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Purchasing strategies in the electronics industry

Design principles for resilient and competitive procurement

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Executive Summary

The procurement of electronic components has evolved in recent years from an operational purchasing function to a strategic management task. Semiconductor shortages, geopolitical tensions, export controls, new customs regimes, and volatile raw material prices have shown that pure price optimization is often no longer sufficient to meet today's requirements.

Successful procurement strategies therefore pursue a balanced approach based on cost control, security of supply, and structural flexibility. This Strategic Brief describes the key developments, explains central design principles, and identifies practical areas of action for OEMs in the electronics industry.

1. The changing role of the procurement function

Several developments are fundamentally changing the framework for electronics procurement and increasing the demands on strategic purchasing decisions.

Geopolitical uncertainties

Export controls, trade conflicts and regional tensions can affect the availability of critical components such as semiconductors, circuit boards or battery cells in the short term and significantly strain supply chains.

Increasing regulatory requirements

Supply chain due diligence obligations, CO₂ reporting, and proof of origin and sustainability now require significantly more transparency along the entire supply chain than just a few years ago.

Volatile prices and availability

Particularly in the semiconductor, sensor, and selected electronic component sectors, many companies continue to report increased price and delivery time volatility. Even if some markets have stabilized temporarily, structural risks remain.

Technological change in purchasing

Digital tools and AI-supported forecasting models are fundamentally changing the way purchasing organizations work, while the global expansion of AI data centers is simultaneously increasing demand for printed circuit boards (PCBs), substrates and memory components, thereby redistributing manufacturing capacities (see sections 2.5 and 2.8).

Assessment

Purchasing is increasingly evolving from an operational procurement function to a strategic early warning and control instrument. Companies that base their purchasing strategy solely on short-term price advantages risk underestimating the growing importance of security of supply, transparency, and resilience in volatile markets.

2. Core strategies of modern electronics procurement

2.1 Multisourcing instead of single-source dependency

Distributing procurement volumes across multiple qualified suppliers reduces dependence on individual sources and increases security of supply. At the same time, it increases the demands on coordination, quality management, and supplier management.

A robust multisourcing concept requires clearly defined volume distributions, uniform quality standards, and coordinated escalation processes. For strategically critical components, the primary goal is to distribute procurement volumes evenly between primary, secondary, and, if necessary, tertiary sources without unnecessarily compromising economies of scale.

2.2 Category Management Strategy

Electronic components differ significantly in terms of criticality, availability, replaceability, and price trends. A differentiated category strategy enables procurement measures to be aligned with the specific risk profile of each category.

While standard components often have a broad supplier base, critical or difficult-to-substitute components require significantly closer market monitoring and longer-term procurement strategies. Many companies therefore group products with comparable requirements and delegate responsibility to specialized category managers or cross-functional purchasing teams.

2.3 Regional diversification instead of pure cost logic

Global suppliers often offer cost advantages and economies of scale, while regional suppliers often offer shorter response times and lower transport, customs and logistics risks.

A more geographically balanced supplier structure can help reduce dependencies and increase the resilience of the supply chain. This does not necessarily mean relocating production sites, but rather strategically diversifying procurement volumes across qualified partners in different regions.

Assessment

Regional diversification does not replace global sourcing, but rather complements it. A balanced supplier structure can help to better distribute risks and increase flexibility in the face of changing market conditions.

2.4 Total Cost of Ownership instead of unit price

The lowest unit price does not necessarily lead to the lowest overall costs. Transport, customs duties, warehousing, quality costs, capital commitment, exchange rate risks, and potential costs due to supply disruptions significantly influence the economic viability of a procurement decision. An evaluation based on the Total Cost of Ownership (TCO) provides a more comprehensive basis for decision-making and supports long-term stable and economically viable supplier strategies.

2.5 Digital and AI-supported procurement

Digital tools are increasingly helping purchasing organizations to identify market changes early and make data-driven procurement decisions. AI-powered forecasting models can reveal price trends, delivery times, and potential supply risks at an early stage.

E-sourcing platforms and digital supplier evaluations also increase transparency and support more efficient management of tenders, compliance requirements, and supplier relationships. Digitalization not only improves procurement efficiency but also strengthens procurement's strategic role within the company.

2.6 Resilience and Risk Management as a Management Responsibility

Volatile markets cannot be controlled solely through operational measures. They require systematic risk management with suitable early warning indicators and a forward-looking procurement strategy.

The effort should be risk-oriented. Not every component requires the same level of protection. Particular attention should be paid to components whose failure could have significant consequences for production, delivery capacity, or customer projects.

2.7 Sustainability and ESG criteria in supplier management

Regulatory requirements are increasingly enshrining sustainability and compliance criteria as an integral part of supplier evaluation. Alongside price, quality, and delivery reliability, documented ESG performance, CO₂ emissions, and evidence of environmental, labor, and human rights standards are continuously gaining in importance.

For many companies, these criteria are increasingly becoming an integral part of long-term supplier relationships and procurement decisions.

2.8 Capacity forecast in light of the AI boom

The global expansion of AI data centers is increasingly impacting the demand for certain electronics industry components. High-density printed circuit boards (HDI), high-end laminates, and high-performance memory technologies are particularly affected.

In the printed circuit board market, manufacturing capacity is increasingly being used for server and AI applications. This can result in longer delivery times for certain specialized substrates and materials. Depending on the market segment, even standard materials are now experiencing capacity constraints, as manufacturers increasingly prioritize higher-margin AI applications.

In parallel, memory manufacturers are increasingly investing in the production of high-bandwidth memory (HBM) for AI accelerators. This could affect the availability of conventional memory chips used in industrial, automation, and other electronics applications.

For OEM companies outside the AI market, this means that they are increasingly competing with very high-volume customers for manufacturing capacity and material availability in individual product segments.

Assessment

Companies should regularly adapt their procurement planning to changing market conditions and continuously monitor the development of critical product groups. Particularly with printed circuit boards, memory components, and other strategic components, early demand planning, qualified alternatives, and close supplier relationships can help to limit risks and increase long-term security of supply.

3. Recommendations for OEM companies

1. **Systematically assess critical components:** Prioritize components consistently according to supply risk, replaceability, and economic importance.
2. **Diversify supplier structures geographically:** Distribute procurement volume strategically across multiple regions and qualified suppliers to reduce dependencies.

3. **Make procurement decisions based on TCO:** Always include transportation, inventory, quality, and disruption costs in the evaluation.
4. **Continuously monitor market developments:** Use early warning indicators and digital forecasting tools to detect changes early.
5. **Strategically integrate procurement:** Involve the procurement function in business decisions at an early stage and strengthen its role in risk management.
6. **Secure capacities for critical components early on:** For printed circuit boards, memory devices, and other strategically relevant components, secure long-term agreements and qualified alternatives.
7. **Establish obsolescence management:** Actively monitor the life cycles of critical components to identify end-of-life discontinuations early and initiate timely redesigns or qualified replacement solutions.

Assessment

A future-proof procurement strategy increasingly considers not only procurement costs but also security of supply, flexibility, and transparency along the supply chain. Companies that integrate these factors into their procurement decisions early on create a solid foundation for remaining competitive even under volatile market conditions.

Conclusion

The requirements for procurement in the electronics industry have fundamentally changed in recent years. In addition to costs, security of supply, transparency, regulatory requirements, and the ability to react to changing market conditions are increasingly becoming the focus of strategic decisions.

A resilient procurement strategy is not built through individual measures but through the combination of risk assessment, a balanced supplier structure, a holistic cost perspective, and forward-looking planning.

Companies that integrate these aspects into their purchasing organization early on create the conditions to remain flexible and competitive even under volatile market conditions.

About the author

Dirk Kaussen is Founder and Managing Director of EMS Strategy Group. With around 40 years of experience in the electronics industry — including founding and managing his own electronics manufacturing company in Germany — he brings deep expertise in manufacturing processes, EMS partner selection, supply chain stability, relocation projects, and risk management. His approach combines practical solutions with a direct connection to industrial reality.

About the EMS Strategy Group

EMS Strategy Group supports industrial enterprises in the strategic and operational advancement of their electronics manufacturing. Our core expertise lies in the strategic relocation of manufacturing volumes, the selection of qualified EMS partners, the establishment of new production capacities, and the expansion of existing manufacturing structures.

Furthermore, we design resilient supply chain frameworks, conduct comprehensive risk assessments, and guide dual-sourcing strategies, with operational support through to a successful series production ramp-up.

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