

## MIT SCALE RESEARCH REPORT

The MIT Global Supply Chain and Logistics Excellence (SCALE) Network is an international alliance of leading-edge research and education centers, dedicated to the development and dissemination of global innovation in supply chain and logistics.

The Global SCALE Network allows faculty, researchers, students, and affiliated companies from all six centers around the world to pool their expertise and collaborate on projects that will create supply chain and logistics innovations with global applications.

This reprint is intended to communicate research results of innovative supply chain research completed by faculty, researchers, and students of the Global SCALE Network, thereby contributing to the greater public knowledge about supply chains.

## For more information, contact MIT Global SCALE Network

## **Postal Address:**

Massachusetts Institute of Technology 77 Massachusetts Avenue, Cambridge, MA 02139 (USA)

## **Location:**

Building E40, Room 267 1 Amherst St.

#### Access:

Tel: +1 617-253-5320 Fax: +1 617-253-4560

Email: scale@mit.edu Website: scale.mit.edu

Research Report: ZLC-2015-1

Transforming Procurement from Minimizing Cost to Maximizing Value

Kanupriya Godara and Francisco Rigoberto Marquez Ramírez

## For Full Thesis Version Please Contact: Marta Romero ZLOG Director

Zaragoza Logistics Center (ZLC) Edificio Náyade 5, C/Bari 55 – PLAZA 50197 Zaragoza, SPAIN

Email: mromero@zlc.edu.es Telephone: +34 976 077 605

# Transforming Procurement from Minimizing Cost to Maximizing Value

By: Kanupriya Godara and Francisco Rigoberto Marquez Ramírez Thesis Advisor: Prof. David Gonsalvez, Ph.D.

## **Summary:**

This thesis identifies the leading enablers to transform procurement from a purely-cost driven to a value-driven process. We model the problem of value creation in procurement as an Analytical Hierarchy Process (AHP) to understand the correlation between the value drivers and values that are important for companies today. To assess the capability of the sponsor company in terms of the top five value drivers, we developed a maturity assessment tool with best practices and levels of accomplishment.



M. Eng. in Logistics and Supply Chain Management, MIT- Zaragoza International Logistics Program (2015)

Bachelor of Technology in Electronics & Instrumentation, Institute of Technology and Management, Gurgaon, India



M. Eng. in Logistics and Supply Chain Management, MIT- Zaragoza International Logistics Program (2015)

Bachelor of Science in Industrial and Systems Engineering, Instituto Tecnologico y de Estudios Superiores de Monterrey, Juarez, Mexico

#### **KEY INSIGHTS**

- 1. A process to identify value drivers and prioritize them.
- 2. A set of identified value drivers to transform procurement from a pure cost optimizer to a true strategic contributor.
- A maturity assessment tool with best practices and levels of accomplishment to assess the capability in terms of the top five value drivers.

## Introduction

Procurement, for many years, was considered a mere support function, and even today, in many organizations, its role has not evolved much beyond the traditional transactional operations such as creating and tracking orders, managing demand, writing contracts and supplier negotiations. However, now some organizations have started to understand the crucial role of procurement and the profound impact of the purchasing decisions on the value of the organization.

Market volatility and business complexity caused by globalization, intense competition, and increasing

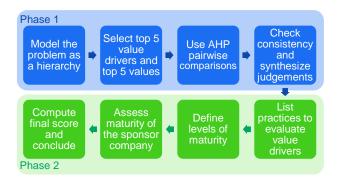
supply chain risk has forced organizations to look for new ways to obtain competitive advantage and longterm profitable growth. It is an opportune time for procurement to become a strategic value-contributor with a strong positive impact on long-term revenue growth and profitability, in addition to a continued focus on cost reduction.

This research aimed to explore transformation needs in moving procurement from a purely cost minimization function to a value enhancement function. It also identified and analyzed core value drivers in procurement strategies that impact the operations of the procurement function.

## Methodology

The approach taken to solve the concerning problem of value creation in procurement was a combination of qualitative and quantitative techniques that included inputs from experts within and outside the sponsor company. The tools used range from surveys to Analytical Hierarchy Process (AHP) and maturity assessment tool.

The methodology was divided into two phases: phase 1, where key value drivers and values were defined and analyzed and phase 2, where procurement performance of the sponsor company was measured in terms of the top five value drivers obtained in phase 1. This methodology is shown in the following figure:



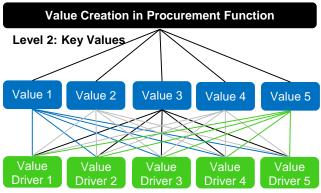
## **Phase 1: Use of Analytic Hierarchy Process**

Phase 1 of the methodology was based on Analytic Hierarchy Process (AHP) method. The results of this phase were:

## Model the problem as a hierarchy

The problem was modeled as follows:

Level 1: Goal



**Level 3: Value Drivers** 

The problem was defined as a hierarchy with 3 levels: global objective, key values for the sponsor company, and value drivers.

## Select Value Drivers and Values

The value drivers and values were identified according to an extensive review of the relevant literature. We conducted a survey to obtain the leading value drivers from a set of pre-identified value drivers with the target respondents being procurement experts in different industries. According to 78 respondents, the ranking of value drivers was the following:

Ranking of value drivers

	rtaritang or value arrivere
Rank	Value Drivers
1	Strategic Sourcing
2	Business Integration
3	Supplier Relationship Management (SRM)
4	Supplier Quality
5	Category Sourcing and Management
6	Risk Management
7	Operational Excellence
8	Supplier Innovation
9	Sustainable Procurement
10	Supply Security
11	Data Analytics
12	Performance Measurement System
13	Procurement Intelligence
14	Talent Management
15	Use of Technology
16	Centralized or Center-Led Organization
17	Knowledge Management

We also conducted a survey within our sponsor company to obtain their top ranking values:

o Ranking of values

Rank	Values
1	Predictable long-term profitable growth
2	Long-term cost reduction
3	Access to new markets
4	New sustainable products/services
5	Increased Purchasing efficiency
6	Strengthened supplier relationships
7	Better Delivery Performance
8	Better and premium pricing
9	Better contracts
10	Better reliability of purchased products
11	Better Market Reputation
12	Long-term Supplier network
13	Return to Shareholders
14	Better Customer Loyalty
15	Better Quality
16	Technology Leadership
17	Better adaptation to market fluctuation
18	Greater product availability
19	Better Customer Satisfaction
20	Product Leadership

From the previous tables, the top 5 value drivers and top 5 values were selected to proceed with the Analytic Hierarchy Process method.

## Pair-wise comparisons.

Pair-wise comparisons between values (level 2) to obtain the global objective (level 1), as well as pair-wise comparisons between value drivers (level 3) to enable values were performed. Matrices of local priorities R were generated: 5 for the top 5 values and 1 for the global objective. As an example, here is the matrix of local priorities of the value drivers to obtain the value  $Predictable\ long-term\ profitable\ growth$ :

	Strategic Sourcing	Business Integration	SRM	Supplier Quality	Category Mgmt.
Strategic Sourcing	1.000	1.906	2.230	2.096	2.037
Business Integration	0.525	1.000	1.859	2.304	3.370
SRM	0.449	0.538	1.000	2.170	2.911
Supplier Quality	0.477	0.434	0.461	1.000	1.859
Category Mgmt.	0.491	0.297	0.344	0.538	1.000

The same matrix was generated for the rest of the top 5 values and for the global objective. This matrix, by using AHP, allowed the generation of a weight vector.

The 5 weight vectors of the values together formed a matrix of local priorities that, multiplied by the weight vector of the global objective, gave a vector of the global priorities for the top 5 value drivers:

Strategic Sourcing	0.403
<b>Business Integration</b>	0.190
SRM	0.169
Supplier Quality	0.131
Category Mgmt.	0.108

The vector of global priorities represents how important each of the value drivers is in obtaining the global objective: value creation in the procurement function for the sponsor company.

Once the local and global priorities were calculated, a consistency check was performed to analyze if the judgments of the respondents were consistent. The metric used to check this was the consistency ratio (CR) that in all the cases was below 10%, the maximum allowable ratio, which means that the judgments were consistent.

From the first phase, some of the findings were:

- According to the company, Strategic Sourcing has the highest priority to create value for procurement. It also has the highest priority for 4 values out of the top 5: Predictable long-term profitable growth, Long-term cost reduction, Access to new markets and Increased purchasing efficiency.
- Business Integration is the second value driver that enables the creation of value for procurement according to the company. This value driver also has the highest local priority for the generation of the value New sustainable products/services.

## Phase 2: Maturity assessment

After obtaining the top 5 value drivers, the top 5 values for the sponsor company and evaluating their priorities to create value for procurement, we developed a maturity assessment tool with best practices and levels of accomplishment to assess the capability of the company in terms of top 5 value drivers. Results of phase 2 are described as follows:

## • Rank practices and weight them.

After an extensive literature review, review of best practices of the sponsor company, and major competitors sharing in their annual reports, a list of practices of the top 5 value drivers was generated. In the tables shown after maturity assessment, the complete list was presented with the weight of each practice. The weight was assigned according to the level of importance of each practice, by using linear weight method, after obtaining a ranking from the subject matter experts within the company in a workshop for each of the top 5 value drivers.

## Maturity assessment

The maturity assessment represents the measure of performance of the procurement function of the sponsor company, according to 5 predefined levels of maturity of the practices for each of the value drivers.

The detailed definition of the 5 possible levels of maturity was different for each of the practices, but in all the cases ranging from 1 to 5, where 1 means basic and 5 advanced level.

Five workshops were conducted, each focusing on one of the top five value drivers. In each workshop, 4

to 5 subject matter experts within the company participated.

The flow of the workshops consisted of four steps: an individual assessment by the experts, sharing of their individual opinion, a discussion about each practice, and finally, unanimous agreement of the maturity level of the practice. The results of the maturity assessment are summarized in the tables below:

Strategie Sourcing Brootings	Mojoshi	Levels					
Strategic Sourcing Practices	Weight	1	2	3	4	5	
Strategic Cost Management	0.21				✓		
Strategic Sourcing Process Implementation	0.21			1			
Knowledge Management: Category Spend Visibility	0.15				✓		
Strategy development	0.15			✓			
Technology	0.10				✓		
Measurement of Strategic Sourcing Performance	0.08			1			
Strategic Sourcing internal communication	0.08			1			
Existence of a role focused on strategic procurement.	0.03				1		

Business Integration	Mojesha		L	.evel	S	
Practices	Weight	1	2	3	4	5
Involvement of procurement in the design and development of others business plans and strategies					✓	
Effective management of relationships with internal stakeholders	0.25				✓	
Collaboration level with Finance, Sales, Marketing and Supply Chain	0.25				✓	
Clear process for procurement involvement in strategic reviews	0.13				✓	
Teaming strategies	0.06				✓	

Supplier Relationship Mgmt.	Wajaht	Levels					
Practices	Weight	1	2	3	4	5	
SRM governance process	0.17			✓			
SRM framework	0.16				✓		
Management of key suppliers	0.14			✓			
Supplier development program	0.14			$\checkmark$			
Close relationship with key suppliers	0.10				1		
Performance improvement strategies	0.09			✓			
Contract Management	0.07			✓			
Agreement of terms and conditions	0.07				✓		
Planning schedules and forecasts with suppliers	0.03		✓				
Learning from Supplier Market	0.03			1			

Supplier Quality Practices	Weight	Levels				
Supplier Quality I factices	es weight		2	3	4	5
Supplier Quality Management	0.33				✓	
Reliability of method for assessing suppliers	0.27			✓		
Quality Assurance in the procurement process	0.20				1	
Supplier performance measures	0.13				✓	
Monitoring, management and review of suppliers	0.07				✓	

Category Mgmt. Practices	Weight	Levels					
Category Mymt. Fractices	weigiit	1	2	3	4	5	
Category Strategies	0.24				✓		
Implementation of Category Management	0.21				✓		
Spend Visibility	0.21				1		

Procurement structure	0.14			1	
Category Intelligence Integrated Analysis	0.10			✓	
Measured KPIs	0.07			✓	
Savings generated Year Over Year (last 5 years)	0.03		✓		
Category Strategies	0.24			✓	

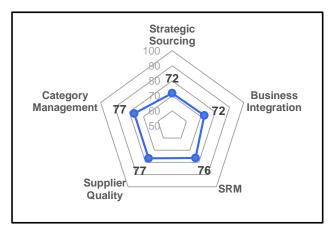
#### Final evaluation

In order to compute a final score for the sponsor company, previous results that were used are: global priorities of the value drivers, linear weights and maturity assessment of the practices.

The score was calculated on a scale from 1 to 100, where 100 is the maximum score that can be obtained if the company has a level 5 of maturity in all the practices.

The score for each of the top five value drivers as well as the overall score of the sponsor company is shown in the table and figure below. In the table, the global priority and the weighted average of the value drivers obtained from the maturity assessment is also shown.

Value Driver	Global Priority	Weighted average of the maturity assessment	Score
Strategic Sourcing	0.403	3.584	72
Business Integration	0.190	4.000	72
SRM	0.169	3.440	76
Supplier Quality	0.131	3.800	77
Category Management	0.108	3.900	77
		Final Score	74



Overall, the company presented similar performance in the top 5 value drivers, but there are more opportunities for improvement in Strategic Sourcing and Business Integration, which are ranked first and second among the top 5 value drivers.

## **Conclusions**

In the transformation of the procurement function from a pure cost optimizer towards a true strategic contributor, it is important to know and understand the key enablers and the levers that the CPO's have to drive the change. Based on our literature review to identify the inroads to our thesis topic and supported through the analysis of the survey results, we can clearly show the more highly ranked value drivers:

- Strategic Sourcing
- Business Integration
- Supplier Relationship Management
- Supplier Quality
- Category Sourcing and Management

These are the fundamental, or better said, the foundational drivers of change. Therefore, companies must focus on the five fundamental value drivers first and have a strong foundation in order to move to the next level of transformation.

We want to stress that our approach should be seen as a guideline towards making evolutionary steps with a procurement organization. We have identified trends of finding new and different growth drivers for companies and organizations that can become pivotal for sustainable existence beyond pure price pushes. Our three key contributions are:

- 1. A process to identify value drivers
- 2. Set of value drivers identified
- 3. A maturity assessment tool

We have developed a process that the sponsor company can use to identify value drivers and prioritize them. This process is repeatable, expandable, and usable in other functions and situations as well. The maturity assessment tool assists the company in identifying the gaps that exist, and this tool can be expanded and used for assessing any function or process in the company.

The challenge, however, remains to find and place company resources, talent, skills, and efforts within a combination of foundational and future value drivers.

#### References

The Hackett Group. (2014). *Procurement Expanding Priorities Beyond Cost Reductions to Focus on Influence, Innovation.* 

Chick, G., & Handfield, R. (2015). *The Procurement Value Proposition: The Rise Of Supply Management* (pp. 19-33). London: Kogan Page Limited.

Hales, M., Zeranski, O., & Disteldorf, H. (2011, September). *Time to Tell Your CPOs to Collaborate with Suppliers*.