



Future-proofing the fashion value chain

The fashion industry thrives on innovation. It's what the consumer wants from us—something new, not just clones or replacements for worn-out items. New product introductions are critical to business success, but only half of them achieve the profit objectives set before launch. To improve the ratio of hits to disappointments, it is essential to listen to the consumer and collaborate with the supply chain.

The consumer sets the bar for value and the supply chain determines whether you meet or miss it. The next decade will call for significant materials and process innovations at both the micro (product) and the macro (enterprise, supply chain, and industry) level. If shorter, more frequent product introduction cycles were the only challenge... but they're not. At strategic planning levels, the industry must figure out how to convert to more sustainable ways of doing business, starting with raw materials and research and development and expanding product lifecycle management practices to include recycling. At the operational level, rethink the way you work internally and collaborate with supply chain partners to eliminate waste throughout the value chain. If a process doesn't add value for the consumer, don't do it. Optimize the entire value chain and focus it on value creation. Innovations arise at every stage, when all the partners can see the value chain as a whole.

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Why future-proof?

Future-proofing is the point of strategic planning. Planners attempt to anticipate future developments so they can take action to minimize a range of foreseeable negative consequences, while positioning their organization to seize opportunities predicted to arise from the same developments. The fashion industry is getting better at short-term planning, profiting from mature technology, better demand-side information, and the example of fast-fashion models. However, the ability to plan for foreseeable long-term issues is limited.

Case in point: Petrochemical-based synthetic fibers account for approximately half of all fiber usage in the industry; their availability has an enormous impact. As far back as 2008, one fiber manufacturer predicted, “Price volatility and availability are key issues that will impinge on the market more and more. Within 10 years, we expect oil-based fibres to be under such pressure that more sustainable solutions will be needed to keep up with global demand.”¹

This outlook has led to the creation of cellulose-based fiber alternatives ranging from corn to seaweed to nettles, and unleashed a flood of creative approaches for enhancing their looks and performance attributes while reducing toxic treatments and emissions. Leaving aside the question of using food stuffs as fabric stock, will enough consumers be willing to pay a premium for alternative fibers while the industry works out these issues? Many alternative fiber developers expect mainstream acceptance to take 10 to 20 years, which is actually an optimistic projection from the perspective of history. Unless it is possible to speed that process up, it is easy to foresee that negative consequences could overtake a large portion of the industry.

“Sustainability” is no longer just a buzzword. It’s a mandate. The industry as a whole is trying to come to terms with issues of environmental sustainability (depletion of resources, air and water pollution). Meanwhile its members all wrestle individually with the difficulties of finding a sustainable business advantage amidst rising input costs and downward pressures on pricing, labor issues, complex regulatory requirements, increasing competition and increasingly rapid rates of change. How can you position your firm to minimize the risks and seize the opportunities that will arise from the interaction of all these factors?

At a recent event of over 100 leading apparel and footwear brands, sponsored by the Sustainable Apparel Coalition (SAC) an SAC staffer said, “transparency in the value chain is quickly becoming a requirement for doing business ...(from) material makeup through end of life.” The product lifecycle, properly understood, goes from conception to disposal after use. Keeping this full cycle in view can actually start to solve some of the sustainability issues we face as an industry—for example, through recycling, a standard supply chain activity in many other industries.

One advantage of synthetic fibers is that they are recyclable back into oil-based raw material. So far, Japan is the only market that has really explored this option. The international retailing giant H&M has made a commitment to use its influence to promote “reduce, reuse, recycle” practices throughout its supply network, and its CEO Karl-Johan Persson hopes that “upcycling old clothes will be a standard in our industry” going forward. Did you ever expect to hear a fashion leader say that?

Perspective on new fiber introductions: Commercializing spandex

To return to the example of the fiber base, it is worth noting that a slow start may lead to a long run. A substitute for natural rubber was sought throughout the wartime 1940s, but nothing satisfactory emerged until spandex (aka elastane, Lycra) was invented in 1959. It was used mainly in corsets and other support wear until the late 70s and early 80s, when dancers, rockers, and athletes popularized spandex performance gear. Now, 30 to 40 years later, stretch fabric is part of everyday clothing, not just active wear or underwear. According to NPR, in 2010, “Americans bought 20.5 billion pieces of clothing and 80 percent of those garments had spandex in them.”²

While spandex has moved from specialty to commodity status as raw material, the category it introduced—performance gear—is rapidly moving in the opposite direction. It is not just clothing anymore; the leading edge products are becoming tools. Speedo, the first company to produce nylon/spandex swimwear in the 1970’s, introduced a specialty fabric with the hydrodynamic properties of sharkskin at the 2008 Olympics. By reducing the friction between skin and water, Speedo said, the suit could give the wearer an advantage over an otherwise comparable swimmer equivalent to a six-meter head start in a 200m race. After swimmers wearing the “sharkskin” suit took 23 of the 25 world records broken at the 2008 Olympics, complaints that the suits amounted to “techno-doping” led FINA to ban them from international competition. The fabric still does well in retail swimwear.³

An even more striking example is the E39 “electronic” compression tee shirt from Under Armour that ushers in the era of wearable technology. Sensors in the shirt monitor the wearer’s heart rate, breathing, velocity, and orientation in space. This data is stored on a hard

disk in the athlete’s shirt and can also be transmitted wirelessly to his trainer’s smartphone, tablet, or PC for analysis. (Not just to a trainer—a scout, a training partner, anyone the athlete wants to share with. How’s that for social data?) Proprietary software analyzes the data in relationship to the athlete’s individual movements to provide insight on how to improve performance.⁴

Speedo, Under Armour, and other innovators in the performance wear category have an advantage over less specialized apparel companies in that their niche is well defined, the performance criteria are well understood, and it is easy to engage consumers in product design and feedback. Their products command a premium price because they fulfill their consumers’ dreams as well as needs. Arguably too, their identification with athletes helped create a culture of continuous goal-setting and improvement that drives their design process. Of course, collaborative R&D and continuous improvement programs are not confined to the performance wear category. For example, the “innofactor” and supply chain innovator TAL Apparel makes dress shirts that wick moisture away from the skin as well as any compression tee and has developed nanotechnology treatments to make them exceptionally stain and wrinkle resistant as well.



Collaboration drives innovation

Granted, these examples lie outside the norm of new product introductions, but in doing so they highlight and reinforce a lesson learned from fast fashion. Innovations are brought to market by networks of firms operating in a coordinated manner. Under Armour wisely chose not to try to become electronics experts. They selected Zephyr Technologies as their electronics partner because Zephyr also supplied “the US Special Forces and people whose lives depend on the data.” Speedo’s R&D team worked with NASA; shark experts from the Natural History Museum of London also worked as consultants on the project for four years.

Collaborations will increasingly drive innovation for both specialized and broad market products, says Bob McKee, Global Fashion Industry Strategy Director, Infor®. This approach to product innovation is not confined to apparel; footwear and accessories benefit from similar teamwork. In addition, the emergence of technical fabrics for medical, automotive, construction, safety, and military applications will make such odd-fellow teams as Speedo and NASA more common. McKee says, “Companies succeed in the 21st century by generating constantly evolving networks of supply chain partners. Such continuously evolving networks can respond to the dynamic nature of today’s ongoing demand for new forms of consumer/supplier collaboration and scalable product and information delivery flows. Today’s companies compete by the quality of their supply chains and invest in supply chain innovation as well as in product innovation. And these collaborative supply chains are creating a whole new group of collaborative networked business models.”

Are you ready?

But are today’s companies ready to compete on this basis? More than half the respondents in the 2013 Gartner survey sponsored by Apparel magazine answered in the negative. Summarizing its findings, Gartner states, “Supply chain planning emerged as the application area that the industry is most concerned about.... 54% of industry respondents stated that, on one level or another, their applications portfolios are not robust enough to:

- Take them to the next level of enterprise maturity
- Overcome the challenge of layering in capabilities to synchronize internal teams
- Collaborate effectively with external trading partners
- Achieve further lead-time reduction
- Improve success in new product launches
- Effectively segment supply chains.”⁵

These are critical shortcomings because respondents also reported moving away from relying on unit cost reductions as a way to maintain margins. Fewer respondents expect growth to come from existing products; increasing numbers expect them to come from new product launches and global expansion. Consequently, Gartner states, there is “a great deal of interest in improving the likelihood that a new product or new product category will live up to the financial, volume, sales channel and customer metrics the company sets for it.”

Finding the magic

We fully agree that successful supply chain execution includes and requires the capabilities enumerated above. But we think that logistics and business process automation are not enough to achieve the stated objectives. Better software will definitely produce better results, but it is not magic. The sub-optimization of a broken process doesn't make it better. The only real magic in any process is the trigger and the goal; the steps in between are just the mechanics.

If your goal is finding a sustainable business advantage in a new or changing market, what is your trigger? Is it a demand signal, a new supplier relationship, an ethical commitment, a belief in the potential of a new fiber, or finishing process? Is it none of the above, or something different? It is quite alright not to have an answer ready, but if that is the case, it is time to do a value chain analysis. (If your colleagues or partners are unfamiliar with this form of analysis, a free online MindTool will step them through the process.⁶ This is a good exercise for a work group of trading partners to perform together.)

Even if you have identified your trigger, it is always wise to remember that you don't know what you don't know. External social media are helping overcome the limitation in what you don't know about your consumers, but along the way they generate huge amounts of unstructured data which you have to be able to collect and analyze. There is also what you don't know about the productivity triggers for internal teams and the untapped capabilities of supply chain partners. The application of social media technology to enterprise or channel workflows can help bring these unknowns to light and thereby show what adds value to the consumer and what doesn't.

Value is in the eyes of the consumer

As classically defined, the fashion value chain is composed of all the activities that occur from the conception of the product through all phases of production and distribution to delivery to the final consumer. Starting with the raw material, each actor in the chain adds value. McKee emphasizes this definition of value: "Value is determined from the consumer's perspective. It may be lowest cost, best delivery performance, highest quality, a unique solution to product/service requirements, or some combination of these requirements. Whatever the definition, the value proposition is expressed as a product or service required at a specific price and time. Production to this specification is value creation,"

In other words, consumer input is raw material for the value creation process, just as consumer satisfaction is an output. Until recently, this point was more theoretical than practical. Most products were conceived by in-house teams and the retailer's results were proxy for consumer input. However, the retailer is just the last customer in the supply chain—not the final consumer. What retailers can tell you is that this is selling and this is not. Sometimes this is all you have to go on when expanding into a new market, and if so, good luck. If the retailer has good analytics, they can also tell you such things as: the rate of sales, the impact of promotions, the most popular SKUs, what items are commonly purchased together, what items sell best in which postal codes, and so on. However, the final consumers can tell you more, not just about their reaction to available items, but also what they want but can't find. They will, if you ask and if you listen.

Action steps for social media

Use social media to get as much consumer input into the design process as possible, directly and indirectly. Ask questions on your Facebook product page and let consumers respond to polls via Twitter. Use interactive, multimedia presentations in stores and online. Survey the members of your loyalty programs; incent consumers to fill out post-purchase questionnaires. Read online consumer reviews and comments on Facebook fashion pages. See if your products turn up on Pinterest; follow pinners like those in your target market and see how they put together a collection.

Join or start an online community whose interests align with or advance your own interests. In keeping with the sustainability theme, check out Green America and the email-driven contest it recently sponsored on behalf of its members.⁷ They profiled ten companies and focused on their supply chain relationships, with the top three vote-getters to receive a \$5,000 award to invest in growing their business.

Start your own online community based on a product or brand, and start experimenting. For example, Threadless.com crowd-sources designs for tee shirts, backpacks, bags, and hoodies, then its online community scores them, and the website takes orders for top-ranked choices.

Some companies allow the final consumer to customize existing designs online instead. For example, eShakti.com offers a portfolio of designs and fabrics that the consumer can customize for both style and fit, from woman's size 0 to size 36; each style is cut to order and direct-shipped. Both these companies have radically reduced the risk and expense of new product introductions.

Make sure your designers get as much inspiration from consumer inputs as from other designers. Review design ideas and concepts with the supplier community. Take their inputs into consideration; don't try to use this communication as a bully pulpit for what you have already decided to do. Sort the inputs for relevance and act on them. Make samples and tweak them as necessary. Pull together relevant items for a collection and review that with the community. Release small succinct collections to market at a faster but more concise rate. Using a PLM system will enable speed—reducing design and development times, cutting lead time in the supply chain, and improving time to market. Sharing your information between PLM and sales and operations planning systems will bring about much greater speed with less risk and better risk assessment.



Supply chain thinking vs. value chain thinking

There are important differences between the value chain and supply chain, starting with the fact that the value chain includes but is not limited to the supply chain. The differences that matter most are between conventional supply chain thinking focused on reducing costs and value chain thinking focused on creating and fulfilling value propositions for which consumers will pay a premium. Prof. Andrew Fearné of Kent Business School humorously and clearly outlines the two styles in a YouTube video.⁸

In the conventional supply chain world where a business pushes its products or services through all the intermediate stages of production and delivery and onto the consumer, Fearné says, “relationships are fundamentally adversarial... In an adversarial climate, information flow is very weak and the nature of information that flows between organizations is very transactional.” By contrast, value chain thinking transforms the business model from push to pull.

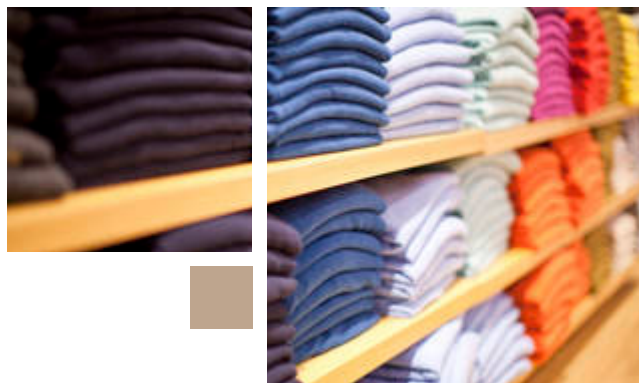
The consumer pulls and the supply chain responds. The whole thing works because the supply chain partners have targeted the right consumers and determined what value is from their perspective and how much they will pay for it.

When the focus is on the value chain, the businesses involved share a richer flow of information. By applying their collective intelligence, they take out cost and time by removing uncertainty and waste; through collaboration they add more value at lower cost. For example, if value chain partners pool their consumer input, then instead of duplicating research costs, they can pay for market research once and align themselves according to the results.

A single organization may engage in adversarial, cost-cutting supply chain relationships with some of its business customers and participate in collaborative value creation with others; supply chains are sometimes segmented between fashion and basic lines to allow this to happen. The difference lies not in what functions the business performs but in the way it behaves. Since people and businesses usually prefer to behave consistently, one mode generally takes over.

Integrate the value chain

Let’s investigate the factors that promote collaboration within the supply chain, because collaboration is the surest way to build a sustainable business advantage for all parties over time. Collaboration essentially requires the ability to share and interact upon critical data, preferably in real-time so that partners can synchronize their activities. Synchronization fosters the channel intelligence to access the right product and the right service in the supply chain to satisfy the consumer. Embracing a value chain approach is not just about using enabling technologies for communications, visibility, decision support, planning, and interaction. It demands that companies up and down the supply chain embrace the accompanying cultural and organizational changes as well.



Collaboration occurs on a scale of increasing intensity within both the technical and business spheres. Technically it ramps up from fax to EDI, server-to-server links, and Internet applications that provide real-time data and transaction synchronization. The ideal solution involves an integrated collaboration platform that lets you capture relevant communications that are usually siloed and lost through email and instant messaging.

Business collaboration ramps up from a bare minimum to joint operations, coordination of network partner competencies, and joint visioning where partners operate as if they were a single entity. Historically, the incompatibility of trading partners' system platforms has been a serious obstacle to business collaboration, but middleware and cloud-based solutions are now available to bridge the gap between partners' systems.

Each level of collaboration generates value through four critical drivers:

- The collaborative capacity of intra-company management teams grows in proportion to the level of collaboration intensity.
- As collaborative intensity grows, it drives exponential growth in technical and business infrastructures to create and extract value, accelerating innovation.
- While joint business processes within the supply channel are critical for creating collaborative value, they are just the start of many possibilities for collaboration.
- Strategic planners must constantly search for and implement new technologies and management methods to regenerate their networks and respond to the market.

No one can disagree on the power of supply chain collaboration. It is also undeniable that corporate inertia and internal performance silos often pose a high barrier to building an environment that encourages the necessary openness, communication and mutual dependence. Another barrier is lack of trust. Some companies fear that proprietary information will be broadcast to partners who will in turn pass it on to competitors or use it to unfair advantage. The best collaborative relationships typically take years of good will, investment in resources, and proof of mutual benefit, but the benefits they achieve are sustainable.

Keep up the momentum: Restock faster

What could be more frustrating than an initially successful product launch that stumbles and drops the ball just when consumer interest is fired up? You can't sell what you don't have, and consumers will move on to someone else. Supply chain execution is highly complex at any time. Planning and coordinating discrete operations in warehouses, labor management, transportation and third-party logistics (3PL) leave a lot of places where hand-offs between suppliers can encounter delays or misunderstandings. IT support for end-to-end integration of these operations allows you to optimize the flow of product through the supply chain—whether on a one-off basis, for standing orders, or through vendor-managed inventory (VMI), depending on the collaborative level you have reached—for the shortest possible time to value.

Under normal circumstances, advance planning allows you to “mind the gap” between stages. However, the best planning in the world cannot prevent all problems. Trucks break down, bridges wash out, and strikes close resupply points. Collaborators who have your back reveal their true worth when things break down. Build those relationships now; disruptive technologies emerging today will be breaking down supply chain links in the foreseeable future.

Disruptive technology ahead

Historically, the fashion industry has lagged behind all other manufacturing-centered industries in its adoption of technology—whether production technology or information technology. When it does invest, it tends to do so in production technology first and information technology later. A disruptive new technology—3D printing on a personal printer—is simultaneously a production and information technology. It allows the printer to fabricate a physical object from a scanned image or CAD file using powdered thermoplastics as raw material.

3D printing is potentially a “killer app” for both light and heavy manufacturing enterprises. Its main applications to date are rapid prototyping and fabricating tooling and pre-production molds used in manufacturing processes, where it saves significant amounts of time and money. Though 3D technology is in its earliest stages as a low-volume direct digital manufacturing solution, it has been used to make a few consumer products, notably designer sunglasses and footwear.⁹ Ecouterre, a website devoted to the future of sustainable fashion design, asks “Are 3D-Printed Fabrics the Future of Sustainable Textiles?” and replies that “the rapid-prototyping process has a litany of surprisingly green benefits. [Fabrication] leaves behind virtually no waste.

Its localized production ... also racks up markedly fewer travel miles, requires less labor, and compresses fabrication time to a matter of hours, rather than weeks or months.”¹⁰

When this technology matures within the next decade, it may have the potential to deliver the fashion industry’s Holy Grail—manufacturing for the market of one—as well as the potential to cut both the manufacturer and the distributor out of the value chain, a process known as “disintermediation.” 3D printing might accelerate a collaborative design process or might become proprietary digital manufacturing by the owner of the CAD file. Will luxury consumers see this as a chance to have “my own designer” and go direct to the source for custom goods? When and if it becomes possible to recycle synthetic fibers into thermoplastic raw material for 3D-printed fabrics, will personal 3D printers become so affordable that ordinary consumers can print a new shirt to wear to work or have a service bureau print out a date dress over their lunch break? Is this the way that the chase for the “cheap needle” will end?

There are a lot of unknowns about 3D printing but one thing is certain—it works. It is the latest tool in the field of regenerative medicine; doctors recently printed and implanted an airway splint for a baby. Both the US Army and NASA are investigating its potential to print spare parts for vehicles and spacecraft while behind enemy lines or on a deep space mission. Another sure fact: the technology is rapidly becoming more affordable. 3D printing was first used to model and output physical objects from digital data back in the 1980s, but at that time the necessary hardware and software cost hundreds of thousands of dollars. They are now available at both the high-end and low-end of the market. Early adopters have printed a solar panel on a personal printer and a car body on an industrial printer.

So print a tee-shirt? No problem.

Recommendations

The value chain is not a new concept. It comes from Michael Porter's attempt in the mid-1980s to consolidate the physical and virtual aspects of the supply chain for planning purposes. However, the term is coming back into fashion because now, as in the 1980s, a great number of enabling and disruptive technologies have become available and affordable at the same time that the consumer market is recovering from a slump. This time around, the consumer has acquired the upper hand in many respects and the market has become global, diverse, and electronic. Issues of environmental sustainability that were not even on our view screens in the 80s now stare us in the face.

In the fashion industry, the pace of change is now so intense as to feel like physical pressure. Data points wash over us all the time; reference points go by as though on a moving sidewalk. Opportunities and threats abound, and sometimes we don't know which is which. "Future Shock" was a book title in the 80s; it is a common experience now.

To help focus on the essentials in this dynamically evolving industry, adopt this as your mantra, "Listen to the consumer and collaborate with the supply chain." If you can harvest consumer input from social media and integrate your business applications and social networking technology for the sake of inside teams and supply chain partners, you will leverage all the effort you put into sales and operations planning. If you are bringing new products to market, remember that you can't sell what consumers don't want. Remember too that collaboration within the supply chain helps all partners stabilize existing positions, take sustainable business advantage of emerging conditions, and future-proof the business to the extent possible.

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