Designing Procurement Strategies for Greater SC Resilience

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Disruption in modern supply chains is inevitable, so increasing the resilience of organizations is crucial. Strategic procurement, especially through the Kraljic matrix, is key to greater resilience. This model classifies procurement sources into four main groups: strategic, leveraged, bottlenecks and non-critical products, each of which requires a specific approach. It should be understood that the factors affecting the rating in this matrix are not always equally important and have different values. Designing procurement strategies based on this matrix is a complex dynamic process that enables organizations to better adapt to changing conditions and needs. The Kraljic matrix is a valuable tool for managing disruptions in supply chains, as it helps organizations increase resilience and stability. Procurement strategies based on this model are an effective approach for successful operations in an unpredictable business environment.

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1 Introduction

We live in an era of increasing global interconnectedness and interdependence. The complexity of these worldwide connections is greater than ever before in history. Consequently, major disruptions in one part of the world's economic environment can quickly ripple across regions, disrupting the links between economic entities and shaping our daily lives.

Many of these disruptions manifest through supply chains–or more accurately, networks–that experience interruptions in the flow of goods, services, finances, and information among individual chain links. The interdependence of supply chain elements exposes the vulnerabilities of companies and organizations that are heavily interconnected and reliant on external partnerships. Modern business models such as Just-in-Time (JIT) have only intensified the impact of these disruptions (ShakirUllah et al., 2014).

The consequences of such disruptions are diverse, including delivery delays, resource shortages, increased costs, reduced productivity, and damage to a company's reputation. These effects impede the normal functioning of organizations, especially supply chains, and thus necessitate adaptations and changes to traditional strategies.

Disruptions–particularly on the supply side–have clearly demonstrated the need to rethink conventional approaches. This has led to increased research focused on how companies can adopt resilient and flexible practices to mitigate the impacts of sudden and unforeseen events (Yi et al., 2011).

Supply chain resilience is essential for managing disruptions. The growing complexity and interconnectivity of supply chains have led to greater vulnerability, prompting a surge in research on the topic. Gartner (2021) emphasizes the need for supply chains to become more resilient and adaptable. However, most companies acknowledge that their supply chains were originally designed for cost efficiency rather than resilience.

Resilience is defined as the ability of a system or community to withstand and recover from unexpected events. In the context of supply chains, it refers to the adaptive capacity to prepare for, respond to, and recover from disruptions. It is also

a critical component of risk management and ensuring business continuity (Resilience | UNDRR, 2007).

Given the rising number of disruptions in upstream supply chains, which often result in more significant and far-reaching consequences, it is important to highlight that upstream resilience (on the supply side) focuses on the company's procurement function. This includes developing capabilities to anticipate, adapt to, respond to, recover from, and learn from disruptive events through effective resource management (Brusset & Teller, 2017; Pereira et al., 2020). Roberta Pereira (2014) stresses that procurement, in this context, acts as a vital link between the organization and its supply-side environment, playing not only a reactive but also a proactive role. She further argues that companies must adjust their procurement functions and strategies to respond swiftly to disruptions, as these are vital in building resilient supply chains.

1.1 Procurement Strategies

The Dictionary of the Standard Slovene Language (*Slovar slovenskega knjižnega jezika,* 2014) defines a strategy as a procedure or method for achieving a goal. Within this context, a procurement strategy can be defined as a process or method for achieving procurement objectives. It consists of a set of decisions related to how resources are acquired.

According to Freytag and Mikkelsen (2007), procurement strategies for sourcing resources have become more important than ever. Their goal is to create a mechanism for linking suppliers with buyers. The use of procurement strategies reduces risks stemming from various factors while enhancing the effectiveness of procurement activities. Furthermore, the application of procurement strategies reduces a company's exposure to opportunistic behavior by other companies and increases the likelihood of successful collaborative relationships (Chen et al., 2004).

Hesping and Schiele (2015) conducted a literature review on the development of procurement strategies and explain that forming a single, general strategy for the procurement function is a difficult task. Instead, various approaches have emerged, the most commonly used being: category management, purchasing portfolio models, strategic sourcing, global sourcing, or supply base management.

Purchasing portfolio models are considered one of the most common approaches to developing procurement strategies (Caniëls & Gelderman, 2005). There are various models, most of which are based on the first model developed in the 1980s by Kraljic (Kraljic, 1983).

2 Kraljic's Purchasing Portfolio Model

The Kraljic purchasing portfolio model–also known as the Kraljic Matrix–is widely regarded as the most frequently applied framework for formulating procurement strategies based on a portfolio approach to sourcing . It has become the benchmark for other portfolio-based models (Ghanbarizadeh et al., 2019a) and plays a key role in classifying suppliers and developing procurement strategies to mitigate supply risks and increase organizational resilience (Bhusiri et al., 2021). The model significantly influenced the evolution of strategic procurement within companies (Caniëls & Gelderman, 2005; Gelderman, 2003) and has inspired numerous authors to conduct further research into portfolio models (e.g., Caniëls & Gelderman, 2007a; C.J. Gelderman & Weele, 2002; Olsen & Ellram, 1997a).

At the core of Kraljic's Matrix lies the principle that procurement managers–faced with suppliers of varying strategic importance–must tailor their strategies to the specific characteristics of their procurement markets (van Weele, 2018). By doing so, companies can protect themselves against harmful supply disruptions and better manage constant technological developments and economic growth (Caniëls & Gelderman, 2005).

Kraljič emphasized that a company's need for a procurement strategy depends on two factors (Kraljič, 1983; Montgomery et al., 2018; Ghanbarizadeh et al., 2019b; Tip et al., 2022):

(1) the **impact on profit** or the strategic importance of procurement, and

(2) **procurement risk** or the complexity of the procurement market. Procurement risk is assessed based on supply shortages, the rate of technological and/or material substitution, entry barriers, logistics costs, or the complexity and conditions of monopolistic or oligopolistic markets.

Procurement sources can be classified within a four-quadrant matrix based on two key dimensions (Figure 3.1). The quadrants are as follows:

- Non-critical items (low risk and low profit impact)
- Bottleneck items (high risk and low profit impact)
- Strategic items (high risk and high profit impact)
- Leverage items (low risk and high profit impact)

Each quadrant represents a specific category of products, services, or suppliers reflecting different interests for the company. By assessing their position using relevant criteria, decision-makers can determine the most appropriate procurement strategies and actions to leverage their purchasing power against key suppliers and reduce their risks to an acceptable minimum (Bhusiri et al., 2021; Olsen & Ellram, 1997b).

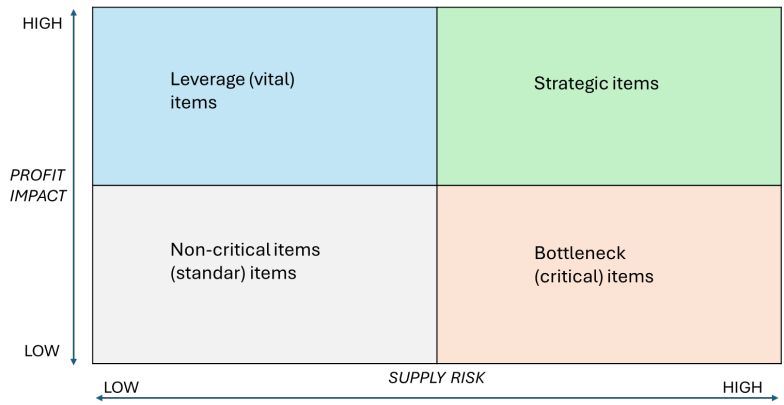

Figure 3.1: Classification of Procurement Products According to Two Dimensions
Source: adapted from Kraljič (1983)

According to van Weele (2018), many procurement managers tend to simplify their assessment of supply risk by relying primarily on thenumber of potential suppliers as the main criterion. However, in practice, a wide range of criteria should be considered to to gain a more accurate and nuanced understanding of this aspect. Over time, these criteria have evolved, shaped by the specific characteristics of individual companies and their procurement strategies. Some of the most important criteria, as summarized by van Weele (2018), are illustrated in Table 3.1.

Table 3.1: Criteria for the Two Dimensions of the Kraljic Matrix

Impact on Profit	Supply risk
– Volume in comparison to total purchase volume – Share of procurement products in total cost price – Contribution of procurement products to the company's total margin – Potential for cost savings through: competitive bidding or volume agreements – Price elasticity – Discount and bonus schemes	– Branded vs. standardized products – Patented or licensed products – Availability of substitutes – Specific quality and logistics requirements (e.g., JIT) – Extent to which the company's customers require certain suppliers – Supplier's share in the buyer's total purchase volume – Buyer's share in the supplier's total sales revenue – Market structure: free competition vs. monopoly – Market conditions: supply-demand ratio – Political stability; (market) regulation, and other political conditions – Supplier's production capacity utilization – Supplier's financial position – Switching costs for changing suppliers

Source: adapted from: (van Weele, 2018).

The next section (Figure 3.2) presents the distinguishing characteristics of each product group.

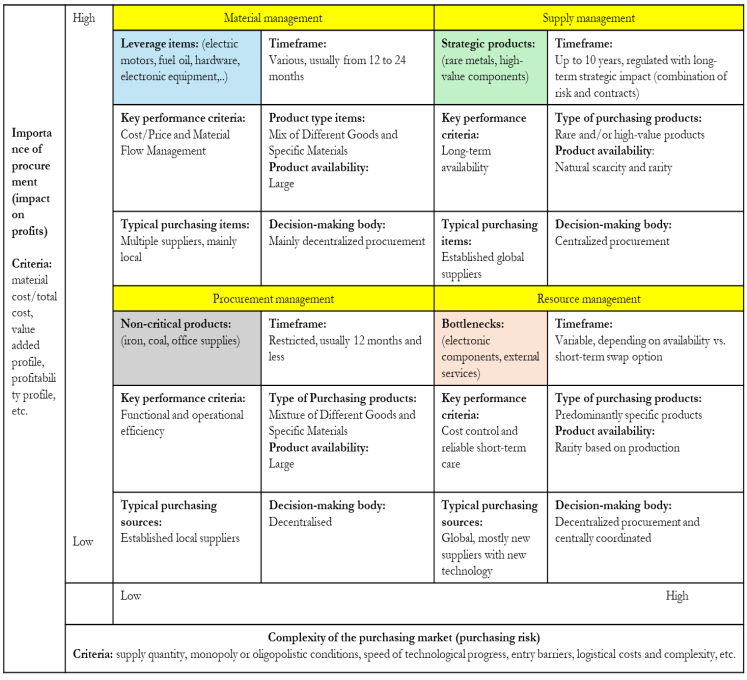

Figure 3.2: Kraljic Matrix – Characteristics of Individual Groups of Purchasing Items
Source: adapted from: (Kraljič, 1983)

2.1 Procurement Market Analysis

Once procurement products have been classified within the matrix, the next step involves analyzing the procurement market, with a particular focus on balance of power between the buying company and its suppliers. At this stage, the company evaluates its purchasing power. A systematic analysis of the procurement market is conducted to assess the availability of strategic materials in terms of both quality and quantity, as well as the relative strength of existing suppliers. In parallel, the company analyzes its internal requirements and supply channels to determine its capacity to negotiate favorable procurement conditions.

Potential evaluation criteria include: the market size relative to supplier capacity, the company's market share in comparison to competitors, the availability of substitute products on the market, the feasibility of in-house production, and similar factors (C. J. Gelderman & Mac Donald, 2008).

2.2 Strategic Positioning

After analyzing the market, where the company evaluates the bargaining power of suppliers relative to its own, it positions strategic items within the purchasing portfolio matrix (Figure 3.3). Based on this relative power position, the company may adopt an **aggressive strategy** ("exploitation" – situations where the buyer has greater bargaining power), a **defensive strategy** ("diversification" – when suppliers dominate and hold greater bargaining power), or a **well-balanced strategy** ("balance" – in cases of mutual power symmetry) (Apostolova et al., 2015).

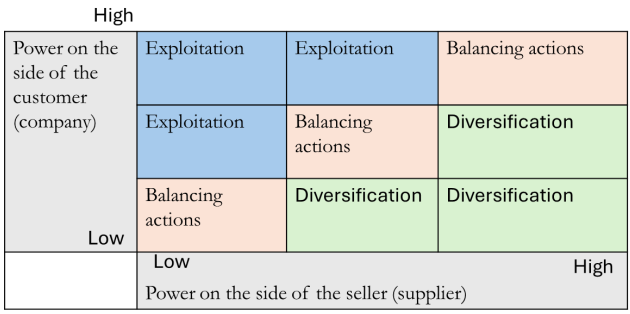

Figure 3.3: Strategic Positioning

Source: Adapted from: (Kraljič, 1983)

In buyer-dominant situations, the purchasing organization exerts greater control over product requirements than the supplier. This is common in the automotive industry, where supplier–buyer relationships are often asymmetrical. Buyers dictate specifications and conditions, and suppliers are expected to comply. In contrast, in supplier-dominant markets, the roles are reversed. Leveraging advanced technology and sophisticated marketing strategies, suppliers can effectively "lock in" their customer. This is frequently seen in the business information technology sector, where IT providers make customers fully dependent on them for hardware, software, and services (e.g., SAP, Oracle, Microsoft). Customers buy their hardware and software from a single supplier, only to discover that the same supplier charges high prices. Usually, service guarantees are valid only if all products and services are purchased from the same provider. The customer has very limited leverage and must accept the terms set by the supplier. Outsourcing can easily lead to such a situation (van Weele, 2018; van Weele & Rozemeijer, 2022). In balanced relationships, neither party dominates. Instead, both have a mutual interest in maintaining a stable relationship, which can develop into a genuine partnership.

3 Designing Procurement Strategies

Based on the characteristics of the individual product groups in the Kraljic Matrix, proposed procurement activities, and the power balance between suppliers and buyers, various authors have suggested tailored procurement strategies for each product group. Van Weele (2018), for example, proposes four basic procurement strategies, summarized in Table 2.2, which indicates the corresponding matrix quadrants and the key objectives for each strategy. These strategies align with the procurement actions discussed earlier for each product group (quadrants and product groups).

Although strategic recommendations for Kraljic Matrix items are often limited to a single strategy per quadrant, empirical research into its practical application by purchasing managers (Caniëls & Gelderman, 2007b; C. J. Gelderman & Van Weele, 2003, 2005) suggests greater nuance. Specifically, somestrategies aim to (1) maintain the current position within the quadrant, while others are focused on (2) shifting to a different position. Figure 2.4 presents an overview of the strategic orientations associated with each of the four quadrants or product categories. A total of nine procurement strategies are illustrated. While some are aimed at transitioning out of a quadrant, others focus on remaining within the current one.

Table 3.2: Four General Procurement Strategies

	Partnerships	Competitive Bidding	Supply Assurance	Category Management and E-Procurement Solutions
Suitable for	Strategic products	Leverage products	Bottleneck (critical) products	Non-critical (standard, routine) products
Objective	Building mutual commitment for long-term partnership	Obtaining the best short-term offers	Ensuring short- and long-term supply and reducing procurement risk	Reducing logistical complexity. Improving operational efficiency. Reducing the number of suppliers.

Source: (van Weele, 2018)

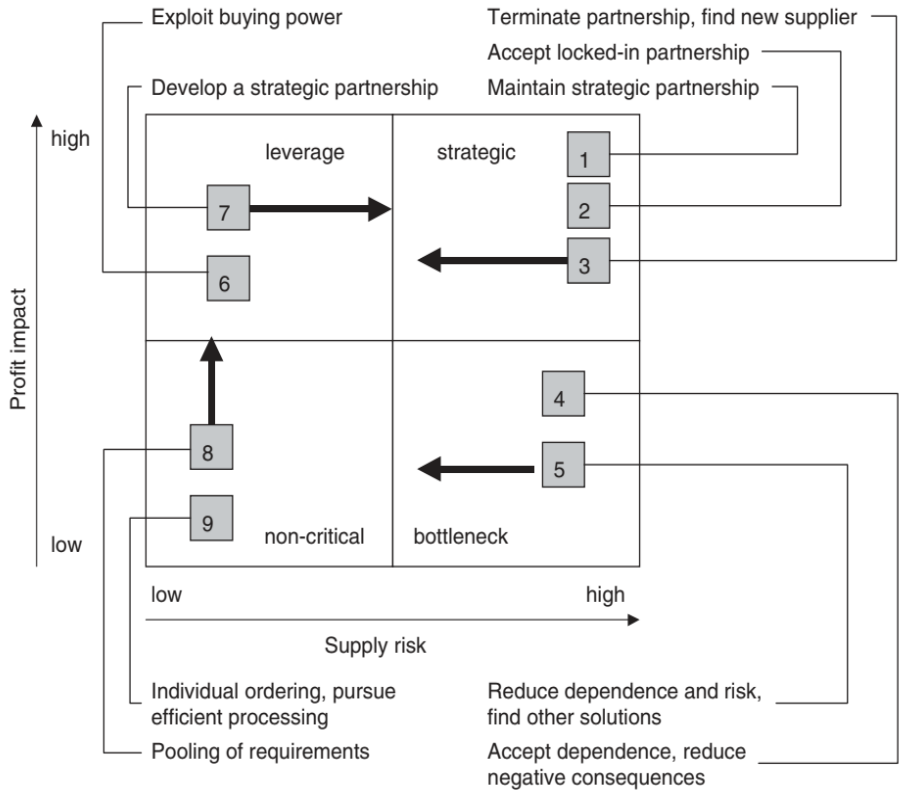

Figure 3.4: Overview of Different Procurement Strategies for All Portfolio Quadrants (Within Quadrants and Oriented Toward Movement)

Source: (Caniëls & Gelderman, 2005)

Quadrant – Strategic Products

1. **Maintain Strategic Partnership** For products with high procurement risk and high financial impact, this strategy focuses on sustaining a strategic partnership, as there is a strong, cooperative relationship with mutual understanding between both parties.
2. **Accept a "Locked-in" Partnership** In cases where the company is effectively "locked into" a relationship with a particular supplier, this strategy accepts the situation. The goal is to make the best out of an involuntary relationship with the supplier.
3. **Terminate the Partnership and Seek a New Supplier** The supplier is expected to behave as a strategic partner, but there is too much uncertainty. The company feels it cannot control the supplier's behavior and decides to look for another supplier and build a new relationship. This is clearly a difficult and demanding task.

Quadrant – Bottleneck (Critical) Products

4. **Accept Dependency and Minimize Negative Effects.** The primary focus is ensuring supply, even at additional cost. Examples include maintaining extra inventory or arranging consignment[1] stock with suppliers. Risk analysis helps identify the most critical bottlenecks and consider the implications. Contingency planning can be a potential response to unexpected dependencies.
5. **Reduce Dependency and Seek Alternatives.** This strategy aims to lessen dependence on a specific supplier. Common approaches include broadening product specifications or finding new suppliers. According to the authors, supplier dominance is most evident when the buyer fully accepts a dependent position.

Quadrant – Leverage Products

6. **Exploit Bargaining Power and Increase Strategic Advantage Over Suppliers.** The company uses competitive bidding. Since suppliers and products are interchangeable, there is no need for long-term contracts. A

[1] Consignment – the owner of the goods (the supplier) charges only for the material used. (Often, the supplier is based abroad.) This is a type of intermediary sale (similar to commission-based sales, where both parties are from the same country).

coordinated procurement approach is used, typically involving a centrally negotiated master agreement with preferred suppliers.

7. **Develop Strategic Partnerships.** Here, the company abandons financial leverage and opts for a strategic partnership—only if the supplier is both willing and able to contribute to competitive advantage. This approach is viable primarily with technologically advanced suppliers. The relationship begins to resemble that of the strategic product quadrant, aiming for balanced power and long-term collaboration.

Quadrant – Non-Critical Products

8. **Consolidate Procurement Requirements.** This strategy aims to reduce procurement complexity. It recommends standardizing products and establishing contract-based supplier relationships, enabling automation and simplification of routine tasks, stock optimization, and bulk ordering over time.
9. **Individual Ordering and Efficient Order Processing.** When consolidation is not feasible, products into larger purchase volumes, individual ordering with a procurement card may be used—still targeting reduced administrative costs of routine procurement.

Despite its advantages as a foundational portfolio model, the Kraljic Matrix also exhibits notable shortcomings:

- **Unclear Classification and Dimension Definitions.** In practice, companies may misclassify 80% of their procurement items as strategic simply because they are critical to operations. This could result in excessive effort on strategic analysis and partnerships, reducing bargaining power by overlooking alternative procurement strategies.
- **Ignoring the Supplier's Perspective.** Perhaps more critically: The Kraljic matrix does not consider the supplier's view of the buyer. For example, a company spending €20,000 at a local café may have more more influence than it would with a significantly larger spend on advertising services from a global corporation like Google. (The Kraljic Matrix - How to Optimize Purchasing Costs and Risks, 2022)

4 Conclusion

Research and practical experience demonstrate that, in an era of increasing global interconnectivity and supply network complexity, it is essential to develop adaptive and flexible practices. The Kraljic Matrix, widely recognized as a standard model for developing procurement strategies through supplier portfolio analysis, proves to be an effective tool for classifying suppliers and formulating strategies aimed at reducing risk and enhancing organizational resilience in supply chains.

By using the matrix, procurement products can be classified into distinct categories, allowing for the development of tailored strategies for each group. Key procurement strategies include establishing partnerships, utilizing competitive utilizing, ensuring continuity of supply, and effectively managing procurement categories. These approaches contribute to better disruption management, cost optimization, and improved efficiency–all of which are critical for maintaining stability in today's dynamic and uncertain business environment.

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