



The role of producer supplier Scorecards in relationship optimisation

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Abstract

In industries dependent on advanced technologies and quality components, effective Supplier Performance Management (SPM) is essential. It ensures the seamless integration of supplier offerings, contributing significantly to operational resilience and competitive advantage. Bomare, known for its commitment to operational excellence through ISO 9001 certification, is a compelling case study. This article highlights the implementation of robust Supplier Performance Assessment Systems to improve operational efficiency. By addressing the shortcomings of the previous assessment system and adopting new strategically aligned scorecards, the company can optimize its supply chain dynamics and cultivate collaborative relationships with its suppliers. Such an approach not only strengthens performance monitoring but also prepares the company to seize opportunities in a dynamic business environment.

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- ✓ Supplier performance
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1. INTRODUCTION

In modern business operations, the efficiency and effectiveness of supply chains are pivotal to organizational success. Supplier Performance Management (SPM) ensures that suppliers meet and exceed expectations, contributing to seamless goods and services flow. The exploration into SPM and procurement is driven by academic interest in supply chain dynamics, the strategic importance of procurement in competitive advantage, and a personal interest in the procurement domain. Moreover, Bomare Company's urgent need for a robust supplier performance evaluation system underscores the research's relevance.

In sectors like television and electronics manufacturing, innovation and value addition from suppliers are crucial. These industries thrive on integrating cutting-edge technologies and quality components from reliable partners. Bomare Company, a leader in local television manufacturing with ISO 9001 certification, exemplifies operational excellence and market leadership. Its commitment to quality management systems and continuous improvement makes it an ideal case study for implementing and assessing a refined supplier performance evaluation system.

The main question addressed in this article is:

How do effective supplier scorecards facilitate the identification of areas for improvement in the producer-supplier relationship?

To help answer this main question, it is important to break it down into several sub-questions :

1. Effective supplier performance scorecards accurately identify issues in a supplier's performance.
2. Effective supplier performance scorecards facilitate the benchmarking and ranking of suppliers.
3. The supplier performance scorecard positively impacts the decision-making process regarding supplier relationships.

For this research, a mixed-methods approach was employed, combining quantitative and qualitative methodologies. The qualitative tools included a literature review of scientific articles and books on procurement and supplier relationship management, as well as semi-directive interviews with key stakeholders to gather essential contextual information and insights. Additionally, performance information about suppliers was collected through qualitative observations. On the quantitative side, a structured questionnaire was used within the company's internal system to assess supplier performance.

The collected data were analyzed statistically to identify performances issues. Semi-directive interviews were meticulously reviewed to extract relevant contextual information, and the internal system analyzed questionnaire responses to calculate KPIs and scores for supplier performance. A simulation was conducted using performance data from May 2024 to evaluate the efficiency of the newly developed scorecards. This comprehensive approach ensured a thorough understanding of the context and the effectiveness of the supplier performance

evaluation scorecard. Our research is divided into two parts. The first part is theoretical, where we discussed various aspects of the supply chain, procurement, and supplier relationship management, highlighting its importance. We then moved on to supplier performance management. This part concluded by describing the steps and processes involved in creating a supplier performance scorecard.

In the second part is discusses challenges with the existing evaluation system, such as inconsistent criteria and data integration issues. This part focuses on designing and implementing new supplier performance evaluation scorecards. It details the creation process, alignment with strategic goals, and presents the outcomes achieved.

2. Research methodology and evaluating the previous evaluation system

2.1. Research methodology

Choice of research topic

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2.2. The research objectives :

The research is guided by several fundamental objectives that are crucial in addressing the initial problem. Key objectives of the study include:

- Evaluating the effectiveness of the previous supplier performance evaluation system.
- Designing a new evaluation system tailored to the specific needs and capabilities of the local procurement department.
- Implementing the new system within the department.
- Assessing the impact of the newly implemented system in identifying supplier performance issues.
- Identifying the role of the new system in supplier ranking and benchmarking.
- Examining the significance of Key Performance Indicators (KPIs) in decision-making processes related to supplier relationships.

2.3. Data collection methods

When conducting research, there are two commonly accepted types of analysis for gathering trustworthy data: qualitative analysis and quantitative analysis. It was crucial to use these two complimentary methodologies in a mixed strategy in this investigation.

Qualitative tools

We adopted a qualitative approach to gather information for the most of the study, with a focus on using semi-directive interviews as the primary tool for data collection from the company.

This method is well-suited for this case due to its usefulness for gaining a deeper understanding of the interviewee's context and experiences, interviews allow for in-depth and

rich data collection. They provide an opportunity to gather detailed information and insights that may not be captured through other data collection methods.

The semi-directive interviews were conducted in French, reflecting the use of French in the professional world of the country. The interview guide was subsequently translated into English and can be found in Appendices 1 to 6.

The semi directive interviews are flexibility in the questioning approach. The questions can be adapted based on the interviewee's responses, enabling a deeper exploration of topics.

During the first phase, aimed to evaluate the previous supplier performance evaluation system employed by the company, we conducted semi-directive interviews to understand its efficiency, the usage practices of the local procurements department, and the challenges they encounter. This phase also identified the areas requiring improvement.

In the second phase, which includes the design and implementation of a new system, we expanded the semi-directive interviews to include a diverse group of stakeholders, such as personnel from the IT and quality management departments. This broader scope was crucial to gather detailed information on system capabilities and quality management requirements necessary for the new design.

Finally, in the third phase, we continued using semi-directive interviews to assess the newly implemented system, ensuring that comprehensive feedback was obtained to evaluate its effectiveness and identify any further improvements needed

Quantitative tools

We also used quantitative approaches to collect data, although not as extensively as the qualitative approach for the reasons mentioned earlier. However, when it came to the supplier evaluation process, surveys were the most suitable data collection method to gather feedback.

Surveys are quick and require less time compared to other research methods. They are an efficient way to gather information from multiple sources, or stakeholders in this case, especially when integrated with programs and applications they already use, allowing for automation.

3. The evaluation of the previous supplier performance evaluation system

Drawing upon a combination of our background knowledge and theoretical expertise, as well as insights gathered from the interview with the local procurements department manager, we have identified several key problems in the evaluation of supplier performance system within the company.

- Time consumption: Delays due to interdepartmental coordination hinder efficiency.
- Manual processes: Paper-based evaluations are labor-intensive and prone to errors.
- Data usability: Converting manual data to digital form is time-consuming and error-prone.
- Invalid data: Outdated data and subjective biases reduce reliability.
- Uniform rating scale: A one-size-fits-all approach oversimplifies evaluations.
- Uniform weighting: Equal weighting disregards the varying importance of different criteria.
- Misalignment with objectives: Evaluation criteria don't always align with business goals.

- Infrequent evaluation: Biannual reviews overlook broader performance trends.

2.1 Improvement propositions

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3. The processes of design and implementation of new supplier performance scorecards

Based on the strategies and insights from interviews, we identified key categories crucial for the company's success:

3.1. Align performance goals

- Product quality: Ensuring high standards in materials and supplies.
- Logistics and delivery: Guaranteeing timely and reliable delivery of products.

Suppliers are evaluated and expected to meet high performance standards in the key areas of quality and delivery, aligning with the main objectives of the local procurement department.

Information collection method and sources

For the supplier performance evaluation process, we have decided to automate the process for various reasons. We have chosen to use the internal system, SAP Business One, as the hub for this automation. SAP Business One is a comprehensive solution designed for small and medium-sized companies.

3.2. Capacities and limitations

The following documents and processes related to the local procurements department's workflow are available in SAP Business One:

- The request for quote
- The purchase request
- The purchase order
- Reception ticket: Limited only to production goods

- Invoice

These are the documents and processes currently integrated into the internal system.

This version of SAP Business One available within the company has several limitations:

- Lack of Integration: Not all processes are captured within SAP Business One.
- System Limitations: No capability to add new documents or database tables; existing documents must be used.
- Access Restrictions: Limited access based on document type (e.g., purchase request, purchase order, reception ticket, and invoice).
- Absence of Evaluation Model: No built-in supplier performance evaluation model in the current system.
- Information source choice
- Production Purchases: Survey created within the reception ticket document to evaluate supplier performance post-reception.
- Non-Production Purchases: Survey created within the purchase order document to assess performance after service consumption.

3.3. *Identify key performance measures*

The performance evaluation scorecard for production suppliers includes five KPIs: quality, delivery, communication, reactivity, and invoice accuracy. Quality is measured through two sub-KPIs: quality conformity rate and conformity frequency rate, which assess the percentage of non-conforming products and issue-free deliveries. Delivery performance is segmented into on-time delivery, deliveries with the correct quantity, and deliveries meeting both criteria. Communication is evaluated on a 1 to 5 scale, as is reactivity, which gauges supplier responsiveness to unforeseen orders. Invoice accuracy is measured through a simple yes/no question to assess the rate of correct invoicing.

For non-production suppliers, the same KPIs are used: quality, delivery, communication, reactivity, and invoice accuracy. However, the quality and delivery KPIs differ slightly. Quality is rated by the department that requested the product or service on a 1 to 5 scale, reflecting the end-user's perspective. Delivery is evaluated based on whether the supplier delivered on time, using a yes/no question. Both KPIs are calculated by averaging responses over a period and multiplying by 100.

3.4. *Identify score calculation method and criteria weights*

The final score for supplier evaluations is calculated using the Sample Adaptive Weighting Method, where each criterion's weight is multiplied by its value, and the sum of these products gives the final score. This method is chosen for its simplicity and practicality.

For determining criteria weights, the Analytical Hierarchy Process (AHP) was used, which involves pairwise comparison of criteria. This method provides greater accuracy and objectivity. The local procurement department manager participated in a directive interview to provide the necessary data for the pairwise comparisons, and the final weights were calculated based on his responses. These weights are detailed in a table.

Table N° 1: Criteria weights according to AHP method

<i>Criterion</i>	<i>Weight</i>	<i>Rank</i>
Quality	39.5%	1
Delivery	23.4%	2
Communication	12.4%	3
Reactivity	12.4%	3
Invoice Accuracy	12.4%	3

Source: Own elaborated by based on interview with local procurement department manager

From this table, it is evident that this method has provided reliable data. We observe that quality carries significant weight, followed by delivery, which also holds importance but to a lesser extent than quality. These two criteria rank first and second, respectively. This reflects the goals and objectives of the local procurement department and their expectations from suppliers.

After selecting key performance indicators and determining calculation methods and weightings, a pilot was conducted to test the system and identify potential issues. The company has two system versions: an official version used company-wide and a test version used by the IT department for trials. For the pilot, the test version was used to avoid disruptions to the official system. One supplier from each category was selected and evaluated on specific deliveries, focusing on technical aspects. During testing, minor technical issues were resolved, and the system is now considered ready for deployment.

3.5 Scorecards deployment

The scorecard for production suppliers begins with a straightforward survey for internal stakeholders, featuring a list of predefined responses to ease completion. The final scorecard is automatically generated from the internal system and includes key metrics like turnover (total financial transactions) and the number of deliveries. This document is collaboratively developed by the local procurement and quality management departments. In addition to the scorecard, guided information is provided to help the procurement team make informed decisions, with some of this information being mandatory for evaluation.

The non-production suppliers' scorecard follows a similar structure, with a simple survey that uses predefined answers and avoids numerical inputs. The final scorecard, containing fewer KPIs than the production scorecard, reflects the lesser significance of non-production purchases. It begins with turnover and service volume, followed by five evaluation criteria, each scored by percentage. Like the production scorecard, it includes guided information to assist in decision-making, ensuring evaluations are aligned with company standards

4. Research results and limits

We will begin with the production suppliers and then move on to the non-production suppliers.

4.1. Results of supplier's performance

The evaluation will be based on multiple receptions of goods. We will begin by reviewing the evaluation details, including the notes and scores provided by stakeholders for each transaction during the month. Following this, we will present the final scorecard for each supplier. Finally, we will compare the overall performance of General Emballage and TDI Plast. After calculating the final performance results of these suppliers, we will rank them and compare their performances.

Table N° 2: Production suppliers ranking by may overall performance

Rank	Supplier	Conformity rate	Conformity frequency rate	Total Quality Score	On-time delivery rate	Delivery Rate of Right	Order on time and with the right	Delivery Total Score	Communication	Reactivity	Finance	The overall rating
1	TDI Plast	98.57%	40%	69.28%	80%	60%	60%	66.67%	84%	76%	80%	72.73%
2	General Emballage	91.34%	00%	45.67%	66.67%	100%	66.67%	77.78%	80%	66.67%	66.67%	62.67%

Source: The internal system of Bomare Company.

From this table, it is evident that the first supplier has better results in the majority of KPIs, which explains their lead in the overall results. However, the delivery KPI and its sub-KPIs are areas where the first supplier does not perform as well. This comparison table also effectively highlights the strengths and weaknesses of each supplier, providing valuable insights for performance improvement.

4.2. Evaluation of non-production supplier's performance

For evaluating the performance of non-production suppliers, we will use the same methodology that was applied in the previous evaluation.

Now, similar to our approach with production suppliers, we will rank non-production suppliers based on their performance this month. This comparison will help us identify both strengths and weaknesses among each supplier.

Rank	Supplier	Quality of services/ Products	On-time delivery rate	Communication	Reactivity	Invoice accuracy rate	The overall rating
1	Tashil Technology	90%	50%	80%	80%	100%	79.4%
2	All Ways Travel	60%	66.67%	66.67%	66.67%	66.67%	64.04%

Source: The internal system of Bomare Company

Like the previous comparison, this analysis highlights the performance differences between the two suppliers and helps identify the best-performing suppliers for each service category. However, it is important to note that in this comparison, the two suppliers do not provide the same service, which can impact the benchmarking process. To ensure an effective comparison, it is crucial to compare suppliers that provide the same or similar categories and types of services and products.

4.3. The impact of KPIs on the decision making process

From a semi-interactive interview with the local procurement department manager, we have gathered insights on the impact of KPIs on the decision-making process.

First, the system hasn't been in use for a sufficient amount of time to make fully informed decisions. However, the manager indicated that, based on the results from May and the available KPIs, suppliers with very high scores, especially in delivery and quality, will be favored in future purchases and are likely to win a significant amount of business with the company. Conversely, suppliers that have issues with quality and delivery and cannot rectify these problems may find themselves losing business with the company.

Based on this information, it is evident that the system needs more time to generate extensive data on supplier performance over a longer period. This will enable the local procurement department to make more informed decisions based on the system's insights. Nevertheless, it is clear from the outset that this system already impacts the decision-making process regarding the relationship with some suppliers.

4.4. Research limits and propositions

We will present some limitations we encountered during this project and, in conclusion, offer several proposals to the company to enhance the overall supplier performance evaluation process.

In the process of developing a new evaluation system, we encountered several limitations that influenced the overall results:

- Lack of data integration : The internal system does not cover many company processes, resulting in incomplete supplier performance data.
- System constraints: Restrictions on creating new processes and documents affected the choice of KPIs and the ability to gather and process data effectively.
- Time constraints: Limited time prevented a thorough assessment of supplier performance over a sufficient period and the full evaluation of the system's impact on decision-making.

5. CONCLUSION

This article delves into Supplier Performance Management within supply chain operations, emphasizing the design and implementation of performance evaluation scorecards. It explores the role of Supplier Relationship Management in creating value and improving supply chain efficiency, using Bomare Company as a case study to evaluate previous supplier performance systems. The article details the development of new scorecards, highlighting processes such as aligning performance goals, identifying key performance measures (KPIs), and assessing their impact on decision-making processes. Overall, it contributes insights into enhancing Supplier Performance Management practices for optimizing supply chain performance.

The central question addressed by this research—how effective supplier scorecards facilitate the identification of areas for improvement in the producer-supplier relationship—was explored through a mixed-methods approach. This approach encompassed both qualitative and quantitative methodologies, including literature reviews, semi-structured interviews, and performance data analysis. The study was divided into a theoretical exploration of procurement and supplier management, and a practical case study involving the development and implementation of new supplier performance scorecards.

4. Conclusion:

Mentionner les principales conclusions de l'article, et les recommandations et suggestions les plus importantes doivent être présentées, et il est préférable d'offrir des perspectives de recherche. (**Times New Roman**13 **interligne 1.15**)

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