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eBusiness in Apparel Retailing Industry - Critical Issues

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E-BUSINESS IN APPAREL RETAILING INDUSTRY – CRITICAL ISSUES

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ABSTRACT

The apparel industry has, like most other industries quickly started using the Internet to gain improvements in the efficiency and effectiveness of operations and marketing. In this report we briefly overview the developments of electronic commerce in apparel industry. We try to develop a framework for choosing the right technology and development options based on the business model and business orientation chosen. We illustrate the framework by four case companies, which have adapted different basic strategies and business models. The cases include companies with traditional operations with also physical retail outlets, as well as companies operating only on the Internet. There are still a number of unresolved problems related both to consumer-oriented e-commerce in general and to apparel industry in particular. Nevertheless, consumers are increasingly using the Internet to do extensive amount of research on products and fashion trends before purchasing through any media, also making more and more online purchases

1. INTRODUCTION

The apparel industry has started using the Internet in an attempt to improve the efficiency and effectiveness of marketing, provide customers access to information about products and their availability, build brand value, and to offer customers a convenient medium to make purchases online. The most valuable aspects of Internet shopping, as compared to store-based ad catalog shopping, are typically perceived to be competitive pricing, one-source shopping, convenience and time-savings (Corral, 2000). In addition to increasing brand loyalty among consumers, the goals of a manufacturer might include increasing opportunities for collaboration with suppliers and customers. A retailer, in turn, might have goals such as increasing sales or revenue by accepting orders through an Internet storefront, getting more customers to come into traditional bricks-and-mortar stores, and reducing customer service costs by allowing customers to view order-tracking information over the Web. (Machan, 2000) According to Xceed Intelligence, the apparel industry has traditionally been slow to adopt new business practices, and the outdated practices have consequently slowed down adoption of e-commerce (Masters, 2000). Apparel has, nonetheless, become the third-largest retail sales category on the Internet and Forrester Research[1] expects online sales of apparel to reach $20.2 billion in 2003 - which accounts, however, for just over 7% of total apparel sales. Often heard argument behind the slow take-off lies in the fact that the consumers perceive clothing as products that have to be seen, touched and tried of before the purchase. In addition to the inability to touch, feel or try on clothing on the Internet, consumers have been concerned with returns, security and costs (Kelly, 2000) - worries

[1] http://www.forrester.com

commonly related to all online retail (see e.g. Farhoomand et al., 2000; Lee & Turban, 2001). Products that are known to the customer from previous experience, typically brand name products are, nevertheless, easier to sell. Also, new technologies, such as 3-dimensional browsing and virtual fitting rooms are attempts to lessen the importance of seeing the physical product and making the purchase decision easier for the consumers.

The most important issues of b-to-c apparel e-commerce thus seem to be related to the very physical and personal properties of apparel that are hard to capture and represent using the on-line medium. To overcome these, there is a need to provide something more than what the bricks-and-mortar shops can offer. Some possibilities for new services and businesses exist in maintaining virtual profiles of apparel buyers, and possibilities of producing made-to-order clothes for mass market. Both of these need heavy re-structuring of the industry channels and modes of operation. For example, there is not much point in providing state-of-the-art virtual body scanning techniques, or custom coloring options, if there are no processes to actually manufacture clothes according to the specifications.

Enhanced communication and interaction along the value chain appear to be the main reasons the Internet is used in the business-to-business side of apparel business (Gertner & Stillman, 2001). Forecasting and logistics processes will continue to become exponentially complex, as a great majority of apparel products will continue to be shipped from international manufacturing plants, and as inventory of finished products shrink, retailer assortments will likely grow (Welling, 2000). In the short cycles of apparel seasons and fashions companies, such as Capstan Systems who target shippers that specialize in "economically perishable goods" such as consumer electronics and apparel, can become key players (Cottrill, 2000).

In this paper we provide a state-of-the-art review of developments in electronic commerce in apparel industry, pointing both to the possible benefits as well as to the barriers slowing down the proliferation. We will especially look at problems and issues arising from the nature of online apparel shops. Furthermore, we illustrate four different strategies and business models that companies in retail apparel business have adopted for electronic commerce. These cases represent both companies combining online and traditional operations, as well as companies operating only on the Internet. We show how the strategies chosen have profound implications for the technologies used in the underlying stores. Based on these cases and other illustrative examples, we will identify key issues for research and practice in the apparel e-business.

2. METHODOLOGY

The methodology of this paper is firstly based on literature review on current research on electronic commerce in apparel industry, and secondly on case examples of four different types of apparel companies practicing electronic commerce. The cases are not meant to cover all different types of business models applied in the retail apparel business, but rather to be representative of four basic types currently typical in the industry, viewed in terms of the company size and whether Internet is utilized in addition or in support of traditional operations, or if the whole business is carried virtually on the Net. The cases are illustrated using the BUMMAT framework for e-commerce (Järvelä & Tinnilä, 2000).

Overview of the trade literature indicate that apparel industry is extremely active in the area, and a number or new initiatives are being introduced on a constant rate, both on business-to-business and business-to-consumer sides. Interestingly, researchers in the field of information systems have not shown too much interest in the particular issues related to electronic commerce in apparel industry. There is a multitude of research on individual technologies for virtual apparel, but very little research on people and systems issues.

The empirical examples used in this report consist of four US-based case companies (originally reported in Tuunainen & Tinnilä, 2000). Interviewing the managers responsible for the respective company's Internet-business was the main method of collecting data. Also publicly available sources,

such as trade journals and a number of Internet sources were used to gather additional information. The case stories in this report were also checked and validated by the persons interviewed.

3. CONCEPTUAL RESEARCH FRAMEWORK: THE BUMMAT MODEL

We use the BUMMAT model (based on Järvelä & Tinnilä, 2000) to model different options for technology and channel choices for e-retailing. Some of these difficulties are more easily than others solved with technology, but as the cases will show, also many other issues are beyond technology. The starting point is, that it is essential that the implementation of the e-commerce system is fitted to the business and not the other way around.

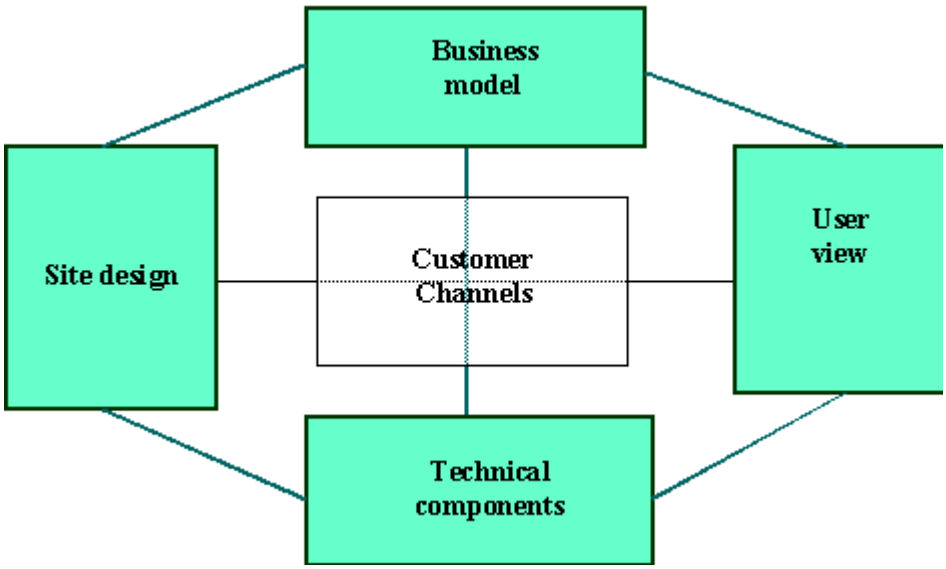

Figure 1 BUMMAT Model for customer channels

We will next briefly explain each of the interrelated parts of our model.

3.1. Customer Channels

The customer channels (originally by Vepsäläinen & Saarinen, 1998, and extended by Kallio et al., 1999) present the major functions of any given e-commerce site. They display the traditional trade processes that are present in any commercial transaction. These processes are divided into marketing, financing, ordering and delivering channels *Marketing Channel* communicates the market offerings to the customers, carries out persuasion and provides for feedback from customers; *Financing Channel* supports the payments, funding and insuring of transactions and, in general, manages the return on investment, risks and incentives for cooperation; *Ordering Channel* facilitates the administration orders, guarantees, customer complaints and other commitments; and *Transferring Channel* accomplishes manufacturing and deliveries through the warehouses to the final customer, managing as well after sales services and maintenance (Kallio et al., 1999). This channel model forms the semantic model of an e-commerce system. It can also serve as the blueprint of an implemented electronic shop.

The inherent assumption in the model is that in the future, channels are the central way of organizing the business and firms in the value chain. The existence of a channel means that there are capabilities offered in the marketplace independent of any individual producer, merchant or customer. (Kallio et al., 1999) Instead of internal functional division to departments, the new restructured organization consists of inter-functional business processes, in some cases exceeding organizational boundaries. The process-based organizations will operate in networks to achieve improved efficiency by carrying specialized tasks in the value chain. The resulting value chain consists of several channels with a

group of channel members participating in defined tasks within the value chain. Instead of performing tasks within the organization, they are outsourced from other channel members.

In the following sections we augment the original BUMMAT model with different constraints and options that limit the available choices of e-commerce implementations in various channels. We look at each of the different views towards the channels in sequel.

3.2. User view

The user view in the framework consists of demand side issues, i.e. the consumer context. The proliferation of media, ranging from cable and satellite television to the Internet and a host of magazine titles enables apparel suppliers to more precisely target customers (Stankevich, 2000). There are accordingly many ways to attract customers to web sites. These include use of traditional channels, such as printed media (newspapers, journals) and TV advertising to point to the company's Web site. Increasingly, however, the Internet itself is both the advertising and sales channel. Many large apparel manufactures with retail operations, such as The Gap, have taken multi-faceted approaches that include developing comprehensive sales and marketing sites that are then linked to e-malls, shopping portals and associate sites via hotlinks (Hill, 2000b). The convergence/divergence of the media used poses challenges for both users and retailers. For example, options that are quite possible in TV are not available on handheld terminals due to the visual properties of the devices.

Several issues are important from the user view and trade-offs have to be made there. First, collecting and using customer data poses great possibilities as well as inherent risks. Internet commerce technologies have significantly reduced sellers' cost of collecting buyer preference information as well as managing multiple prices. The role of infomediaries (see e.g. Hagel III & Armstrong, 1999) and the collection of customer data and its use are widely debated at the moment. The legal rules for the use of consumer data are still undetermined. Furthermore, the approaches taken by the US and EU officials differ fundamentally from each other, constituting an added problem, particularly for the global players (Farhoomand et al., 2000).

This problem is highlighted in the apparel industry. If scanned images, or body measurements, were stored and transmitted in a large scale, the security and privacy of the information would be of vital importance. Most people would not want online marketers or hackers know their measures. Also, as human bodies tend to change with time, it is not enough to take the measurements once, but it is crucial to keep the data up to date.

3.3. Business Model

Although the term business model is commonly used in both business articles and academic literature dealing with e-commerce and information economy, the definitions used are often either vague or nonexistent (Timmers, 1999; Amit & Zott, 2000). Timmers (1999) defines business model in the e-commerce context as the architecture for the product, service and information flows, including a description of the various business actors and their roles; and a description of the potential benefits for the various business actors; and a description of the sources of revenues. The main elements of a business model are value creation and value appropriation through sets of processes and transactions (Rajala et al., 2001).

The business model forms architecture for the operation of the e-commerce site. We use the term architecture more in a logical than technical sense. For example, if the business model chosen is to use the site only as marketing and promotions channel for bricks-and-mortar operations, then there is a little need for a sophisticated payment technology.

There are three primary e-commerce induced business models that have been tried by retailers and manufacturers: sourcing, closeouts (online auctions and direct-sale exchanges), and direct sales (Romer, 2000). Currently, most manufacturer sites that showcase their products steer the consumer

towards a retail location, either on the Internet or to a bricks-and-mortar store. At the other end of the spectrum VF Corp., the world's largest apparel company, uses its site to test-market though e-mail to a panel of consumers that rate products in development. These results are compared with the results of products that are already out and can gauge how well they might do. (Corbin, 1999)

The most successful online clothing retailers so far have been catalogs, due mainly to their existing relationships with consumers and their deep knowledge of fulfillment and inventory management (Welling, 2000). These operations seem to have fitted their business model to the properties of the online media: instead of selling top fashion, like boo.com, they have chosen to sell bulk apparel for customers, who value the convenience over fashion or good fit.

3.4. Site Design

The site design part in our framework includes issues such as the visual image of the site, as well as linking and connections to other sites. These are the issues traditionally referred to as "web site design". They include the technical site design and management (Rossi & Schwabe, 2000), the brand image of the company, and such. There is some evidence of the appearance of fashion malls (like boo.com in its heyday, and fashionmall.com currently) that provide unique appearance for all the shops participating. This obviously, on one hand, limits the choices on visual and technical design of the site, but, on the other hand, also solves a lot of problems, especially for a small retailer.

Even though the global reach is touted as one of the key benefits of the Internet, selling apparel globally is very difficult. Many manufacturers have made money in the past by charging different prices in different countries. Today, however, the emerging global retailing environment puts tremendous pressure on retailers to integrate operations and pricing on global basis (Steidtmann, 2000). In the European market the introduction of a common monetary unit (Euro) enhances this trend, by allowing consumers to compare prices far more easily.

Another aspect complicating global sales further is the fact that fashions and trends differ – at least to some extent - in different geographical regions. This is acknowledged by for example Levi's that displays different sites for its customers from Europe, USA, Asia Pacific, and Latin America. Also Lands' End, a catalog-based retailer, set up different Internet sites in late 1999 for web shoppers in Japan, UK and Germany. It sells clothes and other items in these countries with catalogs that are tailored for the trends and tastes of these specific markets.

3.5. Technical Components

The technical components in the framework include the infrastructure and related components as well as relevant back-office systems. There are a number of technical issues to solve, some of which are common to e-commerce in general, and some of which are particular to apparel e-commerce.

The presentation of clothing epitomizes several challenging problems for e-commerce. The first presentation problem is the "web safe" colors, which are very limited and still vary by browser (Bahar, 2001). As different fabrics reflect light differently, it is very hard to present the clothes on virtual models in such a way that they would be guaranteed to look natural. Lands' End has been at the forefront of online custom-fit technology that let's shoppers virtually "try on" clothing using an internet-based virtual model. "My Virtual Model" generates images of a shopper wearing selected outfits using a consumer's body measurements and sophisticated graphics.

In general, the standardization of data transfer, product coding and payment methods are a big hurdle for all e-commerce companies. This problem is accentuated by some specific standardization issues in apparel industry. The sizing practices for apparel and footwear are far from standardized in international scale, each region having differing conventions. Poor fit is the No. 1 reason for returns to catalogs like Lands' End, and the same problem likewise plagues online sites (Scardino, 2000). Using body scanning technologies or having consumers fill in their body measurements on the

manufacturer's or the retailer's site in order to capture consumers' body dimensions can partly be used to alleviate this problem. The benefit would be for the retailers and brand marketers to be able to refine sizing standards and improve fit of the products for the customers. The actual installations of body scanning systems have until now been sparse to nonexistent, although there are a few, such as [TC]'s Body Measurement System used for instance by Levi's. (Welling, 2000) Land's End has installed body-scanning devices to their own outlets. They use company called ImageTwin's body scanning technology to create 3D versions of their "My Virtual Model" feature for ultra-precise fit and Gap trusts on EzSize for their site (Scardino, 2000).

Fast changes in seasons and products make it less crucial for smaller retailers to have EDI with vendors, but with the larger ones EDI connections are already in place. Taking EDI to the Internet in form of XML-EDI could potentially create extraordinary efficiencies for at least mid-sized players that do not have proprietary systems of their own. With the introduction of XML one could also expect some of the standardization and product coding issues to be solved (Waldt & Drummond, 2001). Large companies are further integrating their ERP (Enterprise Resource Planning) systems with e-business solutions - from consumer-oriented online store fronts to extranets to facilitate communications and transactions with suppliers and other partners - to derive efficiency gains (Everdingen et al., 2000)). Currently only a handful of the exchanges have entered transactional stage, where they can register and authenticate participants, conduct credit checks and hold accounts receivable. None are at the level of virtual supply chain integration, which includes connectivity to ERP, workflow support and integration with other exchanges (Hill, 2000a), although some vendors, such at the Thread.com, are claiming these facilities in the near term. Vertical apparel exchanges supporting specific business processes – i.e., planning, design and product development, sourcing, production, buying, and multi-channel retail operations – that have unique nuances to the apparel industry could be very beneficial for the industry as a whole.

4. THE FOUR ILLUSTRATIVE CASE COMPANIES

In this section we look at some cases of on-line strategies for apparel, pointing to critical or significant issues as categorized by the BUMMAT model. The case companies represent different approaches to e-business in apparel and fashion industry. Of the smaller ones, Culwell and Son uses Internet to support the existing channel with no much emphasis in actual Web-sales, while Feelpretty.com sells its products only on Net. Of the larger ones, JC Penney uses the leverage of its other resources to provide customers with multiple channels, while Styleclick.com is a new, industry independent portal. These latter two companies also represent different alternatives for those manufacturers and retailers of clothing and related products that do not wish, for one reason or another, to handle their own Web-sales.

4.1. Culwell & Son: A small retailer with Web-support

For over 80 years, Culwell & Son has been a men's clothing store "committed to bringing you the finest selection of quality men's clothing for every aspect of your life - whether at work, play, or entertaining guests" in Texas (Dallas and Plano). The annual sales were about 10 million USD in 1999. Suits sold at the store are high quality and high price (USD 600-2000), and Culwell and Son believe in the importance of their name brand on building trust among their customers.

Business Model and User View: Image is the reason to have presence on the Web. Culwell & Son established their Web-site about five years ago, and online shopping has been possible since 1998. This Online Catalog is not, however, used too widely by the customers: there is about one order per day - typically repeat orders – of but cologne and shirts rather than fashion goods. E-mail is seen extremely important in communicating with the customers: Culwell & Son have about 18000 names in the customer base, of which only 1500 do not have email addresses. There is also an email list server for special sales and to link these messages to their Web-site. This can clearly provide savings, as in comparison, it costs about 10000 USD to send 18000 postcards. Also, for the earlier paper-based

newsletter Culwell used to have, 80-90% of cost came from printing and distribution. The Web-site of Culwell & Son is mainly used for interaction, that is, e-mail between the customers and the sales personnel: regular mail or phone can be experienced disruptive, whereas e-mail and the Web can be used as less distracting way to contact customers, and to drive people to the store.

Site Design and Technical Components: Vendors and suppliers are communicated with fax and phone. EDI (Electronic Data Interchange) is not used, although some of them, like the sportswear manufacturer Nike, as well as some other shoe manufacturers, are known to be EDI capable. Sportswear are most often manufactured in the Pacific rim, then shipped to Seattle, then to Dallas. It is typically impossible to replenish stocks, as the season is so short, and by the time the retailer would be ready to reorder, the manufacturers have moved on to the next season's products. Instead, the orders are made with sales representatives that come to the store with all their samples. In Mr. Culwell's opinion, the current Web-sites of the manufacturers are not good but very rudimentary - then again, there are on average 900 fabric samples every season. Another problem with Web-sales is, says Mr. Culwell, the advertising policies of the vendors. For instance, a shoe manufacturer that Culwell buys from, does not want Culwell to have the prices on their Web-site, because their shoes are very popular in Germany and they are much more expensive there. Because of NAFTA, these issues are much easier with North American (US and Canada) manufacturers.

4.2. FeelPretty.com: A small Internet start-up

The Feelpretty.com (established on August 1999) offers the "largest collection of fine lingerie for voluptuous and plus size women on the web". The collection includes garments from manufacturers located throughout the world.

Business Model and User View: FeelPretty.com sells only on the Web, with a traditional showroom and store inventory in Houston, Texas. It sells nationally in the USA, advertising with direct mail. FeelPretty.com utilizes various search engines and plans to start banner advertising. Also direct, personalized e-mail is used together with customer data from the growing customer database. The owner-manager of FeelPretty.com, Ms. Lisa Judson, feels that joining a portal would be too expensive for Feelpretty.com.

Site Design and Technical Components: The sales process is largely manual. When the customer's order comes through the Web site, either her/his credit card is processed, or the customer is called on the phone to get the credit card number (some do not wish to give their credit card number on the Internet). Then the ordered products are pulled from the inventory. If the product is not in stock, it is back ordered and the customer is notified by email. Next, the accounting software produces the invoice, and the order is shipped with UPS, Fedex, or US mail.

The technical development of the site has been outsourced to Avatar Technologies, which is a company specializing in Web-site development, site hosting and e-commerce solutions. The owner-manager Ms. Judson can add products and modify the prices with a module for updating the site.

4.3. JC Penney: Large company with a multi-channel approach

JC Penney is a nation-wide chain of department stores in the USA and the country's biggest catalogue seller ($4 billion business in 1999). JC Penney has been one of the Internet pioneers by taking an early start: in 1994 JC Penney established a Web site with telephone (800#) ordering, and began accepting secure online ordering in 1996. By 1998 EC was identified to be important enough business area to a have a full-time Internet organization, JCP Internet Commerce Solution, Inc.

Business Model and User View: JC Penney applies a multi-channel approach in its sales and services; the customers have a choice of visiting one of the 1.100 stores, order from one of JC Penney's numerous catalogues by phone of from the Web-site, of shop on the JC Penney Internet store. The same multi-channel approach is also applied in marketing by cross-referencing these alternatives

in the various marketing media. The core of JC Penney's Internet strategy is leveraging the existing infrastructure and assets. Strong customer base of 52 million consumers together with the catalogue infrastructure of 14 telemarketing centers, six 2-million sq. ft. distribution centers, 48-72 hour nation-wide delivery, and over 2000 catalogue desks for "will-call" pick ups and returns processing form a basis utilized also in the Internet-channel. Banner advertising is utilized in highly targeted sites. In addition to the web site, customers' e-mail addresses, used for instance in targeted email campaigns, are collected through telecenters, again leveraging the current infrastructure.

Technical Components: On the Web site products and services are displayed with the help of Internet-technology, for example 3D model (shopping agent), "zoom room", "will-call" store locator, and product recommendation system. When the customer is checking out from the e-store, this customized system recommends three additional products based on the customer's shopping history (combined Internet and catalogue purchases). Also, according to Mr. Richard Last, Executive Vice President of JCP Internet Commerce Solution, in 1999 already 50.000 customers had entered their measurements and set up a virtual model for themselves.

Site Design: JC Penney has had an alliance with America Online (AOL) since 1995, meaning in practice that AOL lists and links to JC Penney in women's apparel, men's apparel, home furnishing and department store. Furthermore, JC Penney has around 2000 affiliates that link to JC Penney and get a small bounty if a sales occurs. A number of JCPenney affiliates have build their own Web sites for product information display, but prefer to handle sales through JC Penney. These affiliates are suppliers for JCPenney; they link to JCPenney, but not the other way around. In these cases JC Penney also handles payments and customer care and data, while fulfillment is taken care by the affiliate.

JC Penney uses EDI over third party network with most of its suppliers. There is both centralized and non-centralized ordering, the stores place orders directly to supplier, and many items are handled through automated replenishment system. EDI can also be used to transmit POS-data. Some suppliers "crunch the data" by themselves, but for the less sophisticated this is done by JC Penney and presented on the extranet. The Extranet is used for information and communications. For the about 2200 registered suppliers, JCPenney defines what kind of information they can access (e.g. status of their invoices), the access rights being different for merchandise and non-merchandise suppliers. The Extranet includes, for instance, news and bulletin board, and the EDI manual.

4.4. Styleclick.com: Large Internet start-up with a network of sites *(now a technology provider)*

Founded in 1988 under the name Modacad, Inc. (developer of CAD/CAM systems for the fashion and home furnishings markets), in 1999 Styleclick.com Inc. acted as an e-commerce business services provider for manufacturers and retailers in the "style industries" (fashion, apparel, cosmetics, footwear, and home-furnishings). Today Styleclick provides e-commerce technologies and services to companies interested in expanding their online sales channels. It designs, builds, operates and hosts destination stores on the Web.

User View and Technical Components: Styleclick.com utilized its proprietary technologies, developed in-house, such as real-time contextual merchandising, strategic content management, data warehousing, and decision logic, to create enhanced online shopping environments. The key concept was "personalized shopping". The site utilized technically advanced and innovative visualization technologies, such as 3D comparison of products and an interactive digital dressing room. In addition to "high tech", also "high touch" was offered in form of a personal style consultant, adding human interactivity to the site. The customers were able to shop at Styleclick.com by selecting a department (e.g. footwear or bath & beauty), brand, or a specialty shop (e.g. Fashiontrip Boutique, golf shop, or Valentine's day shop). The site was rebuilt often to keep it interesting.

Business Model: In 1999 Styleclick.com's syndication strategy allowed the company to acquire, produce, and display content across the Internet via major portals, destination sites, and its own

growing network of Internet properties. Styleclick served as an e-commerce facilitator for brands and retailers interested in exposure within a multi-branded shopping environment. Order processing was semi-automated, as the order had to be printed out for the warehouse, after the customer's credit card was processed, and the inventory was reviewed manually. Styleclick.com had about 200 brands and 4000 items, of which about one third was sold by other than Styleclick.com. However, Styleclick.com owned the customer data for all the purchases. Warehousing was taken care by a third party partner.

Already in 1999, the company also provided complete e-commerce services to manufacturers/retailers interested in setting up their own branded destination, and this is today its core business. Styleclick used to manage two dozen e-commerce sites on behalf of its vendor partners. The services offered to vendors by Styleclick.com included web site design and development; fulfillment solutions, including electronic order processing, inventory control, fulfillment services, customer service; creating and maintaining electronic catalogs; and managing digital content. Warehousing was outsourced to a third party company.

Site Design: Styleclick.com had a logistics manager that took care of communications with suppliers with phone and email. Although the company was EDI-capable, automating the purchasing process was not seen rational.

5. DISCUSSION

The four examples introduced in the previous section represent very different approaches to e-commerce in the retail apparel industry. With the help of the BUMMAT model we can uncover some critical industry specific issues often overlooked when focusing on a single case.

Successful earning logic within a business model of an apparel site can be either direct sales, or marketing support, or a combination of them. A small niche player, such as FeelPretty.com, can have significantly larger market in the electronic environment, as compared to traditional bricks-and-mortar retail outlets, as the Internet offers a possibility to reach the highly segmented customer group of its products in national scale. For a traditional provider of specialized services, such as Culwell & Son, the Internet might not be a significant source of additional sales. Instead, it can provide valuable tools for maintaining customer relationships by the means of more general information about the company and its products and services on its Web-site, as well as by means of more targeted e-mail communication with the customers. JC Penney represents an excellent example of a combined earning logic of both increased sales and marketing support. It has adopted a “clicks-and-mortar” approach with its multi-channel structure, within which the Internet store is offered as a parallel channel to traditional outlets and catalogues sales, for customers to choose from, and within which cross-channel advertising and promotion in all media is used to drive traffic to desired channels. Strength of the clicks-and-mortar stores combining online sales with physical retail outlets, as compared to those operating only on the Net, is the possibility for customers to return merchandise to a store (Troy, 1999).

Another critical issue is related to the choice of the sales channel or channels. A retailer can basically choose to have an e-commerce site of its own, or to join a portal of some form. Manufacturers can choose between doing it by themselves, through retailers or vertical portals (e.g. ebags.com, ehats.com), or networks such as Styleclick.com. Also, in some cases when agreements with physical outlets may prohibit manufacturers selling directly on the Net, an independent portal can be a way to avoid channel conflict and offer an alternative for the manufacturer. For a manufacturer the strategy of direct sales on the web can be a risky one. This is illustrated by the case of Levi’s: when JC Penney started the Internet sales, Levi’s did not want JC Penney – the biggest retailer in the USA for Levi’s and Dockers (both brand names of Levi Strauss & Co.) - to sell their products on the Web. Levi’s wanted to control the channel by themselves, including content management and the whole “e-care”. After running into a number of operational problems, Levi's realized that they are not retailers but manufacturers. They negotiated with two large department store chains also operating on the net, JC Penney and Macy’s, of which JC Penney, having the data on Levi's and Dockers products already in

the catalogues, got a head start on selling Levi's on the Web. Levi's and Dockers have worked with JC Penney also to extend the assortment to include items that are not sold in the physical JC Penney stores.

6. SUMMARY AND CONCLUSIONS

In this paper we looked at the special issues and topics that electronic commerce poses to apparel retail. While many of the key development issues, such as security, streamlining of supply chain, and b-to-b commerce related issues are the same across all industries, there are a few distinct difficulties with apparel. First and foremost, apparel is something to wear, which is a very personal and subjective thing for the consumers. This is translated into very strict conditions for product presentation at apparel web sites. Virtual models that are tailored for the individuals' measures are quite a challenge for the system developers. Also the lighting and reflection properties of clothes are difficult to present with current web technology.

With the help of our BUMMAT model and four case examples, we presented different issues related to apparel retail. These four case companies practice electronic commerce with an array of different basic strategies. Of the two case companies with physical retail outlets one utilizes EC primarily to support its marketing, and the other one to support a multi-channel approach. Of the two operating on the Net only one has a basic, simple electronic store, or e-shop, while the other is (or rather was) a large portal in form of a complex network of companies utilizing advanced technologies.

As one of the interviewees pointed out, apparel industry is a relatively traditional one and likely very slow to catch up with technological innovations. It is, however, acknowledged by most players that the importance of digital communication is gaining momentum. As in any retailing industry, communicating with customers is seen to be extremely important in the apparel industry. The retailers want to provide the customers with a possibility to pre-shop on the web before coming to a store: for those with traditional bricks-and-mortar outlets getting the customer to a store is still very much preferred to online shopping. For “e-tailers”, i.e. those selling only on the Internet, getting the customer to shop online is obviously the main goal.

For the apparel industry to be successful in the future e-business, it needs to continue the research and development on virtual models and product presentation. To provide added value for the customer, apparel sites also need efficient back-office and make-to-order systems. In the short run these might options only for the large bricks-and-mortar operations such as JCPenney, but as different outsourcing options become more widely available, this will change. For the time being, the researchers need to continue to look at the standardization of issues such as measurement, model presentation and data interchange.

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