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SUPPLY CHAIN EVOLUTION

SCV-Dashboard

User Guide

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Introduction

The SCV-Dashboard is a practical analysis tool for organizations who want to achieve Supply Chain Viability (SCV). SCV means that organizations are capable of optimally balancing efficiency, resilience and sustainability requirements. The dashboard helps organizations assess their current position in terms of SCV and supports them in setting strategic development priorities.

Purpose of the Dashboard

The dashboard's primary function is to provide transparency regarding the current state of SCV:

- It enables organizations to evaluate their performance across three SCV dimensions: efficiency, resilience and sustainability.
- It requires the organization to consider which KPIs should be used to operationalize and measure SCV in the respective company.
- It helps to identify strengths and weaknesses, as well as the trade-offs between these dimensions.
- It provides an indicative overall SCV score to support long-term supply chain development and strategic discussions. This allows organizations to track their progress over time.

Note: The dashboard is meant to guide internal reflection and strategic dialogue. It should be used as a basis for defining next steps, not as an absolute measure of performance.

Basic Principles of Supply Chain Viability (SCV)

SCV refers to the ability of supply chains to operate efficiently, resiliently and sustainably in the long term. Unlike traditional approaches, which focus primarily on efficiency, SCV aims to strike a balance between those three dimensions.

Thereby, supply chains face a structural dilemma: it is not possible to optimize each dimension independently of one another. They influence each others, often in the form of conflicting objectives. SCV does not seek to eliminate this tension, but rather to harness it productively.

The Three Target Dimensions

Efficiency

Delivering products or services to customers at the lowest cost.

Efficiency Practices

Ensure **maximum profitability** in the **short term** under **stable and predictable** operating conditions.

Resilience

Anticipate, withstand, and quickly respond to unexpected disruptions.

Resilience Practices

Provide additional **profitability** in the **long term under uncertain and unpredictable** operating conditions.

Sustainability

Managing environmental and social impacts across the supply chain.

Sustainability Practices

Secure the **long-term existence** of the organization by complying with **environmental/social standards.**

How the Dashboard Works at a Glance

1 Necessary Groundwork

- Understanding the concept of SCV.
- Identifying relevant stakeholder.
- Analyzing resulting trade-offs.

2 Weight the SCV Dimensions

- Defining the relative importance of efficiency, resilience, and sustainability.

3 Select the KPIs

- Selecting relevant KPIs from the pool (1–10 per dimension).

4 Setting the Benchmarks

- Setting upper/lower limits for KPIs.

5 Setting the Weights

- Using the sliders to adjust the weighting of each KPI .

6 Determine and Enter KPI-Values in Dashboard

- Finding KPI-Values in company (e.g., in ERP, WMS etc.).

7 Calculating the SCV-Score and Analyzing the Results

- Interpreting the overall scores and results by dimension.

Step-by-Step Instructions

Identifying which KPIs are relevant and how to control the development of SCV is far more important than simply applying the numbers on the dashboard. Therefore, paying attention to the set-up and theoretical work beforehand is essential. To this end, we recommend setting up a small cross-cultural team with individuals from different age groups, experience levels and departments (e.g., logistics, procurement, quality, marketing, finance, sustainability, IT etc.).

Step 1: Necessary Groundwork

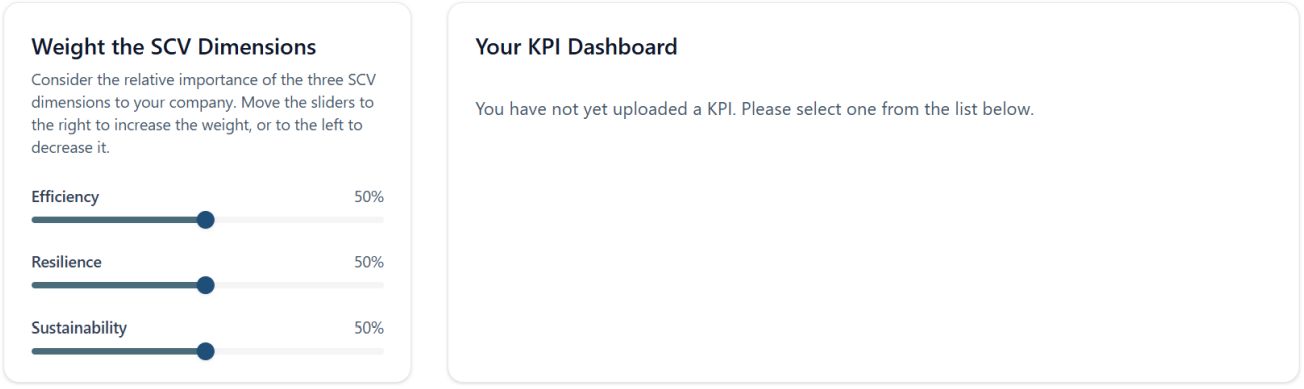
The dashboard is used only to control SCV development. We recommend that you first work your way through the individual work packages on the path to SCV. You can find the relevant information on our website:

1. Familiarize yourself with the fundamentals of SCV (Report 0).
2. Identify relevant stakeholders and their requirements (Report 1).
3. Analyze resulting trade-offs (Report 2).
4. Define and select KPIs to measure SCV (Report 3).
5. Formulate vision and develop strategies to achieve SCV (Reports 4, 5 & 6).
6. Use the dashboard to monitor progress (User Guide).

Step 2: Weight the SCV Dimensions

Prioritize the three SCV dimensions based on their relative importance. As each dimension is not equally relevant to all companies, you can set a weighting for each one. For example, a manufacturing company that frequently experiences

Figure 1
Dimension Weighting and KPI Dashboard (Example with an Empty Dashboard)



supply bottlenecks may prioritize resilience, whereas a consumer goods company under regulatory pressure may prioritize sustainability.

Use the slider (see Figure 1) to adjust the importance of each dimension. All three sliders are in a neutral position by default (importance of 50%). Dimensions further to the right (above 50%) are more important. Those further to the left (below 50%) are less important.

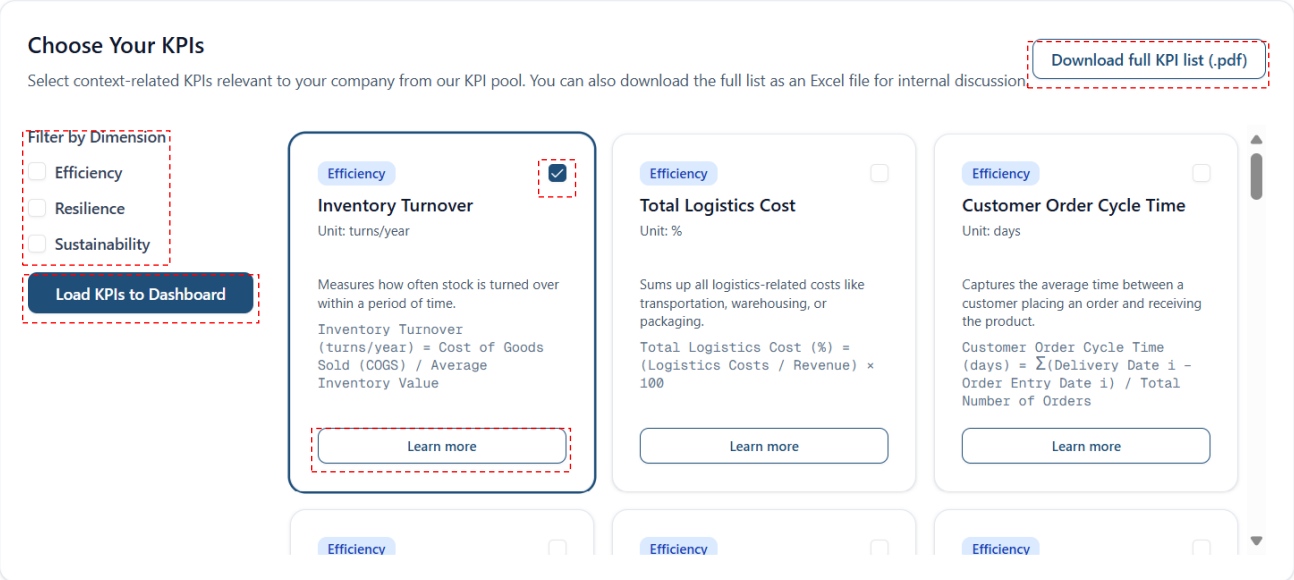
The highest possible weight is 100%, and the lowest is 1%. Even if you could set it to 1%, we do not recommend going to the maximum, since the basic principle of SCV is that all three dimensions should be considered and balanced optimally. The overall weighting rating cannot exceed 200% or be lower than 100%.

Step 3: Select KPIs and Upload them to the Dashboard

Select the KPIs that are relevant to you from our pool. You can find the shortlist of KPIs on our website, as well as in the dashboard. Our pool contains 30 KPIs in total, with 10 KPIs for each dimension. Each KPI is has a description.

You must select at least one KPI for each dimension. Although there is no upper limit, we recommend maintaining a balanced selection across efficiency, resilience and sustainability. The numbers do not need to be identical; however, avoid extremes (e.g., five KPIs in one dimension and only one in another).

Figure 2
Selecting and Uploading KPIs to the Dashboard



Such an imbalance would distort the results and make the overall SCV score too dependent on a single dimension.

At the very beginning, your dashboard is empty (as visualized in Figure 1). You must select your preferred KPIs and upload them into your dashboard. To choose your KPIs, you can also filter the KPIs by the dimension on the left side. Check Figure 2 for further specifications.

Once you have uploaded a KPI to the dashboard, it will no longer appear in the selection panel. You can delete any selected KPIs from the dashboard; they will then reappear in the selection panel.

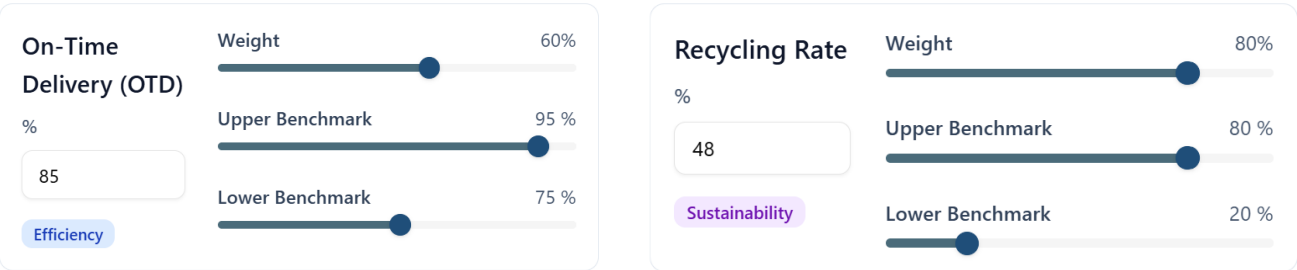
Step 4: Setting the Benchmarks for Each KPI

For each KPI, you should also set meaningful benchmarks. The dashboard only specifies the upper and lower benchmarks, which should cover a broad range of industries. As actual KPI values can vary greatly depending on industry, company and goals, we do not suggest any more detailed benchmarks. Click "Modify KPIs" in the dashboard to define the upper and lower benchmark.

- Upper benchmark: Consider the best possible outcome you would like to achieve with this KPI. Set this value as the upper benchmark. For on-time delivery, for example, 95% could be the best possible result. The upper-level benchmark would therefore be 95%.
- Lower benchmark: Consider what the worst possible outcome of this KPI might be. Set this value as the lower benchmark. Example: On-time delivery: 50% would be the worst possible result. Therefore, the lower-level benchmark should be 50%.

To set the benchmarks, it is also recommended that you study your industry and its estimated average values.

Figure 3
Modifying KPIs: Set Values and Benchmarks (examples)



Step 5: Setting the Weights for Each KPI

Next, you need to decide how much weight to give to each KPI. For example, if a particular KPI is important, you can set its weight using the slider. Refer to Figure 3 again for an example. The default value is 50%, which is in the middle. Moving the slider to the right increases its relevance, while moving it to the left reduces it. You can also leave the slider in the middle to keep this KPI neutral.

Step 6. Determine and Enter KPI-Values in Dashboard

Identify the KPIs that have been selected in your company. This information is usually found in ERP systems, company reports or by talking to relevant stakeholders. Clicking “Learn more” on a KPI will provide suggestions on where the KPI can usually be found. This information is also available in the KPI shortlist. You can then enter the values in the dashboard. Please enter values without units in the corresponding fields.

Step 7: Calculating the SCV-Score and Analyzing the Results

Click 'Calculate SCV-Score' to run the overall calculation. The results display an overall viability percentage for each dimension, as well as an overall SCV score. This score may range from 0% to 100%. See the next chapter for information on how to interpret the results.

Figure 2
Example for Filled Out Dashboard

Interpretations of the Results

The dashboard provides four results: a score for each of the three dimensions (efficiency, resilience and sustainability) and an overall SCV score. These results should be understood as an indication of the current state of your supply chain. They are not absolute values or industry benchmarks.

Balance check between the dimensions

The results show whether efficiency, resilience and sustainability are balanced. A significant imbalance suggests that one dimension is underdeveloped and could affect overall viability.

Progress tracking over time

Repeating the maturity check at regular intervals allows trends to become visible. This enables organizations to track their progress over time, measure the effect of strategic initiatives, quantify improvements, identify areas for development, and communicate their progress to stakeholders.

Scenario and sensitivity analysis

Users can test different scenarios by adjusting weights and benchmarks. These scenarios demonstrate how sensitive the overall SCV score is to changes in specific KPIs and dimensions and identify levers with great impact.

Strategic prioritization

The results support organizations in making strategic decisions by indicating which dimensions or KPIs should be addressed first. This is particularly relevant for prioritization and effective resource allocation.

Benchmarking potential

Although there are no fixed external benchmarks, the results can be compared with previous internal assessments or anonymized peer groups.

Management tool

The scores can create a common language among stakeholders, and hence, allow for better coordinating the development of supply chain viability and communicate the efforts to the stakeholders.

Calculation Principles

The calculations are based on a clear principle. In line with the open-source approach, the following pages describe the calculation method.

Step 1: KPI Normalization

First, each KPI is converted to a standard scale between 0 and 1, making the values comparable across different KPIs. The formula used varies depending on the nature of the KPI.

- The-higher-the-better KPIs: a higher value indicates better performance.

$$Normalized\ KPI = \frac{KPI\ Value - Lower\ Benchmark\ Value}{Upper\ Benchmark\ Value - Lower\ Benchmark\ Value}$$

- The-lower-the-better KPIs: a lower value indicates better performance.

$$Normalized\ KPI = \frac{Upper\ Benchmark\ Value - KPI\ Value}{Upper\ Benchmark\ Value - Lower\ Benchmark\ Value}$$

- The range-best KPIs: the optimal value lies in a certain range.

$$Normalized\ KPI = max(0; 1 - \frac{2 * (|\ KPI\ Value - Center|)}{Upper\ Benchmark\ Value - Lower\ Benchmark\ Value})$$

$$Center = (Lower\ Benchmark\ Value + Upper\ Benchmark\ Value) / 2$$

Step 2: Aggregation to the Dimension Scores

An overall score is calculated for each dimension (efficiency, resilience and sustainability). This score combines the normalized KPI values, and taking the dimension and the KPI weighting set by the user into account.

$$Dimension\ Score = Dimension\ Weight * (\sum (Normalized\ KPI * Weight\ of\ KPI))$$

- Dimension Weight = Weight set in the dashboard for each dimension.
- Normalized KPI = Normalized score of the selected KPIs.
- Weight of KPI = Weight set during the modification of the KPIs.

Step 3: Calculation of the Final SCV-Score

The final SCV-Score is calculated using the harmonic mean of the three dimension scores (efficiency, resilience and sustainability). We use the harmonic mean instead of the arithmetic mean to ensure balance; a very low score in one dimension can not be offset by high scores in the others. If one dimension lags behind, the overall SCV-Score decreases significantly, making trade-offs also more visible. This method also reflects the principle of viability, which states that SCV requires all three dimensions to perform at a reasonable level, rather than a high level in just one or two dimensions.

$$SCV\_Score = \frac{3}{\frac{1}{Efficiency\ Score} + \frac{1}{Resilience\ Score} + \frac{1}{Sustainability\ Score}}$$

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