

Addressing Supplier Issues at SQDN Engineering.

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Summary of Problems SQDN Engineering

SQDN Engineering is a medium-sized manufacturer of fencing and fencing supplies and are currently experiencing significant **challenges** with its primary timber supplier. The managing director has warned against terminating contracts with the supplier because it could take over a year to find a suitable alternative supplier.

Challenges

- Incomplete deliveries
- Incorrect timber sizing
- Partial or absent treatment
- Poor overall timber quality

**4 x Issues
identified**

- Poor response to customer complaints
- Poor buyer/supplier relationship
- Ongoing quality failures
- Failure to address environmental issues

Resolution

- Identifying root causes & propose solutions for the identified issue.
- Defining an implementation plan
- Measuring success

Impacts on operation and overall performance.

The four issues identified at SQDN Engineering have significant impacts on its operations and overall performance. These are outlined in a cause-and-effect table 1 shown below and discussed in detail in the following slides.

ISSUE	CAUSE	EFFECT	REFERENCE
Poor response to customer complaints	No formal complaint handling process	Slow resolution and customer dissatisfaction	(Zavala-Alcívar et al., 2020) (Nenavani & Jain, 2021)
	Lack of ownership, accountability or escalation route.	Repeat issues and loss of customer trust	(Badwan, 2024)
Poor buyer/supplier relationship	Lack of trust and transparency between SQDN and supplier. (arms length)	Increased vulnerability in supply chain, hindering collaborative problem-solving efforts	(Nakandala et al., 2023)
	Infrequent communication and no shared objective.	Misaligned expectations and performance gap	(Onukwulu et al., 2023)
Quality Issues	Below par supplier performance regarding raw material supply.	Increased costs from reworking defective materials and delays in production	(Hsu et al., 2021)
	Inadequate supplier audits and quality controls	Increased returns and operational disruption	(Rhee et al., 2016)
Failure to address environmental issues.	Lack of environmental performance criteria	Non-compliance and regulatory risk	(Zavala-Alcívar et al., 2020) (Rani et al., 2024)
	No monitoring or sustainable sourcing	Reputational damage and customer concern	(Sadrabadi et al., 2023)

Table 1

Part 1 - Fixing Complaints Handling

SQDN Engineering currently lacks a structured complaints handling process. The absence of clear procedures, ownership, and escalation routes has resulted in unresolved complaints, customer dissatisfaction, and reputational damage.

Problems identified:

- **No clear process:** Complaints handling is undefined, leading to inconsistency and inefficiency
- **No ownership:** No designated responsibility for managing and resolving complaints
- **No escalation route:** Complex complaints cannot be escalated for timely resolution

The broken customer complaints process is shown in figure 1



Figure 1

Part 1 - Fixing Complaints Handling Cont.

Proposed Solution: Joint Complaints Process

To address the identified issues, a **joint complaints process** between SQDN Engineering and its supplier is proposed, incorporating the following actions:

- **Shared complaint form:** A standardised form used by both parties to capture all relevant information consistently
- **Named owners:** Designated SQDN and supplier representatives assigned accountability for each complaint
- **48-hour acknowledgement:** All complaints acknowledged within 48 hours to improve responsiveness
- **Weekly review meetings:** Regular joint reviews to track complaints, address root causes, and agree corrective actions.

The new and improved joint customer complaints process is shown in figure 2

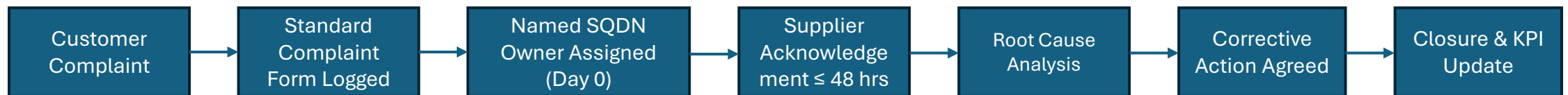


Figure 2

Implementing this joint process will improve complaint resolution, strengthen supplier relationships, and support continuous improvement.

Part 2 - Resolving Buyer-Supplier Relationship Issues

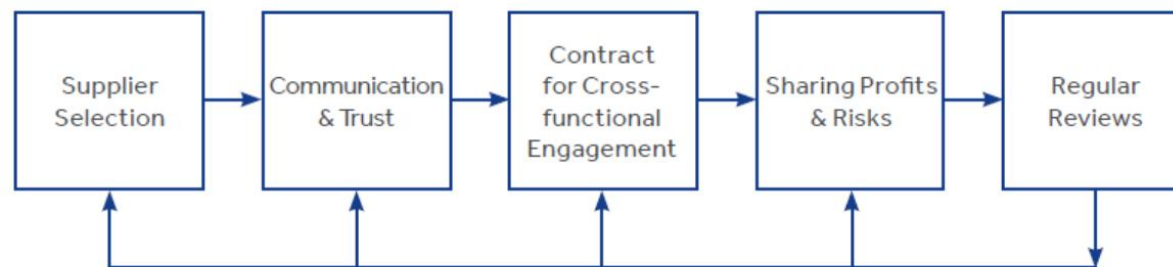
SQDN Engineering currently operates an arm's-length relationship with its timber supplier. Limited trust and predominantly reactive communication restrict collaboration and hinder performance improvement.

Problems identified:

- **Arm's-length relationship:** Limited collaboration and shared understanding
- **Poor trust:** Reduced communication quality and reluctance to address issues constructively
- **Reactive communication:** Interaction occurs mainly in response to failures or complaints
- **No shared objectives:** Absence of aligned goals limits joint performance improvement

To move towards a more effective and collaborative relationship, a **Supplier Partnership Model** is proposed.

Figure 3 – Supplier Collaboration partnership model (Basu R, 2016)



Part 2 - Resolving Buyer-Supplier Relationship Issues Cont.

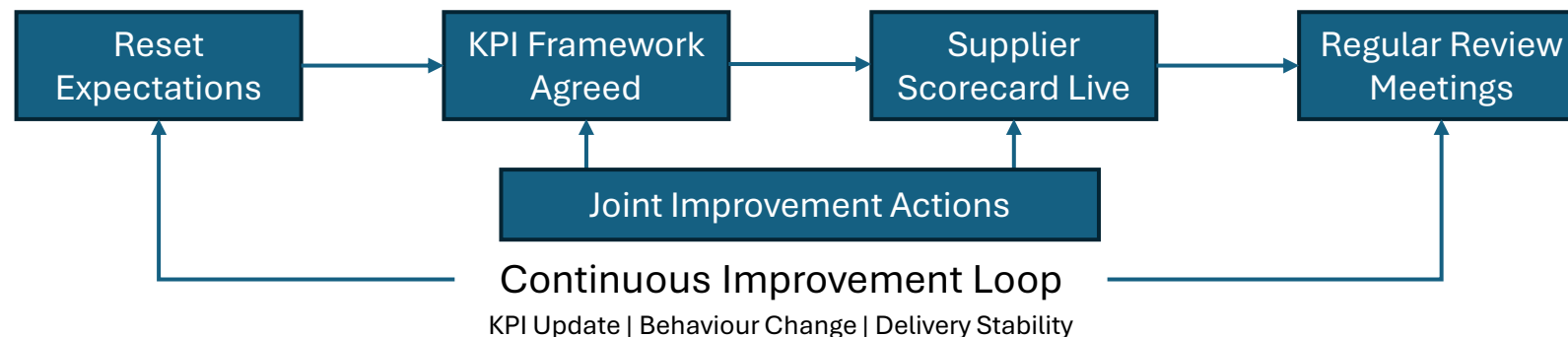
Proposed Solution: Supplier Partnership Model

To develop a more collaborative and effective supplier relationship, the following actions are proposed:

- **Regular review meetings:** Scheduled meetings to support open communication, review performance, and address issues proactively
- **Agreed KPIs:** Jointly defined metrics such as On-Time In-Full (OTIF), defect rates, and complaint closure to drive accountability
- **Supplier scorecard:** A structured scorecard to track performance against KPIs and support continuous improvement

This partnership approach promotes transparency, shared accountability, and sustained supplier performance improvement.

Figure 4 – Proposed SQDN Supplier partnership model from reaction to control.



Part 3 - Quality Failures

SQDN Engineering is experiencing significant quality failures in its timber supply, including incorrect sizing, partial treatment, and incomplete loads. These issues are linked to identifiable root causes that reduce production effectiveness and highlight the need for a robust **Quality Control Plan** to improve product quality and operational efficiency.

Problems Identified - Timber Quality Issues		
Issue	Description	Root Cause
Wrong Sizes	Deliveries often consist of timber cut to incorrect dimensions	This inconsistency can be attributed to the lack of Statistical Process Control (SPC) within the supplier's operations.
Partial Treatment	Many timber products arrive either partially treated or not treated at all	Primarily due to inadequate process control at the supplier's facility. This absence of adequate treatment can compromise the durability and usability of the timber.
Incomplete Loads	Deliveries frequently do not include the full quantities ordered, resulting in inefficiencies in production	The absence of final checks or inspections at the time of delivery exacerbates this issue and leads to additional costs for SQDN

Table 2

Parts 3 - Quality Failures Cont.

Proposed Solution: Quality Control Plan

To address the identified quality failures, SQDN Engineering should implement a **Quality Control Plan** incorporating the following key actions shown in table 3. A **control charts** will be used as a visual monitoring tool to support real-time oversight of production processes, enabling the identification of trends, variation, and quality deviations (**Raza et al., 2023**).

Action	Description
Incoming Inspection Checklist	A standardised checklist to verify timber dimensions, treatment status, and order completeness before acceptance
Supplier Audit Process	Regular audits of supplier production processes to assess compliance with quality standards and identify improvement opportunities
Introduce Statistical Process Control (SPC):	Use of control charts to monitor process variation and enable early detection of quality deviations
First-Article Approvals.	Mandatory approval of initial products to confirm conformity with dimensional and treatment requirements prior to full-scale supply (CofC)

Table 3

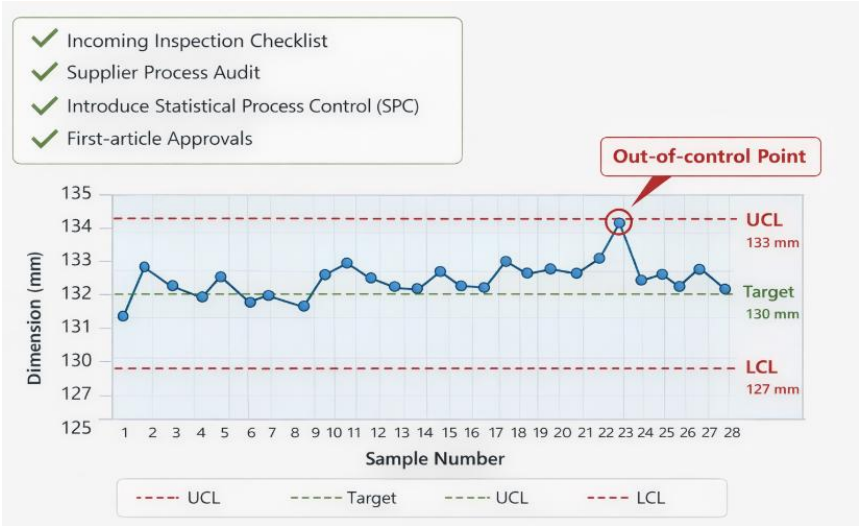


Figure 5

This example control chart shown in figure 5 serves as a framework for SQDN Engineering to implement robust quality monitoring processes, enhancing the reliability and effectiveness of their timber supply quality control system.

Part 4 - Addressing Environmental and Sustainability Failures

SQDN Engineering is currently facing significant environmental compliance challenges, primarily due to a lack of proof for sustainable forestry certifications (FSC and PEFC), non-reusable packaging practices, and insufficient data regarding timber treatments.

Problems Identified - Environmental Non-Compliance Issues

No FSC/PEFC Proof: The absence of certificates confirming that timber is sourced responsibly undermines SQDN's commitment to sustainability and may deter environmentally conscious customers.

(Maesano et al., 2018)

Non-Reusable Packaging: Utilising single-use packaging contributes to waste and environmental degradation, which conflicts with modern sustainability practices.

(Escursell et al., 2021)

No Timber Treatment Data: Failure to provide data on the treatments used on timber creates potential risks regarding product safety and compliance with environmental standards.

(Johansson & Lidestav, 2011)

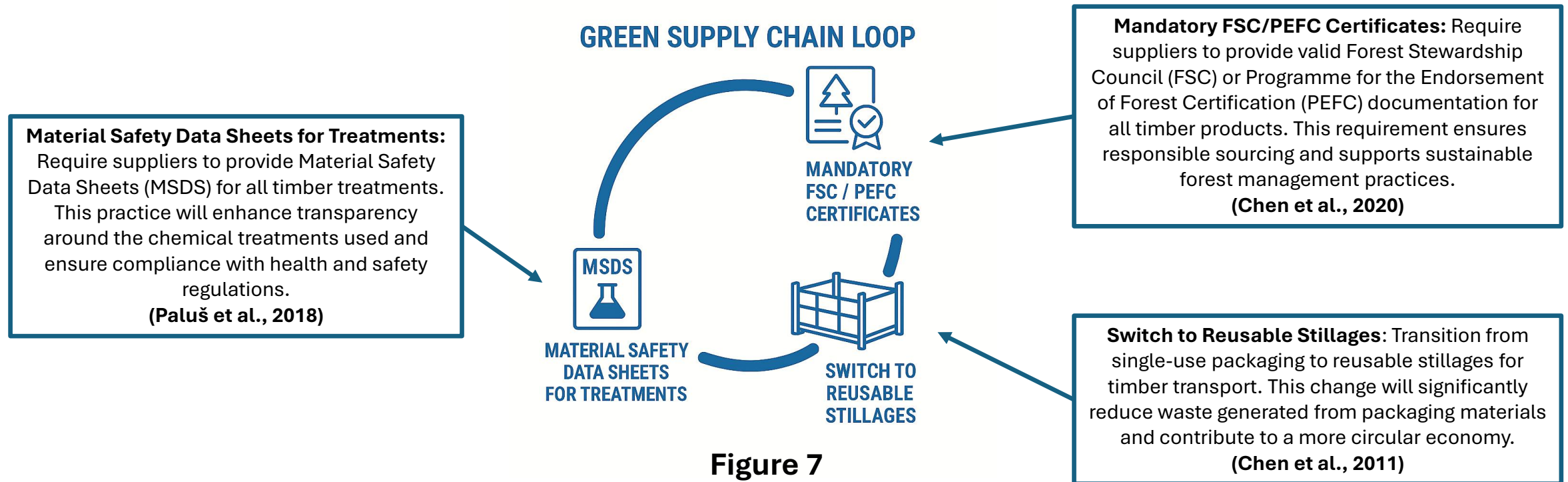
Figure 6

These issues threaten environmental regulatory compliance and pose reputational risks among increasingly eco-conscious consumers.

Part 4 - Addressing Environmental and Sustainability Failures Cont.

Proposed Solution: Environmental Improvement Plan.

To effectively address the identified non-compliance issues, SQDN Engineering should implement the following actions:



The proposed Green Supply Chain Loop in figure 7 will illustrate how these actions interconnect to create a sustainable supply chain, reinforcing SQDN's commitment to environmental responsibility.

Improvement Strategy – 12 Week Implementation Plan

To address supplier-related challenges at SQDN Engineering, a **structured 12-week implementation plan** is proposed in table 4 to strengthen supplier management and resolve the identified issues. The plan focuses on improving complaint handling, enhancing supplier audits, establishing performance metrics, and conducting sustainability re-audits.

Weeks 1-2: Launch Complaint Process	
- Develop a comprehensive complaint management system that includes clear guidelines for logging complaints and resolving them promptly. - Train staff involved in customer service on effective communication strategies and conflict resolution.	Implement a structured complaints process to improve customer satisfaction. Effective complaint management systems are shown to increase customer loyalty and reduce defect rates when supported by robust frameworks (Sharma et al. 2024).
Weeks 3-6: Supplier Audit	
- Conduct a thorough audit of the timber supplier to evaluate compliance with quality standards and contractual obligations. - Involve a third-party quality assurance firm for an unbiased assessment of production processes, delivery schedules, and quality metrics.	Conduct supplier audits to reduce quality and delivery risks by identifying process weaknesses and supporting capacity building, thereby improving supply chain resilience and adaptability (Ambulkar et al., 2014). This activity also reinforces accountability within the supplier relationship, supporting trust and cooperation (Nippak et al., 2014).
Weeks 7-10: KPI Scorecard Live	
- Implement a Key Performance Indicator (KPI) scorecard that includes metrics related to quality, delivery compliance, and customer satisfaction. - Ensure all stakeholders involved in the supply chain are trained on the KPIs and understand their significance.	Implement a supplier KPI scorecard to provide quantifiable performance measurement and support continuous improvement (Bai & Sarkis, 2014). The use of KPIs enables effective monitoring and evaluation of supplier performance over time (Almohtaseb et al., 2019).
Weeks 11-12: Environmental Re-Audit	
- Initiate a second environmental audit focusing on sustainable practices, which includes checking compliance with the previous audit recommendations. - Collaborate with environmental consultants to ensure rigor and adherence to recognised standards.	Reassessment of current environmental policies and practices to address rising consumer expectations for sustainable business operations. Strengthening sustainability commitments enables organisations to meet regulatory requirements while gaining reputational advantages among environmentally conscious customers (Gavrilut et al., 2015). This re-audit will also help SQDN align with industry standards and enhance overall supply-chain resilience (Sadrabadi et al., 2023).

Table 4

Measuring Success with Targets

Setting clear targets is instrumental in achieving operational excellence in supplier management. For SQDN Engineering, the following targets shown in figure 8 will be introduced to measure the success of the implemented strategies supported by evidence.

OTIF (On Time In Full)

95% of timber deliveries to be on time and complete.

High OTIF rates correlate with improved supply chain efficiency and customer satisfaction (Sharma et al. 2024)(Ambulkar et al., 2014)

Defects

Less than 2% of defective materials upon receipt

Reducing defects not only leads to lower rework and scrap costs but also enhances customer satisfaction (Kunathikornkit et al., 2023)(Ahmed et al., 2020)
Organisations with robust quality control mechanisms report significantly fewer defects(Vernanda, 2025)(Sadrabadi et al., 2023).

Complaints Closed in 5 Days

100% of customer complaints resolved within five days.

Timeliness in complaint resolution is positively associated with increased customer retention and loyalty, as delays often lead to dissatisfaction and negative word-of-mouth (Mattila & Mount, 2006) (Ahmed et al., 2020)

FSC Compliance

Achieve 100% compliance with the Forest Stewardship Council (FSC) standards.

Companies demonstrating commitment to sustainability can achieve competitive advantages, including enhanced customer loyalty and market share (Rani et al., 2024; Dewi et al., 2025).

Figure 8

Overall Conclusion

The 12-week implementation plan, supported by clearly defined performance targets, is expected to strengthen SQDN Engineering's operational effectiveness and supplier management.

By implementing a structured complaints process, conducting supplier audits, establishing KPIs, and ensuring compliance with relevant standards, SQDN can improve quality assurance and customer satisfaction.

Clear performance targets will act as benchmarks for success and reinforce the organisation's commitment to quality and sustainability, demonstrating the link between effective management practices and long-term business **performance (Garza-Reyes, 2018)(Karapetrović & Willborn, 2001).**

These initiatives enable SQDN to build stronger supplier relationships, meet environmental obligations, and enhance operational resilience, supporting sustained performance and competitive advantage. The proposed framework not only addresses current deficiencies but also provides a foundation for future growth and innovation within an evolving supply chain landscape **(DOLOKSARIBU & Firdaus, 2023)(Domingues et al., 2019).**

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