



## SUPPLIER PERFORMANCE MONITORING AND IMPROVEMENT (SPMI) THROUGH SIPOC ANALYSIS AND PDCA MODEL TO THE ISO 9001 QMS IN SPORTS GOODS MANUFACTURING INDUSTRY

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**ABSTRACT. Background:** Increasing global competition and customer expectations are forcing companies to improve their supplier performance as part of their supply chain governance initiative. A sport goods manufacturing industry is intensive supplier base industry and majority of these comes under small medium enterprises with limited resources. Developing an easy - deploy, cost effective and result oriented frame work for this industry is a critical business competency.

**Methods:** This paper lays out a framework - a "standard operating system" - for continuous supplier performance monitoring and improvement (SPMI) and is composed of following sections. In the first section supplier performance monitoring and improvement is overviewed with its basic concepts, and then improvement methods used in the paper are explained based on literature review. The third and fourth section focus on the methodology, explaining the way of SIPOC Analysis and PDCA application with using ISO 9001; 2008 QMS standards and example showing its results.

**Results:** The existing process of Supplier Performance Monitoring and Improvement (SPMI) was defined and mapped and then analyzed and revised through SIPOC Analysis by incorporating to PDCA Cycle and ISO 9001 QMS to identify problem areas, variations and unnecessary activities. Corrective actions were recommended to deal with problem areas and an improved and revised Supplier Performance Monitoring and Improvement (SPMI) Process is suggested.

**Conclusions:** Every organization needs to use a proper combination and selection of quality tools, methodologies and techniques for implementing continuous quality improvement process. This framework will provide a guidance for anyone who wants to develop supplier performance measurement system in sports goods manufacturing industry and other small - medium enterprises.

**Key words:** Supplier Performance Improvement, Process Approach, Supply Chain Management, Purchasing, ISO 9001.

### INTRODUCTION

A supplier performance expectation can be defined as "a specific statement of a business practice, process, policy and/or the results anticipated or required from a supplier's performance or behavior in relation to the customer" [Gordon 2008]. Continuously improving the performance of suppliers, a critical component of overall supply and demand chain management, can have a material impact on sports goods manufacturing industry's revenue growth and operating margin.

Supplier performance monitoring and improvement (SPMI) is a business practice that is used to analyze and improve the performance of a supplier's performance in an effort to cut costs, alleviate risks, and drive continuous improvement. This can help companies have better visibility into supplier deliverables and offer benefits to uncover and remove hidden cost drivers from poor quality, increase competitive advantage by reducing order cycle times, chargeback's for non-conforming material and

supplies, gain insight on how to best leverage their supply base, and align practices between themselves and their suppliers.

Our Supplier Performance Monitoring and Improvement (SPMI) framework basically depends on finding the answers of following questions: "What do we want to happen with suppliers, and how do we want it to happen?" and "What actually happened, and why did it happen?" "How do we do better than last time?" and "How do we do better than industry averages?" In this pursuit, the author having worked as Head of Materials Department in one of the reputed Sports Goods Industry with in India for more than 12 years selected this as a single exploratory case study to find out answers of these questions.

This paper lays out a framework - a "standard operating system" - for continuous supplier performance monitoring and improvement (SPMI) and is composed of five sections. In the following section supplier performance monitoring & improvement is overviewed with its basic concepts, and then improvement methods used in the paper are explained based on literature review. The third and fourth section focuses on the methodology explaining the way of SIPOC Analysis & PDCA application with using ISO 9001; 2008 QMS standards and example showing its results. In the final section, the results are discussed and commented.

## LITERATURE REVIEW

There are a number of factors, which have created the storm in the supplier performance world: Increased outsourcing, Globalization of business and of supply chains, increasing complexity in managing suppliers, increasing supply risks etc.

*Viewing suppliers not just as a cost, but as a strategic input to their bottom line*

"Supply Management is a process responsible for the development & management of a firm's total supply system - focuses heavily on the strategic aspects of the key elements of a firm's supply system." "Supply chain consists of all stages involved, directly or indirectly, in fulfilling a customer request. The supply chain not only includes the manufacturer & suppliers, but also transporters, warehouses, retailers and customer themselves." [Chopra Meindl 2001]

"Good supplier performance is a key ingredient in enabling firms to achieve business performance excellence. But how can firms manage or even influence the performance of outside suppliers? Supplier performance improvement (SPMI) is being widely adopted as a method to understand and improve the performance of the extended enterprise." [Gordon 2010]. "However, without careful monitoring of supplier performance, a firm is unable to accurately assess whether its current suppliers are meeting the needs of the firm, and suppliers are unable to respond to unexpressed partner needs." [Simpson et al. 2002]. Supplier performance Monitoring and improvement (SPMI) is a mechanism to track supplier progress towards meeting organizational goals, and gives feedback to the supplier base on their individual performance.

A perfect Supplier Performance Monitoring & Improvement (SPMI) adds value as a:

- Tool to increase a two-way flow of communication between customer and supplier,
- Way to improve supplier performance as well as uncover better processes that they as a customer can enable better relationships and performance,
- Tool to uncover hidden costs and cost drivers,
- Means to improve a customer's own market competitiveness in the process of strengthening their part of the value chain.

A Perfect SPMI program should:

- Align with objectives of the firm, not be focused only on Procurement,
- Planned and designed with those corporate goals in mind - not just "happen",

- Improve and monitor progress against a plan based on supplier performance measures,
- Undergo scheduled reviews and improvement processes,
- Provide diligent communication and follow-up,
- Conduct regular business/performance review meetings to discuss performance feedback, action items and plans, and share mutual improvement ideas,
- Distribute supplier performance score cards on a timely and regular basis,
- Provide supplier development resources,
- Ask the supplier for feedback about the customer (known as 360° feedback or reverse scorecards) - and to actually take action on the feedback. So often the customer's own business processes, practices and behaviors can prevent suppliers from performing well and need to be addressed and improved,
- Develop perfect recognition programs for top performers,
- Trend analysis, such as trends of individual supplier performance scores over time and comparison of suppliers with each other,
- Alerts regarding performance issues,
- Tracking corrective actions & improvement plans,
- Take quick actions Once there is sudden drop in supplier performance or a downward trend Some actions that can be done include communicating with the supplier, conducting further evaluations, developing an improvement plan, or finding an alternative supplier. The actions taken may depend on many factors. These include the supplier's past performance, level of current performance, strategic importance, possible damages, and overall risk.

### *ISO 9001QMS*

ISO (International Organization for Standardization) is established "to promote the development of standardization and related activities in the world with a view to facilitating the international exchange of goods and services and to developing cooperation in the spheres of intellectual, scientific, technological, and economic activity."

ISO9001 QMS is a flexible standard for the requirements of quality management systems for purposes of internal application by organization, certification and contractual purposes. Field of business. Not only can this standard be applied in public-sector organizations or private-sector organizations of any size, it can also be applied to any field, from manufacturing to services and software. It is possible to incorporate actively what seems necessary for its business activities.

### *Process*

An activity using resource management, and managed in order to enable the transformation of inputs into outputs (Extract from ISO9000:2000 Fundamentals and vocabulary 0.2).

For Example: Purchasing Control (ISO9001, Clause 4.6).

Is there a system for assessing sub contractors & vendors?

Do you have a documented procedure for evaluating sub contractors and vendors? [Lal 1996]

### *References to processes in ISO 9001:2008:*

In sub clause 4.1 General requirements: "The organization shall establish, document, implement and maintain a quality management system and continually improve its effectiveness in accordance with the requirements of this International Standard. The organization shall:

- a) Determine the processes needed for the quality management system and their application throughout the organization
- b) Determine the sequence and interaction of these processes,
- c) Determine criteria and methods needed to ensure that both the operation and control of these processes are effective,
- d) Ensure the availability of resources and information necessary to support the operation and monitoring of these processes,
- e) Monitor, measure (where applicable), and analyze these processes, and
- f) Implement actions necessary to achieve planned results and continual improvement of these processes.

These processes shall be managed by the organization in accordance with the requirements of this International Standard".

Based on the above, each organization should define the number and type of processes needed to fulfill its business objectives. It is permissible for a process that is required by ISO 9001:2008 to be part of a process (or processes) that is already established by the organization, or to be defined by the organization in terms that are different to those in ISO 9001. [Introduction .... 2010]

#### *Process approach*

In sub clause 0.2 of ISO 9001 Process Approach: "The application of a system of processes within an organization, together with the identification and interactions of these processes, and their management to produce the desired outcome, can be referred to as the "process approach".

#### *The distinctive characteristics of processes*

A process makes it possible to define what activities and operations are to be performed, to what extent, with what objectives and with what results (output).

A process makes it possible to perform activities and operations not a single time, but repeatedly.

A process makes it possible to measure (evaluate) the output (value added) of activities and operations.

A process makes it possible to predict what results activities and processes will have.

"Plan-Do-Check-Act" (PDCA\*) can be applied to all processes.

#### *PDCA*

PDCA (Plan-Do-Check-Act) can be briefly described as follows.

Plan: establish the objectives and processes necessary to deliver results in accordance with customer requirements and the organization's policies.

Do: implement the processes.

Check: monitor and measure processes and product against policies, objectives and requirements for the product and report the results.

Act: take actions to continually improve process performance.

The PDCA is a dynamic methodology that can be deployed within each of the organization's processes and across their interactions. The Plan-Do-Check-Act (PDCA) methodology can be a useful tool to define, implement and control corrective actions and improvements.

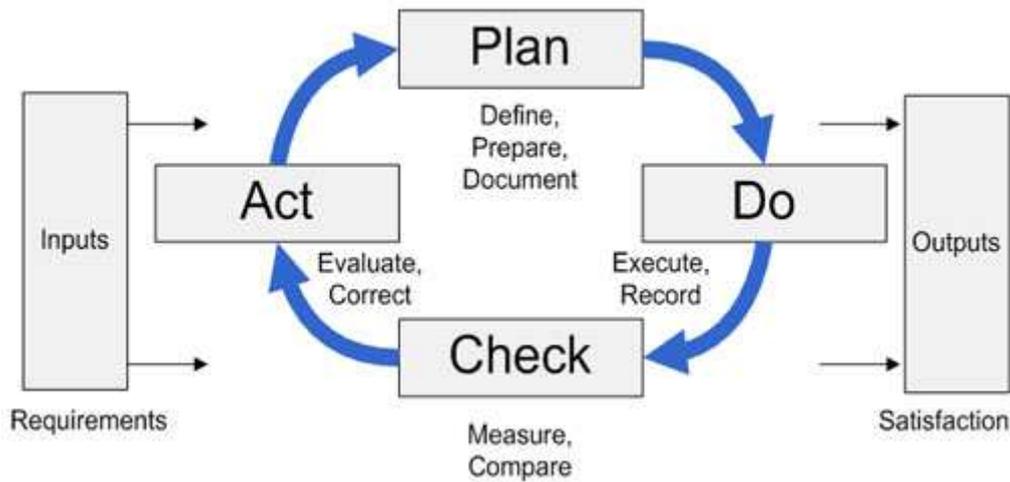


Fig. 1. PDCA (Plan-Do-Check-Act)  
Rys. 1. Schemat PDCA

The PDCA cycle is a well-known fundamental concept of continuous-improvement processes. This is also referred to as the Deming circle, named after W. E. Deming. The PDCA cycle is effective in both doing a job and managing a programme. The PDCA cycle enables two types of corrective action - temporary and permanent. The temporary action is aimed at results by practically tackling and fixing the problem. The permanent corrective action, on the other hand, consists of investigation and eliminating the root causes and thus targets the sustainability of the improved process. The aspects of the PDCA cycle were applied to internal quality-assurance procedures:

- What are we trying to accomplish?
- How will we know that a change is an improvement?
- What changes can we make to improve? [Sokovic, Pavletic, Pipan 2010].

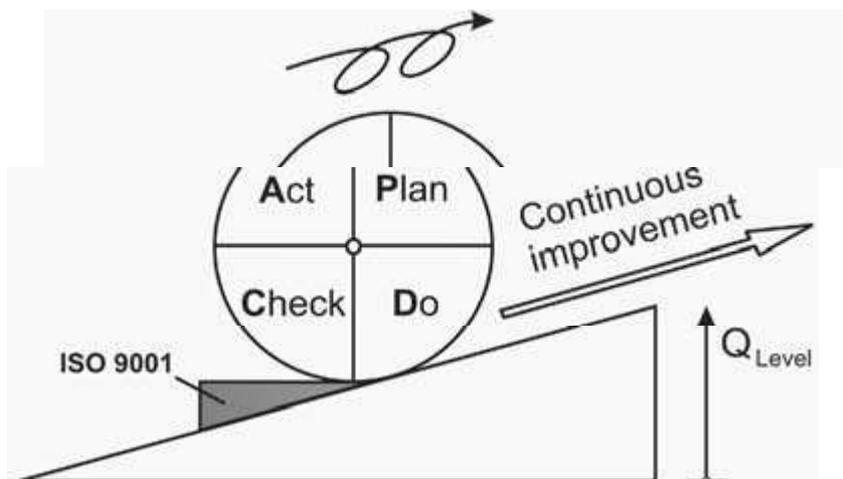


Fig. 2. PDCA cycle in continuous improvement process [Sokovic, Pavletic, Pipan 2010]  
Rys. 2. Cykl PDCA w procesie ciągłego doskonalenia [Sokovic, Pavletic, Pipan 2010]

By following the Plan-Do-Check-Act (PDCA) cycle, the process is defined and documented properly, executed, has its results measured and is continually evaluated to look for improvement opportunities. The better understanding of how the process is working, enable to see required corrective actions and improvements. Whenever corrective actions are needed, the method for

implementing them should be defined. This should include the identification and elimination of the root causes of the problems (e.g. errors, defects, lack of adequate process controls). The effectiveness of the actions taken should be reviewed. Implement the corrective actions and verify their effectiveness according to plan. When planned process outcomes are being achieved and requirements fulfilled, the organization should focus its efforts on actions to improve process performance to higher levels, on a continual basis.

## SIPOC, ONE OF THE KEY PROCESS ANALYSIS & IMPROVEMENT TOOLS

SIPOC stands for Suppliers, Inputs, Process, Outputs, and Clients. SIPOC analysis is a methodology for process improvement employing analysis based on diagrammatic representation of key elements of a process namely, Suppliers, Inputs of the process, Process itself, Outputs of the process and Customers (the recipients of the process). This analytical tool is used mainly for understanding and further improving an individual process within a business. SIPOC is a tool for Continuous Improvement (TQM).

The SIPOC or Supplier Input Process Output Customer is a process flow format that helps us to:

- Understand what inputs are required to attain the correct output,
- Develop team purpose or mission,
- Identify possible "quick hit" opportunities to eliminate some non value-added outputs,
- Select a core process to redesign,
- Clarify key customer or supplier relationships needing improvement.



Suppliers and Customers are WHOs, Inputs and Outputs are WHATs, and Processes are HOWs. Therefore, the S, I, O, and C columns should be lists of nouns. The Process column should be written in the form Verb-Direct Object, e.g., take orders and Select vendors, etc.

For each element of SIPOC - starting from the customer - ask our self:

1. Who are our customers and what do they want?
2. What outputs (goods or services) with features and benefits must we provide?
3. What processes and systems are needed to produce those outputs and how are they currently monitored?
4. What inputs are needed?
5. Which suppliers can best provide the needed input - and how do we know this?

To complete the SIPOC Chain:

- Start with Product/Service Outputs,
- Then work backwards from there by identifying the Processes that produce those outputs,
- The Inputs to those processes, and

- The Suppliers of those inputs (both internal and external).
- Finish by identifying all Customers (internal and external), i.e., anyone who receives and uses your Product/Service outputs.

Divide list of processes into three types:

Core processes directly add value to customer

Examples are: New Product Design, Production, After-sales support

Support processes enable the Core processes

Examples are: Finance, Facilities management, Information management

Governing processes direct or monitor other processes

Examples are: Strategic Planning, Performance Reviews

A common use of SIPOC is to develop a list of processes, then select one or

More to improve. Analyze the customer - supply chain of concerned process to identify areas for improvement. Use a red pen to "flag" any areas in your chain where:

- Customer requirements are not clear,
- Outputs are non value-added and can be eliminated,
- Processes aren't functioning effectively,
- Supplier performance is not satisfactory.

Making Improvements can address identified opportunities.

When selecting a process for improvement, consider the following criteria to ensure you focus your improvement efforts on the VITAL few processes:

Versus - How large is the gap versus competitors? Versus customers' perception?

Influence - To what extent will improvement in this area influence other areas?

Timing - How urgent is it we improve in that area now? Other things we should do first?

Appetite - Is there enthusiasm for achieving this goal? Improving this process?

Likelihood of success - How feasible is it? Do we currently have the required?

Capabilities in that area? Can we develop them?

In addition to these criteria, it is usually best to map, analyze and improve a process that...

- Is existing (versus designing a new one).
- Involves multiple individuals groups or functions.
- The right team can be assembled, including those with sufficient understanding of how it works and authority to change it.
- You are not certain how to improve it, i.e., the answer is "unknown".

"The SIPOC helps the Team reach consensus on the simple scope and purpose of the process and the project... To that end; it is a potent change management tool. The useful outputs of the tools are: an agreed process scope and process, the beginning of a list of customers to feed into Voice of Customers (VOC) work...." [Wedgwood 2007] "SIPOCs do not focus on "how the process is completed" rather, they focus on the complex interrelationships between activities, from the perspective of Suppliers

feeding Inputs or data into the process, and when the process has completed its activity the Output that gets fed to a Customer." [NSSC Implementation Plan Report 2003].

Theoretical model showing relation between research question and theory presented in Fig 3.

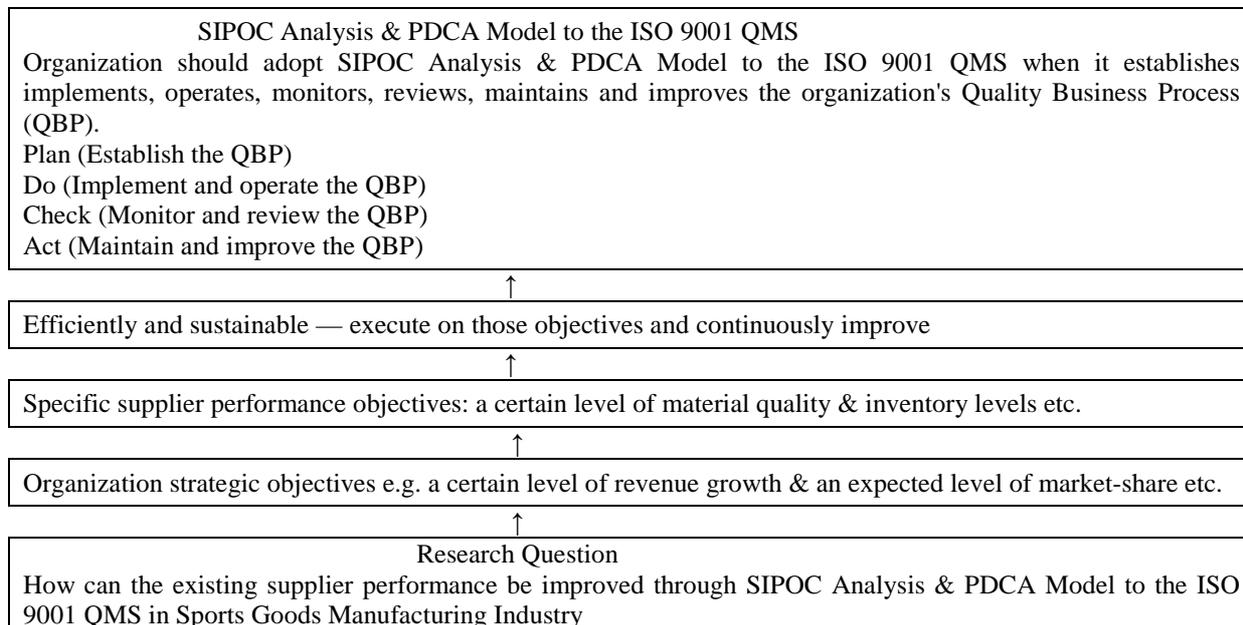


Fig. 3. Theoretical model showing relation between research question & theory presented  
 Rys. 3. Model teoretyczny przedstawiający relację między pytaniem badania a przedstawioną teorią

## METHODOLOGY

Methodology is, broadly speaking, the way in which a researcher conducts research. [Jonker, Pennink 2010] This research paper is a descriptive case study with a deductive approach. "The case study, like other research strategies, is a way of investigating an empirical topic by following a set of pre-specified procedures.

The case study method has a distinct advantage in situations when a "how" or "why" question is being asked about a contemporary set of events, over which the investigator has little or no control and when the focus is on contemporary phenomenon within some real-life context" [Yin 2003]. One of the reputed sports goods manufacturing industry from India has been taken as case study of this research study. This study has mainly a positivism approach by using general theories such as SIPOC Analysis and PDCA cycle to ISO 9001 QMS for improving supplier performance at referred industry. The information used was collected from historical/current data from concerned industry itself. Deductive approach is used because it is a theory-based research leading towards the findings.

### Scientific Method of Study:

Here the qualitative research method is used in order to understand the current Process in depth. And suggest improvements after identifying the variations, unnecessary activities and problems. This research paper will study the referred industry's current supplier performance improvement process about what kind of Problems there are in the current process; furthermore, create an improved process map in order to get continuous improvement objectives.

### Data collection:

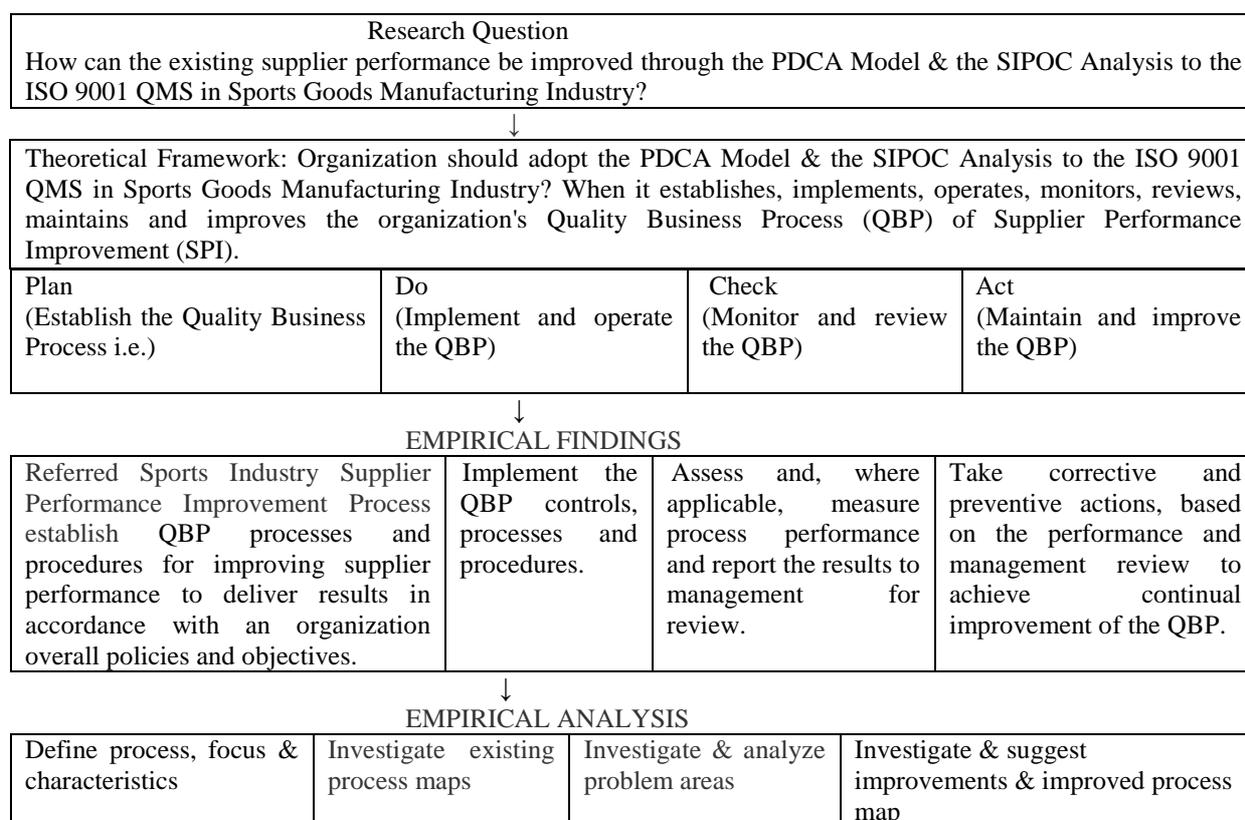
In this study, both primary and secondary data were collected. The primary data was gathered through observations. The secondary data were collected from literature and scientific articles. The search engines such as GOOGLE, Emerald, and Business Source Premier were used to find scholarly

articles and reliable information. The words as supplier performance management, supplier evaluation, Process Approach, ISO 9001 and supply chain management were used to find relevant information and articles.

## EMPIRICAL FINDINGS AND ANALYSIS

Empirical information was gathered through direct in-plant observations.

By the application of the "Plan-Do-Check-Act (PDCA)" model & SIPOC Analysis to process associated with supplier performance monitoring and improvement (SPMI), the effect i.e. continual improvement of supplier performance as expected can be produced as outputs.



Plan: What is the focus of process? ; Whom to improve?

Supplier performance improvement is the focus of process. First we needed to determine whom to improve? i.e. Supplier Selection "Firms should concentrate on strategic suppliers who are integrated business partners as well as core suppliers, who require integration and development plus other suppliers that may supply a high-cost or high-risk item." [Barrett et al. 2008]. Here as discussed with the firms Director Operation, all strategically large & critical suppliers are selected.

Do: How does the process work?

It relates to measuring and mapping the current process to describe and understand

The current process in details. Current supplier Performance Monitoring and Improvement Process map is analyzed through SIPOC Analysis

EXISTING SIPOC (Customer-Supplier Chain)

Process Name: Supplier Performance Evaluation & Improvement

SUPPLIERS (Providers of the required resources)	INPUTS (Resources required by the process)	PROCESSES (Top level description of activity)	PRODUCT/SERVICE OUTPUTS (Deliverables from the process)	CUSTOMERS (Anyone who receives a deliverable from the process)
S	↳	△	↳	C
Purchase, Store & Incoming inspection	The performance measures details (i.e. Quality, Delivery, Competitive Pricing & Proper Responsiveness)	Collection & Compilation of performance measures details on quarterly basis	Compiled database of Delivery, Quality, Competitive Pricing & Proper Responsiveness	Purchase
Purchase	Compiled database of Delivery, Quality, Competitive Pricing & Proper Responsiveness & Working Instructions for supplier performance assessment  Supplier Performance Score Card	Calculation of Supplier Performance	Supplier Performance Score Card	Purchase
Purchase	The performance measures details(i.e. Quality, Delivery, Competitive Pricing & Proper Responsiveness)	Sending Score Card to poor performers & asking for corrective action report to further improve  Verification of corrective actions by checking next two supplies	Corrective action report from supplier	Purchase
Purchase, Store & Incoming inspection	Verification status  Receipt of delivery + inspection details of next one or two supplies WHA	If verification status is ok , monitor performance in next quarter & If not ok, Delete from approved supplier list HOW	Verification Status Report(OK or NOT OK)	Purchase
Purchase			If again poor supplier rating Deletion Letter	Supplier Supplier
Materials Manager			Updated ASL	Purchase
Materials Manager				
WHO			WHAT	WHO

#### EXISTING SIPOC (Customer-Supplier Chain)

Check & Act: What are the problems? and What can be improved?

Detailed & careful study of feedback of supplier performance expectation Vis actual supplier performance monitored, if shows downward trends and deterioration in performance than that can signal a problem. One of the first things to do is to contact the supplier and find out what went wrong and why. The supplier, personnel can determine the cause of the problem.

The problems identified are discussed below in relation to current supplier Performance Monitoring and Improvement Process map:

1. Sometimes user is unable to generate proper forecast regarding required material and normal need becomes urgent & require urgent change in delivery time after placing purchase order leads in the reduction of number of days in delivery time resulting in to less time for order fulfillment. Supplier in haste may do waste.
2. Supplier performance measurement on half yearly basis is quite long period as supplier himself forget the real cause of poor performance
3. Current supplier performance monitoring process does not go with supplier segmentation/selection. Therefore targeting/concentrating effort/resource is not possible
4. Involvement of senior management is not there in current supplier performance monitoring and improvement process
5. Distribute Supplier Performance Cards were being distributed to only poor performing suppliers only instead of all measured suppliers
6. Setting & aligning expected Supplier performance targets are not there in current supplier performance monitoring & improvement process
7. Comparison of actual performance with expected Supplier performance targets is absent. Therefore a true gap analysis is very difficult
8. Holding personal meeting is absent with poor performers to discuss performance feedback, corrective action plans & share mutual improvement idea
9. Organizing Suppliers Recognition events i.e. providing Memento / Certificate to good performers by organizing get to gather is also not there
10. Issuing notice to poor performers if their corrective action verification report has been found not ok prior to deletion from ASL is also absent in SIPOC Analysis of existing QBP to poor performers, if result of verification of corrective action verification report is not ok, issue notice regarding deletion from ASL & develop new supplier as back up. If performance is still not ok in the next quarter rating, delete from ASL.

Now we have identified the problem areas in the current supplier performance monitoring and improvement process of referred sports goods manufacturing industry. Finding problem areas in the supplier performance improvement process helped us to ascertain how the Process is actually working right now and what improvements opportunities there are to make it more effective and accordingly. Following Revised SIPOC (Customer - Supply Chain) with required improvements for revised supplier performance monitoring & improvement process is drafted.

REVISED SIPOC (Customer-Supplier Chain):-

Process Name: Supplier Performance Evaluation & Improvement

SUPPLIERS (Providers of the required resources)	INPUTS (Resources required by the process)	PROCESSES (Top level description of activity)	PRODUCT/SERVICE OUTPUTS (Deliverables from the process)	CUSTOMERS (Anyone who receives a deliverable from the process)
S				C
Senior Management	Corporate targets within business plan	Involve senior management to Set & align expected Supplier performance targets	Expected Supplier performance targets	Purchase Dept
Purchase	Approved Supplier List	Select high value added strategic & critical suppliers		
Purchase	Selected Supplier List	Intimate performance rating method to selected suppliers	Selected supplier list for performance monitoring & improvement	Purchase Dept
Purchase, Incoming Inspection & Store / User	Suppliers Performance Measures Data	Prepare Supplier Performance Score Card for each selected supplier		
Purchase	Supplier performance card	Distribute Supplier Performance Card to all measured suppliers	Intimation letter regarding performance rating procedure	Selected Suppliers
Purchase	Expected Supplier performance targets & actual Supplier Performance Score Card	Compare actual performance with expected one	Supplier Performance Score Card	Purchase Dept
Purchase	Supplier Performance Score Card	Holding personal meeting with poor performers to discuss performance feedback, corrective action plans & share mutual improvement idea	Intimation Letter along with supplier performance card	Supplier
Purchase	Supplier Performance Score Card	Organizing Suppliers Recognition events	A true gap analysis	Purchase
Purchase	Supplier Performance Score Card	Verification of Corrective action report of supplier by keen watch of two or three subsequent supplies		
Purchase	Supplier Performance Score Card	If still not ok, issue notice regarding deletion from ASL & develop new supplier as back up. If performance is still not ok in the next quarter rating, delete from ASL	Corrective action plan & required training plan	Supplier
		HOW		
Purchase	Suppliers Performance Measures Data		Memento / Certificate to good performers	Suppliers
Purchase	Verification Status		Verification Status (OK or NOT OK)	Purchase
Purchase	WHAT		Notice / Deletion Letter	Purchase
WHO			WHAT	WHO

## CONCLUSION

Every organization needs to use a proper combination and selection of quality tools, methodologies and techniques for implementing continuous quality improvement process. The existing process of Supplier Performance Monitoring & Improvement (SPMI) was defined and mapped to understand the process characteristics and capabilities. The existing process was then analyzed and revised through SIPOC Analysis by incorporating to PDCA Cycle and ISO 9001 QMS to identify problem areas, variations and unnecessary activities. Corrective actions were recommended to deal with problem areas and an improved and revised Supplier Performance Monitoring & Improvement (SPMI) Process is suggested. The PDCA Cycle is simple to understand and should be used by a large number of people in the company (also throughout standard ISO 9001:2008). This framework will hopefully provide guidance for anyone who wants to develop supplier performance measurement system in sports goods manufacturing industry and other small - medium enterprises.

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## MONITORING I DOSKONALENIE DZIAŁALNOŚCI DOSTAWCY PRZY ZASTOSOWANIU ANALIZY SIPOC ORAZ MODELU PDCA I ISO 9001 QMS W PRZEMYSŁE WYROBÓW SPORTOWYCH

**STRESZCZENIE. Wstęp:** Wzrost konkurencji na rynkach globalnych oraz oczekiwań klientów zmusza przedsiębiorstwa do poprawy działania swoich dostawców, którzy stanowią część ich łańcucha dostaw. Przemysł wytwórczy sprzętu sportowego jest przemysłem bardzo zależnym od dostawców a jednocześnie większość przedsiębiorstw należących do niego, to małe przedsiębiorstwa z ograniczonymi zasobami. W związku z tym wypracowanie prostej w zastosowaniu i nastawionej na ograniczenie kosztów metody działania jest dla nich kluczowym zagadnieniem.

**Metody:** Praca przedstawia metodę poprawy działania swoich dostawców uwzględniając podejście procesowe do zagadnienia, która została ujęta w następujące etapy. W pierwszej części dokonano przeglądu literaturowego metod monitoringu i poprawy działań dostawców poprzez porównanie do podstawowych koncepcji. Następnie przeanalizowano metody usprawniające tą działalność. W trzeciej i czwartej części skupiono się na metodologii oraz omówieniu metod SIPOC i PDCA z zastosowaniem standardów ISO 9001 i 2008 QMS oraz zaprezentowaniu przykładu wyjaśniającego wyniki.

**Wyniki:** Istniejący proces monitoringu i poprawy działania dostawców (SPMI) został zdefiniowany, zmapowany a następnie poddany analizie przy zastosowaniu metody SIPOC oraz cyklu PDCA i ISO 9001 QMS w celu zidentyfikowania potencjalnych problematycznych sytuacji, zdarzeń i zbędnych czynności. Zaproponowano odpowiednie środki zaradcze do zastosowaniu w obszarach problematycznych oraz zasugerowano poprawę procesu monitoringu i poprawę działań dostawców (SPMI).

**Wnioski:** Każda organizacja dla prawidłowego funkcjonowania wymaga odpowiedniego zestawu narzędzi, metodologii i technik wdrażających i umożliwiających realizację procesu poprawy jakości. Praca ta przedstawia wytyczne dla wdrożenia systemu oceny działalności dostawców w przemyśle wytwórczym sprzętu sportowego w obszarze małych i średnich przedsiębiorstw.

**Słowa kluczowe:** doskonalenie pracy dostawcy, podejście procesowe, zarządzanie łańcuchem dostaw, zakupy, ISO 9001.

## ÜBERWACHUNG UND VERBESSERUNG DER LIEFERANTEN-ARBEIT MIT DER HILFE VON DER SIPOC ANALYSE, PDCA MODELL UND ISO 9001 QMS IN DER SPORTARTIKELINDUSTRIE

**ZUSAMMENFASSUNG. Hintergrund:** Der zunehmende Wettbewerb auf den globalen Märkten und die Erwartungen der Kunden zwingen das Unternehmen, um die Leistung ihrer Lieferanten, die einen Teil ihrer Lieferkette sind, zu verbessern. Die Sportartikelindustrie ist eine Industriebranche, die sehr abhängig von Lieferanten ist, und zusätzlich besteht hauptsächlich aus kleinen Unternehmen mit begrenzten Ressourcen. Deshalb, sehr wichtig ist, eine einfache kostengünstige und ergebnisorientierte Arbeitsweise zu entwickeln.

**Methoden:** Der Artikel präsentiert die Rahmen von der Methode für die kontinuierliche Verbesserung und Überwachung der Leistung von den Lieferanten (SPMI) und besteht aus folgenden Teilen. In der Erste, werden die Verbesserungsmethoden durchgeschaut und mit den Grundkonzepten vergleicht. Dann sind sie erklärt, basierend auf die Literatur. In den dritten und vierten Teilen ist die Methodologie von SIPOC Analyse und PDCA Methode, wie auch ISO 9001 und 2008 QMS, diskutiert. Die Ergebnisse sind in dem Beispiel vorgestellt.

**Ergebnisse:** Der bestehende Prozess von der Verbesserung und Überwachung der Leistung von den Lieferanten wurde mit der Hilfe von SIPOC Analyse, PDCA Cycle und ISO 9001 definiert und zugeordnet und anschließend analysiert, um die Problemen, Variationen und unnötige Aktivitäten zu identifizieren. Die korrigierten Maßnahmen wurden empfohlen um den

Problemen zu behandeln. Der verbesserte und überarbeitete Prozess von der Verbesserung und Überwachung der Leistung von den Lieferanten wurde vorgeschlagen.

**Fazit:** Jede Organisation muss eine geeignete Kombination und Auswahl von hochwertigen Werkzeugen, Methoden und Techniken nutzen, um die kontinuierliche Qualitätsverbesserung zu führen. Diese Rahmen sind eine Leitung für alle, die ein System von der Verbesserung und Überwachung der Leistung von den Lieferanten in Sportartikelindustrie in kleinen und mittleren Unternehmen entwickeln will.

**Codewörter:** Verbesserung der Lieferantleistung, Prozessbeziehung, Lieferketteverwaltung, Beschaffung, ISO 9001

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