

White Paper



Green PLM for fashion & apparel

Designing Profitable Eco-Labels

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Abstract

With increasing focus on environmental sustainability and the concerned regulatory regime becoming more stringent, fashion retailers have to battle twin challenges of creating eco-friendly apparel and delivering fashion. Though consumer propensity to buy green labels is strong, the high cost of green apparel is often a hindrance to achieving their full market potential. However, by making necessary adjustments to the apparel lifecycle, retailers and manufacturers can create green apparel that meet environmental obligations and at the same time offer affordability and fashion. This paper explores how the adoption of Green PLM can enable fashion retailers and manufacturers to reduce the overall environmental impact of apparel manufacturing apparel without compromising their profitability.

Introduction

For a highly seasonal industry like fashion and apparel, both time and speed to market are overriding factors. To keep up with the latest fashion trends, retailers launch thousands of SKUs each year. However, achieving faster time to market and satisfying consumers' fashion appetite have associated environmental costs and implications.

Growing awareness about the negative environmental impact of manufacturing and the need to comply with regulatory mandates have made it imperative for the industry to follow a green product strategy. This is especially the case for those fashion and apparel retailers having a large private label portfolio and hence, greater involvement in different aspects of the product lifecycle. The unique challenge before the apparel industry is how to minimize the environmental impact of apparel products while maintaining their fashion quotient. An environment friendly color may not appeal as much to customers as a hazardous one. Or, an environment friendly fabric may not offer the same comfort as a synthetic alternative. Moreover, eco friendly apparel cost more to produce than regular apparel. The procurement of green materials is also fraught with sourcing challenges. All these hindrances make green apparel a more challenging business proposition versus the status quo.

So, how can fashion retailers meet both environmental and business obligations and tread these seemingly contradictory paths? Does it mean that they should pursue a green agenda on the side just to comply with regulatory mandates rather than follow it with rigor? Do green labels really have any business significance in the foreseeable future? The answers to these questions lie in adopting a more comprehensive green outlook. Investments lacking a strong consumer focus, made purely with the objective of meeting regulatory requirements, are not highly rewarding. On the other hand, if money is spent on building green capabilities keeping the consumer in mind, retailers can realize better returns. Fashion retailers, however, have so far failed to fully capitalize on the growing trend of eco-consumerism that promises bright business prospects. They should draw a lesson from the flooring industry, which has successfully positioned Bamboo, a green, renewable and durable material, as a high-fashion choice of floor covering.

Factors shaping the green label paradigm

- Traceability and environmental regulations such as REACH, TCSA and CPSIA, which require retailers to manufacture sustainable products.
- Greater consumer awareness about the negative environmental impact of manufacturing apparel.
- The ethical dilemma faced by fashion retailers while increasing wasteful spending on the promotion of throwaway fashion.
- Use of large quantities of toxic chemicals while producing raw materials, bleaching, dyeing & treating fabrics and processing apparel.
- The opportunity to derive both operational/financial efficiencies and reduce the negative environmental footprint of the apparel lifecycle.
- Green apparel as a means to achieve private label differentiation.
- Significant carbon footprint of the apparel supply chain on account of geographically dispersed design, manufacturing and marketing operations.

Although there is increasing awareness about green products among customers, cost barriers prevent them from buying eco-friendly products. The challenge for retailers is to create eco friendly apparel products that are both affordable and fashionable. Raw material is often cited as the main cost component of eco-labels; however, this is only one aspect. The high cost of green raw materials can be compensated by optimizing other aspects of the apparel development lifecycle so that the overall cost of production doesn't increase substantially. In order to achieve this, retailers must embrace the process and technology improvements required to drive efficiencies and bring down the overall cost of designing, manufacturing and marketing eco friendly apparel.

Key components of the apparel lifecycle

The entire apparel lifecycle has a significant negative environmental footprint. Optimization of the following three focus areas can ensure the creation of sustainable apparel:

1. Design and Development
2. Supply Chain
3. Product Disposal

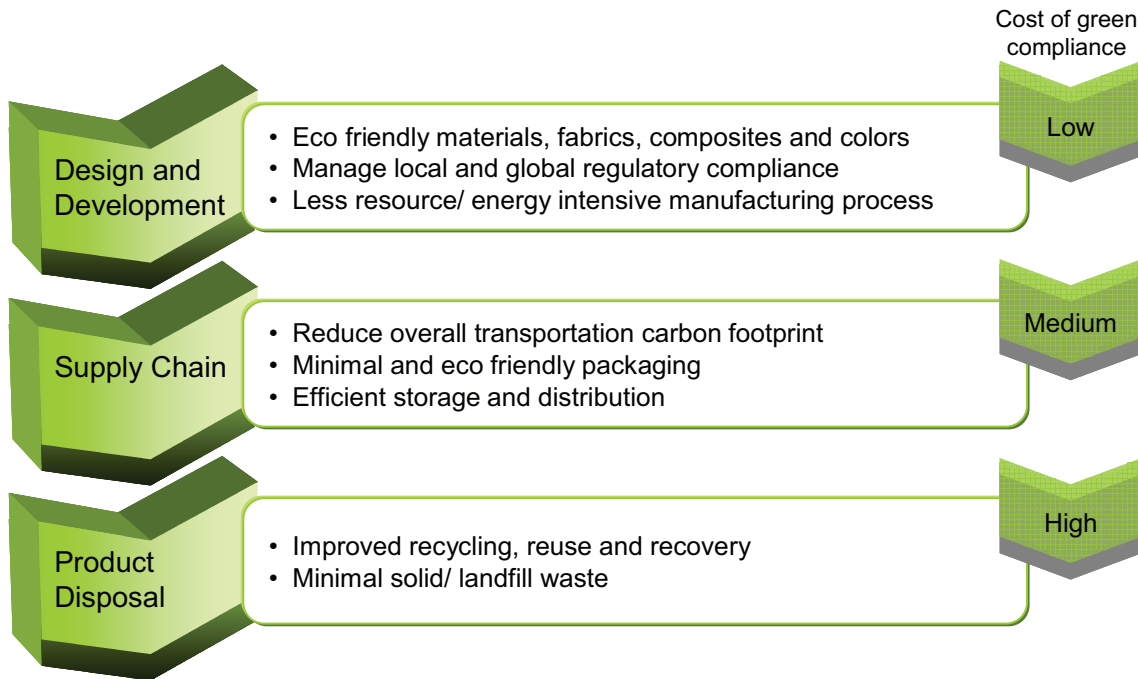


Figure 1 - Opportunities for environmental cost reduction

The cost of adhering to environmental regulations escalates as the apparel lifecycle enters higher stages. The concept and design phase of the product lifecycle is the least capital intensive and most effective for reducing the overall environmental impact of manufacturing apparel. The cost of green compliance is highest while disposing of retired items of clothing.

Correct identification of materials/fabrics and product development processes can significantly reduce the overall environmental impact. The choice of materials during the design stage can also considerably reduce the cost of disposal at the end of life stage. The challenge for retailers, however, is to identify materials that are both eco friendly and available at a commercially viable price. That being said, retailers should do their best to find greener alternatives to environmentally unfriendly materials; when pure green options are not available, low environmental impact fibers can be used. An eco-enabled PLM can help designers make such choices.

Supply chain optimization can also save energy. Consolidating the geographically widespread apparel product lifecycle – for example, by positioning local offices and distribution centers close to supply chain partners – can cut down the cost of transporting raw materials and finished products. Innovative software and information systems plot smarter delivery routes that optimize transportation costs. Such savings can compensate for high green raw material costs and maintain the profitability equilibrium.

Challenges in creating eco-labels

- No consolidated data repository on green attributes and toxicity levels of apparel components such as fabrics, dyes, composites, buttons and packaging materials.
- Varied regulatory requirements for different countries and apparel categories.
- Insufficient transparency in the sourcing process to firmly establish green credentials of eco-designs.
- Balancing the fashion and comfort quotient of apparel made with eco friendly materials.
- Precisely calculating the overall green quotient and ROI during the design stage.
- Lack of information on and availability of eco-friendly materials and suppliers.
- Inadequate knowledge among designers and manufacturers regarding green characteristics of apparel components.

Green PLM for fashion and apparel

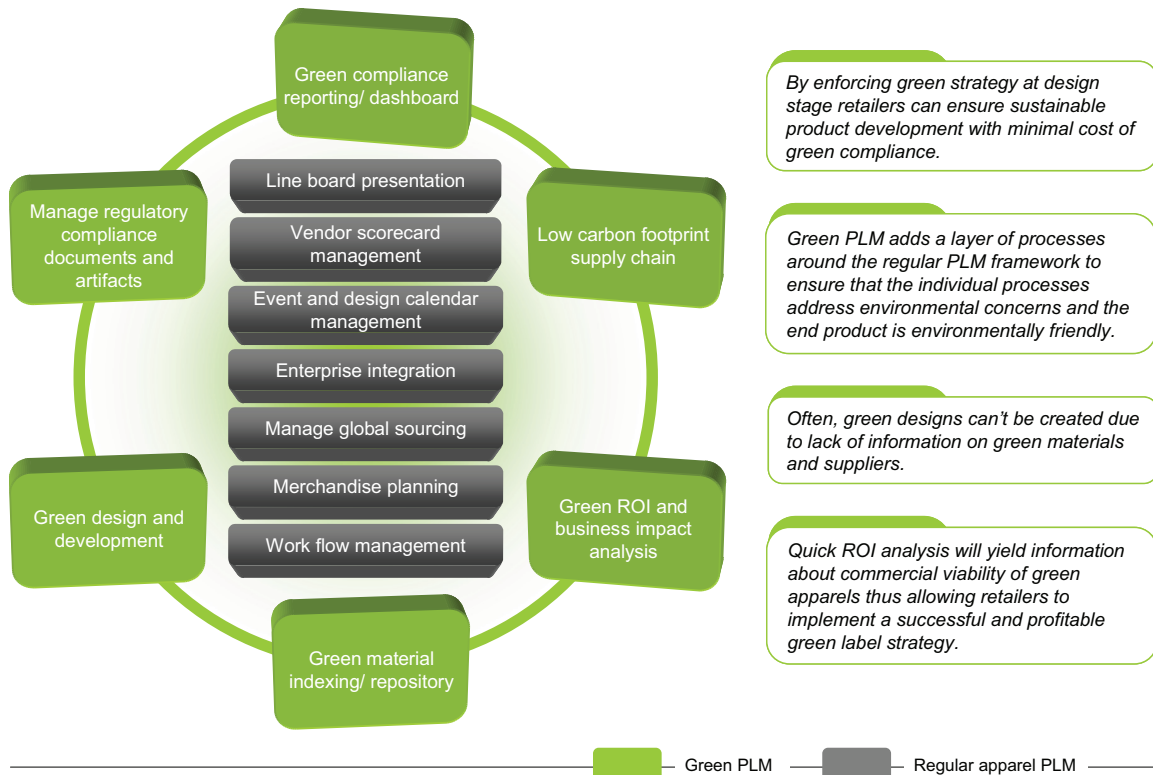


Figure 2 - Green PLM framework for apparels

Using green PLM, the environmental impact at different stages of the apparel lifecycle can be effectively assessed and the most eco-compatible and financially feasible designs can be marketed. For instance, green PLM can automatically replace different components of the proposed apparel design like buttons, threads, fibers, zippers, colors etc. with eco friendly substitutes, and display the eco-friendly versions along with their cost components such as raw material, manufacturing and shipping. This information can be used to calculate ROI and make informed decisions about the marketability of the designs. Moreover, by addressing regulatory compliance at the design stage itself, retailers can avoid expensive product recalls and changes at later stages, when the cost of compliance is higher. All this will ensure the commercial success of eco-labels.

Importantly, a switch to Green PLM only calls for some enhancement of the existing PLM program, and not a total replacement.

Key Capabilities

The key capabilities of Green PLM are listed below

- Eco-indexing of green characteristics of materials, composites, dyes, fabrics and other components.
- Single window view of wide-ranging environmental and regulatory compliance requirements.
- Higher visibility in procurement and manufacturing operations to validate the green credentials of eco labels and meet requisite traceability requirements.
- Enterprise-wide green alignment and measurement of internal and external compliance with green guidelines through reporting and alerts.
- Precise ROI calculation during the design phase.
- Re-engineered supply chain to enable both green sourcing and minimal transportation carbon footprint.

Conclusion

For fashion and apparel retailers, pursuing a green agenda presents significant avenues for cost reduction and fulfillment of environmental obligations. Fashion retailers, however, need to make their green initiatives consumer-centric in order to derive maximum benefit from the evolving economic-environmental paradigm. Green PLMs, such as the one offered by Infosys, allow fashion retailers to design and develop apparel with minimal environmental impact without sacrificing either speed to market or profitability. Using Green PLM, retailers can create optimal green apparel meeting affordability, fashion and regulatory criteria.

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