Operational Strategy Analysis of Stevenson’s Garment Dye Works

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Executive Summary

Stevensons Garment Dye Works, once a leader in agile garment dyeing, lost its strategic edge after transitioning to an offshore production model. Originally, Stevensons thrived using an onshore, postponement-based process that delivered responsiveness, reduced waste, and aligned with volatile fashion demand. However, the shift offshore—driven by client relocation and cost minimisation—prioritised efficiency over flexibility. This move disrupted demand alignment, increased inventory risk, and degraded sustainability performance.

This report applies Fisher’s (1997) product-supply alignment model, Lee’s (2002) coordinated strategies, the Theory of Constraints, and the CLAW framework to assess Stevensons’ misalignment. It reveals that the root failure was cognitive: flawed assumptions, local cost logic, and siloed KPIs overrode systems thinking and strategic coherence.

Stevensons now proposes a hybrid model: offshore base production with onshore dyeing. This restores postponement, segments flows by volatility, and reintroduces responsiveness where it matters. DDMRP and flow-based logic re-anchor the operation within its performance frontier.

The core insight: responsiveness is not a trade-off in volatile markets—it is strategic. Sustainability cannot be bolted on; it must be designed into the system. Stevensons’ path forward depends on its ability to integrate flow, alignment, and sustainability into its operational DNA—resisting short-term cost seductions in favour of long-term system viability.

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1. Introduction: Strategic Alignment in High-Variability Operations

Stevenson's Garment Dye Works, a family-owned British textile firm, built its reputation on post-manufacture garment dyeing. This postponement strategy enabled retailers to delay colour decisions until late in the product lifecycle, aligning production with real-time demand signals. It positioned Stevensons as a leader in responsiveness—a critical capability in the volatile fashion sector, where short life cycles and shifting consumer preferences dominate.

This report analyses Stevensons' operational evolution through three configurations: the original onshore postponement model, the offshore cost-focused structure, and a proposed hybrid model designed to restore agility and strategic coherence. The evaluation applies core operational principles: flow, demand–supply alignment, and coordinated strategy.

Flow refers to the uninterrupted movement of materials and information across the supply chain, reducing waste and delays while enhancing responsiveness and adaptability (Ohno, 1988; Goldratt, 2009). In high-variability contexts, flow is essential to competitiveness.

Fisher's (1997) framework links supply chain design to product characteristics, distinguishing between efficient chains for functional goods and responsive chains for innovative products. Lee (2002) extends this by proposing three tactical responses—separation, buffering, and reduction—to manage variability and uncertainty. These are operationalised through Fisher's Coordinated Strategies (Stratton, 2016) and the laws of operations management: variability buffering, focus, trade-offs, and swift flow (Skinner, Hill, Goldratt, Schmenner and Swink).

Sustainability is addressed through alignment with the United Nations Sustainable Development Goals—specifically SDG 8 (Decent Work), SDG 9 (Industry, Innovation), and SDG 12 (Responsible Consumption) (United Nations, 2022). These inform the broader environmental and social implications of Stevensons' decisions.

The report also draws on the Unified Services Theory (Samson, 2001), framing late-stage customisation as a form of customer co-production. It critiques reliance on visible metrics, echoing Deming (1993) and Goldratt (2009), and presents the hybrid model as a circular economy response through modularity and demand-led production (Atasu et al., 2018).

Each configuration—onshore, offshore, and hybrid—is assessed through theoretical and practical lenses, focusing on trade-offs, variability absorption, strategic alignment, and sustainability. Where relevant, the CLAW framework and performance frontier theory are used to interpret findings and uncover deeper cognitive and systemic dynamics.

2. Onshore Model: Responsiveness and Strategic Fit

Stevensons' onshore model exemplified strategic coherence within a high-variability environment. Operating under a Make-to-Order (MTO) system, the firm specialised in post-manufacture garment dyeing. This postponement approach allowed colour decisions to be based on real-time market data. Deferred differentiation minimised speculative production, enabling agile responses to volatile demand while reducing inventory and markdowns.

2.1. Focused Factory and Performance Trade-offs

Functionally, the operation resembled a focused factory (Hill, 2000), designed not for cost efficiency but for responsiveness, quality, and customer intimacy. The trade-off was explicit: higher labour and operational costs were accepted to reduce market mediation costs, accelerate turnaround times, and enhance demand alignment. In line with Schmenner and Swink (1998), Stevensons operated near the performance frontier, achieving flexibility and speed without compromising quality.

	ONSHORE	OFFSHORE	HYBRID
Environment → Being ***Sustainable***	Localised Finishing	High Emissions	Minimised Rework
Quality → Being ***Right***	Local Control	Inconsistent	Shared Control
Dependability → Being ***Predictable***	Short Lead Times	Long Lead Times	Buffered Inventory
Speed → Being ***Fast***	Very High	Low	High
Flexibility → Being Able to ***Change***	Custom Dyeing	Low	High
Cost → Being ***Productive***	High	Low	Medium

Figure 1.0 Models Order Qualifiers and Order Winners

Among the six operations performance objectives, flexibility and dependability served as Order Winners, with quality and cost functioning as Order Qualifiers. The model leveraged cumulative capabilities (Ferdows and De Meyer, 1990): flexibility enhanced dependability, which supported both quality and sustainability.

2.2. Managing Variability and Uncertainty

The model effectively absorbed variability and uncertainty across demand, processes, and supply. Short lead times and customer proximity absorbed demand fluctuations. Internal process variation was controlled through flexible batch sizing and minimal work-in-progress. Supply-side uncertainty remained low due to consistent greige sourcing. Following Hopp and Spearman (2008), the system relied on time and capacity buffers rather than inventory—traits of a lean yet resilient operation.

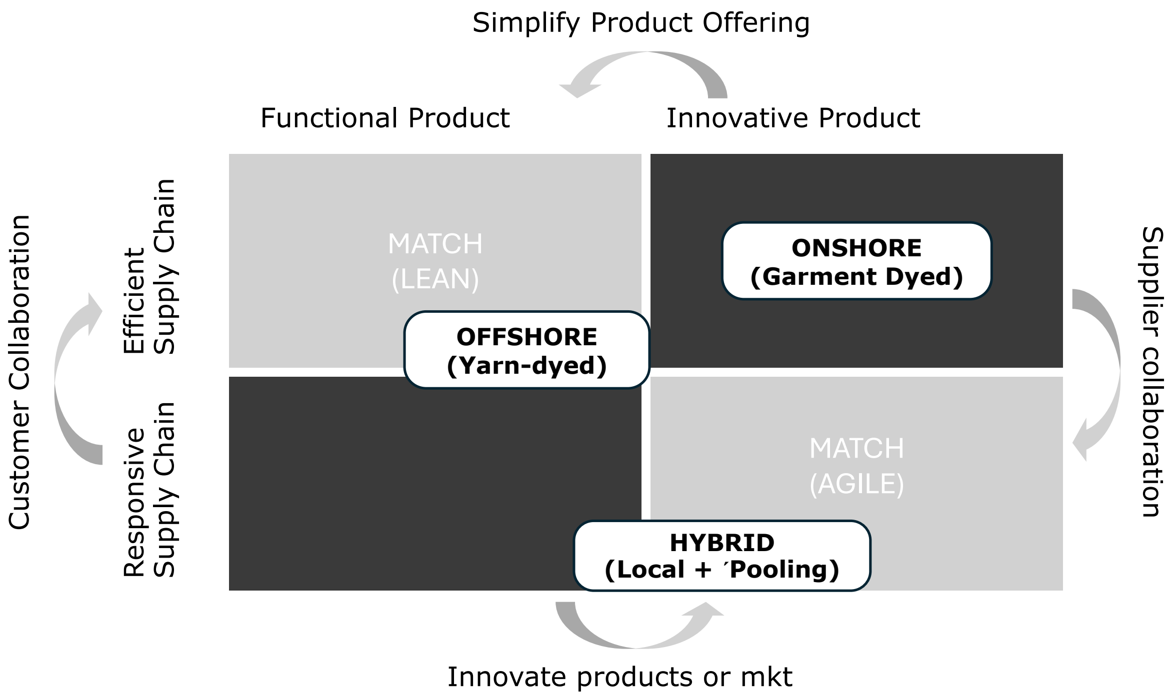


Figure 2.0 Fisher's Product–Supply Matrix

Using Fisher's (1997) framework, the model aligns with the responsive quadrant, matching an innovative product with a responsive supply chain. Lee's (2002) strategies were inherently embedded: separation through delayed customisation, buffering through undyed inventory and dyeing capacity, and reduction via real-time demand sensing.

Stratton's (2016) coordinated strategies are clearly visible:

- **CS1 (Buffer):** flexible capacity and undyed stock
- **CS2 (Reduce):** demand-driven planning and continuous process refinement
- **CS3 (Separate):** late-stage dyeing that decoupled forecasted manufacturing from final customisation

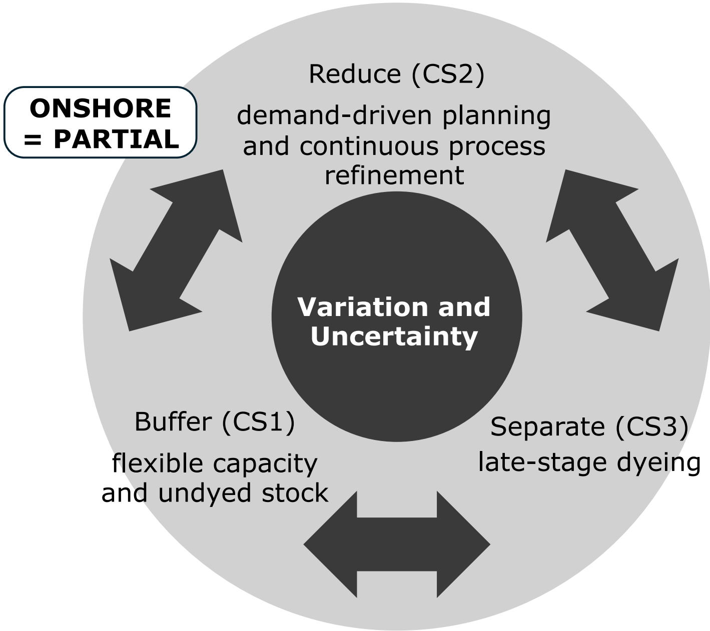


Figure 3.0 Stratton's Coordinated Strategies (CS1, CS2, CS3)

2.3. Sustainability Outcomes

This configuration supported strong sustainability performance. Resources such as water and dye were only consumed for confirmed orders, reducing waste and advancing SDG 12 (Responsible Consumption and Production). Skilled local employment reinforced SDG 8 (Decent Work and Economic Growth), while iterative process improvement contributed to SDG 9 (Industry, Innovation and Infrastructure).

The onshore model demonstrated the benefits of aligning product characteristics, operational design, and sustainability. This coherence, however, was undermined by a reactive shift to follow a key client offshore, prompting strategic drift.

3. Offshore Transition: Misalignment and Rigidity

Stevensons' offshore shift was a reactive response to retain a key client that relocated manufacturing to Sri Lanka. To align with the client's new supply base, Stevensons replaced its responsive onshore model with a Make-to-Stock (MTS) system—centralised, forecast-driven, and designed for scale efficiency. While this promised lower labour costs and production economies, it represented a fundamental departure from the firm's original operating logic.

3.1. Trade-offs and Performance Misalignment

Cost displaced responsiveness and flexibility as the core performance focus. Flexibility and speed were reduced to marginal capabilities, while quality and dependability remained as baseline qualifiers. The new model contradicted Fisher's (1997) principles by applying an efficiency-oriented structure to an innovative, demand-volatile product.

The consequences were widespread. Demand-side variability was addressed through speculative forecasting, which led to inventory mismatches, markdowns, and obsolescence. Process variability increased due to remote coordination. Supply-side uncertainty, worsened by shipping delays and geopolitical risks, could no longer be absorbed. According to Hopp and Spearman (2008), buffering variability requires time, capacity, or inventory. In this model, time buffers disappeared, capacity was inflexible and remote, and inventory was speculative rather than demand-driven—intensifying both risk and cost.

3.2. Systemic Breakdown and Failure of Coordinated Strategies

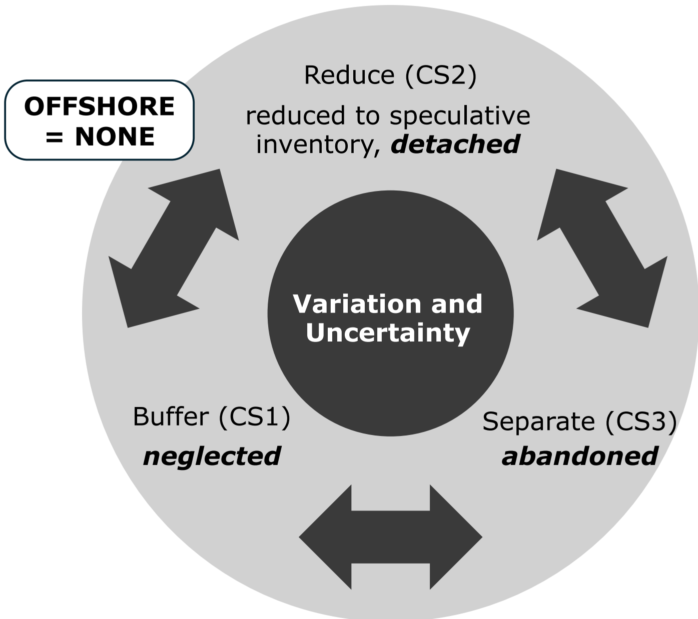


Figure 4.0 Stratton's Coordinated Strategies (CS1, CS2, CS3)

Stratton's (2016) framework shows that Stevensons failed to apply any of the three coordinated strategies:

- **CS1 (Buffer):** reduced to speculative inventory, detached from real-time demand
- **CS2 (Reduce):** neglected, with no investment in smoothing or simplification
- **CS3 (Separate):** abandoned, as all garments were pre-dyed offshore, eliminating postponement

Fisher’s matrix highlights the strategic error: a shift from a responsive supply chain serving an innovative product to an efficient model intended for functional goods. This misalignment led to overproduction, markdowns, and operational waste.

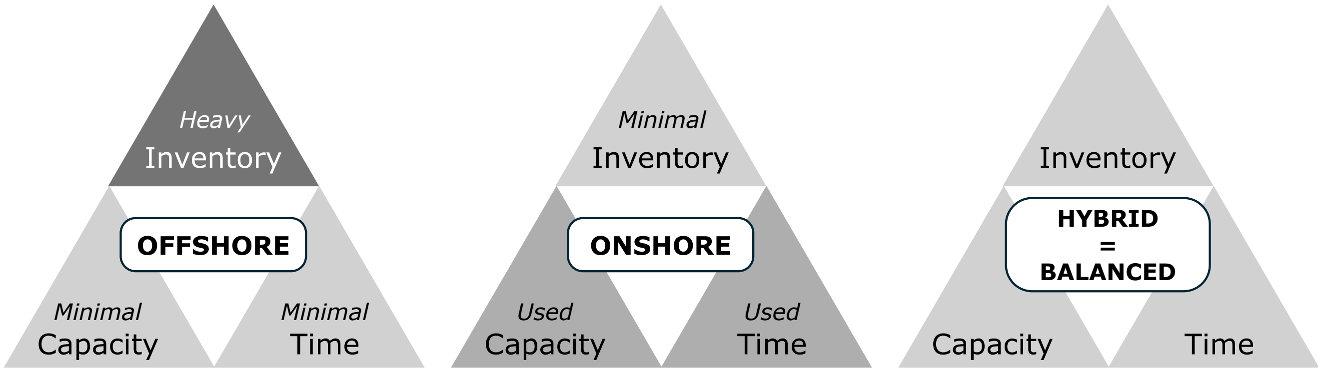


Figure 5.0 Buffering Triangle (Time, Capacity, Inventory)

Lee’s (2002) strategies were also absent. There was no separation, as every SKU followed the same production route. Buffering relied on excess inventory rather than flexible systems. Reduction, which would require demand sensing and decoupled flow, was replaced by static planning and guesswork.

Offshoring intensified the Bullwhip Effect. Minor retail demand shifts caused large upstream distortions, further increasing inventory waste and markdowns. This underscored the absence of flow-protective mechanisms such as DDMRP and modular postponement.

3.3. Environmental and Ethical Costs

Environmental performance deteriorated. Pre-dyed inventory often failed to match demand, creating textile waste and excessive use of water, dye, and energy—violating SDG 12 (Responsible Consumption and Production). Ethical concerns around labour in low-cost regions cast doubt on compliance with SDG 8 (Decent Work). The loss of local process innovation also weakened contributions to SDG 9 (Industry, Innovation and Infrastructure).

3.4. Short-Term Thinking and Structural Failure

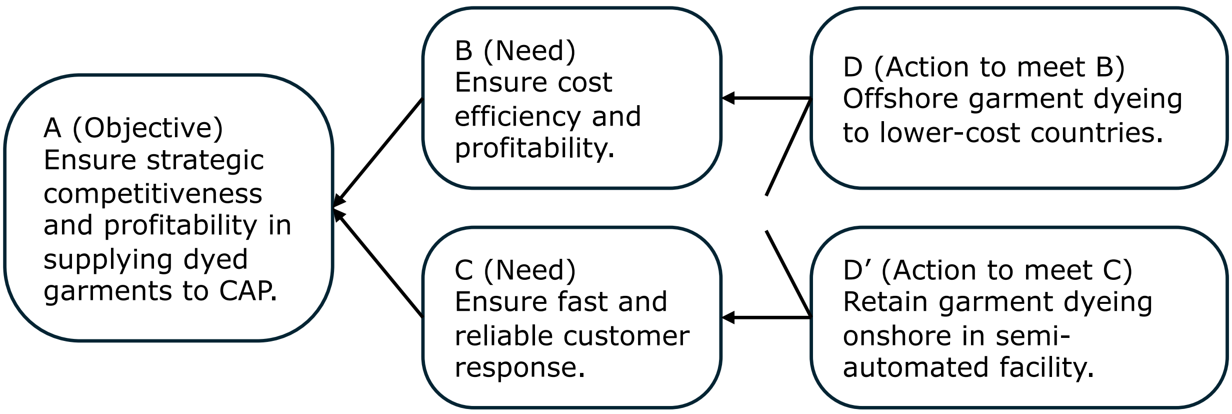
Strategically, the shift revealed a deeper failure in judgement. Decision-makers fell into the local cost trap (Slack et al., 2022), focusing on unit cost efficiency while overlooking system-wide consequences. Goldratt (2009) describes this as “managing by results,” where short-term savings erode long-term flow and responsiveness. As seen in apparel case studies, such reactive cost-seeking often reflects the absence of a coherent framework, like Fisher’s coordinated strategies. These breakdowns rarely stem from poor intent, but from limited understanding of trade-offs and uncertainty.

In essence, offshoring fractured Stevensons' operational alignment. It sought to serve a volatile, innovation-driven market with a rigid, forecast-heavy model. The outcome was not misalignment alone, but systemic incoherence—calling for structural reinvention guided by systems logic.

4. CLAW Analysis: Understanding Strategic Blind Spots

To diagnose the strategic breakdown caused by offshoring, the CLAW framework reveals the cognitive and systemic missteps that underpinned the decision (Slack et al., 2022). Rather than a purely operational error, the offshore transition exposed foundational strategic blind spots. The cloud diagram below illustrates the central conflict between cost efficiency and responsiveness in Stevensons' model, surfacing the assumptions that informed each stance and reinforcing the case for a hybrid solution.

Assumption: Lowering production costs is essential to remain competitive.



Assumption: Quick and reliable response to volatile demand is essential to remain competitive.

Injection: Implement a hybrid model: offshore for base products, onshore for volatile SKUs.

Figure 6.0 Cloud Diagram Illustrating the Strategic Conflict Between Cost and Responsiveness

4.1. Choices

Stevensons chose to follow a client offshore, replacing a responsive MTO model with a forecast-driven MTS structure. This decision prioritised short-term volume retention over strategic alignment with product characteristics and demand volatility.

4.2. Logic

The move reflected classical cost logic—centralisation, scale, and labour arbitrage. Effective in stable settings, this logic ignored the hidden costs of markdowns, rigidity, and lost responsiveness, violating flow principles (Goldratt, 2009; Ohno, 1988).

4.3. Assumptions

Faulty beliefs underpinned the strategic move:

- That **innovative, demand-volatile products** could be managed through long-lead, standardised supply chains.
- That **forecasting** could effectively replace real-time demand signals.
- That **following a client** would naturally preserve alignment and market access.

These flawed assumptions ignored Fisher's (1997) alignment logic and bypassed Lee's (2002) strategies for buffering and uncertainty reduction. Crucially, they reduced postponement to a tactical option rather than recognising it as a core strategic capability. As Stratton (2016) shows, successful transitions require coordinated strategies, not reactive cost-cutting. Stevensons did not simply misclassify its supply chain—it failed to manage volatility structurally.

Chase et al. (2009) emphasise that customer-induced variability cannot be absorbed through forecast-driven models. The hybrid solution corrects this by reinstating onshore dyeing near demand. In adopting its client's logic, Stevensons lost operational identity.

4.4. Worldview

At its root, the failure was cognitive. A cost-first mindset prioritised unit labour cost while ignoring system flow, responsiveness, and strategic risk. Goldratt (2009) describes this as "managing by results," where visible metrics obscure systemic coherence. Deming (1993) similarly warns that such overreliance blinds firms to vital, intangible drivers such as innovation, fit, and alignment.

CLAW reveals that Stevenson's operational breakdown stemmed from a mental model failure. Strategy collapsed not due to a lack of tools, but from flawed logic, invalid assumptions, and a worldview too narrow to grasp the complexity of the system it disrupted.

5. Hybrid Reconfiguration: Restoring Strategic Coherence

To address the misalignment created by offshoring, Stevenson's should adopt a hybrid delivery model that combines offshore efficiency with onshore responsiveness. This configuration segments flows based on volatility and reinstated postponement at the Order Penetration Point (OPP), restoring a key competitive advantage.

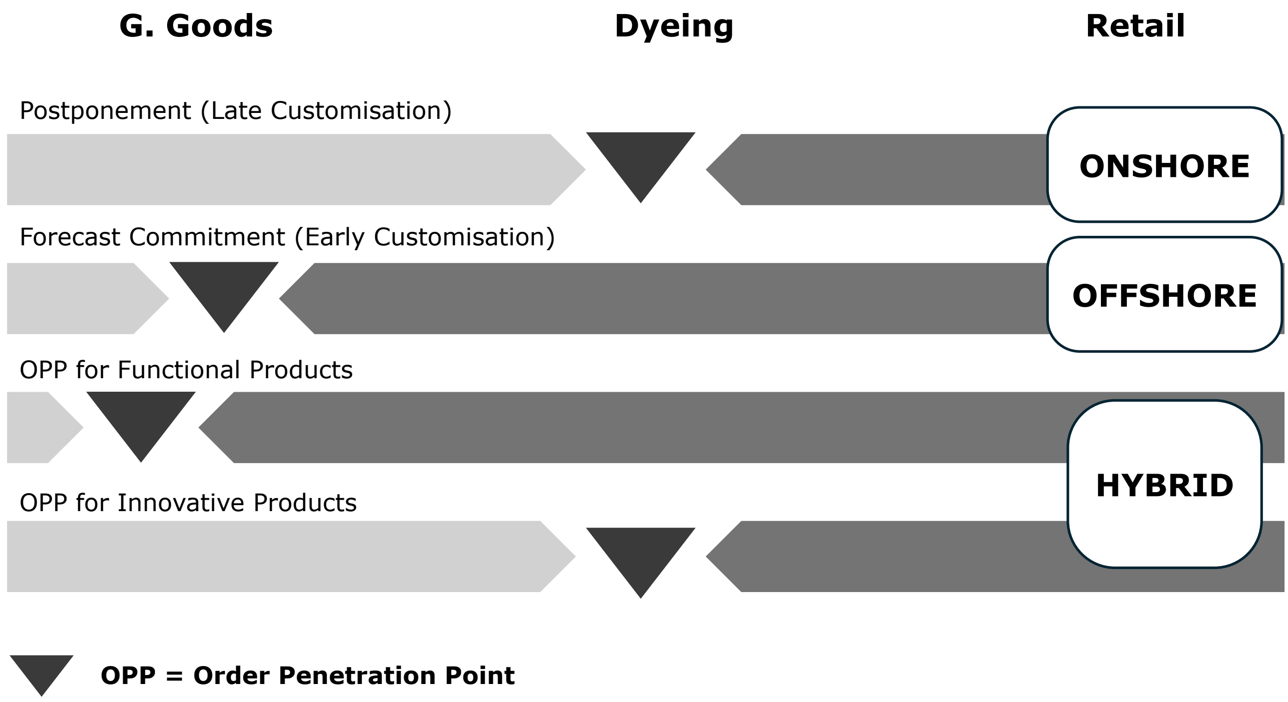


Figure 7.0 Order Penetration Point Between Models

5.1. Balanced Trade-offs and Dual Performance Priorities

The hybrid model restores equilibrium in Stevensons' strategic trade-offs. Offshore production provides cost efficiency for stable-demand garments, while onshore dyeing enables late-stage customisation for high-variability SKUs. This dual path allows the firm to serve divergent demand profiles with tailored flow strategies, moving closer to the performance frontier (Schmenner and Swink, 1998) by advancing both cost and responsiveness.

Variability and uncertainty are now structurally managed. Offshore nodes absorb supply-side variability through consistent greige production. Onshore operations, maintained as responsive cells, manage process variation through flexible capacity. Demand-side uncertainty is mitigated through late differentiation, made possible by proximity to the end market. This segmentation ensures that supply chain architecture matches product characteristics.

5.2. Performance Frontier and Technological Change

Dyeing remains pivotal to Stevensons' operational frontier. In the original onshore model, postponement allowed differentiation in response to real demand. Offshoring removed this capability, increasing the risk of obsolescence and inventory misalignment.

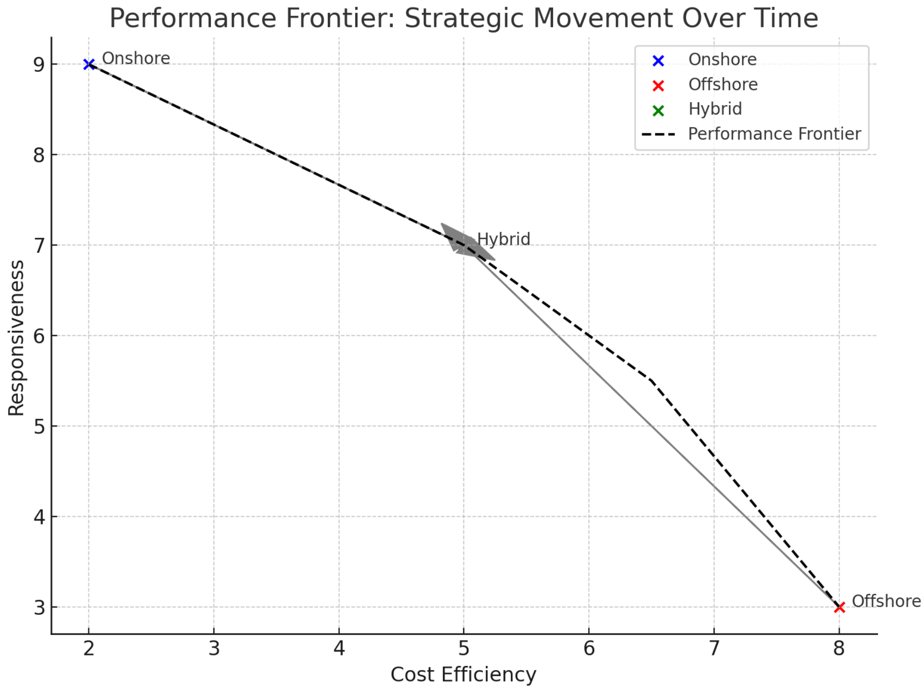


Figure 8.0 Performance Frontier Curve

The hybrid model reintroduces modular, small-lot post-dyeing as a strategic lever. This agile system allows the firm to navigate the performance frontier more effectively. While the offshore model regressed toward rigidity, the hybrid configuration supports both flexibility and efficiency.

Investments in digital planning, real-time demand sensing, and Demand-Driven MRP (DDMRP) improve visibility and control across decoupling points between offshore and onshore nodes. Theory of Constraints (TOC) identifies the dyeing operation as the key bottleneck, focusing managerial attention on capacity optimisation.

5.3. Embedding Coordinated Strategies

The hybrid model fully operationalises Lee's (2002) coordinated strategies:

- **Separation:** Volatile SKUs flow through responsive onshore channels; stable items are routed offshore.
- **Buffering:** Maintained through undyed inventory and modular dyeing capacity.
- **Reduction:** Achieved via real-time demand sensing and adaptive planning systems.

Stratton's (2016) reinterpretation of Fisher's Coordinated Strategies is also clearly applied:

- **CS1 (Buffer):** Undyed stock and flexible onshore capacity.
- **CS2 (Reduce):** Forecast error is minimised through advanced sensing and DDMRP.
- **CS3 (Separate):** Functional and innovative items are channelled through distinct architectures.

This coordinated configuration reestablishes Fisher's dual-chain logic: functional products receive efficient flows, while innovative items are served by agile capacity. It represents a shift from reactive recovery to strategic realignment.

5.4. Systemic Sustainability: The 4-Layer Onion Model

Sustainability is embedded within the hybrid structure, not treated as an external goal. Pre-dyed inventory is reduced, dye use is matched to confirmed demand, and water, energy, and chemical waste are minimised—advancing SDG 12. Onshore jobs are preserved, supporting SDG 8, while reinvestment in modular operations revitalises innovation, contributing to SDG 9.

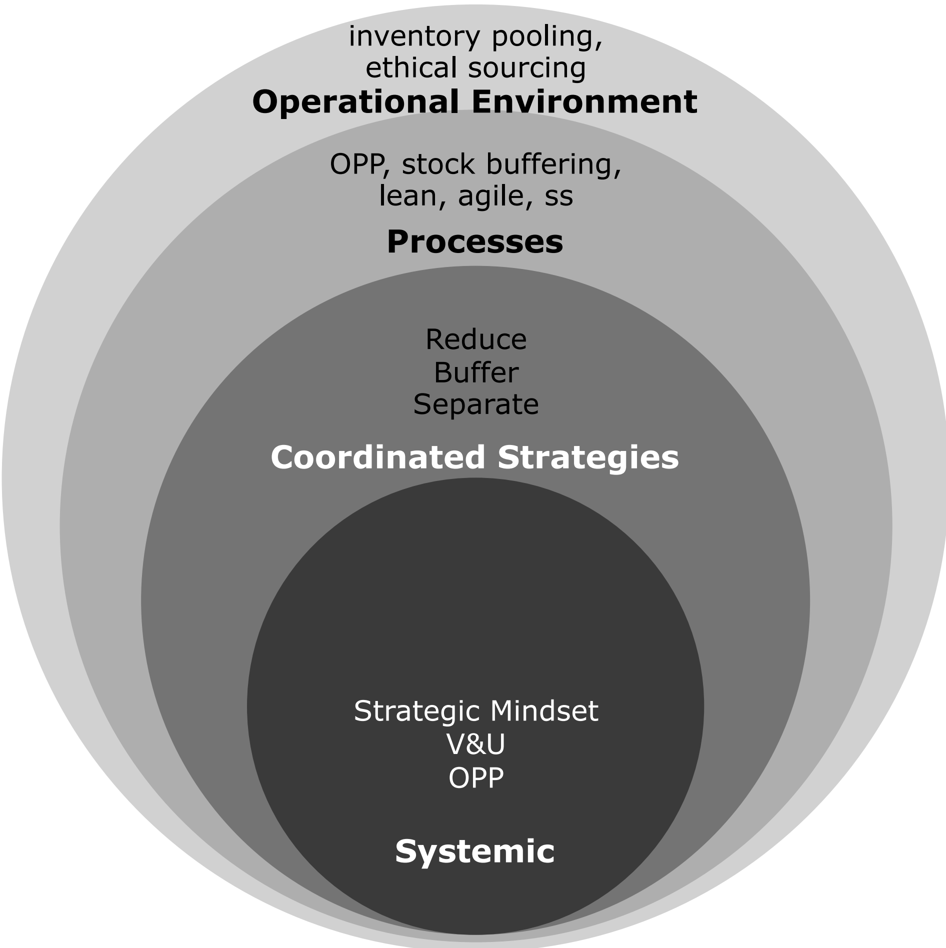


Figure 9.0 The 4-Layer Onion Model

Using the 4-Layer Onion Model (Fisher, 1997; Stratton, 2018), Stevensons embeds sustainability across four levels:

1. **Core Layer:** A shift from low-cost sourcing to value-driven strategy. Hybrid configurations reduce emissions and increase adaptability (Christopher and Towill, 2001).
2. **Strategic Layer:** Coordinated strategies align with SDGs 8, 9, and 12, managing variability while ensuring social and environmental resilience.
3. **Process Layer:** Ecru stock and late-stage dyeing reposition the OPP nearer to demand, enhancing throughput and reducing obsolescence (Lee, 2002; Olhager, 2003).
4. **Outer Layer:** Inventory pooling, flow buffering, and ethical sourcing practices reduce overproduction and strengthen agility (Schmenner and Swink, 1998; Goldratt, 1984).

This configuration reinstates systems thinking. Flow is seen as a strategic resource, buffering is deliberate and diversified, and operational design is once again aligned with product volatility and sustainability imperatives. Stevensons has returned to strategic coherence—where operations support long-term competitiveness and responsibility.

6. Conclusion

The case of Stevensons Garment Dye Works affirms a central principle of operations strategy: competitiveness relies on consistent alignment between supply chain structure, product variability, and strategic intent. The original onshore model embodied this alignment through responsiveness, postponement, and flow control, securing both market relevance and sustainability.

The offshore shift broke this coherence. In applying an efficiency-first model to a volatile product context, Stevensons misclassified its strategic needs. The result was operational fragility—evidenced by markdowns, inventory waste, and a dilution of sustainable practices. The CLAW framework revealed that the root cause was not structural alone, but cognitive: flawed assumptions and a narrow cost-centric mindset.

Table: Performance Objective Comparison across Supply Chain Models

Objective	Offshore Model	Onshore Model	Hybrid Model
Quality	Inconsistent (imports, rework needed)	High (local control, dye precision)	High (shared control, reduced rework)
Speed	Low (18–20 weeks lead time)	Very High (5–10 days)	High (2–3 weeks)
Flexibility	Low (fixed batch runs)	High (customized dyeing)	Moderate-High (SKU pooling)
Dependability	Low (forecast misalignment)	High (short-cycle adaptation)	High (buffered response)
Cost	Low (scale economies)	High (labour, energy costs)	Moderate (balance of cost and responsiveness)
Sustainability	High emissions, poor transparency	Low emissions, local jobs	Balanced (reduced waste, ethical sourcing)

Figure 8.0 Supply Chain Models Table

The hybrid model represents a strategic recovery. By segmenting flows, restoring postponement, and deploying coordinated strategies, Stevensons regains flexibility without sacrificing efficiency. The dyeing operation becomes a performance lever, enabled by modularity and real-time planning. Sustainability is no longer an add-on, but embedded structurally through adaptive design and rebalanced trade-offs.

6.1. Strategic Recommendations

1. Adopt a flow-based decision framework to ensure all operational choices support responsiveness and complexity management.
2. Strengthen modular and digital capability investments to increase system visibility and adaptability.
3. Institutionalise systems thinking through leadership training and strategic planning tools that prevent reactive misalignment.

More broadly, the case highlights the strategic cost of misalignment and the systemic value of operational clarity. Long-term viability depends not only on reconfiguring supply chains, but on rethinking the frameworks that shape those decisions. Operational effectiveness is not solely a matter of structural capability, but of strategic cognition. Stevensons' path to recovery is defined not just by what it makes or where it produces, but by how it thinks. Its return to coherence signals a deeper shift—from reactive decision-making to intentional, systems-driven strategy.

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