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Too many product leaders in retail, footwear and apparel today lack a real understanding of what the Internet of Things (IoT) or the Internet of Everything (IoE) phenomenon means to them. It is too easy for these leaders to assume the appropriate time and attention for IoT rests with their colleagues in store operations, seamless commerce (previously called omni-channel) and marketing. However, it is just as important for product leaders to understand, interpret and act on IoT. It is OK to be skeptical, but is not OK to lack an informed opinion. As the most recent CES show highlighted, IoT for product development is already here and viable.

Here are seven reasons product development leaders need to pay more attention to IoT:

**1. It is Inevitable for Your Core Assortment**

At some point, virtually all product, including footwear, apparel and accessories will have some role in the smart connected product world. While performance apparel/footwear/accessories (i.e. athleisure) leads the way, most other merchandise will eventually have a smart, connected role. This role may be quite active or simply passive. From an active standpoint, softlines merchandise is already starting to play a key role in health and wellness by connecting information about patterns for eating, sleeping and fitness to help consumers live healthier lives. We should also expect that softlines merchandise will eventually be able to track and communicate usage information, such as fit, washing durability, color fastness, etc., to better inform quality decisions in the product development process.

For products like footwear, the technology could sense and communicate obsolescence, possibly based on sole thickness, and trigger the need for replacement. From a more passive standpoint, softlines products may only provide simple identification information for use in inventory management and replenishment, as well as security from theft – a simpler, less expensive alternative to RFID. Finally, information could be stored inexpensively in the article of clothing to provide country of origin and care instructions on labels via a scanable logo or simple storage chip.

**2. You Will Have to Uncomfortably Extend Beyond Your Core Assortment**

The core apparel and footwear assortment will quickly come to rely on related merchandise to provide the extended network required to generate value to consumers for smart connected products. For example, apparel with the ability to track biometrics will need to be linked to smart phones, smart watches or other devices in order to share the information the garment may be tracking.
By bundling core assortment and extended assortment merchandise, leaders are creating differentiated offerings via the IoT capabilities. As a result, product development leaders will need to broaden the scope of their products to be designed and developed for categories in which they have little expertise. Leaders will need to either develop greater in-house expertise or partner with other companies (or both) in order to bring an integrated offering to market.

3. Your PLM Application and Data Will Be Important

Most often, product lifecycle management (PLM) systems are the first point in which the company captures and establishes product information files. The PLM system is frequently the system of origination for information needed to feed into other systems, such as merchandising and e-commerce applications. Going forward, it is highly likely that PLM will be the system of origination, or even the system of record, for product information used throughout a complex IoT network across the supply chain, stores, mobile commerce, etc. Product development leaders will need to have their PLM house in order, with a contemporary PLM solution that provides a reliable, accessible, single source of the truth for product information. In addition, product leaders will have to play a greater role in governing and managing data sets that are more frequently relied upon across the company. They must take responsibility of the data, to be sure it is clean, accurate and dynamically maintained, and that it is strategically applied.

4. Your Smart Connected Stores Will Be Rich with Consumer Insights

Your colleagues with responsibility for stores, e-commerce, mobile commerce, digital marketing, etc. are likely well down the path with smart connected store initiatives, connecting traditional applications and data sources with non-traditional sources of structured and unstructured data from smart phones, beacons, security devices, and RFID tags. These types of initiatives have the potential to yield incredible consumer insights about every aspect of your brands and products.

5. Your Smart Connected Supply Chain Will Move Your Product More Quickly

Your colleagues with responsibility for supply chain (from textile and finished goods factories through to fulfillment centers and stores) are also likely well down the path with smart connected supply chain initiatives. They are likely connecting tracking applications with devices to provide insights from structured and unstructured information, originating from both internal sources and information provided by other external companies. This network of information will enable you to create ways to speed up your product development lifecycle time by skipping unnecessary steps, flagging issues early in the process, segmenting products for sourcing and transportation purposes and more. It is highly likely that you will have a higher degree of interdependency and even integration between product development and supply chain than you have ever had in the past.

6. Proven IoT Innovators Are Working with Your Competitors

Softlines companies, with dedicated product innovation leaders and/or dedicated product innovation functions, centers and/or labs, have already been working with tech companies (both emerging start-ups and established players), academic innovation labs, emerging product vendors and other innovators for months and perhaps years. Frequently, they meet in innovation forums to exchange ideas and eventually pursue strategic experiments via an open innovation process between two or more companies. These innovation leaders are both quick to take on a strategic experiment and quick to drop an idea that lacks real merit. Your most innovative, direct or indirect competitors may already have a jump start on you.

7. You and Your Team Will Need to Become Techies

Product leaders and their team members will need to develop at least a strong, working knowledge of the technologies surrounding IoT, and preferably deep competence in these technologies. In order to make wise design and development decisions that contemplate IoT, product leaders need to be able to separate between hype and the practical application of these technologies. What will they cost?
How should they be incorporated into product design? What types of investments in product will our consumers reward us for? How do we maintain quality standards with the technologies? Robin Thurston, Chief Digital Officer of Under Armour, was recently quoted contemplating, “Are we a performance wear company that leverages technology or a technology company that makes performance wear?” He concluded that Under Armour is moving toward the latter. Closer to home, deep competence for you and your team is also important for career development (and protection), as well as for effective succession planning.

Retail, footwear and apparel product leaders should be doing more to engage in IoT.

At a minimum, every retail product leader should be at least doing the following:

- **Learn** – Actively learn more about IoT, the underlying technologies and the business implications. Dedicate time to articles, blogs, podcasts – any relevant sources to gain a deeper, working understanding of the topic. Meet with firms in the IoT innovation community to learn more about their products and insights about the market. Finally, meet with your colleagues in supply chain, store operations, omni-channel and marketing to learn about their thinking and initiatives.

- **Develop a Point of View** – Based on your more detailed working understanding, develop your own point of view. What is real and not real from a product perspective? How will IoT play out and over what time period? Who are the likely winners from a technology and services perspective? What will my competitors likely do?

- **Set Strategy/Direction** – Set direction for you and your team. Develop a strategy for interpreting and pursuing IoT. Will you be a leader, a fast follower or a slow follower? What inherent advantages do you have that you can exploit? How will you make money over the long term in IoT? What are the risks and obstacles you will likely face? How will you engage your company to pursue your strategy?

IoT is an incredibly uncomfortable topic for many retail, footwear and apparel product leaders, whose experience to date would surely not have adequately prepared them for this phenomenon. However, those leaders that are ready and willing to step well out of their comfort zone and move forward will surely help their own companies while also advancing their own careers.
3D Adoption in Retail – Avoiding the Deployment Trap

by Traci Stapleton, Sonia Parekh and Chad Markle

Although early adopters of 3D fashion technology have experienced many false starts, 3D has matured in the last five years with greatly improved user experience, simulation of materials, and overall believability. 3D solutions are now ready to deliver significant value for brands and retailers, enabling them to reduce cycle times, save on sample and shipping costs, and ultimately create more value from innovation. However, these benefits only matter if they are translated into long lasting business results. When implementing 3D, adopters need a program that demonstrates value quickly and is sustainable.

The Benefits of 3D

When using 3D during design and development, photo-realistic digital assets improve communication and enable cross-functional team members to align on a vision. Designers and technical designers collaborate to create 3D renderings that align with design intent. Then, the asset is shared with merchandisers for assortment planning, patternmakers for fit-ready sample development, customer groups for product tests, or vendors for enhanced communication. Early adopter Adidas has eliminated 1.5 million samples over five years by replacing a portion of physical prototypes with life-like virtual ones, with savings we estimate to be around $8M per year. Target reports a 65% reduction in sampling and a 2-week reduction of development cycle time.

Downstream, the same photo-realistic digital assets replace ad or photo samples for catalog or e-commerce, reducing costly photo shoots. Holograms derived from 3D assets create engaging in-store experiences. 3D product rendering enables customers to try things on virtually with customized fit avatars, creating a digital fitting experience outside of the fitting room.

IKEA has used 3D to replace nearly 75% of photographed online and catalog product images. The retailer saves money on photography, and customers aren’t able to detect a difference.

Avoid these 8 Deployment Traps to Get Started the Right Way

Compared with other investment decisions in retail, it’s not difficult to build a business case to get started in 3D. The savings alone from reduced development prototypes and fit samples, together with reduced lead times, justify the investment, without even tallying the many other benefits.

The biggest challenge – indeed the trap we have seen at many brands and retailers – is that many treat it as a deployment project rather than one focused on achieving company-wide adoption in support of a broader 3D strategy. Success in 3D requires knowledge workers to work and make important decisions in unfamiliar ways using 3D renderings. To change people’s mindsets and behaviors, a transformation and adoption mindset is required. Retailers and brands need to know what to avoid and how to get started.
Here are eight things retailers should look out for when driving adoption of 3D, and some practical tips on how they should get started.

1. **Bottoms up approach**: When 3D is implemented as an experiment without executive sponsorship, it gets deprioritized by other objectives on the executive agenda. Senior managers must regularly talk about their vision for 3D, and demonstrate the criticality of its success and adoption by their actions.

2. **No focused project management**: Avoid embarking on a 3D initiative without a plan and a facilitator in place to achieve the plan. Budget for the project management, change leadership and adoption, and organizational development required to succeed.

3. **Haphazard starting point**: Your choices around where to start, in terms of the categories and stages in the lifecycle, are critical decisions. Understand the potential and the opportunities to add the right value, and then prioritize by the size of the business impact and the ease of execution to find early winners. Pick categories with exceptional 3D believability first.

4. **Scope too narrow**: Start broad enough to involve multiple job roles, processes, workflows and team members. This allows a span large enough to measure results.

5. **Bypassing integrations**: System interfaces and integrations create cost and risk, so it is tempting to avoid them altogether. However, integrating with product lifecycle management (PLM), for example, provides valuable library synchronization of fabrics, artworks and colorways, and bill of materials extraction directly from the 3D software.

6. **Skipping data conversion**: Create 3D blocks and a library of past products to allow 3D users to generate value much more quickly than if they were to design from scratch. Conversion gets everyone up the productivity curve early.

7. **3D as a spare time activity, not “real work”**: Don’t ask designers and developers to get results from 3D while carrying their full-time day jobs unless you want very slow progress. Recognize the time and effort required to learn new tools and create new skills. Plan accordingly in capacity planning and goal setting.

8. **Not changing workflows, systems, habits**: 3D solutions create the opportunity to rethink how work is done in the retail value chain. It is crucial to reengineer workflows to unlock new value and also find ways to drive higher employee engagement in the new ways of working.

Saving on shipping and sample costs, reducing material waste, and increasing speed to market are just a few of the many benefits of a transformational 3D program. Ultimately, business transformation with 3D will deliver results when the objective is clear, the process is sustainable, and adoption is achieved.
The traditional retail industry is at yet another serious inflection point. Squeezed by economic pressures and the growth of viable non-traditional retail channels, retailers are losing share of the consumer wallet. Despite a relentless focus on improving product design and development capabilities, the success rate for new products hovers at 50% as consumers look elsewhere to satisfy their needs.¹

Why do retailers have such dismal results? It’s a real challenge to reach and stay aligned with today’s information-enabled consumer in a hyper competitive marketplace. These consumers have high expectations, are not easily satisfied, and regularly exercise their ability to choose between retailers.

However, retailers that excel in this environment with better success rates regularly test their visions with consumers early in the design and development process. They avoid thousands of wasted working hours, empower internal teams to learn what target consumers really value, and provide a competitive advantage by maximizing the benefits from new product launches.

This process, formally known as Voice of the Customer (VOC), is a capability that has existed for many years. In the world of traditional VOC, consumer focus groups, input from store associates, and test stores delivered some results but took a serious investment in time and resources, with results that were at times difficult to interpret. Today, advanced analytics and social media tools dramatically improve the speed, scale and effectiveness of consumer input. In our annual survey of retail design and development leaders, 96% of the respondents believe that VOC is important for their business, but only 38% believe they are currently successful at doing it.²

Six Barriers to Effective VOC

Why isn’t advanced VOC used more broadly, and more effectively? Kalypso did a study with The Center for Education and Research in Retail at Indiana University’s Kelley School of Business called Leading Practices in End-to-End Product Development: How Retail Leaders Are Transforming the Product Development Lifecycle.

According to this research, the six biggest barriers to having an effective VOC program are a lack of:

1. Technology and tools
2. Funding to build a program
3. Executive sponsorship
4. Effective and efficient processes
5. Talent and expertise
6. Effective change management capabilities to drive adoption

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¹ The success rate for new products is estimated to hover around 50%.
² In our annual survey of retail design and development leaders, 38% believe they are currently successful at doing it.
These six barriers were understandable in the past, when VOC was a labor- and time-intensive process that internal teams would devote weeks or months on before delivering a report back to leadership. But today, advanced VOC is enabled through more effective technology tools and interfaces with consumers across a range of inputs, and powered by predictive analytics models to help inform selection, pricing, planning and targeting decisions. VOC insights can be turned around in days, by focused service providers that allow retailers to gain the benefits of VOC, without having to build the internal capabilities themselves.

Enabling the New VOC

In organizations where product lifecycle management (PLM) software has been implemented, VOC data can be especially effective. Leading VOC analytics solutions integrate with PLM, so the data can be incorporated directly into product design and development processes. During the end-to-end design process, live customer sentiment around price, color, fabrication and material are used to make important development decisions. Should the design team offer next Spring’s line in seven colors or 12? What does the market think of the predicted entry price point? Can we add a price premium to select styles based on key attributes?

Access to this information early in the development process greatly increases the chance of success, conserves resources, and has shown 3%-9% improvement in gross margins in certain instances. In retail companies where PLM has not yet been implemented, VOC capabilities can still deliver meaningful benefits in product selection, customer targeting and pricing models by reducing the need to rely on historical figures and go-with-your-gut decisions.

As traditional retail continues to be squeezed by direct-to-consumer threats and reduced consumer spending, those that make more informed decisions about products with the best chance to succeed in the market will come out ahead. To close the product innovation loop, support the end to end product development lifecycle, and achieve the returns that have been elusive for so long, today’s advanced VOC processes and technologies can help retailers:

- Select better products
- Supply more of what’s resonating with the consumer earlier
- Optimize initial pricing
- Reduce testing and sample costs
- Drive conversion

Getting Started

So what’s the next step for a retail design and development leader who wants to pursue a VOC program?

First, decide what type of input you want your VOC program to capture. Looking at three types of improvements made possible through VOC: more refined product assortment, more accurate initial pricing and more accurate buy quantities, is there one area that your business struggles on getting right the first time? For example, do your product introductions routinely result in stockouts or excess inventory?

Once you’ve defined the parameter that you want to improve, it’s time to build your business case. Set a goal for what you want to improve, and by how much, and then define how bringing customers closer-in to design and development will help you achieve your goal.

Next, look at the market for VOC analytics providers. Recent improvements in data capture and analysis of data can make small investments in VOC programs even more valuable by extracting additional insights from your consumer base. Additionally, there are numerous full-service providers that can help run VOC programs and build the capability into your design and development process.

As the retail industry continues to face challenges, it’s time to start getting better results from innovation, and closing the loop with Voice of Customer can do just that.

1 - First Insight, Harvard Business Review, MIT Sloan and Gartner

2- Study by Kalypso and The Center for Education and Research in Retail, Indiana University Kelley School of Business - Leading Practices in End-to-End Product Development: How Retail Leaders Are Transforming the Product Development Lifecycle

3 - First Insight Testimonials
Driving Value with Digital Product Creation for Retail
by Steve Riordan, Sonia Parekh and Traci Stapleton

The possibilities for gaining value from Digital Product Creation have exploded. This video provides examples of value created by 3D throughout the go to market process and across multiple functions.

Leading retail, footwear and apparel companies leverage 3D technologies across the value chain, including open innovation, design, merchandising, sourcing, production, marketing and selling. This video provides examples of value created by 3D throughout the go to market process and across multiple functions.

Winning retail companies of the future will use the power of Digital Product Creation to bring the best products to market. The time is now to start thinking about what 3D can do for you.
Amazon does it again with its disruptive value chain and “just-walk-out” technology. Going from on-line, to brick-and-mortar, and now with this novelty, Amazon Go, Amazon has listened to consumers to solve shopping hassles at the checkout.

Most stores where I shop have incorporated self-checkout kiosks, mobile POS solutions, or mobile-app checkout options. In the later part of this year, California Fresh Market opened as a grocery store providing app checkout and so did Sam’s Whole Club with its Scan and Go app. Is Amazon then just catching up? No – Amazon has taken it a step further and removed any sort of work whatsoever from the consumer. Everything in the store will be pre-packaged in specific quantities and labeled.

And how will they do it? Artificial intelligence, RFID sensors, computer vision (cameras), and machine learning technologies that are all available today – all it took was for someone to activate these technologies in a way that creates a fantastic new experience for the consumer. The use of RFID and other automation technologies at supermarkets has been explored since early 1990’s. However, the cost of it used to be a show-stopper. Today, hardware prices have settled and the newer software technologies offer endless opportunities to study the consumer and the act of shopping. Tie that with Amazon account profiles, spend study, and a global distribution channel – you’ll never have to think of what to buy ever again!

Despite the hype and the benefits, some questions still come to mind. What happens when you take your family to the store? Is only one person allowed to put things in the bag/cart? What if your kid sneaks in another piece of chocolate? Do you really have to return the item to the exact shelf? In the case of packaged produce, can I rip one banana from the bunch?

Amazon will no doubt work out the kinks at their first store in Seattle, currently opened for employees only. The future of this technology has sparked interest among consumers, and could become a game-changer for brick-and-mortar retailers.
The rage of the summer, **Pokemon Go**, an app created by **Niantic Labs** and distributed by **Nintendo**, has kids and adults around the world capturing, training, and battling creatures through their phones. The game uses the GPS and camera of the player’s device to display a map based on the player’s immediate surroundings. Players are required to physically navigate the map and as they explore, different augmented reality (AR) creatures appear. These creatures can then be captured for rewards.

While some retailers are banishing players from their stores, others are welcoming the increased foot traffic and even purchasing a Lure through the app to bring creatures and, subsequently, more players to their location. With an estimated 20+ million daily active users in the US, it is the first mobile app using AR technology to achieve mainstream success. **Pokemon Go** demonstrates the ability for brands to creatively use AR technology to engage consumers and increase profits. Consider the opportunities to leverage AR for your brand; that Pikachu isn’t going to catch itself.
Retail Innovation Shout Out: The Container Store’s Virtual Assistants to Boost Customer Experience

by Vineet Ghalian

The Container Store will soon have its employees ditch their walkie-talkies for voice-activated wearable computers made by Dallas startup v. The matchbox sized hands-free wearable answer questions, similar to Siri or Amazon Echo. Through a set of Apps, the device allows employees to quickly access real-time, detailed information on inventory and the status of pickup orders without looking at a computer screen or walking to the stock room.

Today’s technology-savvy customers will appreciate the immediate and superior customer service, and Container Store employees will like using the voice-controlled wearables to communicate one-on-one or in a group by using software that’s connected to a Wi-Fi network.

By capturing and analyzing data on employee’s daily activities, The Container Store can also maximize efficiency and reduce costs associated with in-store operations.

You could soon see similar wearables being used at big box sporting goods stores, home improvement stores and major apparel brands who are focused on delivering an innovative in-store experience driven by the latest in digital technologies.
It’s the end of a long day and an even longer week. You’ve finally made it to the airport and fought through security, only to find that the terminal is packed with people. You still have a few emails you want to send out before the plane leaves and your phone battery just dipped below 10%. Of course there’s nowhere to sit near an outlet and you forgot to pack your portable battery pack this week. If this sounds like a familiar situation, then the new Raden suitcase is ideal for you.

With the goal of “making one perfect polycarbonate suitcase,” this new offering includes built-in technology to create a seamless travel experience. Not only does the Raden suitcase include a TSA-approved battery that can charge phones or other USB-connected devices, but it also has weight sensors and Bluetooth to gather information from proximity sensors. By downloading the Raden app, you can view information about the location of your bag, security check-in wait times, weather, public transportation and flight details. The app can pair up to 10 bags.

Although Raden’s aim is to be the leader in “Smart Luggage,” they are not the only company working to add their cases to the Internet of Things (IoT) bandwagon. Samsonite is working on a line of cases called “GeoTrakR” that include a removable tracking device. Tumi has recently announced a wireless tracking device called the “Tumi Global Locator” that is set to be released in the second half of 2016; Rimowa is debuting a bag that travelers can check with their airline from an app on their phone.

As the IoT continues to grow into new areas, the real question is - will consumers buy-in on the need for what has traditionally been seen as a utilitarian item, becoming another piece of technology in their lives? Raden certainly thinks so, but it will be interesting to see what the market says.
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