirt customization offered similar choices in fabric, color, pleating, collar and cuff style, and with or without a chest pocket. From Web site depictions, say, of the muscular structure of a man’s arm, customers could select options best matching their own bodies. By opening small browser windows, customers could look at larger images of color swatches and richer pictures of fabric detail and patterns.

In October of 2001, Bill Bass was Lands’ End’s Senior Vice President for E-Commerce. Bass joined Lands’ End in 1999 after three years at Forrester Research Inc. He was group director of research for consumer e-commerce and new media when he left.

At Lands’ End, Bass found three elements that he felt were conducive to a successful electronic commerce offering: proprietary products, a strong distribution infrastructure, and an established brand. He attributes Lands’ End’s success on the Internet to two factors. First, the firm had not established a separate Internet business unit, thereby avoiding potentially destructive internal competition. Second, the merchandise was exclusive to Lands’ End, which reduced competitive threats from other vendors.

Custom-made apparel was to be one of the most important technological advances in the history of apparel, Bass believed, because it gave everyone a perfect fit without hiring a tailor. He predicted that in just a few years, no major apparel company could afford not to offer custom-made apparel.

Lands’ End’s approach to tailoring is quite different from the approach used by others, such as Brooks Brothers, notes Bass:

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9 Ibid.


12 Ibid.

13 Bass is currently Vice President and General Manager of Sears Customer Direct and Senior Vice President of Lands’ End E-Commerce.
"In the past, you've had to go into a store, get undressed, and get yourself measured and your body scanned. Both going to the store and getting undressed, are inconvenient. Compare that to our process. Sit down in front of your computer and for two minutes answer questions that you already know the answers to.”

Lands’ End customized products range in price from $49 to $69. The margin percentage is reportedly the same on custom and off-the-rack sales, but because custom products are priced higher, they yielded a higher profit.

Customers are sent a confirmation email when their order is received and another when their order is shipped. This shipping message includes Lands’ End’s guarantee:

“All Lands’ End items are backed by our Guaranteed.Period.® promise: If you are not entirely satisfied with an item, return it to us at any time for an exchange or refund of its purchase price.”

Lower return rates have been one claimed benefit of custom tailoring. Lands’ End, though, has reported that returns for its custom products have been similar to its ready-made products. This somewhat surprising result could be attributed to the firm’s policy that customers who rate purchases as “fair” or “worse” are requested to return them for a refund and given a discount on a reorder. Not only is this accommodation likely to improve a customer’s attitude but the customer’s details about product fit can also be used to fine-tune the design algorithms.

The customizing program has increased customer loyalty, notes Bass:

“Customer loyalty to our custom-tailored clothing has surprised me. The level of feeling that customers have is amazing. This is particularly true for women. Fitting some 100 million women in the U.S. in 8 or 10 basic sizes as well as they would like is really impossible. Once they get a pair of jeans to fit, some will order every color in every fabric.”

One of the authors’ students explained that custom tailoring could save consumers time and money, as well as provide a better fit:

“I am short, 5’2” and I am not a “regular-sized” person. It is time-consuming, inefficient, and expensive for me to order or buy “ready made-sized” clothing off the rack at a department store. I cannot order the regular sizes without having to spend an additional $25 to $50 per item to have my pants shortened and cuffed. Additionally, I have short arms and petite sleeves are sometimes even too long, depending on the style. So, Lands’ End custom fit clothing options work great for me. I can order clothes online while I am delayed at the airport or taking a study break.”

The Mechanics of Making Custom Apparel for Lands’ End

To order customized apparel, customers enter their orders into an electronic Web form created by Lands’ End’s partner Archetype Solutions, Inc (ASI). The content of that form, along with a tracking barcode, is transmitted from the Lands’ End server to ASI’s office in California.

Bobbin magazine, a trade publication, describes what happens once ASI receives an order.14

“Using Gerber’s15 PDF 200016 and made-to-measure programs and Nester17 software, patterns are swiftly drafted. The trio of software programs allows Archetype to match the specific measurements and styling demands of the consumer and to make and manipulate the patterns. Then the pattern files are sent electronically to select contract manufacturing locations, where Archetype has already installed its systems, including Gerber’s automatic, convey- orized, single-ply DCS 3500 cutters.”18

The manufacturer processes the orders in batches based on the fabric requested. For each batch, a roll of fabric is mounted on the laser-driven cutter. Each pattern is then cut in single-ply, based on the transmitted pattern. The various stages in the process are shown in Figure 1.

Commenting on this process, Bass warns:

“The manufacturing process is very complicated. Manufacturing units of one, when people are used to doing it with mass production, is very difficult. Moving from standard manufac-

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15 http://www.gerbertechnology.com
17 Nester Software produces software for arranging elements of a pattern or patterns to minimize material waste (http://www.nestersoftware.com).
18 The Gerber Technology DC3500 is an automated machine tool for cutting single (single-ply) or small layers of material. (http://www.gerbertechnology.com/gtwww/01library/Literature/Apparel/dcs3500e.pdf).
turing to modular requires significant training and testing before production can be started; it takes several months. But, by using technology and our experience, we have been able to bring the cost of custom apparel to a level comparable with mass production. For example, setting up a fabric to be cut takes 15 minutes. Unless you can batch a certain number of orders for that fabric, it is not feasible to offer the fabric for selection by customers."

Choice of manufacturer was left in the hands of Lands’ End, explains an ASI executive:

“Brands and retailers don’t like to be locked into one apparel supplier for a category. We give them the flexibility to choose whichever manufacturer they want. Then, as long as that manufacturer can set it up and work with us, it will happen. We make sure our production partners are real partners. We help them, they help us. The hard part is the set-up of new products, styles and brands. That takes many months. Also, the brands and retailers have to trust us; we are making products with their name. That trust takes a while to build.”

Manufacturers pay ASI for a license to use their software and intellectual property. Retailers also pay a licensing fee as well as a transaction fee for each item produced.

The Strategic Alliance between Lands’ End and Archetype Solutions

Lands’ End’s business partner in the custom apparel initiative has been Archetype Solutions. Robert Holloway started Archetype Solutions Inc. in early 2000. He had previously been president as well as a 17-year veteran of Levi Strauss North America. ASI held several patents pertaining to the customization process and the algorithms used to create custom-made apparel. In the year after ASI’s founding, Holloway proposed to Lands’ End that the two firms enter into a partnership to produce and sell custom-tailored apparel. The resulting contract gave Lands’ End a six-month exclusive agreement with ASI for custom-tailored chinos and then jeans. Lands’ End also purchased a non-controlling interest in ASI.

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Figure 1: Production and Distribution Process for Custom-tailored Clothes

1. Archetype supplies retailer with sizing question-and-answer choices.
2. Consumer answers questions on Web site, in store, or over phone.
3. Retailer sends Archetype the order daily.
4. Orders are automatically processed by Archetype software in California.
5. Software produces electronic pattern and order file for each order.
6. Order is sent via e-mail to production facilities in Latin America or Asia.
7. Manufacturers have one central server and five or six networked desktops located at different stages in the production process.
8. Garments are assigned a unique ID.
10. Barcode ID label is printed out as fabric is cut.
11. Label is attached to the product.
12. Production order is also printed out as fabric is cut.
13. Production order has a bill of materials listing necessary pieces for each garment (zippers, buttons, labels, pockets, etc.).
14. Garments are made, inspected, and packed for shipping.
15. Garments are scanned and status is updated at each stage of process.
16. Garments are shipped from factory to a third-party shipping center in the US.
17. Garments are received by shipping center and individual items are scanned.
18. Shipping labels are printed.
19. Items are express-shipped to customer.
20. Status report for all orders is sent nightly to retailers.

- from personal communication with Jeff Luhnow, ASI President, Nov. 18, 2002
Robert Holloway holds a compelling vision of the future of apparel:

“What if you could go online to a store, or phone up a catalog, and in two or three minutes design your own pair of pants, design your shirt, whatever, and have it made for you as an individual so it’s exactly to your specifications, and it fits you absolutely? And what if you could do it at a price that was fairly similar to what you pay for off-the-shelf? That’s what we set about doing for two years—solving this fundamental issue for the apparel industry. Ultimately, what I’m excited about—and what we talk about—is redefining apparel.”

Another key executive at ASI has been Jeff Luhnow, President and Co-founder. Luhnow, formerly a consultant at McKinsey & Company and an engineer at Gore Fabrics, brought important experience to the start-up. Luhnow described the challenges of finding suitable manufacturing partners:

“It does require some investment on their part up front. They are sharing part of the risk, hoping and assuming this idea will take off and that it will be something that they will be a part of for a long time. All our manufacturers need to be able to be adept and flexible, and able to learn new technologies fairly rapidly. They need to have automated cutting machines [because] part of what we send them is instructions for these cutting machines, along with all the files that help track the order through the manufacturing process.”

After ASI’s exclusivity agreement with Lands’ End for chinos had expired, ASI helped Bob’s Stores, a regional apparel retailer, to develop a custom chinos service. Bob’s chinos were priced somewhat lower than Lands’ End’s and included several design choices not available from Lands’ End. Even though Bob’s initially relied on the same manufacturing plants as Lands’ End, they offered different choices in color and fabric. Despite the manufacturers’ familiarity with the process, several months were still required to create the patterns for Bob’s unique styles, as an ASI executive explained to a reporter:

“There’s a ton of work that has to be done for each customer before we can launch. A lot goes into getting to know each customer’s brand, and how best to customize with them.”

ANALYSIS OF THE LANDS’ END CUSTOM APPAREL INITIATIVE

Lands’ End’s custom-made apparel initiative can be analyzed using a framework for assessing and creating competitive advantage. The first step in such a post-implementation analysis is to demonstrate that the IT-driven strategy does indeed provide a competitive advantage. This analysis would require internal data, which is not publicly available. But information in the public domain suggests that the initiative does indeed create significant value because customers are willing to pay a premium, while the additional costs of production and distribution are modest. As the available data suggests, while profit margins per item are no higher, total profits are greater because of the higher prices per custom garment shipped. Demand is also demonstrated to be high for the custom apparel categories, and Lands’ End continues to roll out new categories, suggesting that management is happy with the results. Our assumption, therefore, is that the initiative has provided competitive advantage.

The following analysis assesses the sustainability of that advantage. Central to this discussion is the notion that IT-driven competitive advantage can indeed be sustained in the face of competitive responses, and that the degree of sustainability is determined by the height of four “barriers to erosion”:

1. Development and implementation barrier
2. IT assets barrier
3. Complementary resources barrier
4. First-mover advantage barrier.

Independently or in concert, each barrier contributes to sustaining competitive advantage. The four barriers are described below using Lands’ End’s custom apparel program to illustrate each one’s contribution.


This section makes certain inferences about strategy and assumptions about costs that are not drawn from company sources. It is written by the two academic authors in the spirit of a case analysis rather than a reflection of Lands’ End’s actual costs or strategy. Bill Bass, the paper’s second author and a Lands’ End executive at the time of the case, has neither confirmed nor denied these inferences and assumptions.


24 Ibid.

25 Ibid.

26 Tedeschi, B., “E-Commerce Report; A Lands’ End Experiment in
**Development and Implementation Barrier**

The sustainability of IT-derived competitive advantage is often questioned because of the supposed ease with which competitors can duplicate, or even acquire, the underlying information technology. Our research suggests, however, that the time required to duplicate a competitor’s IT initiative actually varies considerably.\(^\text{26}\) Sometimes the time to develop and implement the project is trivial. But in many instances, it presents a formidable barrier to imitators.

This development and implementation barrier has a number of components. One is the visibility or uniqueness of the technologies used. A second is the complexity of either the technologies or the process required to implement them and make them operational. A third component is the amount of process change required to employ the technologies.

In Lands’ End’s case, its custom apparel innovation was readily visible to competitors—even to customers. So there appears to be little or no visibility barrier.

On the other hand, the initiative is built on a very complex IT infrastructure that includes the Web site as well as Archetype’s proprietary pattern-cutting software. The initiative also uses tracking software so that ASI and its clients can see the status of a garment anywhere along the supply chain. While the Web site and its features are highly visible, ASI’s proprietary patterning application is unobservable and therefore difficult to copy. Moreover, the application requires significant fine-tuning, much of it driven by customer returns, and thus cannot be quickly replicated.

Another implementation and development barrier is the lengthy set-up time required to create each custom-tailored apparel category—for both the brand and retailer (Lands’ End) and the manufacturers. Executives at both Lands’ End and ASI have pointed out these long lead times, required both to get a new category ready and to bring a new manufacturer online.

Custom-tailored manufacturing significantly shifts standard manufacturing to modular design. Manufacturers generally need new specialized machinery and software. Interfaces between the software and the equipment must be developed, employees must be trained, and significant testing is required. For its testing, Lands’ End created apparel for employees. Only when the results were satisfactory was the innovation rolled out.

We estimate that the set-up time to imbed the new technology in the production process gives Lands’ End a six-month lead after a competitor has decided to imitate the strategy, devoted the resources, and begun the process. Coincidentally, Lands’ End’s exclusivity contract with ASI provided that six-month lead time as well.

For the follow-on categories, though, competitors’ response lag might be much shorter, especially if ASI assists them. On the other hand, the appearance of a competitor to ASI could change the timing for competitors.\(^\text{27}\) Moreover, manufacturers who have been set up to work with ASI’s system appear to be free to work with Lands’ End’s competitors—and those relationships would likely be expedited by ASI.

Even so, as complex as ASI’s software may be, and as significant the process change required is, competitors still have ready access to these capabilities because Lands’ End does not control ASI. Indeed, ASI quickly worked with Bob’s Stores to custom-tailor chinos, and other retailers are also now using ASI’s technology.

Analysis of this time-based barrier to erosion suggests that its contribution to sustainability is relatively low for Lands’ End. It would be higher if Lands’ End controlled ASI.

**IT Assets Barrier**

The second barrier to erosion is based on a firm’s IT assets, assets which may not be readily available to competitors. IT assets include past investments in IT infrastructure or information repositories, as well as both technical and management skills.

Lands’ End’s current IT infrastructure appears to provide few advantages over other major catalog apparel retailers with a significant Web presence. Clearly, a Web sales infrastructure is a minimum necessity. How it is leveraged is important. Assuming the costs of Web orders are lower than phone orders, anything a firm can do to expedite the migration of telephone callers to Web site visitors will provide at least a temporary cost advantage.

Lands’ End’s information repository provides a more significant barrier. Due to the firm’s lengthy experience with custom-tailored apparel, Lands’ End has assembled a large, and growing, database of customer-fit information. This repository reflects the two million customers who purchase online, including a 40% penetration of custom-made apparel in certain product categories. Such a database provided the basis for the

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\(^{27}\) The sustainability of ASI’s own IT investment, though important to Lands’ End, exceeds the scope of the current paper.
initiative, and now for offering new garments and options. As Lands’ End expands the scope of this initiative by increasing the breadth of products, the database will continue to expand and be a continually important resource underpinning the strategy.

To successfully replicate Lands’ End’s custom tailoring, competitors will need a repository of comparable value (i.e., with similar breadth and precision of information).

Given the importance of the information repository to competitive advantage sustainability, it is important to understand its nature and characteristics. As noted earlier, Lands’ End retains legal control over the data it shares with ASI. While ASI has physical control over much of the data, storing it and maintaining it, ASI cannot use the data other than to create custom-made apparel for Lands’ End’s customers.

Data ownership is a key element in the sustainability of Lands’ End’s advantage. Ending the six-month exclusive relationship between Lands’ End and ASI does diminish exclusivity of the system, but it does not diminish exclusivity of the data. ASI cannot use the personal customer data collected by Lands’ End (although ASI does benefit from returns data because that data is used to fine-tune its fit algorithms). In its dealings with other retailers, ASI must rely on those retailers’ customer data, even when servicing the same customers.

It is unclear whether Lands’ End could use the data if it severed its relationship with ASI. Legally it could, of course. But it is unclear whether that data could be easily converted for use with other custom tailoring software. If the answer is no, then Lands’ End is locked into ASI. This issue is mitigated, however, by Lands’ End’s partial ownership of ASI and, presumably, by favorable licensing fees built into its contract with ASI.

The IT assets barrier also includes management capabilities. Lands’ End’s management team values IT innovation, and historically has been able to deliver it through its Web site. For instance, prior to each holiday season (the busiest period of the year for apparel retailers), Lands’ End comes out with “a big WOW on the Web site.”

The firm’s ability to consistently innovate with IT is an important IT capability, and one that erects barriers to erosion of its competitive advantage. This capability also links to the development and implementation barrier. Introducing innovations just before holiday Web site design lock-down allows Lands’ End to maintain the exclusivity of the new feature over its busiest season. Such exclusivity is difficult to maintain for long because many of these features have been relatively easy to replicate. While it is difficult to speculate on the future value of this strategy, it appears that Lands’ End’s executives understand and spend significant time thinking about IT’s value to its strategy, especially for maintaining competitive advantage each year end.

**Complementary Resources Barrier**

This barrier consists of non-IT resources (tangible and intangible) and capabilities (including the firm’s business processes) as well as external resources, such as relationship assets. It is described in more detail elsewhere.²⁸

Reuse of Lands’ End’s traditional competencies appears to offer a modest barrier to erosion of its custom-apparel initiative. Its structure as a direct retailer, along with its competencies in marketing apparel through paper catalogs and taking and fulfilling orders, all fit well with Internet technology. Its traditional competencies “fit” with its newly needed Internet ones.

While these same advantages also apply to other online catalog merchants, other competitors are not so lucky. Levi Strauss, for example, which has long, established relationships with its distribution channel, faces substantial challenges in replicating Lands’ End custom-tailoring program because it does not have the catalog-fulfillment expertise. It is perhaps no coincidence that several ASI executives previously worked at Levi, where they might have become frustrated in pursuing Web-based, custom-tailored apparel initiatives. Levi’s complementary resources were the underpinnings for its traditional strategy, but become obstacles for a Lands’ End-like Web-based strategy.

Lands’ End’s 100% “any time” return policy, while not unusual for catalog stores, presents another complementary resource for Web-based selling. Some retailers might be reluctant to provide a 100% guarantee on a product that customers configure, because the item is probably not resalable. On the other hand, it would be difficult, if not impossible, to offer a 100% guarantee for all but custom apparel. Lands’ End has turned the ill-fitting returns into a valuable resource by using them to fine-tune ASI’s sizing algorithms.

Another complementary resource is Lands’ End’s strong brand which, coupled with the nature of the traditionally styled merchandise Lands’ End sells, tends to promote repeat purchasing and long-lasting relationships with customers. Its brand also likely promotes trust and thus, perhaps, customers’ willing-

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ness to experiment with technology-driven offerings, such as online ordering and custom tailoring.

Lands’ End is a catalog merchant, competing against retail stores. Interestingly, its custom-tailored option can potentially reverse the long-standing competitive advantage of retail stores over catalog merchants—assurance, at the time of purchase, that the merchandise fits and meets the customer’s requirement. This potential reversal might explain why Lands’ End’s agreement with ASI expedited, if not promoted, other catalog merchants’ move toward custom-tailored apparel.

The buyout of Lands’ End by Sears, of course, produces an entirely new set of complementary resources to be leveraged. Among the most obvious are the opportunities to develop a “bricks-and-clicks” synergy with customers and to leverage Sears’ customer list.

**First-Mover Advantage Barrier**

Sometimes, an innovator achieves real first-mover advantages. That appears to be the case with Lands’ End. Its head start in custom-made apparel initially provided it with far more customers than anticipated. Higher order flow decreases the cost of manufacturing new products by increasing per-fabric order sizes. The manufacturers establish fixed set-up times to change fabric on a machine. Set-up reduces productivity and increases per-unit costs. To keep the costs in line with mass manufacturing, manufacturers can only offer fabrics that receive sufficient demand to be batch processed efficiently.

A self-reinforcing cycle appears to reward the first mover. The larger the database of customers and their fit measurements, the larger the resulting order flow should be. Retailers with larger order flows can therefore offer a wider selection of fabrics because they are more likely to receive enough demand to justify production runs for each. If sales continue to increase, retailers can progressively offer more fabrics, providing richer choices for customers. Customers perceive continually increasing value, so they return and tell others who become new customers, further increasing volume.

This positive self-reinforcing cycle—more orders, leading to more production runs, allowing more fabrics, leading to greater value to customers, creating more customers, leading to still more orders—appears to be working at Lands’ End. In spring 2003, Lands’ End expanded the number of chino trouser colors to nine. By comparison, in June 2003, Bob’s Stores still only offered three colors of chinos.

While Lands’ End, as the leader, experiences this virtuous cycle, subsequent entrants may not. If they have lower demand, they cannot cost-justify offering the same variety. The offerings of such competitors will be less appealing, particularly to Lands’ End’s current customers. Therefore, they may be unable to feed their own virtuous cycle.

Still, if order flow is the triggering factor, then large retailers, particularly brick-and-mortar retailers with an installed base of loyal customers, may have an easier time jump-starting the virtuous cycle, even when they enter the custom-made apparel market later. Lands’ End will need to rely on other barriers to hold off such new entrants.

In the above example, the first-mover advantage comes from economies of scale. First-mover advantages can also result from switching costs. Switching costs aim to dissuade customers from switching to a competitor because they will lose their “investment” (in time, information, or familiarity) in their current supplier.

Some will contend that Lands’ End’s strongest barrier to erosion in custom apparel is the switching costs— the time customers spend taking their own measurements and filling out the online form. They would need to repeat these steps to buy from a competitor. And while a customer might go to a competitor’s Web site and copy the same data, this still is a switching cost to the customer, albeit a small one.

Brick-and-mortar competitors could aim to reduce this need-to-measure switching cost, and perhaps improve the quality of fit, by measuring customers in their stores. But, physical measurement introduces its own problems. The most obvious is having to go somewhere to take one’s clothes off for a mysterious, and potentially embarrassing, process. But professional or laser measuring could reduce the need for fine-tuning and returns. If so, the recent acquisition of Lands’ End by Sears could provide the sites for this personal contact with customers.

Measuring one’s body and providing the information is only a portion of the investment customers make in using Lands’ End’s custom-tailoring program. Lands’ End also collects customer feedback regarding the fit of previously purchased apparel. The company even offers customers monetary incentives to try again when they are not satisfied.

Lands’ End appears to especially encourage “try again” to customers who return items and provide feedback to improve fit. Once these customers achieve a good fit, they are probably even less likely than others to switch to a competitor. Dissatisfied cus-
customers who feel that custom-made clothes are not yet ready for prime time are not relevant to the analysis of switching costs because they are unlikely to try the process with a competitor.

Other customer-switching costs include search costs (to find custom-tailored alternatives) and learning costs (understanding competitors’ options, how to navigate their Web site, etc.).

Learning costs also encompass “trying on” costs. When switching to a competitor, customers have no guarantee, short of trying on the clothes, that a competitor’s approach will result in the same fit, even when the exact same measurements are used. If the competitor uses the same fitting engine (i.e., the ASI algorithms) and the same inputs, the fit will, presumably, be very similar. But few customers are likely to jump to this conclusion, even if they see the Archetype Solution logo on the competitor’s Web site.

Consider also Lands’ End’s discovery that a new offering (e.g., jeans) boosts sales of previously available items (e.g., chinos). This finding suggests that customers may appreciate the ease of reusing their measurements to get other new clothes while they are at the Web site. In other words, when enticed to return to the site by a new offering, customers with fine-tuned personal models order other items as well, because the “cost” of doing so is low. This low “cost” also discourages them from switching to a competitor.

Relationship exclusivity is another opportunity for a first-mover advantage. Switching costs hopefully result in an exclusive relationship with a customer. But exclusivity can also come in other forms. For instance, you might have an exclusive relationship with a supplier or channel partner. Lands’ End’s contract with ASI provides a six-month exclusivity for each new type of custom apparel.

A full analysis of Lands’ End’s first-mover advantages is beyond the scope and available data of this analysis. The analysis would need to consider the power of the Lands’ End brand, the difficulty in identifying alternative sources of apparel, the relative magnitude of switching costs, the propensity of different types of customers to switch (i.e., the price sensitivity of Lands’ End customers, which may be relatively low), the value of the six-month exclusivity agreement in creating switching costs, customer ignorance about the role played by ASI, and other related issues.

Taken together, these four barriers provide the basis for sustainable competitive advantage. Our analysis of Lands’ End’s custom apparel using this framework was done after the fact. But it could have been done to formulate strategy or shape subsequent competitive moves.

**CONCLUSION**

Lands’ End, in partnership with Archetype Solutions, has demonstrated that mass customization can be more than a small niche business in the apparel industry. With approximately 40% of Web sales in specific categories now custom-tailored, and with Web sales continuing to increase, there is little question that customers are willing to pay a premium for custom-tailored apparel. Indeed, given that very little advertising fueled much of Lands’ End’s early demand, it is reasonable to expect customer demand to continue to grow. Perhaps we are only a few years away from custom tailoring being the norm in the middle-market apparel business.

This example of IT-driven innovation in mass customization is based on a beneficial relationship between Lands’ End and its strategic partner, Archetype Solutions. This partnership was structured to ensure that both firms harvest benefits, while not raising high barriers of entry to competitors nor encouraging the entrance of competitors to ASI by locking out Lands’ End’s catalog competitors.

Lands’ End has not contracted for an extended sustainable competitive advantage by locking ASI away from other retailers. But due to its partial ownership of ASI, Lands’ End will benefit from ASI’s growth as well as from greater acceptance of custom apparel—partly fueled by competitors’ advertising. For instance, “big and tall” stores trumpet the advantages of their own custom tailoring. But will large-sized customers bother to shop those outlets if they can buy nearly identical products and sizes from Lands’ End or discount retailers? And, by helping ASI grow quickly, thereby garnering economies of scale of its own, Lands’ End’s non-exclusivity with ASI may help ensure an even bigger ASI success—a success that Lands’ End would share. As noted, Lands’ End also has leveraged its first-mover advantage through economies of scale and scope. Finally, one could argue that custom tailoring is a potential differentiating factor for the entire catalog apparel channel, in its competition with the retail store channel.

In our analysis, we have used Lands’ End to introduce a model for assessing, creating, or maintaining the sustainability of IT-based competitive advantage. The analysis makes some assumptions about possible Lands’ End strategies. But the model is equally useful to competitors and to other industries. Mass customization has implications for entire value chains, and it
is a paradigm that most industries must learn to harness if they are to compete successfully.

ABOUT THE AUTHORS

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Gabriele Piccoli is on the faculty of the School of Hotel Administration at Cornell University. His research interests include strategic information systems and the business application of network and Internet technologies in support of internal activities, such as training and teamwork, and external activities, such as customer service. His research has appeared in MIS Quarterly, Communications of the ACM, The DATABASE for Advances in Information Systems as well as other academic and applied journals.

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Bill Bass oversees Sears' direct-to-customer business, which includes E-Commerce and specialty catalogs, and he is the head of the E-Commerce business for Lands' End. At Sears, one of the nation's leading brick-and-click retailers, Bass champions multi-channel integration, such as the ability to buy online/pickup in store. His team at landsend.com, the largest apparel site in the U.S., pioneered the online use of live customer help, the virtual model, and custom clothing. Bass was appointed Vice President and General Manager of Sears Customer Direct in 2002.

Prior to joining Lands' End, in 1999, Bass served as a group director at Forrester Research. Before that, he co-founded and co-managed the Boston.com Web site, the online subsidiary of the Boston Globe newspaper. Bass's business career also includes work as a strategic initiatives manager with Knight Ridder and six years in the United States Army where he served as a paratrooper and helicopter gunship pilot. Bass received his B.A. from Princeton University and an M.B.A. and M.A. from Stanford University.

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Blake Ives holds the C.T. Bauer Chair in Business Leadership in the C.T. Bauer School of Business at the University of Houston, where he also directs the Information Systems Research Center (ISRC). Blake is a past President of the Association for Information Systems and a Fellow of the Association for Information Systems. He previously served on the Board of Directors for the Society of Information Management International and has twice before won an award in the SIM best paper contest. He has been the recipient of the prestigious Marvin Bower Fellow at Harvard Business School and was selected as a John Olin Fellow at Templeton College, Oxford University. Blake is past editor-in-chief of MIS Quarterly and currently chair's its Policy Committee. In 2002 Blake was selected as Educator of the Year by the Association for Information Technology's Special Interest Group for Education.

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