# Harnessing Control Towers for Global Supply Chain Excellence

## What is a Supply Chain Control Tower?

A supply chain control tower is an integrated software system that captures every data point along the trip from the manufacturer to the end customer, from raw materials to finished items.

Control towers collect and extract relevant data from suppliers, manufacturers, 3PLs, and other stakeholders by merging and extending existing ERP, WMS, and TMS systems. This provides granular visibility and operational control across the whole supply chain. Finally, this software optimizes inventory lead times, reduces costs, manages exceptions in real time, and improves on-time delivery.

The supply chain control tower is a valuable instrument for maintaining a stable and transparent global supply chain. It can help businesses streamline operations, track shipments, monitor incoming and outgoing actions in real time, access historical data, and analyse supply chain gaps. The implementation of a supply chain control tower paves the way for a slew of supply chain optimization and profit-margin-boosting benefits. This technology assists firms in strengthening their supply networks by increasing on-time delivery rates, cutting operating and human expenses, automating manual tasks, and enhancing supply chain collaboration and communication.

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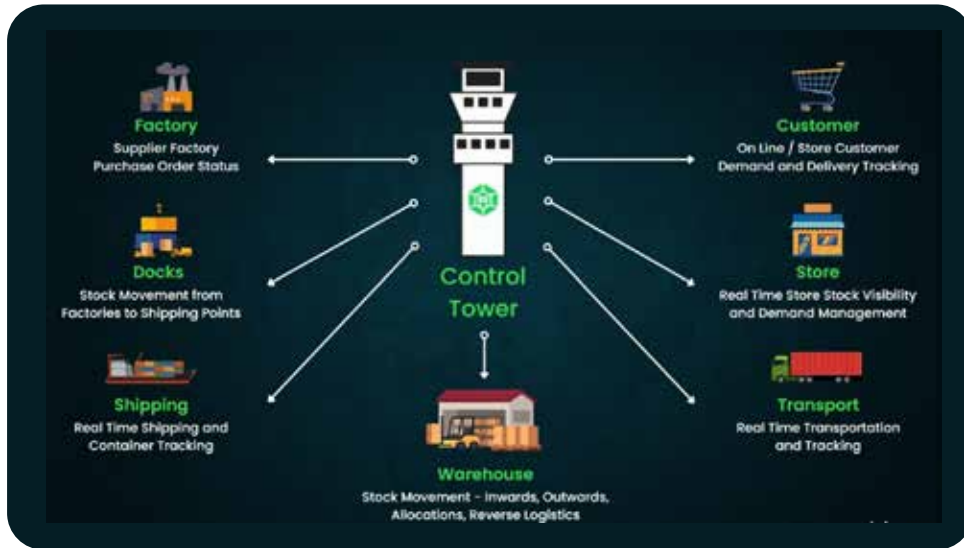
# Challenges with the Traditional Control Towers

While control towers offer numerous benefits in SCM, there are still several gaps and challenges in their implementation. With the global spread of supply chains, rising volumes of trading partners and channel proliferation, Traditional control towers now fall short because:

**Data and Application Silos**

Siloed organizational structures and lack of collaboration among cross-functional teams can hinder the effectiveness of control tower initiatives. Limited communication and alignment between departments may lead to suboptimal decision-making. It's difficult to see the big picture and drive collaboration across boundaries. Without the ability to link sales orders to inventory to transportation, it's hard to say "yes" to customers with confidence.

**Lack of Predictive & Prescriptive Capabilities**

Many organizations struggle to leverage predictive analytics and artificial intelligence/machine learning (AI/ML) effectively to forecast demand, anticipate disruptions, and optimize supply chain decisions. Their data structure and architecture can't flex and keep pace with ever-evolving supply chains. Plus, they typically can't take advantage of the rapid growth of data science and analytics capabilities because they don't easily connect to other analytics tools. Control towers must be scalable and based on a modern technology architecture that can quickly adapt to enable supply chain resiliency.

**Less Real-Time Visibility**

Achieving real-time visibility across the entire supply chain remains a challenge due to limitations in data capture, latency in data processing, and connectivity issues. They can't drive actions because they either lack the broad correlation of data or they don't have granular visibility. Traditional control towers too often rely on people to get the right data and "connect the dots" to make supply chain decisions and drive action.

**Low Data Integration and Quality**

Integrating data from disparate sources and ensuring its accuracy and consistency can be challenging. Incomplete or poor-quality data can undermine the effectiveness of the control tower. Valuable data like risk events, and weather and traffic events cannot be factored into inventory availability and fulfilment decisions, putting the customer experience at risk.

# Moving towards a Smarter Control Tower - Fusion with Gen AI

Smarter control towers are designed to address specific functions such as inventory management, supply assurance, and logistics. They go beyond the basics, zooming in to help solve day-to-day problems while keeping the longer horizon in mind to drive strategic change. They give a customizable dashboard of KPIs and events, as well as important technologies such as Gen AI, so that the supply chain team can easily comprehend, prioritize, and fix critical issues in real time, resulting in a better customer experience and cost savings.

The impact of Gen AI on control towers for supply chain management (SCM) is significant, influencing various aspects of how control towers are designed, implemented, and utilized. Here are some key impacts of Gen AI on control towers for SCM:

**Demand for AI-Driven Solutions**

Gen AI's familiarity and comfort with AI technologies drive the demand for AI-driven solutions in SCM, including control towers. Organizations are increasingly adopting AI algorithms for predictive analytics, anomaly detection, and decision support within control towers to enhance visibility and decision-making capabilities.

**NLP & Voice Interface**

Gen AI's comfort with voice assistants and chatbots drives the integration of natural language processing (NLP) capabilities into control towers. Users can interact with control tower systems using voice commands or text-based queries, enabling more natural and efficient communication
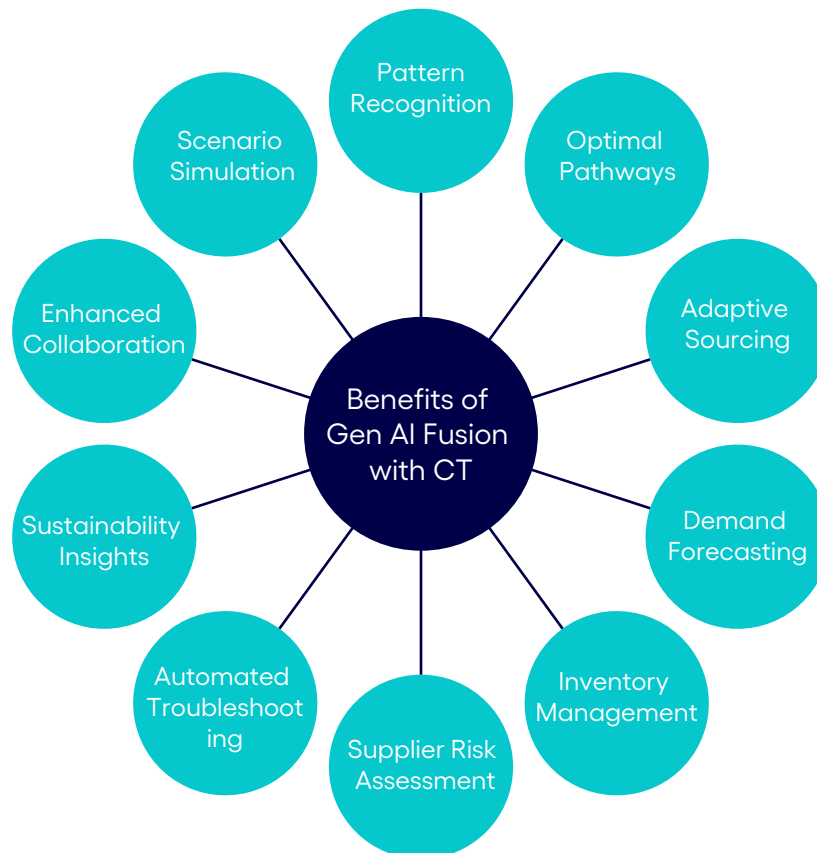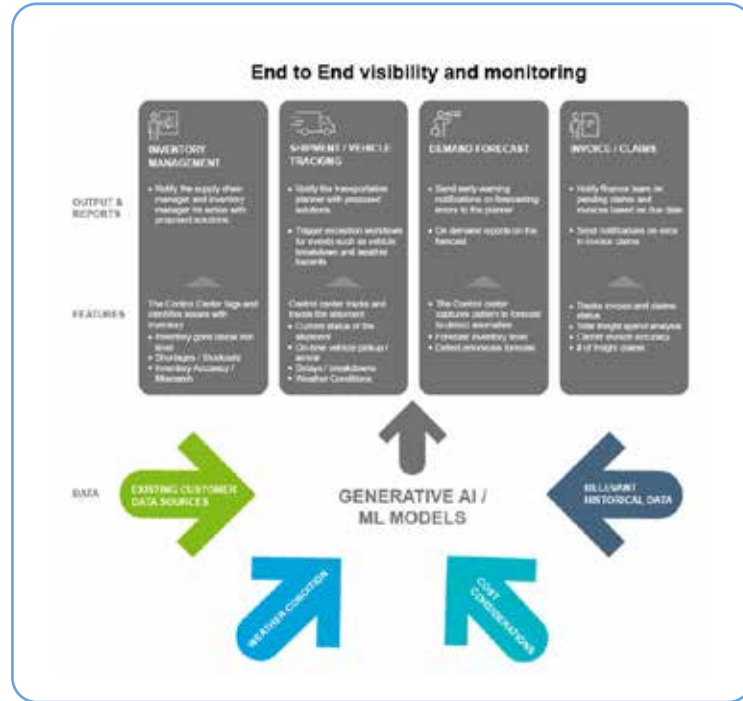
**Intelligent Workflows**

Actionable workflows can be customized to meet unique requirements and process steps required to automate actions within source transactional systems. Make informed decisions with a supply chain virtual assistant that provides responses to issues based on your supply chain data using natural language search.

## True end to end Visibility

Remove data silos and establish real-time visibility across your global supply chain through a standardized data platform. Turn data into actionable insights with personalized dashboards that provide a 360-degreee view of KPIs and significant supply chain events.



End to End visibility and monitoring



Benefits of Gen AI Fusion with CT:
- Pattern Recognition
- Optimal Pathways
- Adaptive Sourcing
- Demand Forecasting
- Inventory Management
- Supplier Risk Assessment
- Automated Troubleshooting
- Sustainability Insights
- Enhanced Collaboration
- Scenario Simulation

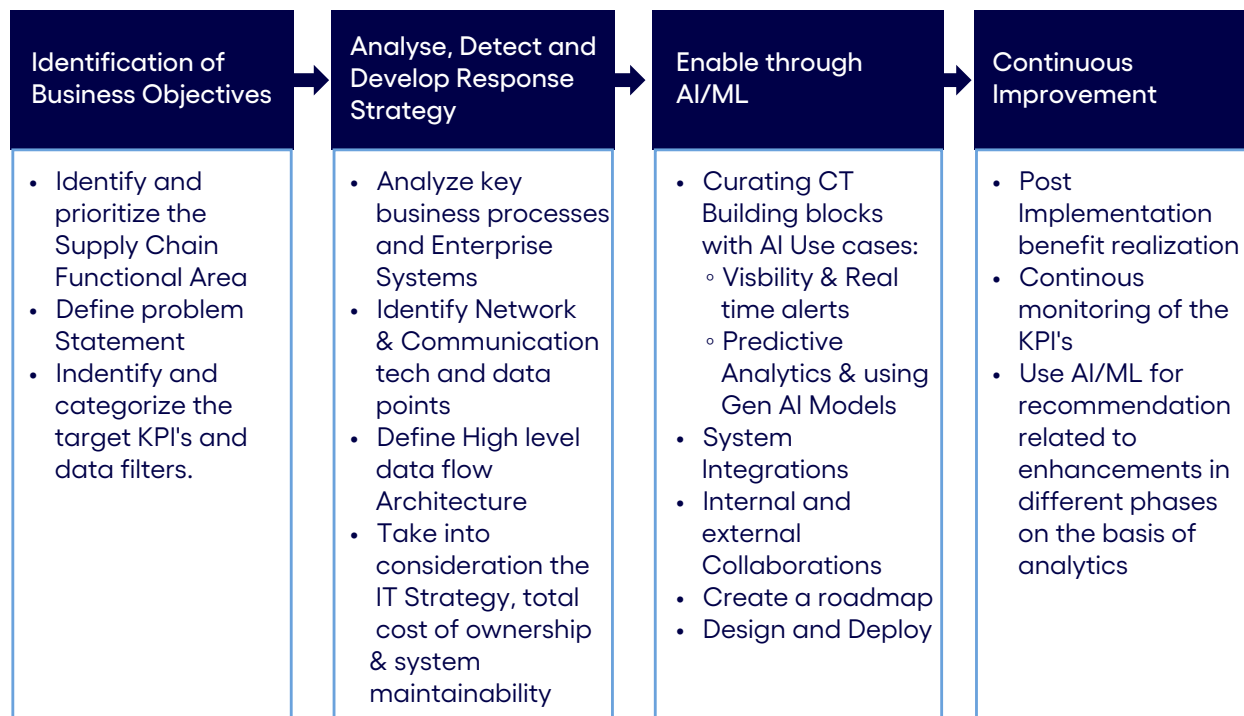# Understanding the existing players in the Market

There are several software products available in the market that offer control tower solutions for supply chain management (SCM). These products vary in terms of features, functionalities, scalability, and industry focus. Here are some of the control tower products in the SCM market:

| Company Name | Product Name | Key Features |
|---|---|---|
| 1) Blue Yonder (formerly JDA Software) | Blue Yonder Luminate Control Tower | • Real-time visibility into end-to-end supply chain operations.<br>• Predictive analytics for demand forecasting and risk mitigation.<br>• Collaboration tools for cross-functional teams and partners.<br>• AI-driven decision support for dynamic supply chain optimization.<br>• Actionable insights to improve operational efficiency and customer service. |
| 2) SAP | SAP Integrated Business Planning (IBP) Control Tower | • Comprehensive supply chain visibility across planning, execution, and monitoring.<br>• Advanced analytics and machine learning for predictive insights and scenario planning.<br>• Integration with SAP's suite of SCM solutions for seamless data flow.<br>• Supplier collaboration tools and risk management capabilities.<br>• Customizable dashboards and reporting for actionable intelligence |
| 3) Oracle | Oracle Supply Chain Management (SCM) Cloud Control Tower | • Unified platform for end-to-end supply chain visibility and control.<br>• AI-driven insights for demand forecasting, inventory optimization, and logistics planning.<br>• Collaboration tools for internal teams, suppliers, and logistics partners.<br>• Real-time monitoring of key performance indicators (KPIs) and alerts.<br>• Support for compliance management and regulatory requirements. |

| | | |
|---|---|---|
| 4) Manhattan Associates | Manhattan Active® Supply Chain Control Tower | • Dynamic control tower with AI-powered analytics and automation capabilities.<br>• Unified platform for order management, inventory optimization, and transportation planning.<br>• Collaboration hub for internal and external stakeholders.<br>• Predictive insights for risk management and scenario planning.<br>• Scalable architecture to support complex supply chain networks. |
| 5) Kinaxis | Kinaxis Control Tower | • End-to-end visibility into supply chain processes and performance.<br>• Rapid scenario modeling and simulation for dynamic decision-making.<br>• Collaborative planning capabilities for cross-functional teams and partners.<br>• Machine learning algorithms for predictive analytics and demand sensing.<br>• Actionable dashboards and reports for continuous improvement. |
| 6) E2open | E2open Control Tower | • Network-based platform for multi-enterprise collaboration and visibility.<br>• Real-time monitoring of orders, shipments, and inventory levels.<br>• Predictive analytics for demand forecasting and supply chain risk management.<br>• Supplier performance tracking and exception management.<br>• Integration with E2open's trading partner network for seamless data exchange. |
| 7) Llamasoft (now part of Coupa). | Llamasoft Supply Chain Guru Control Tower | • Network optimization for end-to-end supply chain visibility and analysis.<br>• Scenario modeling and what-if analysis for strategic decision-making.<br>• Integration with enterprise systems and data sources for data-driven insights.<br>• Supply chain design and optimization capabilities.<br>• Visualization tools for supply chain mapping and performance monitoring. |

# High Level Approach for Implementing Control Tower

| Identification of Business Objectives | Analyse, Detect and Develop Response Strategy | Enable through AI/ML | Continuous Improvement |
|---|---|---|---|
| • Identify and prioritize the Supply Chain Functional Area<br>• Define problem Statement<br>• Indentify and categorize the target KPI's and data filters. | • Analyze key business processes and Enterprise Systems<br>• Identify Network & Communication tech and data points<br>• Define High level data flow Architecture<br>• Take into consideration the IT Strategy, total cost of ownership & system maintainability | • Curating CT Building blocks with AI Use cases:<br>  ◦ Visbility & Real time alerts<br>  ◦ Predictive Analytics & using Gen AI Models<br>• System Integrations<br>• Internal and external Collaborations<br>• Create a roadmap<br>• Design and Deploy | • Post Implementation benefit realization<br>• Continous monitoring of the KPI's<br>• Use AI/ML for recommendation related to enhancements in different phases on the basis of analytics |

## Understanding KPI's - Procurement

A procurement KPI or metric is a measurable value that tracks all relevant aspects of obtaining or buying goods and services. These KPIs enable the procurement department to control and optimize the quantity, quality, costs, timing, and sourcing of purchasing processes.

## Filters to use across different visualizations:

Filters in a procurement dashboard allow users to customize and drill down into specific data sets based on various parameters. Some of them which we can use are:

| Name | Criteria | Inference/ Insights | Chart Type |
|---|---|---|---|
| 1.Time Period | Filter by date range, such as daily, weekly, monthly, or quarterly. | Year-to-date (YTD) and month-to-date (MTD) filters. | Line/ Bar |
| 2.Vendor/ Supplier | Filter by specific vendors or suppliers to analyze their performance and contribution to the procurement process. | Top suppliers or vendors based on spend or performance. | Bar / Radar |
| 3.Category | Filter by procurement categories or spend categories to analyze spending patterns in different areas. | Top categories by spend or quantity. | Pie Chart |
| 4.Department/ Division | Filter by internal departments or business units to understand procurement activities across the organization. | Analyze spending patterns by department. | Stacked Bar |
| 5.Status | Filter by procurement status, such as open, closed, pending, or in progress. | Monitor the status of purchase orders, requisitions, and contracts. | Donut Chart |

| | | | |
|---|---|---|---|
| 6.Geographic Location | Filter by location to analyze procurement activities in different regions or offices. | Monitor regional variations in procurement performance. | Map Chart |
| 7.Budget vs. Actual | Filter by budget compliance to compare actual spending against budgeted amounts | Identify areas where spending exceeds or falls below the budget. | Bar |
| 8.Contract Type | Filter by contract type, such as fixed-price, time and materials, or cost-plus. | Analyze the distribution of contracts and their impact on spending. | Pie Chart |
| 9.Compliance | Filter by compliance level to assess adherence to procurement policies and regulations. | Identify non-compliant activities for corrective action. | Gauge Chart |
| 10.Purchase Order (PO) Status | Filter by PO status, such as pending approval, approved, or rejected. | Monitor the flow and status of purchase orders. | Stacked bar |
| 11.Spend Analysis | Filter by spending thresholds to focus on high-value transactions or outliers. | Analyze spending patterns based on different monetary ranges. | Histogram |
| 12.Supplier Performance | Filter by supplier performance metrics, such as on-time delivery, quality, and reliability. | Identify top-performing and underperforming suppliers. | Radar/ Bar |

# Understanding KPIs:

## Number Of Suppliers

1.Number Of Suppliers Shortlisted        2.Diversity Of Suppliers

### Monitor the level of dependency towards suppliers

This KPI tracks the evolution of how many suppliers the company has. Relying on just a few and not diversifying your sources creates a risk of dependency, and potential further problems if one of them pulls out at the last moment. On the other hand, too many suppliers reduce the possibility of discounts. The procurement KPI aside shows the evolution of the number of suppliers over the years, divided into two categories: contracted and unlisted ones. Often enough, companies prefer contracting suppliers so that they agree with their terms of compliance – but not all of them agree, so they are unlisted. The contracted partners can be classified as gold, silver or bronze according to certain criteria measuring the relationship through discount, reliability, etc.

## Performance Indicators

Apart from the level of dependency, the optimal number of suppliers you need should be measured using other metrics like the quantity discount they provide you with, and the defect rate of their supplies.
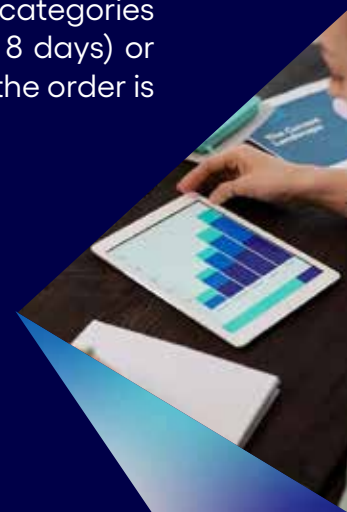


# Purchase Order Cycle Time

## Know who to address your urgent orders to

The purchase order cycle time is a procurement KPI that covers the end-to-end ordering process, from the moment a purchase order is created to the order approval, receipt, invoice and finally payment of the order. It focuses on the order and does not include the creation and delivery of the product or material itself. On the illustration aside, we see that the cycle decreased to 3,9 days at its minimum in March 2017, before increasing up to 6,3 days in June. The suppliers are divided into three categories classifying their purchase cycle time: short (4 days or less), medium (5 to 8 days) or long (over 8 days). This is a factor to take into account when purchasing: if the order is urgent, you may need to know which supplier is able to handle it quickly.

## Performance Indicators

Reducing your cycle time can improve the turnaround of other key activities and improve staff productivity and the overall cost of the procurement function.

# KPIs Influencing PO Cycle Time

| KPI | Formula/ Inputs | Chart Type |
|---|---|---|
| 1. Average Purchase Order Cycle Time: | (Total time taken for all purchase orders / Number of purchase orders) | Line chart showing the average cycle time over different time periods (e.g., months or quarters). |
| 2. On-Time Purchase Orders: | (Number of On-Time Purchase Orders / Total Number of Purchase Orders) x 100 | Donut chart displaying the percentage of purchase orders delivered on time. |
| 3. Purchase Order Cycle Time by Vendor: | (Total time taken for all purchase orders from a specific vendor / Number of purchase orders from that vendor) | Bar chart comparing average cycle times for different vendors. |
| 4. Purchase Order Processing Time Breakdown: | Breakdown of Processing Time (e.g., Requisition Approval, Supplier Confirmation, etc.) | Stacked bar chart illustrating the time spent at each stage of the purchase order process. |
| 5. Purchase Order Cycle Time Trends: | Trends in Purchase Order Cycle Time | Line chart showing the trend in cycle time over a specified time period, helping identify patterns or improvements. |
| 6. Backlog of Purchase Orders: | Number of Outstanding Purchase Orders | Area chart displaying the backlog of outstanding purchase orders over time. |
| 7. Purchase Order Approval Time: | (Total time taken for approval of all purchase orders / Number of purchase orders) | Box plot or violin plot depicting the distribution of approval times. |
| 8. On-Time Delivery Performance by Supplier: | (Number of On-Time Deliveries from a Supplier / Total Deliveries from that Supplier) x 100 | Heatmap showing on-time delivery rates for different suppliers. |

# Sample Visualization Charts:

# Purchase Order Coverage

## 1. Receipt Accuracy

### How invoices match to purchase orders

The purchase order coverage is a metric that tracks the percentage of supplier invoices received that can be matched to a purchase order. It is an important KPI to track as it not only protects the business from invoice fraud but also saves money and builds stronger relationships. Traditional means of invoice matching usually involve manual processing, which is time consuming and prompt to error. To avoid this, procurement departments rely on automation technologies such as the 3-way-matching approach. This is the process of comparing the original PO, the receiving document, and the vendor invoice to match the information in them. If the three do match, then the company's expectations regarding the price, service, and goods match the vendors ones.

### Performance Indicators

As a benchmark your purchase order coverage should be higher than 95% to avoid extra processing costs and unverified orders.

# Supplier Quality Rating

## Analyse the quality of your suppliers

The quality rating is one of the supplier performance metrics critical in evaluating present as well as future relationships with suppliers. If the designated supplier continuously delivers a lower quality score, then their status may be downgraded, or corrective measures implemented until issues in the supply chain are resolved. For example, if the supplier availability was low, and you cannot rely on their stock, your business can, consequently, suffer due to a lack of products.

## Performance Indicators

The point is to monitor suppliers, try to reach the highest quality score (above 90%), and re-evaluate the percentage of returned items, availability, and the defect rate, in order to renegotiate future contracts and agreements. Maintaining your supplier's availability over 90% ensures a good functioning of your supply chain and a greater level of efficiency.

## KPIs Influencing Supplier Quality Ratings

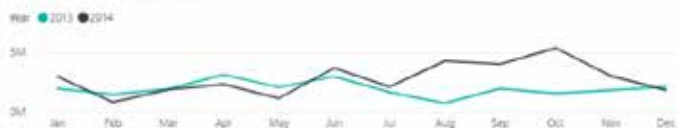| Name | KPI | Formula/ Input | Chart Type |
|------|-----|----------------|------------|
| 1. Product/ Service Quality: | Supplier Defect Rate | (Number of Defective Units / Total Units Received) x 100 | Pareto chart showing the most common types of defects. |
| 2. On-Time Delivery: | On-Time Delivery Rate | (Number of On-Time Deliveries / Total Number of Deliveries) x 100 | Donut chart displaying the percentage of on-time deliveries. |
| 3. Compliance with Specifications: | Specification Compliance Rate | (Number of Compliant Deliveries / Total Number of Deliveries) x 100 | Radar chart illustrating compliance across different specifications. |
| 4. Corrective Action Responsiveness: | Average Time to Resolve Corrective Actions | (Total Time Spent on Corrective Actions / Number of Corrective Actions) | Bar chart showing the average time taken to resolve corrective actions. |
| 5. Customer Satisfaction: | Customer Satisfaction Index | Survey results or feedback scores | Gauge chart illustrating the overall customer satisfaction level. |
| 6. Overall Supplier Quality Score: | Weighted Average Quality Score | Weighted sum of individual criteria scores | Spider chart or radar chart showcasing scores across different quality criteria. |
| 7. Supplier Availability | Measure your suppliers' responses to urgencies | (Number of times items were available with vendor/total number of orders placed with the vendor) | Line chart depicting the suppliers availability |
| 8. Quality Improvement Trends: | Trends in Quality Improvement Initiatives | Trends in Quality Improvement Initiatives | Line chart illustrating the progress of quality improvement initiatives over time. |
| 9. Cost of Poor Quality: | Cost of Poor Quality | Total costs incurred due to defects, rework, or non-compliance | Pie chart illustrating the components contributing to the cost of poor quality. |

# Sample Visualization Charts:

# Criteria for Supply Quality Rating Calculation:

## 1. Define Criteria:

• Identify key criteria that contribute to supplier quality. Common criteria include:

  ◦ Product/Service Quality
  ◦ On-Time Delivery
  ◦ Compliance with Specifications
  ◦ Quality Control Processes
  ◦ Corrective Action Responsiveness
  ◦ Customer Satisfaction

## 2. Assign Weights to Criteria:

• Assign weights to each criterion based on its importance to your organization. The sum of weights should equal 100%.

  ◦ Example:
    • Product/Service Quality: 30%
    • On-Time Delivery: 20%
    • Compliance with Specifications: 15%
    • Quality Control Processes: 15%
    • Corrective Action Responsiveness: 10%
    • Customer Satisfaction: 10%

## 3. Define Scoring Scale:

• Establish a scoring scale for each criterion. For example, a scale of 1 to 5, where 5 represents excellent and 1 represents poor.

## 4. Evaluate Supplier Performance:

• Collect data on each criterion for each supplier. This may involve using supplier performance surveys, audits, quality control reports, and other relevant sources.

## 5. Apply Scoring:

• Assign scores to each criterion based on the defined scale. For example:

  ◦ Product/Service Quality: Supplier A - 4, Supplier B - 5, Supplier C - 3
  ◦ On-Time Delivery: Supplier A - 5, Supplier B - 4, Supplier C - 3

## 6. Calculate Weighted Scores:

• Multiply each criterion score by its assigned weight.

  ◦ Example:
    • Product/Service Quality: (4 * 30%) = 1.2
    • On-Time Delivery: (5 * 20%) = 1.0

# 7. Sum Weighted Scores:

- Sum the weighted scores for each supplier to obtain the overall quality score.

    ◦ Example:
        - Supplier A: 1.2 + 1.0 + ... = Total Quality Score

# 8. Normalize Scores (Optional):

- If needed, normalize scores to a standardized scale, e.g., from 1 to 100, for easier comparison.

# 9. Set Thresholds or Ranges:

- Define thresholds or ranges to categorize suppliers into quality levels (e.g., Excellent, Good, Acceptable, Needs Improvement).

# 10. Communicate Results:

- Share the quality ratings with relevant stakeholders and suppliers, providing insights into areas for improvement.

# 11. Continuous Improvement:

- Regularly review and update the criteria, weights, and scoring methodology based on evolving organizational priorities and industry standards.

## Supplier Availability

Measure your suppliers' responses to urgencies



## Supplier Defect Rate

Evaluate suppliers' individual quality

# Lead Time

## Measure the total time to fulfil an order

It measures the interval of time between the initiation of a procurement action, and the receipt of the production model into the supply system, purchased as a result of such action. In other words, it is the latency between the initiation and the execution of a process. For instance, the lead time between the placement of an order and the delivery of printed circuit boards from a manufacturer can span from 2 weeks to 3 months, or sometimes more. Lead time is different from purchase order cycle time as it starts when the request is made till the final delivery and testing, while cycle time ends at the confirmation of the order.

## Performance Indicators

The idea is to reduce lead time as much as you can while keeping a good quality level.

## KPIs Influencing Lead Time

| Name | KPI | Formula/ Input | Chart Type |
|------|-----|----------------|------------|
| 1. Average Lead Time: | Average Lead Time | (Sum of lead times for all orders / Total number of orders) | Line chart displaying the average lead time over different time periods. |
| 2. Lead Time Variability: | Coefficient of Variation (CV) of Lead Time | (Standard Deviation of Lead Time / Average Lead Time) x 100 | Bar chart showing the coefficient of variation for lead time. |
| 3. On-Time Delivery Performance: | On-Time Delivery Rate | (Number of On-Time Deliveries / Total Number of Deliveries) x 100 | Donut chart displaying the percentage of on-time deliveries. |
| 4. Lead Time Trend Analysis: | Trends in Lead Time | | Line chart showing the trend in lead time over a specified time period, helping identify patterns or improvements. |
| 5. Supplier Lead Time Performance: | Supplier Lead Time Adherence | (Number of On-Time Deliveries from a Supplier / Total Deliveries from that Supplier) x 100 | Radar chart comparing lead time adherence across different suppliers. |
| 6. Lead Time vs. Target: | Lead Time vs. Target | ((Actual Lead Time - Target Lead Time) / Target Lead Time) x 100 | Thermometer chart displaying how close actual lead times are to the target. |
| 7. Lead Time Distribution: | Distribution of Lead Times | | Histogram depicting the distribution of lead times. |
| 8. Backorder Rate: | Backorder Rate | (Number of Backorders / Total Orders) x 100 | Stacked area chart illustrating backorder rates over time. |
| 9. Lead Time Benchmarking: | Lead Time Benchmarking | | Box plot comparing your organization's lead times to industry benchmarks. |

## Measure the total time to fulfil an order
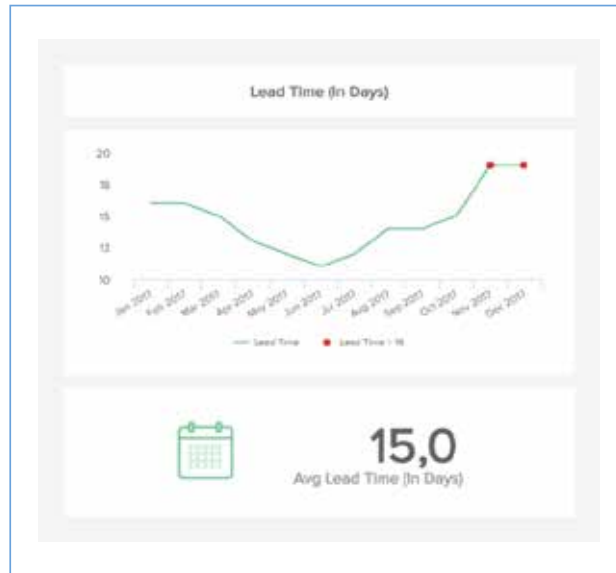


# Procurement Cost Reduction

## Streamline the tangible costs savings

Cost reduction is central amongst the procurement. It wants to measure the tangible "hard savings", that you have performed in terms of cost management over the years. You can easily measure them by comparing directly the old costs versus the new ones for the same good or service. On illustration aside, we see that it went from €260k up to €480k five years later. It also breaks down the cost reduction by supplier category (switches, battery, display, etc.) and we see that the transistors' section has the highest savings. There are a lot of best practices to adopt to reduce spending: you can streamline your supplier lifecycle management, increase efficiency by leveraging supply chain analytics, or train your staff on how to save costs. It is a key metric for top management as it has a direct influence on the income statement.

### Performance Indicators

Monitor your cost reduction over time in order to increase it in the long-term.
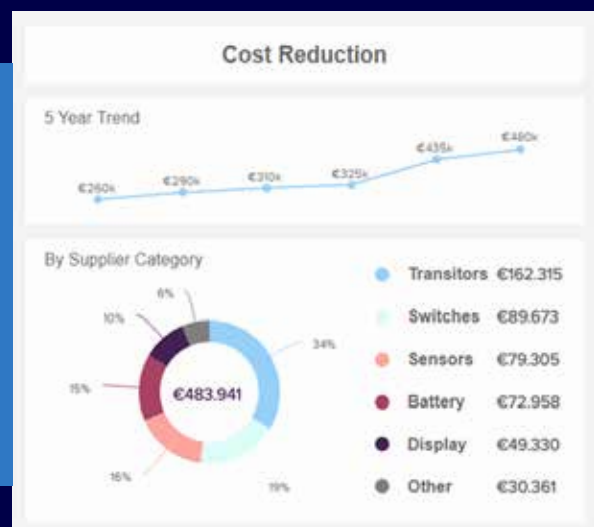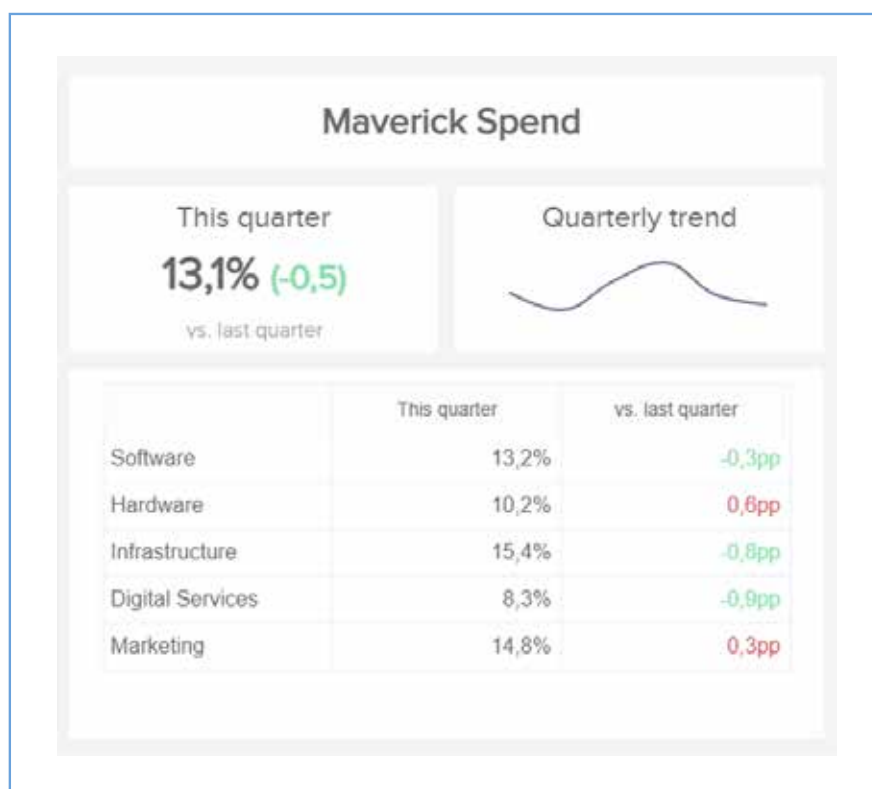
# Maverick Spend

## Monitor your out-of-contract spending

The maverick spend tracks the spending of goods or services from non-contracted or non-preferred providers. It represents a big challenge for organizations as it can bring adverse consequences especially in cost savings. For example, a high maverick spend can lead to increased expenses by not being able to benefit from discounts previously stated with contracted vendors or damaging the relationship with preferred ones and affect future contract terms. Besides increasing costs, maverick spending can also show a lack of communication inside the business. Some departments might be managing their purchasing on their own without considering the contracts that are already in place. To avoid this, it is necessary to implement a centralized system that informs the entire organization about purchasing policies.

## Performance Indicators

Track this KPI for different business areas and departments to easily pinpoint if one of them is lacking and implement corrective measures.



**Maverick Spend**

**This quarter**
**13,1% (-0,5)**
vs. last quarter

**Quarterly trend**

|  | This quarter | vs. last quarter |
|---|---|---|
| Software | 13,2% | -0,3pp |
| Hardware | 10,2% | 0,6pp |
| Infrastructure | 15,4% | -0,8pp |
| Digital Services | 8,3% | -0,9pp |
| Marketing | 14,8% | 0,3pp |

# The Kraljic Matrix

The Kraljic Matrix, developed by Peter Kraljic, is a strategic procurement tool that provides a systematic approach to managing a company's supplier portfolio. The significance of the Kraljic Matrix lies in its ability to help organizations strategically analyse and categorize their suppliers based on two key dimensions: supply risk and profit impact. Here are some key aspects of the significance of the Kraljic Matrix:

1. Strategic Supplier Management
2. Risk Mitigation
3. Resource Allocation
4. Cost Optimization
5. Supplier Collaboration
6. Strategic Sourcing Strategies
7. Enhanced Decision-Making
8. Continuous Monitoring and Adaptation
9. Scenario Planning
10. Communication and Alignment

To create the matrix, we need to consider relevant key performance indicators (KPIs) that help assess these dimensions. Some KPIs that can be used to populate a Kraljic Matrix are:

## Supply Risk:

| Type | KPI |
|------|-----|
| Geopolitical Stability | Political stability index of the supplier's country. |
| Financial Stability | Financial health of the supplier, including credit ratings and financial statements. |
| Supplier Concentration | Percentage of total purchases from a single supplier. |
| Supply Chain Visibility | Level of visibility into the supplier's supply chain, including potential disruptions. |
| Lead Time | Average lead time for the delivery of goods or services. |
| Supplier Dependency | The extent to which the organization relies on a specific supplier for critical inputs. |

## Profit Impact:

| Type | KPI |
|------|-----|
| Contribution to Revenue | Percentage of the organization's revenue attributed to the supplier's products or services. |
| Cost of Goods Sold (COGS) | Percentage of COGS associated with a particular supplier. |
| Market Competition | The level of competition among suppliers for the organization's business. |
| Product Differentiation | The extent to which the supplier provides unique or differentiated products. |
| Innovation | The supplier's contribution to innovation in products or processes. |
| Cost Structure | Analysis of the supplier's cost structure and potential for cost reductions. |

# How to Use the KPIs in the Kraljic Matrix:

## 1. Score Each Supplier:

- Assign scores for each supplier based on the identified KPIs. Use a scale (e.g., 1 to 5) where higher scores indicate higher risk or impact.

## 2. Plot Suppliers on the Matrix:

- Use the scores to plot each supplier on the Kraljic Matrix. The X-axis represents Supply Risk, and the Y-axis represents Profit Impact.

## 3. Quadrant Definitions:

- Define the quadrants based on the positions of suppliers in the matrix:

    ◦ **Strategic:** High risk, high impact.
    ◦ **Leverage:** Low risk, high impact.
    ◦ **Bottleneck:** High risk, low impact.
    ◦ **Non-Critical:** Low risk, low impact.

# Strategic Actions:

Develop specific strategies and actions for suppliers in each quadrant.

## 1. Strategic Quadrant:

- **Characteristics:**
    ◦ **High Supply Risk**
    ◦ **High Profit Impact**

- **Meaning**
    ◦ Suppliers in this quadrant are strategically critical to the organization. They have a high impact on profitability, but they also pose a significant supply risk.

- **Strategic Actions:**
    ◦ Develop close relationships and partnerships with these suppliers.
    ◦ Collaborate on innovation and product development.
    ◦ Implement risk mitigation strategies.
    ◦ Continuous monitoring and communication.

## 2. Leverage Quadrant:

- **Characteristics:**
    ◦ **Low Supply Risk**
    ◦ **High Profit Impact**

- **Meaning**
    ◦ Suppliers in this quadrant have a high impact on profitability, and there is a lower supply risk associated with them.

- **Strategic Actions:**
  - ◦ Negotiate aggressively for favorable terms and pricing.
  - ◦ Focus on cost optimization and efficiency improvements.
  - ◦ Encourage healthy competition among suppliers.
  - ◦ Optimize terms and conditions.

## 3. Bottleneck (Critical) Quadrant:

- **Characteristics:**
  - ◦ **High Supply Risk**
  - ◦ **Low Profit Impact**

- **Meaning**
  - ◦ Suppliers in this quadrant may not have a significant impact on profitability, but they pose a high supply risk. Disruptions from these suppliers could lead to bottlenecks in the supply chain.

- **Strategic Actions:**
  - ◦ Monitor and manage risks associated with these suppliers.
  - ◦ Consider alternative suppliers or dual-sourcing strategies.
  - ◦ Implement contingency plans.
  - ◦ Collaborate with these suppliers to improve performance.

## 4. Non-Critical Quadrant:

- **Characteristics:**
  - ◦ **Low Supply Risk**
  - ◦ **Low Profit Impact**

- ◦
- **Meaning**
  - ◦ Suppliers in this quadrant have a low impact on profitability, and there is a low supply risk associated with them.

- **Strategic Actions:**
  - ◦ Implement efficient procurement processes without excessive focus.
  - ◦ Optimize transactional costs.
  - ◦ Monitor performance but with less intensity.
  - ◦ Consider consolidation or simplification of the supply base.



**Kraljic Matrix**

(Profit impact — High / Low)

| Leverage items | Strategic items |
| Non-critical items | Bottleneck items |

Risk / Complexity — Low → High

# Integrating SCOR with Supply Chain Control Tower

The Supply Chain Operations Reference (SCOR) model is a framework developed by the Supply Chain Council (now part of APICS) to standardize and improve supply chain management practices. SCOR provides a comprehensive set of metrics, processes, and best practices for managing key areas of the supply chain. Integrating SCOR with a control tower in supply chain management (SCM) can enhance visibility, decision-making, and performance management across the supply chain. Here's how SCOR can be used with a control tower in SCM:

✓ **Alignment of Metrics:**

- Map SCOR metrics to key performance indicators (KPIs) within the control tower. Ensure that the control tower captures data relevant to SCOR performance measures such as reliability, responsiveness, agility, cost, and asset management.

✓ **Process Standardization:**

- Use SCOR processes as a basis for standardizing supply chain processes within the control tower. Align control tower workflows and procedures with SCOR process definitions to ensure consistency and efficiency.

✓ **Performance Benchmarking:**

- Compare control tower performance against SCOR benchmarks and industry standards. Use SCOR benchmarking data to identify areas of improvement and prioritize initiatives for enhancing supply chain performance.

✓ **Root Cause Analysis:**

- Leverage SCOR's process analysis techniques such as process mapping and root cause analysis within the control tower. Use these methodologies to identify inefficiencies, bottlenecks, and areas of risk in the supply chain.

✓ **Scenario Planning:**

- Utilize SCOR's scenario planning capabilities to assess the impact of different supply chain strategies and decisions within the control tower. Model various scenarios to evaluate their effects on SCOR performance metrics and overall supply chain performance.

✓ **Supplier Performance Management:**

- Integrate SCOR's supplier performance management framework with the control tower. Monitor supplier performance against SCOR metrics such as delivery performance, quality, and cost. Use the control tower to identify underperforming suppliers and collaborate on improvement initiatives.

Integrating SCOR with a control tower in SCM enables organizations to leverage a standardized framework for performance management, process optimization, and collaboration across the supply chain. By aligning control tower initiatives with SCOR principles, organizations can achieve greater visibility, agility, and efficiency in their supply chain operations.

# Thank you

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For any further queries,
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