Master Thesis Paper

For Business Process and Supply Chain Management Program

Intra - Organizational Purchasing Synergy:
Reengineering of Periodic Price Adjustment (PPA) Process

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ABSTRACT

Purpose: The purpose is to investigate and analyse the impact of intra-organizational purchasing synergy on periodic price adjustment (PPA) process. Specifically, paper provides a view on how purchasing process synergy through an operational IT platform can increase process reengineering opportunities within PPA.

Methodology: So, to fulfil the purpose of the research, the in-depth case study approach is chosen as a strategy that goes along with exploratory nature of the study, aimed at gaining rich insights in the context in which the phenomenon happens.

Findings: The findings emphasize the importance of global process standardization and balanced governance among regional affiliates in successful implementation of PPA process synergy. We also identify a set of specific process reengineering needs in PPA such as company wide information sharing, standardization of part specifications and cost bases, and joint world-wide cost reduction activity within global buyer community (BGC). Then it is observed that all these process reengineering initiatives will not be possible without solid and flexible IT infrastructure to improve buyer productivity and support their further development.

Research limitations/implications: Primarily, this study was conducted on single in-depth case study which makes it difficult to completely generalize the findings. Next, there are many factors impacting intra-organizational pricing processes besides global synergy projects. In fact, regional and organizational contexts are of high importance, which are addressed but not analysed in detail in the current study.

Practical implications: Together, the findings contribute to our understanding of the step-by-step pricing activity from industrial customer perspective and how buyers can improve cost competitiveness through various tangible and commercial part cost reduction activities.

Originality/value: Current study has addressed the pricing process from industrial customer perspective. It has two main theoretical contributions: (1) Detailed step-by-step description of PPA process between OEMs and their suppliers happening after SOP; and (2) groundwork for implementation guidance on intra-organizational price revision process synergy.

Terms used: periodic price adjustment, intra-organizational purchasing synergy, regional differences in purchasing strategy, business process reengineering and inter-organizational integration of business information systems.
ACKNOWLEDGEMENT

Going back and reflecting on the process of writing this thesis and all the people involved on it I would like to say a few words of appreciation.

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I would like to also express gratitude to research participants. Without their collaboration, this thesis would not have any contribution to existing purchasing process practice. Their expertise and knowledge are the base of the study results.

Another great thank is to Professor Helena Forslund, who provided great support in opening ways for my further personal and professional development. Without her help I would not be part of the case company and this whole thesis project would not commence.

23/05/ 2018, Brussel

Askar Muratov
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<th>Abbreviation</th>
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<tbody>
<tr>
<td>PPA</td>
<td>Periodic Price Adjustment</td>
<td>FX</td>
<td>Foreign Exchange Rate</td>
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<td>MNC</td>
<td>Multinational Corporation</td>
<td>D&amp;D</td>
<td>Design and Development</td>
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<td>BPR</td>
<td>Business Process Reengineering</td>
<td>A&amp;F</td>
<td>Accounting and Finance</td>
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<td>IT</td>
<td>Information Technology</td>
<td>CR-SI</td>
<td>Cost Reduction Scope Identification</td>
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<td>IS</td>
<td>Information System</td>
<td>R&amp;D</td>
<td>Research and Development</td>
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<tr>
<td>GPS</td>
<td>Global Purchasing Synergy</td>
<td>CSR</td>
<td>Corporate Social Responsibility</td>
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<tr>
<td>FY</td>
<td>Fiscal Year</td>
<td>VA</td>
<td>Value Analysis</td>
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<td>SOP</td>
<td>Start of Production</td>
<td>PI</td>
<td>Process Improvement</td>
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<tr>
<td>OEM</td>
<td>Original Equipment Manufacturing</td>
<td>T/O</td>
<td>Turnover</td>
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<tr>
<td>SCM</td>
<td>Supply Chain Management</td>
<td>RAV</td>
<td>Revised Annual Volume</td>
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<td>ICT</td>
<td>Information Communication</td>
<td>OAV</td>
<td>Original Annual Volume</td>
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<tr>
<td>NMSC</td>
<td>National Marketing and Sales Companies</td>
<td>ECI</td>
<td>Engineering Change Instruction</td>
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<td>RM</td>
<td>Raw Material</td>
<td>PxP</td>
<td>Part-by-Part</td>
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<td>PM</td>
<td>Project Management</td>
<td>VE</td>
<td>Value Engineering</td>
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<tr>
<td>CSP</td>
<td>Controlled Sourcing Part</td>
<td>BPI</td>
<td>Business Process Improvement</td>
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<tr>
<td>PDCA</td>
<td>Plan –Do- Check-Act</td>
<td>RBV</td>
<td>Resource Based View</td>
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<tr>
<td>KPI</td>
<td>Key Performance Indicator</td>
<td>PIC</td>
<td>Person in Charge</td>
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<tr>
<td>GBC</td>
<td>Global Buyer Community</td>
<td>PN</td>
<td>Part Number</td>
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<td>NEG0</td>
<td>Negotiation</td>
<td>BI</td>
<td>Business Intelligence</td>
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1. INTRODUCTION

This chapter aims to introduce to the reader the topic of PPA process within the context of intra-organizational purchasing synergy and its challenges. The general background, problem statement, purpose, research questions are presented.

1.1 Background

Global competition has long started to dictate that multinational corporations (MNCs) can no longer stand out as a group of nationally independent subsidiaries; more effort should be directed towards integration of subsidiary activities across geographical or regional locations (Kotabe & Murray, 2004). In response to this trend Barlett et al. (2004) emphasized the urgency of prioritizing the global efficiency, national responsiveness and worldwide learning as capabilities vital to competitiveness. The achievement of sustainable competitive advantage is not possible only with superior customer value, what is need as well is the pursuit of operational effectiveness (Faes et al., 2000). For most global companies, the issue of competitiveness lies on being able to adapt their organizational structures and governance in increasingly complex organizations (Trautman et al., 2009). If we specifically address the functional level and look at purchasing, then we can observe, that the companies have turned to hybrid purchasing organizations to leverage global sourcing synergies (Trautman et al., 2009).

Rozemeijer (2000) defines the synergy as: “the value that is added when two or more business units (or purchasing departments) join their forces (e.g combined buying) and/or share resources, information, and/or knowledge in the area of purchasing”. Referring to the definition of “synergy”, more emphasize is made on integration in all possible organizational functions, and as a prerequisite for implementing global sourcing, the criticality of aligning global sourcing strategy with organizational design is considered as crucial. Moreover, Gunasekaran & Kobu (2002) highlight the importance of organizational restructuring; 2) changes in employee behavior; and 3) integration of various
functional areas through IT, which will facilitate the smooth flow of information and materials along the supply chains. To achieve this objective, companies engage in business process reengineering (BPR) projects in order to align goals across regional affiliates through intra-organizational processes. Altinkemer et al. (2011) define BPR as the “redesign of the process, typically using the information technology (IT), in order to gain significant improvements in key areas of performance such as a service, quality, cost, and speed”. It has been noted by Jahnke & Tjiok (1998) that Information System (IS) support is an essential element in redesigning of the business processes, because companies acquire the groundwork to achieve sustained process improvements through the use of technology. “An appropriate IS support alternative has to factor out the strategic and operational characteristics of the business process to be reengineered and supported” (Jahnke & Tjiok 1998). In fact, “…challenged by competitive pressures, and enabled by information IT, organizations are forming strategic partnerships that share, collaborate, and make collective decisions across the supply chain” (Singh & Teng, 2016).

Following the trend of IT-enabled intra-organizational purchasing synergy, Company A - one of the regional affiliates of the MNC in the automotive industry, aims to gain operational efficiency through the “Global Purchasing Synergy” (GPS) project, where MNC aims to take advantage of global synergy potentials through more efficient purchasing of parts and components. To do that, MNC globally reviews the purchasing processes and its interactions with other functions (design, planning, and accounting) in order translate their needs into an operational IT platform. This is done with an aim to improve competitiveness through effective and efficient purchasing which can help to realize sustainable growth.

Areas to be covered through GPS includes: sourcing, pricing, tooling, and supplier performance management. One of the least standardized processes across regions and within the organization is the pricing; unlike to sourcing and supplier performance management, pricing carries more regional character and
there is not much collaboration between regional affiliates. Collaboration within pricing is important both from operational and cost efficiency point of view.

![Figure 1.1 PPA Contribution to Total Cost Reduction](image)

Figure 1.1 PPA Contribution to Total Cost Reduction

One of the important areas within pricing that contributes to the company’s profitability and where, according to the initial review, Company A can gain more synergy potential with other regional affiliates - is the Periodic Price Adjustment (PPA) process (Fig. 1.1). PPA - is a yearly price negotiation between Company A and its suppliers, which reflects the cost impact of competitive gap analysis, process improvement at supplier, raw material cost adjustments, and other economic factors in the piece price.

1.2 Problem

While the literature on purchasing synergy has acknowledged global efficiency, national responsiveness, and worldwide learning as major benefits of intra-organizational purchasing integration (Barlett et al., 2004; Trautman et al., 2009; Rozemeijer, 2000), current research covers only the portion of purchasing processes, which is sourcing and related activities before the start of production (SOP). Specifically, there is a lack of empirical research on some major processes such as price revision after SOP and how the intra-organizational purchasing synergy can impact the pricing efficiency. Accordingly, there are some gaps in the current academic discussion: (1) insufficient understanding of how the periodic price revision process between OEMs and their suppliers take
place; and (2) missing implementation guidance on intra-organizational price revision process alignment.

As Faes et al. (2009) have pointed out, one of the important challenges in realizing purchasing synergy is to clearly identify those categories that should be integrated across subsidiaries and those to be remained under the authority of each purchasing site. Referring to the case of Company A, this observation mainly relates to cost reduction items, to be tackled after the SOP, and as well as to the scope of collaboration items between regional affiliates, that will bring more benefit on the global scale. However, it remains unclear how regional requirements and practices might impact the PPA process synergy. Because, due to legal requirements, different market conditions, and supply network complexity, regional subsidiaries may not be able to fully share cost breakdown details of suppliers. Thus, there is no inter-regional and intra-organizational process standards that would facilitate collaboration in information sharing. Moreover, even on the regional level there is no detailed understanding on standard price revision processes. In fact, based on the initial review, current PPA process at Company A is not well standardized to support buyers’ activities in identifying and evaluating the cost reduction items. Thus, on one hand, the process should be streamlined by reducing all non-value adding activities, and on the other hand, it should be reengineered in a way that buyers will have needed IT system support, which, according to Gunesekaren & Kobu (2002), will facilitate the smooth flow of information.

Standardized PPA process together with IT platform will potentially improve the capability of buyers by having sufficient understanding of the cost drivers in order to assess the validity of price changes. However, as Faes et al. (2000) pointed out, such initiatives may be hindered due to the process issues that are crucial in achieving the intra-organizational synergies. When it comes to the rising importance of IT, more and more businesses are automating their operational processes. Ideally, IT should allow firms to expand their global presence and improve efficiency through operational synergies. However, acknowledging what previous research identifies, the automation does not
always lead to higher purchasing efficiency and performance. As Cagliano et al. (2006) summarizes, within supply chain management (SCM), intra-organizational information and communications technology (ICT) has hardly been addressed and there seems no clear relationship with supply chain performance. Importantly, IT requires huge investments, and most of the time acquired systems are not flexible when business processes changes or when they are not standardized between subsidiaries (Stelzer et al., 2006). Therefore, on top of the non-standardized PPA process, organizations also may face synergy challenges due to missing implementation guidance on intra-organizational price revision process alignment through an operational IT platform.

1.3 Purpose

The purpose of this thesis is to investigate and analyse the impact of intra-organizational purchasing synergy on PPA process. In particular, author intends to provide a view on how intra-organizational purchasing process synergy through an operational IT platform can increase process reengineering opportunities.

1.4 Research Questions

Q1: What are the PPA process steps and challenges at Company A?

Q2: How the intra-organizational purchasing synergy can create opportunities for process reengineering within current PPA?
2. **METHOD**

*In this chapter the research purpose, philosophy and approach, the methodological choice and research strategy are outlined. The use of semi-structured interview questions, secondary documentary data, and data analysis and the reliability and validity of the study are considered.*

**2.1 Characteristics of the Study**

Based on the nature of the problem statement and the research questions presented in Chapter 1, as depicted in the Table 3.1, authors have used exploratory research methodology as the dominant logic of the discovery.

Table 2.1 Methodological Choices

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<th>Methodological Choice</th>
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<td>2.1</td>
<td>Research Characteristic</td>
<td>Exploratory Study</td>
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<td>2.2</td>
<td>Research Philosophy</td>
<td>Combination of pragmatism and interpretivism</td>
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<td>2.3</td>
<td>Research Approach</td>
<td>Abductive</td>
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<td>2.4</td>
<td>Methodological Choice</td>
<td>Partially integrated mixed-method approach</td>
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<td>2.5</td>
<td>Research Strategy</td>
<td>In-depth Case Study</td>
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<td>2.6</td>
<td>Time Horizon</td>
<td>Cross-Sectional</td>
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<td>2.7</td>
<td>Techniques and</td>
<td>Qualitative but also quantitative techniques</td>
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<td>2.8</td>
<td>Research Quality</td>
<td>Trustworthiness/Validity/Reliability/Ethical Considerations</td>
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In fact, exploratory research is a useful way to ask open questions and gain deep insights and understanding of a specific phenomena, that is not well understood; apparently, which is a case of PPA process synergy, addressed in this study.
Also, as Saunders et al. (2012) explains, exploratory approach is flexible and allows to change direction during the project when there is a need. Additionally, based on previous research conducted in the area of purchasing synergy and inter-regional process integration, the use of exploratory research was considered to be the best fit for this thesis’s objective. Also, Table 2.1 summarizes all subsequent sections of the method choices of this study.

2.2 Research Philosophy

Current study is guided by a “pragmatism” as a philosophical stance. Because, pragmatic point of view gives flexibility and puts the research questions as the base, which according to authors will allow them to look at a problem from different perspectives and identify many possible ways to address the issue. This is also in line with the claim of Saunders et al. (2012), who state that for pragmatists, “the importance of the meaning of an idea (or a research finding) is its practical consequences; there are many different ways of interpreting the world and undertaking research, that no single point of view can ever give the entire picture and that there may be multiple realities “(p.130). It implies that, in this study, author used many interpretations, which make the most sense, while collecting and analyzing data with reference to each research question.

In addition, this study used the combination of interpretative and functionalist view, which helps to reflect on the importance of socially constructed and subjective points of view with an attempt to derive solutions to problem which also have rational explanations (Bryman & Bell, 2012). Applying those two views is relevant in this study due to the fact that relationship and interests of different affiliates are being studied as part of the purchasing synergy project. Next, the case study strategy used in this thesis contains detailed, complex, and unique information specific to PPA process. Additionally, interpretivism provides the tools to interpret the answers from the respondents with respect to the context in which they are present thereby allowing a more in-depth analysis (Saunders et al., 2012). While functionalistic paradigm allows to identify “…why organizational problem is occurring and develop a set of recommendations within the structure of the organization’s current management” (Saunders et al., 2012; p.137).
In connection to interpretivist stance this thesis adopted constructionism as an onto-logical position. Having ontological position is necessary since it helps to construct the view about the nature of real-life phenomenon being studied (Saunders et al, 2007). In fact, “constructionism asserts that social phenomena and their meanings are continually being accomplished by social actors” (Bryman & Bell, 2011; p.22). By adopting constructionism as a position, author can imply that social phenomena being studied and categories identified throughout the research are not only results of social interaction but that they are in a constant state of revision (Bryman & Bell, 2011). Constructionism conduced to understand the purchasing process synergy as something subjectively constructed through the meanings and conceptions developed socially which can change depending on the context. Hence, both interpretivism and constructionism are concerned with perceiving and interpreting the meanings behind a socially constructed phenomenon, which, in this case, purchasing process synergy between regional affiliates.

2.3 Research Approach

Abductive approach is chosen to facilitate the flexible nature of the study. Because, this approach allows authors during the study to go back and forth between the empirical findings and theory (Saunders et al., 2012). Apparently, Saunders et al (2012) mentions as well the fact that abductive studies can easily reflect the changes due to unanticipated findings and theoretical insights acquired along the the project phases. Accordingly, the theoretical references on the subject area have been reviewed before the interviews and questionnaires are conducted, but with the intention to gain knowledge and insight on the subject and as well as to identify gaps in the theory. If during the project new areas will be addressed as a result of the interviews, author may to go back to the literature in order to look for further insights. In fact, only after empirical findings, author will able to choose some additional relevant theories / concepts that would be used on the theoretical framework on the analysis part.
2.4 Methodological Choice

In this study the data collection and analysis was done through partially integrated mixed-method approach. It means that data collection techniques or data analysis methods are based on both qualitative and quantitative approaches at only one stage or at particular stages (Saunders et al., 2012; p. 166). Primarily, author of this study aim to gain in-depth understanding of the topic through qualitative method, where perceptions and contextual factors can be identified and categorized. Afterwards, to really prioritise the impact of those factors on the purchasing processes, it is planned to use quantitative methods of data analysis.

As recognized by Saunders et al. (2012), purposeful mixing of methods leads us to consider the timing within the research process when the mixing actually needs to occur. According to Creswell & Clark (2007) mixed methods research may be conducted sequentially or concurrently (Cited in Saunders et al., 2012). As the current research is exploratory in characteristics with a double-phase research design, authors will be using sequential exploratory research strategy, where qualitative data collection and analysis is followed by quantitative method. In fact, “sequential mixed methods research involves more than one phase of data collection and analysis. In this design, the researcher will follow the use of one method with another in order to expand or elaborate on the initial set of findings” (Saunders et al., 2012; p.167).

2.5 Research Strategy

Intra – organizational purchasing process synergy is a complex and dynamic phenomenon which involves interests of many parties effected. Thus, one of the key elements of the research strategy is to clearly understand the context in which the research is conducted. So, to fulfil the strategic purpose of the research, the case study approach is chosen as a method that goes along with the the exploratory nature of the study aimed at gaining rich insights in the context in which the phenomenon happens. According to Stake (1995) case study is a favoured approach in exploratory studies, since it may be hard for the researcher to focus on a specific topic and what is more relevant beforehand. In fact, the
case study research design allows researchers to gain both general and significant understanding of a current real-life situation (Saunders et al, 2012). Even though in many case studies, as Yin (2003) highlights, the boundaries between the topic and the context can overlap making difficult to define them, the case study research design gives researchers a chance to get a snapshot of a topic within its real life context at a specific time horizon (Saunders et al, 2012). Apparently, in order to build an in-depth understand of the impact of IT-enabled intra-organizational purchasing synergy on annual price review process, it is necessary to study the context where the change going to happen and how the parties will prepare and adapt to upcoming synergy initiatives. Hence, a case study is an option to gain in-sights about process changes and how the business affiliates within the company react to them before a synergy potential is realized.

2.5.1 Case Company

Current thesis is based on a case study in an automotive manufacturer. The reason for choosing the company as a case is that this study, first of all, aims to explore how the process reengineering through IT enabled platform takes place in an industry with well-established purchasing standards and procedures. Secondly, the case company is a MNC, with global structure, and large amount of purchasing volume being sourced in regional affiliates. Third, as a good fit for the research objective, MNC is currently running a global purchasing synergy project.

Company A has been chosen as a case, which is one of the regional affiliates of the MNC in the automotive industry. Company A is a part of the GPS project where MNC aims to review global synergy potentials through more efficient purchasing of parts and components. During past few decades the MNC has expanded through a variety of strategic acquisitions and global partnerships during the past few decades, having operations in on all continents. When it comes global sourcing, MNC has control over design from its headquarters, while every affiliate, including Company A, has their own purchasing department, addressing the needs of its regional customers. However, the heritage of a decentralized purchasing organization had led to a variety of inefficiencies, which started to be obvious when the IT innovations increased
with higher pace, thereby creating urge for global efficiency in purchasing in order to secure worldwide competitiveness. Thus, purchasing management at headquarters prioritized the integration of continental purchasing sites into a coherent global sourcing that would lead to realization of tremendous corporate-wide benefits, such as cost saving through increasing purchasing power, common systems and processes, and the exchange of knowledge and expertise.

The case is divided in two parts: from one side, the purchasing synergy motives of the global corporate structure are presented and examined to what extent the synergy potential may be realized depending on the regional purchasing requirements and practices, and also on the differences in the relationship with suppliers; and on the other side, how the IT enabled process reengineering can facilitate the synergy is explored and possible process improvement and standardization attempts are investigated. Indeed, researchers realize the limitations of having only one case, thus, it is difficult to defend the generalizability of the study results. Nevertheless, as Saunders et al. (2012) points out, having one case makes possible "to observe and analyse a phenomenon that few have considered before”.

3.5.2 The Selection of Respondents for the Case

The current purchasing process synergy project – GPS – may have an impact on all regional affiliates, and especially on purchasing functions. Specifically, purchasing members – commodity buyers – can experience a change in their way of working and collaboration with other regional counterparts. It is interesting to understand what are the expectations of the buyers and what the GPS proposes when it comes to PPA Process. It should be noted that the objectives listed out in GPS are linked to more strategic goals of the company, which are cascaded to regional and subsequently to functional levels. It means that the real user’s, in our case buyer’s, viewpoints may be overlooked. Thus, to be able to get an effective and holistic view of these impacts, different criteria were used when choosing the respondents for the case. In fact, such intentional selection of the case respondents was done in accordance with Saunders et al (2012) comment, which states that the respondents can be selected using the purpose-
ful technique, where the judgment of the researchers and the specific reasoning can serve as a proof of selection

The criteria’s are listed below:

1. **Involvement in GPS.** In order to understand the cascaded objectives of GPS in purchasing function, first of all, respondents have to be members of the purchasing division within the Company A. Secondly, respondents should be directly involved in the global GPS project representing the Company A.

2. **Functional Role.** To understand the impact and concerns on the operational level, one group of respondents had to have section manager and senior manager roles.

3. **Duration of Service.** Respondents for semi-structured interviews and focus groups had to have at least 5 years of experience at Company A and also have a quite good understanding of the concerns in the current purchasing processes.

4. **Global Commodity Responsibility.** Respondents had to have a global commodity responsibility. Interviews were held with buyers who source commodities which are relatively common in specifications and in supply in between regional affiliates. It is believed to bring more insights into the subject matter, as one of the purposes of the GPS is to improve inter-regional collaboration.

The first step was to identify buyers with most years of experience, which is performed through listing out all senior buyers in purchasing function. The respondents were then analysed by checking their duration of service at Company A. Further, the respondents who fulfill all the requirements above were sorted according to if they belong to a group buyers with a global commodity responsibility.

### 2.6 Time Horizon

Due to the project requirements, where the subject has to be studied during a specified period, the research is cross-sectional in nature (Saunders et al, 2012). It was also clear that in the light of phenomenon being studied a cross-sectional study was an appropriate choice. In addition, Robson (2002) points out that the
data gathered from case study through semi-structured interviews can be studied within a limited time requirement.

2.7 Research Techniques and Procedures

2.7.1 Data Collection

Following research uses both primary and secondary data collection techniques in order to gain knowledge about the subject matter. Also, following the chosen partially integrated mixed-method approach, the data was collected mostly through qualitative but also through quantitative techniques. The combination of both collection techniques allowed authors to fulfil the research objective by answering the research questions in a structured and reliable way. Further, it also guaranteed the triangulation of the data, which according to Bryman & Bell (2011) and Saunders et al. (2012), refers to the use of different data collection techniques within one study with a purpose to ensure that the data collected are valid enough to reflect the reality. In fact, in this study qualitative data collected through semi-structured interviews and focus groups were triangulated through quantitative data collected by other means such as a questionnaire.

Primary Data

In this qualitative study, the primary data was collected through semi-structured interviews, focus groups and questionnaires in addition to three initial in-depth interviews to be conducted at the beginning of the project.

According to Saunders et al. (2012), conducting semi-structured interviews is a common approach when doing an exploratory and qualitative study. Using semi-structured interviews allows to ask many different questions and clarify the answers and questions when necessary; moreover, it can open way to additional information that researchers might not have thought about beforehand (Saunders et al., 2012). Therefore, the primary purpose of semi-structured interviews was to gain detailed knowledge on the PPA process steps and also understand the challenges encountered by buyers.
<table>
<thead>
<tr>
<th>Type</th>
<th>Participants</th>
<th>Length</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-structured</td>
<td>With 6 Section Managers</td>
<td>30 min each</td>
<td>01.09.2016 to 30.11.2016</td>
</tr>
<tr>
<td>Interviews -PPA Process Review</td>
<td>With 8 Senior Buyers</td>
<td>30 min each</td>
<td></td>
</tr>
<tr>
<td>In-depth Interview</td>
<td>Senior GPS Project Manager</td>
<td>30 min</td>
<td>06.03.2017</td>
</tr>
<tr>
<td></td>
<td>GPS Project Manager</td>
<td>30 min</td>
<td>14.03.2017</td>
</tr>
<tr>
<td></td>
<td>GPS Project Leader</td>
<td>30 min</td>
<td>01.03.2017</td>
</tr>
<tr>
<td>Focus groups</td>
<td>PPA Process Flow Review</td>
<td>1 hour</td>
<td>14.04.2017</td>
</tr>
<tr>
<td></td>
<td>Process Flow Challenges</td>
<td>1 hour</td>
<td>20.04.2017</td>
</tr>
<tr>
<td></td>
<td>GPS Impact on PPA</td>
<td>1 hour</td>
<td>25.04.2017</td>
</tr>
<tr>
<td>Questionnaire</td>
<td>32 buyers from 8 Sections</td>
<td></td>
<td>01.05.2017 to 08.05.2017</td>
</tr>
</tbody>
</table>

In addition to semi-structured interviews, another qualitative research method – focus groups were used. Before conducting focus groups, three initial in-depth interviews were conducted on the pilot basis and were aiming to gain initial insights into the GPS project and identify specific topic to be discussed in the following focus groups. As Brymann & Bell (2011) points out that “the focus groups typically emphasize a specific theme or topic that is explored in depth.” Three different focus groups were held with three senior buyers with most experience and who are directly involved with the GPS project. Purpose of the focus group was first to get a consolidated image on standard PPA process, to summarize challenges discusses during semi-structured interviews, and to get preliminary insights into how buyers perceive the global purchasing synergy.
project potential and what are the possible ways to improve current purchasing processes, and specifically the PPA Process.

Finally, questionnaires were used to validate the results from the semi-structured interviews and focus groups. In fact, 36 buyers from 8 different sections received questionnaires that allowed them to rate the constraints and difficulties within the current PPA process and also to evaluate the possible options to eliminate the non-value adding activities. Authors believe that using questionnaires allowed them to improve the validity of the findings and also identify concrete countermeasures to address the current process flaws with reference to GPS project goals.

**Secondary Data**

In addition to primary data, this study also used secondary data which was collected for another purposes. Authors believe that using the secondary data is helpful to collect additional information, knowledge, interpretations that may provide further insights on the topic. As secondary data, mostly documentary records were used, which consists of text materials such as e-mail correspondence, project presentations and company reports. According to Saunders et al. (2012) using the secondary provides context to the case and also allows to triangulate findings from the primary data mentioned above.

**2.7.2 Data Analysis**

**Unit of Analysis**

In this study the unit of analysis is the impact of purchasing synergy on PPA process. Specifically, in line with the purpose of the study, author aims to investigate and analyse the potential impact of IT-enabled intra-organizational purchasing synergy on price revision with suppliers. Then following the research questions, unit of analysis is divided into two distinct items: 1) inter-regional alignment in price revision through process reengineering; 2) role of IT platform in facilitation of purchasing process reengineering.
Empirical Data Analysis

Saunders et al. (2012) have outlined a generic approach to analyze the qualitative data which consists of following five points: 1) identifying categories or codes that allow to comprehend data; 2) attaching data from disparate sources to appropriate categories or codes to integrate these data; 3) developing analytical categories further to identify relationships and patterns; 4) developing testable propositions; 5) drawing and verifying conclusions (p.557).

In this study, as part of the data categorization, the distinct categories will be identified, each of which will be then linked to the original data, which will be rearranged into analytical categories. “Each category is given a suitable name, usually referred to as a code or label. This simple process provides an emergent structure that is relevant to organize and analyze your data further” (Saunders et al., 2012; p.557). The purpose of the research will serve as a guideline to the creation of the categories, while the classification of the categories will be concept-driven, meaning that the categories will be based on the literature review items(Saunders et al, 2012), which are in this research grouped as follows: Purchasing Synergy in Decentralized Company, Regional Differences in Purchasing Strategy, Process Reengineering, and Inter-Organizational Integration of Business Information Systems.

As clarified by Yin (2009), while generating categories and reorganizing data accordingly, researchers already engage in the process of analyzing the data. Following the confirmation from Saunders et al. (2012), in this study, the process of analysis will continue as the researcher looks for common themes, patterns, and relationships within the data, which may lead to revision of current categories and rearrangement of the data to find meaningful connection. Further, those relationships will be tested by trying to find alternative explanations.

After patterns have been revealed within the data and relationships already can be recognized between categories, the next is to develop testable propositions. As clarified by Saunders et al. (2012), the relationship or connection between categories will need to be tested in order to able to conclude that there is an actual relationship (p. 560). In this study, once the propositions are developed,
they will be interpreted based on the existing theory and practical implications of the current purchasing processes. In fact, interpreting is more than just describing the data and adding significance, it will also allow to recognize the findings, draw conclusions, and develop assumptions about the topic (Saunders et al, 2012).

Finally, after interpretations are made, author will proceed to the data analysis and drawing conclusions with and attempt to link the new understanding provided by the empirical findings with the known literature. Hence, the idea will be to add knowledge and close the gap within the existing literature (Saunders et al, 2012). In this regards, author will rely on the proposition of Miles and Huberman (1994), where the process of analysis consists of three concurrent sub-processes:

- Data reduction; includes summarizing and simplifying the data collected and/or selectively focusing on some parts of this data.
- Data display; involves organizing and assembling data into summary diagrammatic or visual displays.
- Drawing and verifying conclusions.

2.8 Research Quality
2.8.1 Trustworthiness

This thesis aims for high levels of trustworthiness of the research process and the results. To achieve that objective, author has paid special attention to what type of criterias were selected in this study. In fact, in order to assess the trustworthiness of the study conducted, it was tested for validity and reliability, which, according to Saunders et al. (2012), serve as necessary criteria to assess the level of research quality.

Validity

As explained by Lincoln & Guba (1985), there are two ways researchers can look at validity of the study; internal and external. Mainly, Yin (2009) refers as an internal validity the quality of the data and to what extent the research
accurately represents the reality. In fact, some measures were used in this
research in order to ensure the quality of the data; all interviews conducted
followed strictly a case study protocol and then were transcribed and shared
among respondents, which according to Trautmann et al. (2009) enhances the
objectivity and robustness of the findings. Apparently, the idea is to avoid
misunderstandings and provide an opportunity to the interviewee to make
corrections or additions of new insights to the study (Ellram, 1996). On top of
that, interviews were cross-checked against internal documents. Thereby, the
quality of the information was ensured through triangulation of the information
given by the interviewees with other sources (Saunders et al., 2012). In addition,
analysis of archival documents was used, which was done primarily to
supplement the data collected through the interviews. Highlighted as useful by
(Trautmann et al., 2009), sources of information included various internal
reports, presentations concerning the actual status of the project, protocols from
meetings, and planning documents.

On the other hand, the external validity of the research is the generalization of
the findings beyond the specific research context (Bryman & Bell, 2011; Yin,
2009). As outlined by Bryman & Bell (2011), “it is in this context that the issue
of how people or organizations are selected to participate in research becomes
crucial” (p.43). Hence, this study is done only on one case, it is difficult to claim
that this results will be representative to other cases as well. Therefore, the
authors do not consider that this study can be generalized to a larger population.
Nevertheless, author believes that theoretical contributions can be used within
or outside of the automotive industry; therefore, the right term to be utilized shall
be “transferability” as suggested by Lincoln and Guba (1985). Thus, in order to
increase the chance of transferability, author has included as much details as
possible about the contexts of the research. Accordingly, the findings presented
in this study can be transferred to other cases in the same industry as well as to
other industries that face similar case of intra-organizational purchasing synergy
project.
Reliability

According to Yin (2009) reliability means collecting and analysing data in a way that, in case other researchers would do the same study, they would realize the same findings; in other words, “reliability is concerned with the question of whether the results of a study are repeatable “(Bryman & Bell, 2011). The researcher accept that the chances of a qualitative research about purchasing process synergy and how regional affiliates within a corporate group will react is likely to reproduce different findings. In fact, differences in regional requirements, practices, and cultural perspectives may impact the way how the new purchasing practices are implemented and ultimately how the synergy potential is realized. Besides, different researchers may use different approaches and priorities, which makes the use of the same categorization unlikely. This consideration as outlined by Bryman & Bell (2011), “entails asking whether or not a measure is stable over time, so that we can be confident that the results relating to that measure for a sample of respondents do not fluctuate” (p. 157). Seemingly, in this study, the measures that are chosen for data analysis and the subsequent findings can be vary from one researcher to another. However, common purchasing measures and standards for automotive industry should be replicable to another studies, at least conducted within the same industry, if, as Bryman & Bell (2011) points out, a researcher does spell out his or her procedures in great detail, which is a case in this particular research work. And the final observation about the point is that relationships are always changing, and since this thesis has as a main topic the relationship balance between companies it is hard to say that another study will reach the same conclusions.

3.8.2 Ethical Considerations

According to Saunders et al. (2011), “ethical concerns will emerge as you design and plan your research, seek access to organizations and to individuals, collect, analyze, manage and report your data” (p. 226). In this current research study, following ethical principles are followed:
Table. 3.8.2 Ethical Consideration Parameters

<table>
<thead>
<tr>
<th>N #</th>
<th>Ethical Principle</th>
<th>Actions Taken within Research Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Integrity and objectivity of the researcher</td>
<td>As part of ensuring research quality, the integrity and objectivity of the researcher has been closely followed. All data gathered and analyzed is interpreted with high level of truthful and accurate approach without any manipulation; author also takes responsibility to avoid deception, dishonesty, misrepresentation.</td>
</tr>
<tr>
<td>2</td>
<td>Informed consent of those taking part</td>
<td>Participants of the Interviews, questionnaires, and focus groups are contacted through e-mail by providing information about the project purpose, scope of engagement, and duration of their participation. This allowed them to understand the implications of their participation beforehand.</td>
</tr>
<tr>
<td>3</td>
<td>Ensuring confidentiality of data and of anonymity of those taking part</td>
<td>To ensure the confidentiality and privacy of those who took part in the research, their names and positions within the company is not specified. Also, in addition to participants, company also remains anonymous.</td>
</tr>
<tr>
<td>4</td>
<td>Responsibility in the analysis and findings</td>
<td>All confidential, internal data provided during the project has been processed to make it non-attributable.</td>
</tr>
</tbody>
</table>
3. RESEARCH QUESTION 1: CURRENT PPA PROCESS

The following chapter provides an overview of theoretical reference relating to the PPA process, empirical findings on the current PPA process at Company A, challenges and issues within the process, analysis of the process, discussion and conclusions.

3.1 Frame of Reference

3.1.1 Industrial Pricing Process and Challenges

Davenport (1992) has defined process as “a structured, measured set of activities designed to produce a specified output for a particular customer or market” (p.12). Referring to the resource-based view analysis of Dutta et al. (2003), pricing can be described as a process of determining the value that is received by an organization in exchange of its products or services. Research on pricing in business-to-business markets in the industrial context is quite limited. Even though there is some research in organizational buying behavior, mainly reflecting “how managers’ interpretations and cognitive processes affect purchasing decisions, similar research on pricing in industrial markets is only in its infancy” (Iyer et al., 2015; p.6).

Based on the analysis conducted by Bedrosian & Moschos (1988), “underlying conventional industrial behaviour suggests that industrial prices are cost dominated in the sense that price levels are determined as a markup upon costs, either direct or full, calculated at the actual or standard level of operation” (p.460). Christopher (2005) has pointed out that within industrial setting the contract manufacturing has also reduced the degree of cost control of industrial firms. Since cost control is gradually being dispersed throughout the supply chain, it makes sense for a company to seek cost reduction in the wider supply chain. However, controlling supply chain, especially in the international context within global markets, poses a lot of challenges with uncertainty management in pricing process. “When companies delegate to their suppliers the considerable control over product’s bill of materials, the total cost of ownership of the product (including transportation and inventory management) become invisible to the OEM” (Choi & Linton, 2011; p.113). Apparently, companies have little
leverage to reduce costs – especially if the entire subsystem is outsourced to a single supplier and cannot quickly stage a competition or switch suppliers.

Research carried out by Lancioni (2005) on “industrial pricing issues” provides insights into the complexities of industrial pricing processes, including the organizational influences on industrial pricing, the factors affecting international pricing, the importance of pricing in controlling supply chain costs, the influence of information on pricing decisions, and the importance of developing a strategic pricing plan. According to Forman & Hunt (2005), to mitigate the uncertainty risk in pricing, a global company can take action to integrate its efforts internationally. For instance, “a greater degree of internationalization allows subsidiaries across various countries to flexibly shift resources from one country to another in response to new information and/or changes in relative prices (Forman & Hunt, 2005; p.137). Yet, to be able to do that, as Lancioni (2005) highlights, companies are in need for an effective international pricing strategy.

The challenge in formulating an effective international pricing strategy is driven by the fact that “… firms must consider multiple foreign markets with their own respective cultural, language, and economic, legal, and political differences” (Lancioni, 2005; p. 113). In fact, an international pricing strategy is influenced by both internal and external factors. Internal factors include cost levels, profit maximization objectives, ROI levels, and capacity utilization levels; while, the external factors include buyer sensitivity to prices, barriers to entry, distribution infrastructures, and the economic trends in each country. Next, Lancioni (2005) states that “developing a pricing plan requires that a company commit to a set of objectives, a course of action, an operational strategy, and a set of control and review procedures dedicated to making the management of its pricing process a success” (p.114).

3.1.1 Periodic Price Adjustment (PPA)

Literature on periodic price adjustment is as well rather scarce and most of the existing research works cover only the supplier perspective in the industrial setting. In fact, from the supplier point of view, Zbaracki et al. (2004) have
studied the price adjustment practices and have provided a quantitative measurement of the managerial and customer costs of price adjustment by using data from a large U.S. industrial manufacturer and its customers. They describe periodic price adjustment as follows:

According to Zbaracki et al. (2004), the process for changing prices has two parts. The first part is the process of changing list prices. Changing the list price takes place over a period of several months, known as the *pricing season* to the firm employees. The second part of the price adjustment process includes developing a communication strategy to inform customers of the list price change, followed by negotiation with some customers. The amount of time and resources spent on the negotiation, and the outcome of the negotiation, depend on the customer and market situation. Occasionally additional negotiations will occur with specific customers later in the year, depending on customer requests and competitors’ actions, but these negotiations are much less frequent (Zbaracki et al., 2004; p. 517).

What is quite important is the frequency of the price adjustment and effect of price changes. Because as Bedrosian & Moschos (1988) have pointed out, at the industry level, firms do not necessarily perceive cost increases at the same time and by the same amount. “Differences may arise from firm policies with respect to supply agreements at fixed prices with various durations, practices of holding different stocks of raw materials and semi-finished goods, different credit facilities to customers and suppliers” (Bedrosian & Moschos, 1988; p. 460). Consequently, the business–to-business industry price levels has a character to adjust gradually over time. If we look in more details, Zbaracki et al. (2004) provides timeline explanation of periodic price adjustment as below:

The price change period, or “pricing season”, occurs once a year. The firm sets the start of the season based on the needs of the firm’s customers. The largest customers need approximately 2–3 months of lead time before they publish new prices in January. The firm also requires approximately 3 months to set its prices, so the pricing season generally begins in late July or early August. The season culminates in the distribution of new list prices, generally around November.
These dates may vary depending on the complexity of the actual price changes. (Zbaracki et al., 2004; p. 517). Similarly, Bedrosian & Moschos (1988; p. 460) refer to price adjustment periods as “adjustment lags” inherent in the decision of the firm to adapt to a change in costs. “These lags are traditionally taken to be the lags of informing customers of impending price rises, distributing price lists etc” (Bedrosian & Moschos, 1988; p. 461).

3.1.2 Purchasing Process Control: Pricing

The focus of existing literature within sourcing and purchasing management is related to the analysis of implications of a global sourcing strategy on the control mechanisms applied by MNCs in order to integrate their purchasing activities across countries. By elaborating on the information processing perspective of contingency theory, Hartmann et al (2008) have analysed the application of different control mechanisms in the global sourcing context (Fig 3.1.2). Their findings from case studies at eight multinational companies suggest that firms use various control mechanisms mainly due to two contingencies: (1) corporate organisational structure and (2) the distribution of purchasing expertise among subsidiaries (Hartmann et al., 2008).

![Figure 3.1.2 Information processing perspective for global sourcing.](image)

Primarily, studies within global sourcing and inter-organizational purchasing management highlight the importance of having conducive organisational structure, that will allow purchasing members to improve the visibility and on control over buyer-supplier relationship. In the light of global sourcing initiatives, research studies within purchasing management point out to
purchasing process coordination (e.g. pricing) through global commodity teams. “Commodity teams provide one example of a coordination or pooling structure within a larger firm, typically multinational and consisting of a number of individual business units” (Englyst et al., 2008; p.16). According to Van Weele (2005), a commodity team generally consists of purchasing professionals, but joins actors across business units or operational units, and it aims to improve the leverage of the company in order to reduce overall materials cost and/or to improve the service obtained from outside suppliers (Van Weele, 2005). In fact, Englyst et al. (2008) have explored and discussed in their research about the functioning of commodity teams in a global sourcing context. Result of the study has identified factors that may influence team members’ motivation to participate in activities that create opportunities for synergy and coordination of purchasing process. They have also provided rich description on how commodity teams function and on managerial issues that should be considered when implementing commodity teams. Guinipero & Vogt (1997) clarified that usually commodity teams are built in order to establish and pursue cost-reduction strategies, to evaluate and select suppliers, and to support sourcing for selected items.

Moreover, existing research highlights the importance of buying expertise, which is crucial element in ensuring the control over pricing. Control over pricing process can be enhanced through improved buyer capability. If purchasing professionals do not possess highly developed skill set, they will be unable to achieve high status levels irrespective of organizational support such as through commodity teams (Tassabehji & Moorhouse, 2008). We can categorize purchasing skills into two main groups (Giunipero & Pearcy, 2000; Kolehin & Giunipero’s, 1993):

1. Technical skills (process and technology related): Cost analysis, product knowledge, computer literacy, total quality management, government legislation, and global sourcing development.
2. Managerial and Interpersonal skills: Market analysis, negotiating with partners, managing internal and external relationships, change management and planning and organizational skills, risk taking, written and oral
communication, conflict resolution, influence and persuasion, group dynamics, leadership, problem solving and international and cultural awareness. However, as Reinecke et al. (2007) highlights, even though the gaining of skills related to processes and technology (i.e. technical) are important for buyers, solely having them is not enough to improve a company’s procurement performance. In fact, empirical findings by Tassabehji & Moorhouse (2008) suggests that in the global challenging environment the purchasing professionals must be a dynamic relationship manager, capable of creating and developing cross-functional strategies and internal selling, change manager with supplier relationship and partnership management skills. Moreover, in spite of the fact that purchasing professionals definitely need to have certain skill sets in order for the firm to achieve operational efficiency, still “the degree of organizational support and internal acknowledgement of the role’s importance, were found to be a major barrier to the development and progress of procurement professionals” (Tassabehji & Moorhouse, 2008; p.55).

3.2 Empirical Findings: PPA Process at Company A

3.2.1 Company A

Company A is one of the regional affiliates of the MNC within the automotive industry. MNC has a global structure represented by regional affiliates in Asia, North America, Europe, and large amount of purchasing volume being sourced both on global and regional scales. Alongside with the other OEMs, it is one of the world’s leading automotive manufacturers providing wide range of products to car industry. Also, it is obviously one of the few successful players in the automotive industry which have chosen “global strategy” and became quite profitable over years with external strategic alliances. Despite the odds and differences of doing business on inter-regional level, MNC was able to successfully market its products which was mainly due to unique strategy that it had. This unique strategy often prescribed as a core competence of MNC which
is related to its manufacturing system and as well as to special approach towards supply base.

Company A is an OEM operating on the European scale, covering markets such as: Eastern Europe, Russia, Western Europe, Gulf region, and Turkey. It has manufacturing plants in Europe, Turkey, Russia, and also European parts center that provides service parts and accessories to the regional parts centers and to the national depots of the European National Marketing and Sales Companies (NMSCs) that are not supplied by the regional parts centers, vehicle hubs, and production and distribution centers. Sales span of Company A is represented through 25 NMSCs spread in more than 20 countries in the pan – European zone.

MNC is currently running a GPS project. Company A is a part of this project, where MNC aims to review global synergy potentials through more efficient purchasing of parts and components. During past few decades the MNC has expanded through a variety of strategic acquisitions and global partnerships during the past few decades, having operations in on all continents. When it comes global sourcing, MNC has control over design from its headquarters, while every affiliate, including Company A, has their own purchasing department, addressing the needs of its regional customers – manufacturing plants. However, the heritage of a decentralized purchasing organization had led to a variety of inefficiencies, which started to be obvious when the IT innovations increased with higher pace, thereby creating urge for global efficiency in purchasing in order to secure worldwide competitiveness (Project Report, 2017). Thus, purchasing management at headquarters prioritized the integration of continental purchasing sites into a coherent global sourcing that would lead to realization of tremendous corporate-wide benefits, such as cost saving through increasing purchasing power, common systems and processes, and the exchange of knowledge and expertise (Project Report, 2017).
3.2.2 PPA Process

Concept

PPA— a structured price negotiation between OEM and its suppliers - effective after SOP- which reflects non-design related changes including competitive gap analysis, process improvement, raw material cost adjustments, and other economic factors in the piece price ((Fig 3.2.2a) This review also covers design & development cost change, but its impact is reported separately, outside of PPA impact on piece price and on total company budget spending.

Figure 3.2.2a Cost Reduction after SOP – Role of PPA

PPA is one of the most important cost reduction activity, which contributes to company profitability improvement (Fig 3.2.2b).

Figure 3.2.2b PPA contribution to Total Cost Reduction
PPA provides OEM and its suppliers the opportunity to maintain focus on identifying cost reductions and improve global and regional competitiveness. Suppliers are expected to achieve a competitive level, but implementation timing can be negotiated. Supplier and Company A should collaborate in order to improve their cost competitiveness.

**PPA Cost Elements**

Below is a general overview on cost items which are subject to revision during the PPA period.

(1) **PPA Cost Item**

Cost reduction scope which reflects the effort of supplier and Company in reducing the cost. It comprises of process improvement, competitor benchmarking (competitive gap analysis), commercial negotiation, and other activities (ex. supply chain optimization). Main activities for cost reduction are: process improvement and competitive gap analysis. PPA cost subject logic links the two activities, which helps to close the competitive gap with tangible elements of cost improvement.

<table>
<thead>
<tr>
<th>Competitive Gap Reduction Activity</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Competitive Target Achievement (Best practice sharing &amp; Pull –forward)</td>
<td>OEM/ Supplier</td>
</tr>
<tr>
<td>Competitor Benchmark with Supplier</td>
<td></td>
</tr>
<tr>
<td>Shop Floor Improvement</td>
<td></td>
</tr>
<tr>
<td>Collaborative Best Practice Sharing (OEM and Suppliers)</td>
<td></td>
</tr>
<tr>
<td>Competitive Gap Analysis (Internal)</td>
<td>OEM</td>
</tr>
<tr>
<td>Recent Sourcing Reflection</td>
<td></td>
</tr>
<tr>
<td>Competitor Process Improvement Benchmark</td>
<td></td>
</tr>
<tr>
<td>Global/ Affiliate Match</td>
<td>Supplier</td>
</tr>
</tbody>
</table>
OEM has expectations from suppliers to achieve regional and global competitive cost performance (Fig 3.2.2c). This is done in order to encourage suppliers to produce competitive products in the marketplace and to focus on achieving cost improvements. However, annual cost reduction targets will need to be achieved through tangible and sustainable cost improvements; goal is to enhance the global price competitiveness of parts and materials supplied to OEM without endangering suppliers’ financial viability.

(2) Raw material
Company considers raw material adjustments for commodities which are heavily impacted by material rates that are outside of suppliers’ control. Adjustments can be made using historical trailing average changes of market when there is an agreed formula between OEM and its suppliers. In case, there is no such agreement (RM Escalation), and suppliers incur large RM cost impact, buyer should be ready to negotiate the RM claim by suppliers.
(3) Volume claims
When OEM does not meet up to the Volumes committed to the suppliers, suppliers might claim reimbursement for losses due to overproduction/overcapacity.

(4) Foreign Exchange Rate Effect
Pass through parts (parts produced and bought from suppliers from other regions) are affected by currency effects. This effect is considered under Currency escalator depending on the agreement made previously. Usually suppliers tend to not come with currency claim, but if the cost incurred due to FX rate fluctuation is large, then they will claim to OEM for a compensation. In case of large currency claim, it can be decided to use "Currency Escalation".

(5) Design & Development Cost
During PPA period buyers also negotiate other cost changes such as design & development, but their impact is not reported as a PPA cost reduction merit. Delivered volume data is used to report D&D cost changes and functions as an alert to indicate the end of the required D&D cost payment in the piece price.

**Process Steps**

At Company A, PPA process is repeated on annual basis. Process itself can be characterized as bi-pillar: on one side it is pure price negotiation and pricing, while on the other side it is all about quarterly status reporting, where purchasing team report to top management and to A&F the progress of the negotiation and cost reduction results. Obviously, process does not only involve purchasing division and buyers, but it is more comprehensive, meaning that there are many parties involved along the annul PPA process. In fact, Stakeholders in the PPA process include the Suppliers, Purchasing Project Management team, Purchasing Business Planning team, A&F, and Corporate Purchasing Division. If we look purely at core buyer job responsibilities then we can identify seven distinct process elements: cost reduction scope identification, PPA target development, target proposal, target clarification, proposal evaluation, negotiation & agreement, and PPA authorization Also, each process step happens at certain timeline along the fiscal year of the company.
a. **Cost Reduction Scope Identification (CR-SI)**

Initial step in preparation for upcoming fiscal year’s PPA activity is to identify the cost reduction scope. This step is considered by purchasing division as a core activity to track the cost improvement ideas within the company and also to strengthen the supplier capability for cost reduction. Additionally, CR-SI supports buyers in PPA negotiations and approval process. Moreover, CR-CI provides a clear link between current and future project cost reduction activities. Thus, CR-CI provides a format for tracking all cost reduction items:

- **Competitive gap analysis:**
  Along the project life-time the supplier cost content can be challenged versus competitive rates from other suppliers, which is as well an incentive for the incumbent suppliers to improve their cost level and maintain the market competitiveness in their area of focus.

- **Supplier shop floor visit:**
  In order to see the facts at place and also look for additional cost improvement ideas, buyers can visit supplier plants and see the manufacturing process. After the visit buyers can get support from supporting divisions such operations management development or supplier production management team to materialize cost reduction ideas through tangible process changes.

- **Future reduction commitments:**
  At the sourcing time, each supplier commits cost improvement level on the piece price or on the value-added portion. This commitment is usually reflected in percentage change over couple of years (usually up to 3 years after SOP) which will be documented during the sourcing authorization by buyers. So, at each PPA activity, buyers need to make sure that suppliers are providing what has been already committed.

- **Pull-forward of Cost Reduction:**
  Newly sourced projects can bring cost reduction items that can be as well applied to currently running projects. In fact, cycle time can be improved through manufacturing process optimization for the similar part, which can further be
challenged back to supplier in order to improve the cycle time for the current mass production parts.

- **Sourcing and cost planning gaps:**
  This cost item represents the scope between suppliers’ sourcing level quotation proposal and project cost target. At the start of part sourcing there is a project cost target which determines the profitability level for each sourced item. In many cases, at the start of the project, this target is hard to meet, because supplier’s manufacturing or logistics operations are not optimized and needs further revision once all the details (packaging, lot size, cycle time, and tooling) are clarified.

- **Localization:**
  Most of the parts are imported from other regions due to special raw material content or manufacturing process. Buyers with the help from other supporting divisions (R&D, logistics, material engineering, production engineering) and commitment from local suppliers can identify the localization possibility, which is increasing the content of local production. Localization first of all reduces the FX rate fluctuation risk and also can bring raw material and logistics cost benefits.

- **Supply Chain Optimization:**
  Buyers need to ensure the optimal operation of a manufacturing and distribution within the Tier 1 supply chain, especially when it comes to bought-out part content of the supplier. If there is a room for further cost improvement without compromising on quality and delivery, then buyer needs to challenge and ask for supplier commitment for further optimization. In general, optimization scope spans from the inventory level within the supply chain, minimization of operating costs (including manufacturing costs, transportation costs, and distribution costs).

- **Commercial negotiation:**
  Purchasing policy of the Company A is to achieve cost improvement at supplier through tangible activities, where supplier financial condition and sustainability is not jeopardized. However, in cases, where supplier is not able to provide what has been committed and tangible cost reduction through manufacturing process
improvement cannot be achieved due to the delay, buyer and supplier can negotiate on the commercial level to reduce the piece price.

**PPA Target Development**

After the CR-SI, buyers need to compile cost improvement ideas into the “challenge target” to be communicated to suppliers as the PPA cost reduction target. This challenge target will represent OEM’s PPA expectation target for suppliers to improve competitive level. Buyers should negotiate with suppliers to meet the target. Challenge target will be in terms of percentage reduction in the piece price, which is usually a sum of two groups of cost reduction scope:

- Already committed cost reduction improvement by supplier
- Other cost reduction items to be negotiated

It should be noted that after buyers develop a target, which indicates the level of expected cost reduction that will feed the initial forecast for the upcoming fiscal year’s budget.

**b. Target Proposal**

After challenge target is developed and goes through management approval, the next step will be to communicate the target to suppliers. Target is sent in a pack of letter called “Supplier Improvement Expectations”, which will be delivered to suppliers in October each year.

Expectation pack includes following items:

- CSR (Corporate Social Responsibility)
- Safety Expectations
- Quality Expectations
- Delivery Expectations
- Additional Specific Expectations (Service Parts, VA, Risk Management)
- Cost Reduction Expectation (PPA items).
c. **Target Clarification**

After expectation target is received suppliers, they will 1.5 month period to review the target and come back with their proposal. During this period buyers and supplier can arrange meetings (face-to-face or through phone) to discuss the target, which will provide a venue for detailed clarifications and same level of understanding.

d. **Proposal Evaluation**

During this step buyers will be evaluating the supplier initial proposal, that will come in the format of official response letter, stating the PPA cost reduction percentage, and part-by-part list showing the effect on each part number. Proposal evaluation process will also provide initial image on the level of realistic results, to be reported to cost planning team, which after internal compilation, will be communicated to A&F as a revision to initial forecasted amount. Buyers have to check whether the:

- Supplier’s proposal is in line with the purchasing challenge target (**LOGIC**: Process Improvement, Competitive Gap Analysis, Sourcing, FX rate trend, RM market data)
- PPA target logic was clearly understood by suppliers.
- Suppliers provided their commitment made during the sourcing time.
- Supplier’s proposal follows clear logic and backed-up by facts

Apparently, evaluation will be done item-by-item reflecting the PPA Cost Elements: PPA cost item, RM, volume claims, FX rate, and D&D Cost.

As the RM level is driven by the market and is difficult to control, it is imperative to conduct detailed check on it. Based, on the review with buyers, the initial proposal of supplier on RM, should be analyzed following these items:
1) Adjustments should follow the general policy and PPA expectations.

Step 1: Is the supplier’s raw material price competitive?

Step 2: Does PPA cost reduction item offset the material impact?

Step 3: Follow the general policy for raw material adjustments?

2) Collect and understand the market data being used by the supplier, and compare with company approved market indexes as applicable.

e. Negotiation and Agreement

Once supplier proposal is evaluated and internally reported, buyers kick-off the round of PPA negotiations. There is no standard way to negotiations, all depends on the supplier proposal, commodity characteristics, market trends, buyer style etc. However, after supplier proposal analysis, buyers need to build a negotiation strategy and involve management level into negotiation with the supplier. Based on the review with senior buyers, there is a list of consideration points that buyers need to be aware of beforehand in order to successfully finalize PPA negotiations with suppliers:

1. Product Knowledge
   - Review production technology trends
   - Average prices of the product you are negotiating
   - Global issues (e.g. import/export taxes)

2. Pricing Trends
   - Supplier price evolution for the impacted part
   - The level of price increase/decrease of other 3 big similar suppliers
   - Global price comparison
2. Market Conditions

<table>
<thead>
<tr>
<th>Economic factors</th>
<th>Industry factors</th>
<th>Supplier factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest rates</td>
<td>Vehicle sales</td>
<td>Raw Materials</td>
</tr>
<tr>
<td>FX Rates</td>
<td>Growth rates</td>
<td>Supply/Demand</td>
</tr>
<tr>
<td>Unemployment rates</td>
<td>Supplier sales</td>
<td>Financial</td>
</tr>
<tr>
<td>Inflation</td>
<td>Technological Innovation</td>
<td>Risk management</td>
</tr>
<tr>
<td>Production index</td>
<td>Supplier share</td>
<td>Spot prices</td>
</tr>
<tr>
<td>Change in GNP</td>
<td>Legal</td>
<td>Regional performance</td>
</tr>
<tr>
<td>Profits by industry</td>
<td>Competition</td>
<td>Supply network</td>
</tr>
</tbody>
</table>

f. PPA Authorization

![Diagram of PPA Authorization]

Figure 3.2.2c Total Company Impact of PPA Activity

To explain the reporting and tracking process for PPA targets, status, and results. For company management it is necessary to have a view on the outcome (estimated outcome) of the negotiations and the possible impact on company’s
target (mission)/result (profit)/resources (cash). This information is necessary for management to support decision making process in order to, at the end, increase company profitability throughout the year and coming years.

### 3.2.3 PPA Process Challenges

After the process review with the buyers, challenges have been identified within following steps of PPA Process: CR-SI, Target Proposal, and Supplier Proposal Evaluation.

#### 1. CR – SI

- **Base Turnover (T/O) Calculation**

  Requires buyer to confirm parts list, option rates (pieces per project), and recent prices in the system, and forecasted production volume. Forecasted production volume is released twice a year: Original Annual Volume (OAV) in February and Revised Annual Volume (RAV) in October. For buyers it is important to accurately calculate the starting T/O because it impacts quality of all PPA reports and ultimately Company A’s financial reporting. During this initial process step buyers experience two main challenges: calculation of option or fitment ratios per project and forecast of PN price level to be valid at the start of the PPA activity. Base T/O calculation takes place 4 months before the fiscal year ends and most of the data in hand does not reflect the real situation. In fact, period of the production volume data coverage does not match with the fiscal year; at this stage, buyers have access only to OAV, which covers volume only until July. In addition, in OAV part number list may not cover all the projects, especially, new upcoming projects that fall under the next PPA activity. Another challenge can be due to the fact that there is no price freeze during the PPA negotiation timeframe to capture the starting point for price negotiations on existing PPA part list. Apparently, buyers struggle with capturing all possible price changes in the piece price within the last 4 months period, because there is no clear indication of ECI change effect and most of the time the data in the system is obsolete (old parts are not inactivated). Moreover, the process of data retrieval is very much a manual job, which consumes a lot of time and buyers spend most of their time on non-value adding-activities.
• Cost Reduction Scope Collection

Collection of the cost reduction scope is one of the important and primary steps in the PPA activity. Because, this is the stage where buyer needs historical performance data on supplier and as well as other divisions support in order to create cost improvement ideas. Based on the buyer review, there two main blocking points which makes their work challenging and less productive. Primarily, there is no electronic database which stores historical data on supplier PPA performance as well as commitments. Apparently, each PPA period, buyers need to spend some time on retrieving the necessary data from paper files or from e-mail records, which is sometimes purely an administrative activity without any value addition. Secondly, buyers need input from supporting divisions in order to evaluate the cost reduction idea or receive their cost reduction ideas. As per buyers’ claims, it is challenging to get supporting divisions’ input on time. Because, first, there is no clear role and responsibility assignment between purchasing and other supporting divisions when it comes to PPA process; second, there is no system support for collaboration between supporting divisions.

2. Target Proposal

• Part-by-Part (PxP) List Creation

PxP list creation and sending out it is the communication of parts and T/O to the suppliers for the purpose of negotiation and ultimately reaching to a PPA agreement. Based on the review with the buyers, it has been identified that creation of PxP requires high workload (as shown in Fig 4.2.2) and there is no standard way to approach this process step. Some buyers prefer to create PxP list themselves and send out to supplier, while others prefer to send blank format to suppliers and let them fill out the file. Obviously, the scope of the work depends on the number of the parts within a commodity group: some buyer can have almost five hundred different parts and some only five to ten. Yet it does not mean that less part number makes process less complex.

In fact, some parts are technologically complex and buyers does not have full cost-breakdown, meaning that it is difficult to do cost comparison or price
forecast. This requires buyers to seek as much information as possible from suppliers and other supporting division in order to forecast the volume and price changes. Thus, on one hand, filling out the file by supplier considerably improve productivity of buyers, as they can spend their time on cost improvement idea generation instead of compiling all the data into PxP List.

Figure 3.2.3 Buyer Workload in PPA PxP List Preparation and Evaluation

On the other hand, there is a risk that supplier may input wrong data in the list (inactive parts, wrong price, higher or lower part volume, incorrect option rates), which has huge impact on the PPA negotiation and reporting. So, irrelevant to whether buyer create their own PxP list and share with the supplier or let the supplier fill, the sanity of the PxP list data accuracy is a must.

3. Supplier Proposal Evaluation
   • Part-by-Part Proposal Check
   Once supplier submits proposal/part-by-part list, buyer at Company A checks & analyze the proposal. To do that, buyers first need to look for required data from different data sources (production part list and volume, recent effective prices in the system). Some buyers use their pre-prepared PxP List and cross-check
supplier proposal against that. However, not every buyer prepares PxP list reasoning that there is risk to miss some data or input wrong data which can be a responsibility towards suppliers. Accordingly, there is no standard way how to look for the data - and each buyer has his or her own approach. In fact, each year buyers need to figure out a way how handle the data check. On top of that, data provided by others supporting divisions are not complete: period of the data coverage does not match with the fiscal year, part number list does not cover all the projects, no clear indication of ECI change effect, and obsolete data in the system is obsolete (old parts are not inactivated). Moreover, the process of data retrieval is very much a manual job, which consumes a lot of time (refer to Fig 4.2.2) and buyers spend most of their time on non-value adding-activities and less on negotiation with suppliers or looking for cost reduction opportunities in cooperation with supporting divisions.

- **Clarification of Discrepancies**

Most of the time there is an expectation and data mismatch (incomplete part list, different prices, different volumes, and different fitment ratio) between supplier PxP proposal and what buyer considers right. Even though there is PPA target clarification opportunity between buyer and supplier, there is no standard practice to held it. So, if there is a need or request from one of the sites, the meeting happens. Otherwise, all of the clarifications needs to be done when the supplier submits proposal. Even in case, such meeting was held, there still might be expectation mismatch on the PxP List level, because target clarification meetings usually does not cover all details. Subsequently, when there is a mismatch, buyer requests for clarification and supplier clarifies those points. This data clarification loop takes quite some time and delays the PPA negotiation and closure. Based on the buyers comment, clarification takes around 3-4 weeks depending on the data type. In a meantime, buyers engage other functional divisions and request for additional information. Then buyers, by taking into account respective inputs, proceed to the judgement of the supplier’s proposal. After the judgement, there is a consultation with management, where management compares proposal against target achievement plan.
3.3 Analysis

3.3.1 PPA Process Steps

Referring to the resource-based view analysis of Dutta et al. (2003), pricing can be described as a process of determining the value that is received by an organization in exchange of its products or services. This definition by Dutta et al.(2003) addresses pricing process from the supplier perspective and presumes price settlement against the value provided when the product or service is offered to the market; and, supplier aims to charge higher price possible for the delivered value. On the other hand, from customer perspective, pricing logic is vise-versa; for customers price is the value that they pay for the product or service. In fact, industrial firms view the supply chain as an opportunity to reduce costs and improve product profit margins through more effective pricing (Lancioni, 2005). Thus, within industrial setting, especially considering the competitive automotive sector, it is crucial to achieve low cost on bought out parts so not to undermine the price competitiveness of their own final product selling out to the market. Apparently, as Bedrosian & Moschos (1988) highlighted, “underlying conventional industrial behaviour suggests that industrial prices are cost dominated in the sense that price levels are determined as a markup upon costs, either direct or full, calculated at the actual or standard level of operation” (p.460). Therefore, for automotive OEMs pricing process implies activity directed towards continues cost reduction for bough out parts in mass production.

Accordingly. OEMs try to achieve price reduction on bought out parts through PPA process. Davenport (1992) has defined process as “a structured, measured set of activities designed to produce a specified output.” (p.12). Similarly, PPA is a structured price negotiation between OEM and its suppliers - effective after SOP- which reflects non-design related changes including competitive gap analysis, process improvement, raw material cost adjustments, and other economic factors in the piece price. As part of PPA at Company A, prices are get reviewed with suppliers on annual base and as Table 3.3.1 shows the review is done within the time span of 9 months. This cost reduction element only exists as of following FY after SOP. It shows the negotiated effect on piece prices
done during that FY. This review also covers design & development cost change, but its impact is reported separately, outside of PPA impact on piece price and on total company budget spending.

Table 3.3.1 PPA Process Steps

<table>
<thead>
<tr>
<th>Stage</th>
<th>Process</th>
<th>Activity</th>
<th>Who?</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Scope Identification</td>
<td>Manage the Cost Reduction Scope Investigation (CR-SI)</td>
<td>Buyer</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Turnover Cross-Check for PPA Target Identification</td>
<td>Buyer</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Competitive Gap Identification &amp; Cost Reduction Scope Generation</td>
<td>Buyer</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Target Proposal</td>
<td>Determine Overall PPA Target (Fill-out the Scope Sheet Items)</td>
<td>Buyer/Manager</td>
<td>Oct-Nov</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Send Target to Supplier</td>
<td>Buyer</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Meet with Supplier for Scope Explanation &amp; Target Review</td>
<td>Buyer</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PPA Budget Setting</td>
<td>PM</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Chase Supplier for the Response</td>
<td>Buyer</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Evaluation</td>
<td>Prepare and Check Parts List (Active/Inactive/Missing, Pcs/veh/Fitment Ratio)</td>
<td>PM/Buyer, Buyer</td>
<td>Dec</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Receive Initial Supplier Proposal</td>
<td>Buyer</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Send Part-by-Part List to Supplier</td>
<td>Buyer</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check and Analyze the Supplier Proposal (PI, Raw Material, other)</td>
<td>Buyer</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Internal Judgement of Supplier Proposal</td>
<td>Buyer/Manager</td>
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</tr>
<tr>
<td>4</td>
<td>Negotiation &amp; Agreement</td>
<td>Ongoing Negotiation with Supplier</td>
<td>Buyer</td>
<td>Jan-Feb</td>
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<tr>
<td></td>
<td></td>
<td>Receive Part-by-Part Proposal from Supplier</td>
<td>Buyer</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Check Parts List with Supplier (Price/PN List/Fitment Ratio)</td>
<td>Buyer</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Agreement on New Prices</td>
<td>Buyer</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>PPA Authorisation</td>
<td>PPA Authorisation</td>
<td>Buyer</td>
<td>Mar-Apr</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Input New Price in the System</td>
<td>Buying Assistant</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Reporting to Purchasing Top Management &amp; A/F</td>
<td>PM</td>
<td></td>
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</tbody>
</table>

From supplier perspective, as Zbaracki et al. (2004) highlights, the process for changing prices is done in two steps. The first step is the process of changing list prices. Changing the list price takes place over a period of several months, known as the pricing season to the firm employees. The second part of the price adjustment process includes developing a communication strategy to inform customers of the list price change, followed by negotiation with some customers. In contrary, in case of PPA, which represents pricing from industrial customer perspective, negotiation takes place first before prices are changed in the system and actual activity of changing prices is a minor step (from timing point of view).
compared to other preceding steps. As listed out in the Table 3.3.1, PPA process consists of five main steps: scope identification, target proposal, evaluation, negotiation and agreement, and PPA effect authorization. All these steps, ideally, should fall under certain timeline in order to effectively update prices; however, due to many reasons such as negotiation timing and RM price update period activities can be delayed. This empirical findings is also in line with Bedrosian & Moschos (1988) comment that, at the industry level, firms do not necessarily perceive cost increases at the same time and by the same amount. “Differences may arise from firm policies with respect to supply agreements at fixed prices with various durations, practices of holding different stocks of raw materials and semi-finished goods, different credit facilities to customers and suppliers” (Bedrosian & Moschos, 1988; p. 460). Consequently, the business –to-business industry price levels has a character to adjust gradually over time.

From the buyer core job perspective, there are three main steps which require more time and effort: scope identification which is an ongoing process, supplier proposal evaluation which requires careful check, and negotiation and agreement which depend on many factors. In fact, Zbaracki et al. (2004) pointed out that from the supplier perspective, the amount of time and resources spent on the negotiation, and the outcome of the negotiation, depend on the customer and market situation. “Occasionally additional negotiations will occur with specific customers later in the year, depending on customer requests and competitors’ actions, but these negotiations are much less frequent” (Zbaracki et al., 2004; p. 517). Likewise, from customer perspective as well, the negotiation effort very much depends on the market situations, part complexity, and commercial items (like compensation claims) from suppliers.

3.3.2 PPA Process Challenges

Lancioni (2005) connect the industrial pricing challenges with the complexities of pricing processes, including the organizational influences on industrial pricing, the factors affecting international pricing, the importance of pricing in controlling supply chain costs, the influence of information on pricing decisions, and the importance of developing a strategic pricing plan. Subsequently, together
with the process step analysis, we have also concentrated on the operational challenges of PPA at Company A. The aim was to review the PPA process in order to detect the non-value adding activities and further process reengineering opportunities that would increase buyer competence to work more on cost reduction possibilities. Also, focus of analysis was directed towards whether buyers do have required information and system support to make subtle judgment. Based on the initial process review with buyers, we have identified four main concern points which are considered as challenges in PPA (refer to Fig 3.3.2): late supplier response, weak PPA process control, long negotiations, and difficulty in supplier proposal evaluation. We particularly want to emphasize the issue of process control, for which we find reasoning from purchasing literature: Christopher (2005) has pointed out that within industrial setting the contract manufacturing has also reduced the degree of cost control of industrial firms. Thus, cost control is gradually being dispersed throughout the supply chain, it makes sense for a company to seek cost reduction in the wider supply chain.

**Figure 3.3.2a Root Cause Analysis of PPA Process Challenges**
As shown in Fig 4.3.2a, after step-by-step root cause analysis, we could have identified common issues such as lack of standard format and procedure, lack of data management process, lack of guidelines and process support. Accordingly, above stated considerations have guided us to review the PPA process challenges based on these three sub-questions:

- How standardized is the PPA process among buyers?
- Does the PPA process provide enough information visibility and control over pricing and cost reduction?
- How high is the workload for buyers in each PPA process step?

As depicted in the Figure 3.3.2b PPA process steps has been evaluated based on three criteria: process standardization among buyers, level of workload, and process control by buyers. First of all, it has been identified that in three out of five steps, buyers’ job is pretty standardized. In fact, during the scope identification, all buyers fill out the pre-prepared CR-SI sheets, where they summarize all the applicable scope (supplier commitments, process improvement, logistics, VA etc) for the upcoming PPA timing. Next, target proposal is carried through centrally delivered standard PPA Expectation Letters (quality, delivery, cost), where buyers need to make certain changes in case they do have special request to their suppliers. Authorization and reporting is also well standardized, where PPA results of each section is gathered from internal PPA PxP file and summarized through Excel macro in the standard authorization document. Subsequently, buyers have not much workload during those steps, with some exceptions during scope identification, where buyers need to make effort to gather cost improvement ideas as much as they can. However, this is not considered as non-value adding activity and falls out of our consideration. Moreover, since the process steps are pretty standardized, buyer do have enough control over the activities.

In contrary, unlike in above described steps, buyers’ job within evaluation and negotiation is not standard and each buyer has his or her own approach. As it has been discovered, it is quite difficult to standardize the negotiation and
agreement, as this step depends on many factors such as market conditions, supplier and buyer negotiation style, cost reduction or supplier claim scope etc.

Figure 3.3.2b Identification of Problem Area within PPA Process

It means that buyers have not much control on those factors and will definitely need to spend some time to close open items with less harm on the company profitability. Again as in scope identification, workload during the negotiation step is not considered as non-value adding activity, and thereby not considered as a process issue.

As highlighted in the Fig 3.3.2b, the focus area with most process challenges is found to be the evaluation step, where, based on buyers input, the process is least standardized which leads to the fact the workload is not balanced and buyers have low level of control. Controlling supply chain, especially in the international context within global markets, poses a lot of challenges with uncertainty management in pricing process. “When companies delegate to their suppliers the considerable control over product’s bill of materials, the total cost of ownership of the product (including transportation and inventory management) become invisible to the OEM” (Choi & Linton, 2011; p.113). Therefore, buyers at Company A find supplier proposal evaluation as challenging and as well as time-consuming activity, which is not really value-adding to their performance. If we refer to the Fig 4.3.2c, Evaluation step can be further divided into four steps: PPA PxP list preparation, evaluate initial supplier PPA proposal, send PxP list to supplier, and receive and evaluate supplier PxP PPA proposal. As it is shown in the sequence the quality of data and PPA result input in the supplier PxP file impacts the reporting and subsequently the authorization.
Figure 3.3.2c Clarification and Break-down of Problem Area

As depicted in the Fig 3.3.2c, the evaluation process issues flow out from the initial step, which is the preparation of PPA PXP list. Based on the review with the buyers, it has been identified that the point of problem occurrence is situated where there is no standard way among to approach this process step.

Some buyers prefer to create PxP list themselves and send out to supplier, while others prefer to send blank format to suppliers and let them fill out the file. This requires buyers to seek as much information as possible from suppliers and other supporting division in order to forecast the volume and price changes. Thus, on one hand, filling out the file by supplier considerably improve productivity of buyers, as they can spend their time on cost improvement idea generation instead of compiling all the data into PxP List.

On the other hand, there is a risk that supplier may input wrong data in the list (inactive parts, wrong price, higher or lower part volume, incorrect option rates), which has huge impact on the PPA negotiation and reporting. So, irrelevant to whether buyer create their own PxP list and share with the supplier or let the supplier fill, the sanity of the PxP list data accuracy is a must.

Some buyers use their pre-prepared PxP List and cross-check supplier proposal against that. However, not every buyer prepares PxP list reasoning that there is risk to miss some data or input wrong data which can be a responsibility towards suppliers. Accordingly, there is no standard way how to look for the data - and each buyer has his or her own approach. In fact, each year buyers need to figure out a way to gather necessary data to counter - check the supplier PxP
proposal. The process of data retrieval is very much a manual job, which consumes a lot of time and buyers spend most of their time on non-value adding-activities and less on negotiation with suppliers or looking for cost reduction opportunities in cooperation with supporting divisions.

3.4 Discussion

3.4.1 PPA Process Steps

A significant challenge for many industrial firms involves the selection of an efficient and effective pricing strategies. Yet, to be able to do that, it is essential to understand the detailed process steps of pricing. Lancioni (2005) states that “developing a pricing plan requires that a company commit to a set of objectives, a course of action, an operational strategy, and a set of control and review procedures dedicated to making the management of its pricing process a success” (p.114). By reviewing current literature, we have realized that pricing activity is very much focused on how manufacturing firms will be able to set the correct market price (cost plus value) for the product, which reflects the pricing process before product launch. Thus, much of the academic literature focuses on pricing strategy from supplier perspective (Bedrosian & Moschos, 1988; Lancioni .2005; Zbaracki et al., 2004).

But, we have to acknowledge that in the market setting ones profit is a cost for another player in the supply chain. Thus, less is understood about how pricing is perceived and management from industrial customer perspective. Specifically, there is a lack of empirical research on some major processes such as price revision after SOP. Accordingly, there is some gap in the current academic discussion: insufficient understanding of how the periodic price revision process between OEMs and their suppliers take place.

Through analysis of empirical findings, collected from in-depth cased study at automotive customer, we first of all, found out that unlike to supplier goal of increasing margin, industrial customers try to work more on cost reduction activities. In fact, PPA process is a structured price negotiation between OEM and its suppliers - effective after SOP- which reflects non-design related cost items in the part price. Hence, pricing from industrial customer perspective is
very much cost focused, which is as well in line with Bedrosian & Moschos (1988) findings that “underlying conventional industrial behaviour suggests that industrial prices are cost dominated in the sense that price levels are determined as a markup upon costs, either direct or full, calculated at the actual or standard level of operation” (p.460). Next, findings of this study suggest that periodic price adjustment is quite complex activity, involving many parties (suppliers, purchasing, finance, R&D), which consist of 7 steps (5 distinct), where Zbaracki et al. (2004) recognizes the process for changing prices as having only two parts: the process of changing list prices and developing a communication strategy to inform customers of the list price change, followed by negotiation with some customers.

3.4.2 PPA Process Challenges

As a result of analysis, we have identified that PPA process is a complex and challenging activity which involves interests of many parties effected. As Christopher (2005) pointed out, controlling supply chain, especially in the international context within global markets, poses a lot of challenges with uncertainty management in pricing process. And as a research goal we aimed to analyse, by the example of Company A, what are the PPA process issues besides uncertainty management, which is market driven. In fact, after PPA process review with senior buyers at Company, it has been identified that current price review mechanisms, to some extent, reduces the buyer’s ability to detect the cost improvement ideas over time through efficient and effective cost reduction scope identification; the current PPA complexity and unstructured approach is considered to be less supportive in analyzing and evaluating the means for cost reduction. Specifically, evaluation of buyers comments have pointed out to four main areas where we see more operational challenges: process control, data access, governance, and employee value. These findings more or less confirm the Lancioni (2005) findings on industrial pricing issues, including the organizational influences on industrial pricing, the factors affecting international pricing, the importance of pricing in controlling supply chain costs, the influence of information on pricing decisions, and the importance of developing a strategic pricing plan.
However, current literature focusing on the pricing challenges take more a macro perspective on and concentrates on factors. For instance, Lancioni (2005) claims that pricing strategy is influenced by both internal and external factors. Internal factors include cost levels, profit maximization objectives, ROI levels, and capacity utilization levels; while, the external factors include buyer sensitivity to prices, barriers to entry, distribution infrastructures, and the economic trends in each country. Apparently, those factors are analysed from supplier perspective and omits the industrial customer view. Accordingly, in contrary to existing academia, findings of the current study suggest that the pricing challenge carries more micro perspective and are process related. Describing the challenges, we can discern that due to low level of visibility and control over the PPA process, buyers’ added value is decreased and their performance is negatively influenced. In fact, PPA target is not met, not all cost reduction ideas are implemented on time, and agreement with suppliers is delayed.

In an ideal situation, buyers should be able to finalize their annual PPA negotiations and agreements with subsequent price update in the system within nine months period. However, due to late supplier PPA response, difficulty in supplier proposal evaluation, and long negotiations it has a tendency to be delayed until August timing. Nevertheless, based on the buyers confirmation, taking longer time on negotiation is not always a bad strategy, because there will be a room for more cost reductions. But, the challenge buyers encounter with the late supplier response and time-consuming supplier proposal evaluation negatively impacts both the results of achieve PPA target and also the quality of quarterly PPA status reporting.

3.5 Conclusion

3.5.1 PPA Process Steps

First of all, through this study we have aimed to identify what are the steps within current PPA process at Company A. As shown in Fig 3.4.1, at Company A, the PPA process is repeated on an annual basis and consists of seven steps: cost
reduction scope identification, PPA target development, target proposal to suppliers, target clarification with suppliers, supplier proposal evaluation, negotiation and agreement, and PPA authorization with management and price update in the system. Responsibility wise the process is divided into two parts: core buyer job and reporting administration by PM team within the purchasing division. Relation between this parts is the quarterly report of PPA status, where buyer supply necessary data to project team to be compiled and reported to purchasing top management and afterwards to company A&F. Based on the quarterly results A&F tracks the progress of cost evolution and informs purchasing about the revised cost reduction targets. Cost reduction targets further challenges buyers to find more cost reduction opportunities either through tangible cost reduction or through commercial negotiations with suppliers.

![Figure 3.4.1 Process Steps and Timeline of PPA Process](image)

### 3.5.2 PPA Process Challenges

Next goal of the research question one was to investigate and analyze what there are the process challenges within PPA at Company A. Through the analysis section of the paper, it has been identified that, primarily, buyers do not have good level of process control on PPA. Low level of control implies higher reliance on supplier input, which could be subject to data manipulation. Also, the lack of common approach among buyers in evaluation of supplier PPA
proposal impacts negotiating timing and PPA result, which as well characterizes the deficiency of control.

Table 3.4.2 Summary of PPA Process Challenges.

<table>
<thead>
<tr>
<th>Process Control</th>
<th>Data Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliance on supplier input and operational Inconsistency</td>
<td>Lack of detailed information visibility</td>
</tr>
<tr>
<td>Governance</td>
<td>Employee Value</td>
</tr>
<tr>
<td>Unbalanced division of roles and responsibilities</td>
<td>High-workload in data processing and regional cost comparison.</td>
</tr>
</tbody>
</table>

Differences in buyer approach and timing of each PPA process step, leads to operational inconsistency resulting in late PPA agreements. Additionally, buyers do not have necessary information details at hand in order to evaluate supplier proposals. This implies again reliance on supplier input, where data can be wrongly input or in worst case intentionally manipulated, which forces buyers to spend more time on clarifying data accuracy. So, buyers are spending quite some of their time on data gathering and paper work rather than on negotiation with suppliers. All these issues at the end contribute to late PPA agreements, where most parts are subject to retro-pricing, which creates extra administrative work in handling the invoices and payment by A&F.
4. RESEARCH QUESTION 2: OPPORTUNITIES OF PPA PROCESS REENGINEERING

The following chapter provides an overview on opportunities of PPA process reengineering, frame of reference, empirical findings on the GPS project, analysis of the process reengineering, discussion and conclusions.

4.1 Frame of References

4.1.1 Intra-Organizational Purchasing Process Synergy

According to Faes et al. (2000) and Kotabe & Murray (2004) there are two main reasons why companies engage into the global sourcing: first is location specific, which is an ability to access to local supply and labour markets or new technologies, while the second one is exploiting the global synergies, which is pooling of common requirements across sites. Rozemeijer (2000) defines the synergy as: “the value that is added when two or more business units (or purchasing departments) join their forces (e.g combined buying) and /or share resources, information, and/or knowledge in the area of purchasing” (p.7). Referring to the definition of “synergy”, more emphasize is made on integration in all possible organizational functions, and as a prerequisite for implementing global sourcing, the criticality of aligning global sourcing strategy with organizational design is considered as crucial. Apparently, Quintens et al. (2006) have introduced a GPS as an explanatory construct of global purchasing performance, which is conceived as the driving force behind the strategy-organization alignment. “GPS is conceptualized along four dimensions: the configuration of the global purchasing process, the standardization of the global purchasing process, the standardization of product-related characteristics and the standardization of the purchasing staff organization” (Quintens et al., 2006; p.882).

In the functional context of purchasing, Faes et al. (2000) and Johnson & Leenders (2004) have pointed out to the importance of balancing the forces of global integration and local responsiveness. Empirical study, conducted by Roh et al. (2014), suggests that there some key contextual factors that may the influence the extent of implementation of a responsive supply chain strategy.
Those factors’ list includes the size of firms, industry characteristics, and customer and supplier bases, rather than the location of manufacturing firms. Besides contextual factors, “the effective implementation of a responsive supply chain strategy should involve the integration of inter-organizational resources (i.e., socio-relational and techno-process integration) across the global supply chain, which will enhance the pull production capabilities of the firm” (Roh et al., 2014; p.198). Similarly, Faes et al. (2000) point out that the global integration and local responsiveness can be achieved through hybrid purchasing structure. One of the key challenges in these structures is to distinguish between categories that should be integrated across sites and those to be remained under the authority of each purchasing location (Faes et al., 2000). In fact, as Monczka et al. (2002) explains, in hybrid purchasing organizations, the tasks are divided between the global office and region; the global office is responsible for the negotiation of some long-term contracts with suppliers, while subsidiaries issue purchasing orders for those contracts. Apparently, due to the advantage of such organizational structures, firms seek to benefit from global purchasing synergies (Trautmann et al., 2009).

However, Faes et al. (2000) pointed out a gap in the research on global purchasing synergy: what has been lacking is the “…insights into the process of achieving global purchasing synergy as well as specific managerial guidelines.” In particular, they have tried to identify the process issues that are crucial in achieving the global supply synergies. Apparently, their focus was on horizontal approach in implementation of purchasing synergy. Horizontal approach is “a coordinated set of goals and policies across distinct but interrelated business units” (Faes et al., 2000). And, as highlighted by Cavinat (1999), purchasing has an important role in horizontal coordination as an internal and external network broker to support innovation. Therefore, purchasing personnel must become team players, leaders and consultants.

Following this, global purchasing synergy can be divided into three main categories: economies of scale, economies of information and learning, and economies of process (Rozemeijer, 2000). Trautmann et al. (2009) further elaborates on the categories suggested by Rozemeijer (2000):
a. Economies of scale – refers to attaining lower unit costs by increasing market power through volume bundling and standardization of categories.

b. Economies of information and learning - relates to sharing information and knowledge across different sites and locations. For example, knowledge on suppliers, new technologies, applications, specification requirements but also on best practices and experiences. Also, as part of economies of information and learning, Matthysens & Faes (1997) pointed out the importance of the prevention of mutually incompatible negotiating strategies and deprivation of limited resources between affiliates.

c. Economies of process - relates to benefits derived from establishing a common way of working and exchanging best-practice purchasing procedures across the company. In fact, having a common way of working worldwide will allow one line of conduct to suppliers, benchmarking procedures, and joint training and development (Faes et al., 2000).

Trautmann et al. (2009) also argues that companies can fully benefit from global sourcing, when all three types of above mentioned synergy categories are realized. Nevertheless, they support the view of Faes et al. (2000), which states that it is important to identify cases in which to implement the coordinated synergies. Additionally, Trautmann et al. (2009) have also highlighted the missing implementation guidance, which they define as “a coherent and structured framework for analysing global synergy opportunities at the category level”. Moreover, they have referred to the insufficient research on factors driving global integration of categories in light of purchasing synergies. In fact, Trautmann et al. (2009) have emphasized the topic of portfolio decisions as an antecedent of successful global sourcing or purchasing synergy. So, the result of their study is put into the portfolio model that provides a comprehensive view of relevant dimensions reflected on particular global synergy potentials: economies of scale, economies of information and learning, and economies of process.
Economies of Scale

Based on the conceptual review done by Trautman et al. (2009), volume bundling potential is one of the main drivers of purchasing synergy.

And there are relevant factors which determine whether the certain category should be bundled or not on the purchasing level. Trautman et al. (2009) list out two main groups of factors (in Fig. 4.1.1a): 1) the degree of volume aggregation; 2) relevant supply market.

First group emphasize the extent to which common requirements and harmonized specifications are available across sites in order to improve the negotiation power in the respective supply market (Smart & Dudas, 2007). Unlikely, the second group relates more to the geographical scope of the relevant supply market. Apparently, these factors reflect the delivery capacity of the suppliers; in fact, “global suppliers with sites across different countries can deliver cost-effectively to the different locations of their customers, have more capacity and thereby enable the exploitation of significant economies of scale” (Trautmann et al., 2009).

Economies of Information and Learning

When companies face global sourcing with uncertain market conditions and complex categories of products there is more and more uncertainty involved.
Indeed, in those situations, buyers need more information and at the same time learning capability to effectively assess the supplier quotations, product quality and market conditions (Trautmann et al., 2009). So, engaging in global purchasing synergy can bring more knowledge and understanding of categories to be bought; different subsidiaries and sites can learn from each other and have access to necessary information on time.

Figure 4.1.1b. Purchasing sub-portfolio to determine economies of information and learning

Trautmann et al. (2009) illustrates two main groups of factors determining the necessity of purchasing synergy in order to enhance the information and learning at the decentralized company. Primarily, in case of the uncertainty purchasing members need to conduct careful analysis, obtain additional information and spend extra effort to manage the situation. For instance, product can be highly customized (specification complexity), relate to many other parts of the system (functional complexity) and involve more complicated commercial arrangements (commercial complexity) (Trautmann et al., 2009). In means that there more need for the additional information and knowledge regarding the product or service specifications, technical capacity of the suppliers and contract structures. Secondly, there is a group of factors reflecting the supplier market conditions: number of suppliers, competitive demand, and make versus buy options (Trautmann et al., 2009). This highlights that global sourcing synergy can be
bring more product and market specific knowledge to purchasing function and to the whole company.

Economies of Process

Companies can also gain additional value through third type of synergy potential – economies of process, which is “…adopting a common way of working or establishing best practice sharing process across the organization” (Trautman et al., 2009).

<table>
<thead>
<tr>
<th>Economies of Process</th>
<th>Definition of Dimensions</th>
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<tbody>
<tr>
<td><strong>Transaction Volume</strong></td>
<td><strong>Factors influencing transaction volume:</strong></td>
</tr>
<tr>
<td><strong>High</strong></td>
<td><em>Frequency of orders</em></td>
</tr>
<tr>
<td><strong>Low</strong></td>
<td><strong>Factors influencing process complexity:</strong></td>
</tr>
<tr>
<td><strong>Local purchasing process</strong></td>
<td><em>Number of suppliers/supply availability</em></td>
</tr>
<tr>
<td><strong>High</strong></td>
<td><em>Competitive demand/Suppliers’ power</em></td>
</tr>
<tr>
<td><strong>Process Complexity</strong></td>
<td><em>Substitution possibilities</em></td>
</tr>
<tr>
<td><strong>Low</strong></td>
<td><em>Make-or-buy opportunities</em></td>
</tr>
<tr>
<td><strong>Improvement and re-engineering of process to manage interfaces</strong></td>
<td><strong>Standardization where possible</strong></td>
</tr>
<tr>
<td><strong>Improvement and re-engineering of process to manage interfaces</strong></td>
<td><strong>Standardization where possible</strong></td>
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</table>

Figure 4.1.1c. Purchasing sub-portfolio to determine economies of process

As the Figure 4.1.1c depicts, economies of process is analysed under two dimensions: transaction volume and process complexity. Transaction volume mainly refers to order frequency: higher the order frequency, more transaction cost is associated with purchase, which is a reason for a synergy need in order to decrease costs. Thus, there is a necessity for streamlined purchasing processes that may improve order efficiency (Trautman et al., 2009). Apart from the order frequency, Trautman et al. (2009) also drew attention towards “process complexity” that explains the amount of the information needed in order to complete the purchasing operation. In fact, again there might be a need for cost minimization by improving the underlying purchasing process; because, when purchasing operation needs more information, which incurs additional search and coordination costs (Trautman et al., 2009).
In addition to three main types of synergy potentials presented by Trautman et al. (2009), Rozemeijer (2000) highlighted the importance of closing the gap on limited knowledge in order to realize sustainable purchasing synergy; his attempt was to find out “...whether there is a link between different forms of synergy and different kinds of mechanisms, and whether purchasing synergy initiatives need to be crafted to meet the specifics of each situation.”

Following this argument, the attention is driven towards the level of business unit homogeneity and purchasing maturity in a specific company situation that can have important effect on what type and level of synergy can be achieved. He even came up with a hypothetical model which presents approach to purchasing synergy that can best be used. So as the Figure shows, this model suggests certain strategic and tactical options depending on the level of purchasing maturity in the BU’s and the degree of business homogeneity, which, as referred by Rozemeijer (2000), means also the “procurement fit”. “If business unit homogeneity is low, purchasing synergies are mainly found in sharing best practices and information” (Rozemeijer, 2000). Each quadrant (as shown in the Fig.4.1.1d) proposes approaches below in order to sustainable purchasing synergy:

- Low purchasing maturity and high homogeneity means central purchasing synergy through bundling of volumes.
• In case of high purchasing maturity and high homogeneity, Rozemeijer (2000) suggests a cross-functional approach, because decentralized groups will not accept a central purchasing group.
• There are not many chances to share best practices with low homogeneity and low purchasing maturity.
• When there is a low homogeneity and high purchasing maturity, Rozemeijer (2000) supports the idea of facilitating sharing best practices. Apparently, one of the initiatives can be joint investment in a procurement transaction system.

4.1.2 Process Reengineering

The idea of improving business process, as a research subject, was predominantly discussed starting from 90’s and onwards. Quite many scholarly works focused on the total quality management (TQM) and continues improvement, which was the part of “quality movement” reflecting the Japanese logic of kaizen (Grover & Malhotra, 1997). Importantly, guided by kaizen logic “…managers and workers are encouraged to use innovation and risk-taking as an opportunity to reduce cost and better meet customers' requirements” (Lyu, 1996). Following this and with adoption of information technology tools, the new notion of “process reengineering” became more popular. Altinkemer et al. (2011) defines BPR as the “redesign of the process, typically using the information technology (IT), in order to gain significant improvements in key areas of performance such as a service, quality, cost, and speed”. Paper (1998) has also referred to BPR as a “…redesign of core business processes to add value to the business, improve quality, and dramatically improve customer satisfaction.” In fact, firms engage in BPR with a goals to integrate functional tasks into complete cross-functional processes (Altinkemer, 2011).

Even though many firms report that their process reengineering initiatives reach their goals, not all of those efforts are successful. In fact, the failure rates were as high as 70% (Wu, 2002). Many different reasons have been attributed for this have been given in past research. According to Wu (2002), one of the major reason was that process reengineering efforts had not been aligned to the corporate goals. Similarly, Gunasekaran & Kobu (2002) have also argued that
“… business process design and BPR depend crucially on linking production procedures and organizational services to business goals and objectives”. Moreover, more and more concerns have been connected with flaws in the implementation of BPR, and as both Gunasekaran & Kobu (2002) and Wu (2002) pointed out, past discussions around the implementation were, however, incomplete and the papers merely reported a part of the process. In addition, Davenport (1993) has pointed out that “for every example of IT as an enabler of new process designs, there is almost invariably an accompanying change in the organizational or human resource type” (p.17). In fact, according to Davenport (1193) beside IT innovation a firm needs to create a more empowered and diversified work force, eliminate levels of hierarchy, create self-managing work teams, combine jobs and assign broader responsibilities, and upgrade skills.

Study, conducted by Wu (2002), proposes an integrative framework based on a strategic perspective. Particularly, the framework involves three steps that: (1) identify corporate strategies based on analysis of a strategic thrust/strategic target matrix; (2) select strategic paths for BPR based on analysis of a functional coupling framework with the IT application; (3) implement BPR based on analysis of project characteristics to decide on a suitable version of the composite methodology. If Wu (2002) have proposed process step related suggestions, Gunasekaran & Kobu (2002) came up with a conceptual model described in Fig. 4.1.2a, which depicts what are the requirements needed for successful BPR execution.

According to the model, to facilitate the radical changes, that will lead to dramatic improvements in the business performance, BPR will require: 1) organizational restructuring (include the facility location, capacity, types of products, technology, people); 2) changes in employee behaviour (training, education, job enrichment, job enlargement, and employee empowerment); 3) Integration of various functional areas through IT, which will facilitate the smooth flow of information and materials along the supply chains (Gunasekaran & Kobu, 2002). Apparently, as Gunasekaran & Kobu (2002) notes, organizational restructuring, that is achieved through standardization and simplification of information and
material flow, will eliminate the barriers on the way of attaining improved process delivery systems and hence an improved customer service level.

Figure 4.1.2a Conceptual Model for Business Process Reengineering (BRP)

Starting from late 90’s considerable amount of scholarly works were dedicated to the cross-cultural and regional differences in adoption of BPR. Apparently, Paper (1998) did a thorough analysis on the nature of business process reengineering between US and Japanese firms. He found out that that Japanese companies tend to adopt incremental business process improvement (BPI) rather than BPR, while US companies want to change quickly and radically to become more competitive, many are experimenting with BPR.
Figure 4.1.2b Framework of Process Reengineering
Indeed, Japanese companies are in favor of continuous improvement and rely on “Kaizen Approach”, which makes any possible improvements under the PDCA (plan-do-check-act) cycle, standardizes the improvements, and continues for another PDCA cycle (Lyu, 1996). Yet, according to Lyu (1996), kaizen in integration with automation has a lot to contribute to process reengineering. So, if we consider automation of the process as a radical change and process kaizen as incremental change, then we can imply that firms, aiming for successful process redesign, should apply both types of change initiatives. A unified framework, proposed by Lyu (1996), depicted in Fig. 4.1.2b shows how the kaizen approach and the automation approach can be merged for process reengineering in order to achieve dramatic performance improvement. The framework includes eight stages that are grouped under PDCA cycle items for continuous improvement efforts.

Additionally, with the globalization and competitive markets in overseas, process reengineering in multinational organizations not only poses cross-cultural challenges, but on top of that, an inter-organizational barrier, since internationalization means also international branches and offices. More than two decades ago Clark & Stoddard (1996) defined the Inter-organizational business process reengineering as “… a logical extension of discussions of the potential for inter-organizational systems to fundamentally redefine relationships among buyers, sellers, and even competitors within an industry.” Despite having being tackled more than two decades ago, their definition can be still considered as a basis for all subsequent studies in this topic, because even that time (Clark & Stoddard, 1996) have developed a framework through which they highlight the importance of merging technological and process innovations in order to transform organizations, processes, and relationships. This leads to another important notion of business transformation, which happens as a result of process reengineering.
4.1.3 Inter-Organizational Integration of Business Information Systems

The motivation behind business process reengineering through Information Systems (IS) is a need to speed up the process, reduce needed resources, improve productivity and efficiency, and improve competitiveness (Attaran, 2004). We can discern two patterns among previous researches on the IS integration. On the one side, academia denotes the benefits the integration can bring, such as easy exchange of data, unification of software components, and the ultimate streamlining of business processes. On the other side, researchers warn that along with positive benefits, integration can negatively impact the business. Closer the integration of two companies, higher the probability that it will be difficult to switch from one cooperation partner to another (Stelzer et al., 2006).

Information Technology (IT) is identified as an element, which exerts beneficial effects on supply chain outcomes. In fact, by synthesizing and integrating transaction cost economics and relational governance, Singh & Teng (2016) have developed a research model, which clarifies the intricate relationships between the five factors: IT, Inter-organizational Trust (TR), Relational Governance (RG), Transaction Cost (TC), and Supply Chain Performance (PE). The model identifies two common resources for enhancing supply chain: Interorganizational Trust and IT. These sources serve as independent variables, which influence outcome measures: performance, and reduction in transaction costs. Additionally, Singh & Teng (2016) highlight the role of relational governance, which facilitates joint decision making and is theorized as playing a central role between the resources and the outcome measures. Barros et al. (2015) attribute the growth in the use and application of IT in SCM as a factor leading to performance improvements and value creation within organizations. They propose a new conceptual model for the evaluation of the benefits or impacts of the adoption of IT in SCM (Figure 4.1.3a). As the figure 4.1.3a. shows the model is comprised of the following five dimensions:

1. Cost reduction.

2. Operational efficiency and process improvement (i.e. increase in productivity; improvement in asset management and inventory control; increased agility and
flexibility; reduction of delivery times; improved coordination and elimination of redundancies in processes or functions).

3. Quality, reliability, and accuracy of information (i.e. customer service and satisfaction; increased knowledge; and improved planning and management).

4. Integration and collaboration (i.e. improvement of coordination; management of partnerships; and communication between the supply chain agents).

5. Differentiation of products or services (i.e. increase of value-added; innovation and development of new products or services).

Figure 4.1.3 a. The Evaluation of the Impact/Benefits of IT on SCM

The close integration of business IS may result in reduced flexibility and agility of organizations. Apparently, Stelzer et al. (2006) highlight that approaches in exploring the essential dimensions of IS integration and respective guidelines often miss out the most important aspects of integration, which are both positive and negative effects. Primarily, they have identified two types of integration (as shown in Fig. 4.1.3b): interconnection and unification, where interconnection is further split into two: partially automated interconnection and fully automated
interconnection. Based on the situational judgement and the company needs, types of integration fit should be assessed certain level of integration should be applied (Stelzer et al., 2006).

![Diagram of Types of Integration]

Accordingly, to systematically analyze the impact, they have developed a framework for assessing inter-organizational integration of business IS. As the Figure 4.1.3c shows the framework is presented along two dimensions: intensity of integration and flexibility of integration. The extent and strength of IS integration is explained by the intensity of integration process, which is evaluated based on scope of integration and type of integration. The level of integration can be used to judge the results whether the initial objectives of integration are met (Stelzer et al., 2006). In parallel to intensity of integration it is necessary to analyze the flexibility of integration. “Flexibility of integration denotes the ease of with which integration implementations can be redesigned and collaborating partners can be replaced by other organizations” (Stelzer et al., 2006). Flexibility dimension is further highlighted by criteria elements which are: scope of standard usage and type of compliance with standards.
Figure 4.1.3c Structure of the Framework for Assessing Inter-organizational IS Integration

Stelzer et al. (2006) imply that framework of inter-organizational IS integration will also be useful for practitioners, who aim to assess the efficiency and flexibility of business-to-business integration options. They also indicate number of interesting areas for future research. One of key directions is to practically evaluate the framework in different contexts and industries (Stelzer et al., 2006). Similarly, Lu et al. (2006) have revealed seven critical success factors for the implementation of Inter-organizational Information System (IOS); 1) intensive stimulation; 2) shared vision; 3) cross-organizational implementation team; 4) high integration with internal information systems; 5) inter-organizational business process re-engineering; 6) advanced legacy information system; and, 7) infrastructure and shared industry standard.

The benefits of business IS integration have been also addressed from the resource-based view of the firm. Wade & Hulland (2004) clarify the strategic value of information systems and how the RBV can provide guidance on how to explore the relationship between ICT resources and business performance. Specifically, “…the RBV presents an organization as a bundle of resources, that generate competitive value from ICT only in combination with other organizational resources such as Supply Chain integration” (Wade & Hulland, 2004). It has been noted by Jahnke & Tjiok (1998) that IS support is an essential element in redesigning of the business processes, because companies acquire the
groundwork to achieve sustained process improvements through the use of technology. In fact, “an appropriate IS support alternative has to factor out the strategic and operational characteristics of the business process to be reengineered and supported” (Jahnke & Tjiok 1998).

Primarily, IS resources are being important elements in creating business value, especially when there is a case of business network which highly depends on information-sharing and collective decision making. However, per resource based-view, the firms cannot improve their performance solely due to IS resources; what they need more is the supply chain process integration that serves as a bridge for IS alignment with the external business parties. In fact, Ghobakhloo et al. (2014) “…found that supply chain process integration is an important multidimensional intermediate organizational capability through which the value of IS resources for supply chain management can be materialized.” Apparently, the above finding implies that through extending the concept of process integration in supply chain network, as well as broadening the role of IS resources in relation to process integration, we can identify and evaluate the dynamics of firm performance. Ghobakhloo et al. (2014) have transformed their findings into a research model which shows the impact of IS-enabled supply chain process integration on business performance (Figure 4.1.3d).

As the model shows, the supply chain process integration capability “… serves as a catalyst in transforming the value of technical aspects of IS resources into higher performance gain for a firm (Ghobakhloo et al., 2014). Indeed, all dimensions of this capability: activity integration, information sharing, physical integration, financial coordination should be realized across the entire supply network. The model highlights another important aspect of IS integration, which suggests that the “…technical aspects of IS resources need to be jointly developed by supply partners to effectively form supply chain capabilities” (Ghobakhloo et al., 2014).
Next, academia also points out to the distinctive roles of inter-organizational ICT and intra-organizational ICT in improving supply chain performance: the first contributes more to supply chain integration, thereby improving the performance, while the second requires additional investment in integrative practices to improve business performance. Zhang et al. (2016) propose different mechanisms to explain how intra- and inter-organizational ICT interact with supply chain integration process, and ultimately contribute to supply chain performance. Referring to Ghobakhloo et al. (2014), we can see the same pattern of correlation also in the findings of Zhang et al. (2016), who argue that “...inter-organizational ICT has a positive direct relationship with supply chain performance and this relationship is mediated by supply chain integration.” However, it is quite important to note the distinguishing relationship between Intra-organizational ICT and supply chain performance; as Zhang et al. (2016) have identified, there is no direct relationship between the two. Nevertheless, intra-organizational ICT is found to regulate the effect of the supply chain process integration on supply chain performance.
4.1.4 Regional Differences in Purchasing Practices

MNCs can no longer compete as a collection of nationally independent subsidiaries, since competition is increasingly based on the ability of the firm to integrate its subsidiary activities across geographical locations (Kotabe & Murray, 2004). In this context, to achieve global efficiency, national responsiveness and worldwide learning were put forward as capabilities vital to competitiveness by Bartlett et al. (2004). Nevertheless, it remains unclear how these capabilities can be translated to the functional level.

<table>
<thead>
<tr>
<th>Europe</th>
<th>North America</th>
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<tbody>
<tr>
<td><strong>Strategic Differences</strong></td>
<td></td>
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<tr>
<td>Higher price and cost focus in purchasing strategy</td>
<td>Higher emphasis on social and ethical and compliance issues</td>
</tr>
<tr>
<td><strong>Differences in Purchasing Tools Used</strong></td>
<td></td>
</tr>
<tr>
<td>Supplier auditing and rating, as well as spend analysis tools in high use</td>
<td>High usage of e-tools in purchasing combined with higher VMI usage</td>
</tr>
<tr>
<td>Signifies an emphasis on control</td>
<td>Signifies an information sharing and integration emphasis in practice.</td>
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Figure 3.1.2a. Summary of Key Continental Differences

Karjalainen & Salmi (2012) have conducted a study on similarities and differences between the continental purchasing strategies and tools in Western European and North American companies. According to their findings (shown in Fig. 2.4a), European companies out more emphasize on the reduction in piece prices and total cost of ownership as a strategic objective, while for North American firms the social and ethical guidelines have more weight when making purchasing decisions (Karjalainen & Salmi, 2012). Moreover, as Fig. 3.1.2a depicts in detail the North American buyers use more electronic tools in
purchasing and communication with suppliers. On the other hand, buyer from Europe tend to use more the purchasing tools which are closely associated with rating and auditing suppliers.

Similarly, Yang et al. (2013) have examined the effects of purchasing activities and the purchasing functions involvement with corporate strategy on manufacturing competitiveness within the context of national differences (Fig 3.1.2b ).

![Figure 3.1.2b Theoretical Model](image)

Result of their study suggest that the intensity and the efficacy of purchasing activities and strategic involvement differs between countries in Asia and Western Europe/USA; apparently, as findings show national difference matter in implementing purchasing activities (Yang et al., 2013). Similar research with slightly different settings has been conducted by Bildsten (2015), who tried to examine the rationale behind purchasing strategies within two industrialised building companies in Sweden and Australia. As the result of the study shows, case companies seem to have divergent rationale for their perspective purchasing strategies: Australian company uses the same, known, supplier across projects with occasional switch between projects, while Swedish company utilize the multiple sourcing structure in order to benefit from economies of scale when purchasing commodities (Bildsten, 2015). Moreover, compared to Swedish company Australian company found to engage more in close partnership with suppliers thereby providing some value-adding activity.

When it comes to automotive industry, which is known for being mature in terms of development and application of purchasing practices, Florea & Corbos (2015) have conducted and international comparative analysis between three biggest car
manufacturers in the world: Toyota, Volkswagen, and General Motors. Primarily, this study analyses the differences in company culture and strategy in terms of supplier relations; “…it points out whether the company culture can be easily implemented in locations all over the world or the local particularities are more important” (Florea & Corbos, 2015). The result of the research explains that between three auto manufacturers the philosophy, strategy and principles in supplier relationships are very similar, however, the implementation is not always the same and the ratings are very different (Florea & Corbos, 2015).

Similarly, Ahmadjian & Lincoln (2001) have done deep analysis on Japanese “keiretsu” (network) structuring of assembler–supplier relations within automotive industry. Their main argument was that among Japanese companies “…the keiretsu relationships are drifting from “hybrid” or “network” governance modes toward the extremes of arms-length contracting and top-down administration” (Ahmadjian & Lincoln, 2001). In fact, one of the findings showed that Toyota’s keiretsu supply network changed to more hierarchical way of parts-supply transactions: despite having Denso as a long-term partner, Toyota took initiative to build in-house capability in electronic components, which was done in order to scale down its dependence on Denso. Reasons behind this, as Ahmadjian & Lincoln (2001) explain, is due to globalization and the continuing weakness of that time’s Japanese economy.

4.1.5 Intra–Organizational PPA Process Synergy: Model of Analysis

As a result of the current literature review, we have come up with a model of analysis for the second part of the study. Intra–organizational purchasing process synergy is a complex and dynamic phenomenon which involves interests of many parties effected, so as a research strategy it is necessary to clearly understand the context in which the study is conducted. Therefore, we aim to analyse the phenomena from multiple levels, and we presume that those levels have following relationship links as designated in Fig 4.1.5.
4.1.5 Intra-Organizational PPA Process Synergy: Model of Analysis
4.2 Empirical Findings

4.2.1 GPS Project

GPS is a global activity led by MNC head office with the support from major three regional affiliates (Project Report, 2017). GPS is planned to have an impact on all regional affiliates, and especially on purchasing functions. Specifically, purchasing members—buyers—can experience a change in their way of working and collaboration with other regional counterparts (Project Report, 2016). Therefore, project presumes that in order to achieve the best out of global synergy is to get input from buyers and understand what are the expectations of the regional buyers and what the GPS proposes when it comes to sourcing, pricing, cost planning and tooling (Project Manager, 2017). It should be noted that the objectives listed out in GPS are linked to more strategic goals of the company, which are cascaded to regional and subsequently to functional levels.

Objectives

According to the Project Leader at Company A, “the purpose of the GPS project is to improve global synchronization and to capture synergy benefits such as cost comparison, global cost reduction activities (VE, VA etc.) and supplier performance by promoting global cooperation among buyers from different regions”. Project manager at Company A mentions three specific purposes of the GPS project:

1. Build sourcing and pricing strategies in order to achieve No.1 competitiveness by connecting global information and knowledge.
2. Combine entire global purchasing activity on a commodity basis as a team and strengthen the activity level in each region.
3. Reform of current purchasing processes through innovative IT infrastructure.
So, as shown in the Fig. 4.2.1, GSP project objectives consist of three main pillars: stronger purchasing resource, global cooperation, and purchasing process reform.

a. **Stronger Purchasing Resource**

As on average 70% of the cost of goods sold accounts for outsourced parts, having competitive purchasing resource is vital for the sustainable development and growth of the manufacturing company (Senior Project Manager, 2017). Based on the GPS objectives, to become the industry leader in purchasing resource, company should improve buyer capability and global operational support. Enhancing buyer capability relates mainly to: 1) supplier quotation analysis (supplier performance benchmark, commodity strategy, cost base analysis); 2) leading pricing activity (confirmation of the change of design and cost in a timely manner, analysis of market cost impact, further cost improvement ideas) (Project Report, 2015). Thus, in order to be able to get an effective and holistic view of supplier cost impacts, buyers at the regional purchasing offices need to have access to global operational support. In fact, there is a need for a shift to efficient and high value operation by establishing database to share information with other divisions (R&D, Project Management, Logistics etc.) and overseas affiliates (Project Report, 2015). Such global
support initiative, in accordance with Project Managers (2017) comment, will enhance buyer capability to direct his or her effort to more value adding activities rather than merely information gathering, and also it will strengthen the cooperation between internal divisions.

b. Global Cooperation

“Having global support is not possible without global cooperation, which means there should be more connection between different divisions and regional affiliates on both operational, tactical, and strategic topics” (Senior Project Manager, 2017). When it comes to the operational level, current information gathering by buyers is only one-way (analog) and limited in scope. On tactical level, there is not much activity is performed on commodity level with some limited discussion on commodity cost improvement strategy. On top of that, global purchasing strategy and direction is driven by corporate head-office through one-way announcement that will further be cascaded down with some regional alignment (Project Manager, 2017). So, GSP project aims to bring changes to this setting in order to be able to adapt global trends. Primarily, information gathering will be done through timely discussion on sourcing and pricing strategies by Global Commodity Community based on agreed KPIs. Accordingly, it is aimed to have constant discussion and info-sharing in the community, where buyers and managers from different regions as well as supporting division members (from R&D, logistics, project planning) can work together on future strategy building.

c. Purchasing Process Reform

In order to achieve purchasing resource enhancement and global cooperation there is a need for a process reform (Senior Project Manager, 2017). There are two main pillars under purchasing reform: work process innovation and IT infrastructure innovation. Specifically, these two process innovation items the process aim to bring following changes (Project Report):

1. Work Process Innovation: creation of globally standard information sharing basis on commodity and supplier – levels.
2. IT Infrastructure Innovation: establishment of a cooperative platform for regional affiliates to discuss sourcing and pricing strategy planning.

Scope

First of all, GPS highlights the importance of aligning the regional purchasing strategies and needs into common global strategy (Project Report, 2017). In fact, as depicted in Fig. 4.2.1b, there is a necessity to discuss and set the strategy together with regional affiliate purchasing members – buyers. To be able to do that it is necessary to create common part numbering world-wide, which is working on same part drawings and specifications (Project Manager, 2017).

A. Strategy
- Cooperative strategy building
- Common work and part design standards

B. Sourcing
- Common quotation standards
- Common authorization document

C. Pricing
- Global cost comparison
- Joint world-wide cost improvement activity

D. Cost Planning
- Automated reporting and analytics
- Common understanding on design changes and respective cost impacts

4.2.1b GPS Project Scope

Next, having common part design specifications can serve as a basis for collaboration in sourcing activity (Project Leader, 2017). Apparently, common part standards will allow regional affiliates to work with common quotation standards with affiliate buyers and share cost information for piece price and manufacturing tooling. Accordingly, it will be possible to create common sourcing authorization document standards (centrally stored), which can be
accessed by buyers from regional affiliates and used for later cost comparison or quotation analysis from suppliers for future projects.

Further, common quotation standards, authorization documents will allow buyers to conduct a global cost comparison for the same part number. Additionally, buyers from different regional affiliates can communicate with each other and participate in the joint world-wide activity to work on the cost reduction possibilities (Project Manager, 2017). For instance, cost reduction activities or ideas such as Value Engineering (VE) and Value Analysis (VA) will be connected to a certain part number, details of which can be centrally stored and accessed through common system.

Finally, GPS also covers cost planning activity, which ensures that company operates under the planned budget and also gives indication regarding the cost reduction targets both for purchasing and as well as to other supporting divisions such as R&D. Indeed, GPS aims to improve the operational efficiency during the cost planning and build systematic approach through automated reporting and analytics (Project Leader, 2017). Results of the automated cost analytics will be available for buyers from different regional affiliates, which will allow them to have common understanding on design changes and respective cost impacts (Project Report, 2017).

*Pricing Process Reform*

As part of business process reforming, GPS project plays special attention to pricing process, as it is believed to bring more benefit in case the global operational efficiency is realized (Project Manager, 2017). “Pricing process reform is needed in order to allow Price Sharing Globally (between regional affiliates) in order to expand cost comparison activities globally and to capture best practice sharing in cost reductions (Project Report, 2017). In addition, “price reform should improve the lead-time and efficiency to collect other regions’ prices (current lead-time is 5 days) and remove constraints (currently buyer can only ask limited part prices per week)” (Project Leader, 2017). Last but not least, pricing process reform should construct solid and flexible
infrastructure capable of responding appropriately for future organization change and new work style. Senior Project Manager (2017) points out four main characteristics of the future infrastructure as depicted in Fig. 4.2.1c.

Primary, infrastructure should bring improvement to net productivity and shift resources to highly value added operations (Project Report, 2016). It means that as a result of pricing process reform, buyers should be eliminated from performing non-value adding activities (administrative tasks and information gathering) and rather be able to direct their efforts towards more value adding activities such as developing cost reduction ideas, best practice sharing in cost improvement between regions, and actual supplier shop floor visit for process cost improvement. Next, infrastructure should bring company-wide price information sharing per parts, and it should also link cost reduction activities between commodities and projects. Additionally, result of the infrastructure development should further strengthen the supply base of the company, which is after pricing process reform will carry more global character with regional focus. Strengthening supply base presumes more intensive collaboration and relationship with suppliers on cost improvement activities, where cost reductions are shared among parties. Finally, infrastructure should allow both new buyers and experienced ones to enhance their knowledge regarding new technological trends, part specifications, regional best practices. This can

Figure 4.2.1c Infrastructure for Process Reform
achieved through discussions and collaborations within the commodity team and as well as outside it.

If we specifically address the actions required, then the GPS process reform will address following items (Project Report, 2017):

- Change in communication method with commodity buyers (Leader or PIC of affiliate)
- Establish organizational structure and consider operational procedures (commodity-leader choosing, communication etc.)
- Clarify window-person in Purchasing for each issue (leader or person in-charge of each affiliate)
- Define standards for information disclosure and data security among affiliates and other divisions.

4.3 Analysis

As Faes et al. (2000) and Kotabe & Murray (2004) explained, there are two main reasons why companies engage into the global sourcing: first is location specific, which is an ability to access to local supply and labour markets or new technologies, while the second one is exploiting the global synergies, which is pooling of common requirements across sites. In case of MNC, the location specific strategy of global sourcing has been long ago pursued dating back to 1980’s. In fact, internationalization of the business through establishing regional affiliates, like Company A in Europe, is a prominent evidence to that. However, differing regional customer requirements, market conditions, legal norms and size of the company have pushed the organization towards decentralized structure making it more difficult to exploit the global synergies. Therefore, for the MNC it is number one objective to catch up with global synergy initiatives, which will improve both regional and global competitiveness in terms of operational efficiency.

Rozemeijer (2000) defines the objective of synergy projects as an attempt to create more value through combining activities of more business units (or purchasing departments) join their forces (e.g combined buying) and/or share resources, information, and/or knowledge in the area of purchasing” (p.7).
Actually, at Company A, the purpose of the GSP project is to improve global synchronization and gain synergy benefits in knowledge and best practice sharing in cost reduction activities (VE, VA etc.) and supplier performance by promoting global cooperation among buyers from different regions (Project Leader, 2017). Project manager at Company A mentions three specific purposes of the GPS project, which can be categorized according to three levels: strategic, operational, and system.

4.3.1 Strategic level

Lancioni (2005) states that “developing a pricing plan requires that a company commit to a set of objectives, a course of action, an operational strategy, and a set of control and review procedures dedicated to making the management of its pricing process a success” (p.114). Certainly, through GPS MNC aims to build sourcing and pricing strategies in order to achieve No.1 competitiveness within the industry. Based on the project scope (Table 4.3) that will be achieved by: 1) commonization of requirements, specifications and work practices across regions; 2) connecting global information and knowledge; 3) Process reengineering through operational IT platform

First of all, Trautmann et al. (2009 points out the achievement of economies of scale as a driver behind the purchasing synergy, which they refer to attaining lower unit costs by increasing market power through volume bundling and standardization of categories. However, in order to improve the negotiation power in the respective supply market, the extent to which common requirements and harmonized specifications are available across sites are important (Smart & Dudas, 2007). GPS, in fact, highlights the importance of aligning the regional purchasing strategies and needs into common global strategy (Project Report, 2017). To be able to do that it is necessary to create common part numbering world-wide, which is working on same part drawings and specifications (Project Manager, 2017).

Next, having common part design specifications can serve as a basis for collaboration in information sharing. When companies face global sourcing with uncertain market conditions and complex categories of products there is
more and more uncertainty involved. Indeed, in those situations, buyers need more information and at the same time learning capability to effectively assess the supplier quotations, product quality and market conditions (Trautmann et al., 2009). Apparently, common part standards will allow regional affiliates to work with common quotation standards with affiliate buyers and share cost information for piece price and manufacturing tooling (Project Leader, 2017). So, engaging in global purchasing synergy can bring more knowledge and understanding of categories to be bought; different subsidiaries and sites can learn from each other and have access to necessary information on time.

<table>
<thead>
<tr>
<th>Synergy Categories</th>
<th>GPS Scope</th>
<th>PPA Level</th>
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<tbody>
<tr>
<td>Economies of Scale</td>
<td>Commonization of requirements, specifications, and work across regions</td>
<td>Cooperative strategy building</td>
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<tr>
<td></td>
<td></td>
<td>Common cost base and part design standards</td>
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<tr>
<td>Economies of Information and Learning</td>
<td>Connecting global information and knowledge.</td>
<td>Common quotation and authorization documents</td>
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<tr>
<td></td>
<td></td>
<td>Collaboration through GBC</td>
</tr>
<tr>
<td>Economies of Process</td>
<td>Process reengineering through operational IT platform</td>
<td>Joint world-wide cost improvement activity</td>
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<tr>
<td></td>
<td></td>
<td>Global Cost Comparison</td>
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</tbody>
</table>

Finally, companies can also gain additional value through third type of synergy potential – economies of process, which is “…adopting a common way of
working or establishing best practice sharing process across the organization” (Trautman et al., 2009). Actually, GPS recognizes that in order to achieve global cooperation, there is a definitely need for process reengineering or innovation through and operational IT platform. In effect, process reengineering identifies the necessity of change in two aspects: work process innovation and IT infrastructure innovation. Work process innovation presumes the creation of globally standard information sharing basis on commodity and supplier levels, while IT infrastructure innovation aims to establish a cooperative platform for regional affiliates to discuss sourcing and pricing strategy planning. Obviously, having a common way of working worldwide will allow one line of conduct to suppliers, benchmarking procedures, and joint training and development (Faes et al., 2000).

Apparently, as described through three main strategic proposals above, GPS project aims to take the global synergy activity to another level. As shown in Fig.4.3a, through this project MNC will be able to transform its synergy potential from passive information sharing (Quadrant A) to more collaborative level (Quadrant B), where not only information will be shared between purchasing divisions at regional affiliates, but also value creation initiatives like joint world-wide cost improvement activity and best practice sharing will happen. This potential change from A to B can be explained by the fact that purchasing maturity on the corporate level will be increased and standardized at each regional affiliate through internal common requirements and specifications. However, we need to acknowledge the challenge in formulating an effective international pricing strategy. In fact, “… firms must consider multiple foreign markets with their own respective cultural, language, and economic, legal, and political differences” (Lancioni, 2005; p. 113). Therefore, it will be difficult to commonize external requirements like regional customer, legal, and market needs, which makes it impossible to achieve high level of homogeneity between regional affiliates. Accordingly, when there is a low homogeneity and high purchasing maturity, Rozemeijer (2000) supports the idea of facilitating sharing best practices. Apparently, one of the initiatives can be joint investment in a procurement transaction system.
4.3.2 Operational level

When cascaded to the operational level, the synergy strategy is to be realized through combining entire global purchasing activity on a commodity basis as a team and strengthen the activity level in each region (Project Report, 2017). As Quintens et al. (2006) highlighted, the implementation of global purchasing strategy is conceptualized along four dimensions: the configuration of the global purchasing process, the standardization of the global purchasing process, the standardization of product-related characteristics and the standardization of the purchasing staff organization (p.882).

When it comes to global pricing strategy, GPS project objective is to construct solid and flexible infrastructure capable of responding appropriately for future organizational changes and new work style. According to Forman & Hunt (2005), to mitigate the uncertainty risk in pricing, a global company can take action to integrate its efforts internationally. For instance, “a greater degree of internationalization allows subsidiaries across various countries to flexibly shift resources from one country to another in response to new information and/or changes in relative prices (Forman & Hunt, 2005; p.137). Yet, to be able to do
that, as Lancioni (2005) highlights, companies are in need for an effective pricing strategy. Senior Project Manager (2017) points out four main characteristics of the future infrastructure: company wide information sharing, buyer productivity improvement, strengthening the supply base, and people development. Apparently, in order to achieve the company–wide information sharing, as an initial step, there was a need to map out the current processes at each affiliate within the MNC, which as Quintens et al. (2006) points out will be a configuration of the global purchasing processes. As a result of the examining existing PPA process at Company A with respect to internal objectives and also to global GPS objectives, authors could identify purchasing needs and requirements in terms of process visibility and control, and as well as data availability during the each step of the PPA process. As depicted in Fig. 4.3, we see a gap between the target state of PPA process, envisioned through GPS objectives to bring global information and knowledge sharing, and current state of PPA process at Company A.

![Figure 4.3b Problem and Gap within Current PPA Process](image)

In fact, this gap is primarily driven by the four main process issues: lack of detailed information visibility, high reliance on supplier input, unbalanced division of roles and responsibilities, and regional differences in cost comparison.
division of roles and responsibilities, and regional differences in cost comparison.

Mainly, on the operational level, buyers are struggling to gather all the data needed in order to make accurate and on-time judgement. In fact, information is not visible from buyer-to-buyer, supplier-to-buyer; buyers need time to communicate the person in charge for the required data and then spend time to analyze it. Moreover, as people change their roles or leave the company, needed information is not stored and accordingly lost. This leads to the fact that buyers in most of the cases rely on the supplier input (PPA commitment, quotation, price increase, logistics cost), which time-to-time can be manipulated. To address this concern, GPS proposes company-wide price information sharing. “Price sharing globally (between regional affiliates) will be available in order to expand cost comparison activities and to capture best practice sharing in cost reductions (Project Report, 2017). In addition, “price reform will improve the lead-time and efficiency to collect other regions’ prices (current lead-time is 5 days) and remove constraints (currently buyer can only ask limited part prices per week)” (Project Leader, 2017).

Furthermore, it will be possible to create common sourcing authorization document standards (centrally stored), which can be accessed by buyers from regional affiliates and used for later cost comparison or quotation analysis from suppliers for future projects. GPS also covers cost planning activity, which ensures that company operates under the planned budget and also gives indication regarding the cost reduction targets both for purchasing and as well as to other supporting divisions such as R&D. Indeed, GPS aims to improve the operational efficiency during the cost planning and build systematic approach through automated reporting and analytics (Project Leader, 2017). Results of the automated cost analytics will be available for buyers from different regional affiliates, which will allow them to have common understanding on design changes and respective cost impacts (Project Report, 2017).

Next, there is a lack of coordination and equal role division within the PPA process on the global scale. Most of the requirements and directions are
provided by the global head purchasing office and buyers on the regional level should adapt the way they work. On top of that, global purchasing strategy and direction is driven by corporate head-office through one-way announcement that will further be cascaded down with some regional alignment (Project Manager, 2017). Moreover, buyers on the regional level experience the deficiency of support both from internal divisions and as well as from other regional affiliates.

Indeed, studies within global sourcing and inter-organizational purchasing management highlight the importance of having conducive organisational structure, that will allow purchasing members to get more support from other divisions. In the light of global sourcing initiatives, studies within purchasing management point out to purchasing process coordination (e.g. pricing) through global commodity teams (Van Weele, 2005). Actually, to solve the gap in process coordination and equal role division, GPS proposes to enhance the global cooperation through GBC. “Having global support is not possible without global cooperation, which means there should be more connection between different divisions and regional affiliates on both operational, tactical, and strategic topics” (Senior Project Manager, 2017). Apparently, commodity teams will provide a coordination or pooling structure within a larger organizational setting (Englyst et al., 2008; p.16).

On the operational level, current information gathering by buyers is only one-way (analog) and limited in scope. On tactical level, there is not much activity is performed on commodity level with some limited discussion on commodity cost improvement strategy. So, GSP project aims to bring changes to this setting in order to be able to adapt global trends. Primarily, information gathering will be done through timely discussion on sourcing and pricing strategies by GBC based on agreed KPIs. Accordingly, it is aimed to have constant discussion and info-sharing in the community, where buyers and managers from different regions as well as supporting division members (from R&D, logistics, project planning) can work together on future strategy building. Apparently, access to global knowledge and mutual learning within the GBC will improve the buyer proficiency and contribute to their development as global players. In fact,
empirical findings by Tassabehji & Moorhouse (2008) suggests that in the global challenging environment the purchasing professionals must be a dynamic relationship manager, capable of creating and developing cross-functional strategies and internal selling, change manager with supplier relationship and partnership management skills. So, the activity done within and outside of GBC is a good evidence for that.

Table 4.3.2 GPS Process Reengineering Opportunities

<table>
<thead>
<tr>
<th>Company A PPA Process Concerns</th>
<th>GPS Process Reengineering Opportunity</th>
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</thead>
<tbody>
<tr>
<td>Lack of detailed information visibility</td>
<td>• Company-wide price information sharing</td>
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</table>
| High reliance on supplier input | • Centrally stored common sourcing authorization documents  
| | • Automated reporting and analytics |
| Unbalanced division of roles and responsibilities | • Collaboration through GBC |
| Regional Differences in Cost Comparison | • Common cost base and part specifications  
| | • Joint world-wide cost reduction activity |

Another concern from buyers was that it is difficult to align cost base (cycle time, shot cost etc) comparison between different regions. GPS proposal to this concern is to standardize the part design through common architecture and quotation formats between regions. First of all, having common part design specifications can serve as a basis for collaboration in sourcing activity (Project Leader, 2017). Next, common part standards will allow regional affiliates to work with common quotation standards (on the same cost basis) and share cost information for piece price. Further, common specifications and requirements towards suppliers will allow buyers to conduct a global cost comparison for the
same part number. Additionally, buyers from different regional affiliates can communicate with each other and participate in the joint world-wide activity to work on the cost reduction possibilities (Project Manager, 2017). For instance, cost reduction activities or ideas such as Value Engineering (VE) and Value Analysis (VA) will be connected to a certain part number, details of which can be centrally stored. Aimplementation of sourcing activity, that better organizes detailed cost breakdown on global scale, will help to achieve higher supplier performance visibility and control.

4.3.3 System level

The motivation behind business process reengineering through IS is a need to speed up the process, reduce needed resources, improve productivity and efficiency, and improve competitiveness (Attaran, 2004). At Company A, implementation of the process reform in the current PPA process is to be carried out through the help of innovative IT infrastructure. It has been noted by Jahnke & Tjiok (1998) that IS support is an essential element in redesigning of the business processes, because companies acquire the groundwork to achieve sustained process improvements through the use of technology. According to GPS objectives, infrastructure innovation should establish a cooperative IT platform, where buyers from regional affiliates will be able to discuss sourcing and pricing strategy planning, collaborate on cost reduction activities, and share knowledge on new technologies or know-how related to supplier base. In fact, “an appropriate IS support alternative has to factor out the strategic and operational characteristics of the business process to be reengineered and supported” (Jahnke & Tjiok 1998). So, there are three main areas where IT platform is planned to open up process reengineering opportunities within current PPA: 1) detailed cost breakdown on global scale; 2) instant access to global data to achieve greater cost savings; 3) systemized data visualization & problem identification.
1. Detailed Cost Breakdown on Global Scale

Barros et al. (2015) attribute the growth in the use and application of IT in SCM as a factor leading to performance improvements and value creation within organizations. In fact, within GPS, the implementation of sourcing module, that better organizes detailed cost breakdown on global scale, will help to achieve higher supplier performance visibility and control. Current system usability and data input structure does not allow for the cost base analysis across regions required today. Data is labeled and collected differently in each region making comparison time consuming (Project Report, 2017). Solution to this is to standardize the quotation format across regions and utilize IT platform to allow supplier to enter requested level of detail without administrative burden to buyers. Thus, new sourcing module collects detailed cost breakdown for further data analysis (cost comparison) to be used on a global scale during the PPA process.

2. Instant Access to Global Data

New IT platform should allow global access to company-wide data to identify opportunities and achieve greater cost savings (Project Report, 2017). This highlights the importance of agreement and relational governance between affiliates on data access. Indeed, Singh & Teng (2016) highlight the role of relational governance in data sharing through IT system, which facilitates joint decision making and is theorized as playing a central role between the resources and the outcome measures. Currently, at each affiliate, the data is pulled offline to manipulate and share in piece meal fashion (difficult to consolidate/verify for decision making) (Project Manager, 2017). Buyer experience long leadtimes offline to identify contact, explain request, and share information during different regional working hours. Shift non-value add administrative burden from team member to system in order to maximize effort toward cost reduction activity (ex- competitive gap analysis, supplier manufacturing visit, etc).
As shown in Fig 4.3d, access to necessary data is a basis for PPA IT system. The quality and timing of the data determines the level of visibility and control by buyers over the supplier PPA performance and progress. Of course, data as it is not enough; what should be done more is to categorize the data based on the PPA cost reductions or cost element items which will be linked to certain part number. Next, buyers alone will not be able to assess the applicability (e.g. technical compatibility) of the cost reduction item, which means they need input from supporting divisions (R&D, logistics, material engineering, buyers from other regions, buyers within the same purchasing office). Singh & Teng (2016) highlight the role of relational governance in IS integration and establishment of inter-organizational trust, which facilitates joint decision making and is theorized as playing a central role between the resources and the outcome measures. Therefore, the IT system should also define the roles and governance that will guarantee access to all related parties in setting and approving the PPA target to suppliers.

3. **Systemized data visualization & problem identification:**

Data gathering about supplier performance and quotation will not generate enough value if it does not serve as a guide for cost reduction and improve
strategic planning. In other words, there is a need to strengthen the business process through IT analytics to allow for data to be visual and easily compared globally. For now, data is available but it is unclear how it will be accessed or what the data will mean to another affiliate for comparison. Current system requires IS or Purchasing Systems to run complex queries to access existing data which requires budget and lead-time (e.g., General Systems Reporting). Data is batch vs real time and does not allow project management team to easily report up-to-date status. (e.g., quarterly PPA reports based on data from previous quarters).

Solution to this current problem can be the creation of a real time interface with Fixed Business Intelligence (BI) tool for standard global reports and Flexible BI to allow buyers and PM to view, analyze, and report on latest data. For instance, review with the senior buyers at Company A have identified the need for data in order to enhance the visibility of supplier PPA performance visibility covering the period of each project’s life-time. As shown in Fig 4.3e, analytical tool should allow buyers to view the supply market analysis in order to conduct comparative review; it should provide project details (annual forecasted and
delivered volume trend, project life time, and supplier PPA performance); buyers should be able to see in a visual diagram the PN and commodity relation in order to identify cost reduction activities on child part level; data analytics should allow buyers to compare supplier PPA performance at each region; finally, buyers should be able to easily track the supplier progress through standard KPIs (common across regions) and prepare reporting authorization documents on the instant basis.

4.4 Discussion

Following the analysis section, we can point out that GPS brings pricing process reform that will offer to each regional benefits derived from establishing a common way of working and exchanging best-practice purchasing procedures across the company. The findings emphasize the importance of global process standardization and balanced governance among regional affiliates in successful implementation of PPA process synergy.

Table 4.4 PPA Process Reengineering Opportunities

<table>
<thead>
<tr>
<th>Item Description</th>
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<th>(3)</th>
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<tbody>
<tr>
<td>Documentation of supplier historical PPA Performance</td>
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<td>Company-wide price information sharing</td>
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<td>Cross-regional supplier PPA performance benchmark</td>
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<td>Common cost base and part specifications</td>
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<td>Defined roles on commodity basis</td>
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<td>Centrally stored common Sourcing Authorization Documents</td>
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<td>Involvement of functional areas</td>
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<td>Joint world-wide cost reduction activity</td>
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<td>Instant Access to Global Data</td>
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<td>Automated reporting and analytics</td>
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We have also identified a set of specific process reengineering opportunities in intra-organizational PPA process such as company wide information sharing, standardization of part specifications and cost bases, and joint world-wide cost reduction activity within global buyer community (BGC).
Since cost control is gradually being dispersed throughout the supply chain, it makes sense for a company to seek cost reduction in the wider supply chain. However, controlling supply chain, especially in the international context within global markets, poses a lot of challenges with uncertainty management in pricing process. “When companies delegate to their suppliers the considerable control over product’s bill of materials, the total cost of ownership of the product (including transportation and inventory management) become invisible to the OEM” (Choi & Linton, 2011; p.113). As summarized in the Table 4.4, exploiting all these opportunities will help to close the gap in the current PPA process, caused mainly by lack of detailed information visibility, low level of control (reliance on supplier input), and unbalanced division of roles, regional differences in cost comparison, and late PPA agreement and closure.

In fact, following the initial review our subsequent result of analysis has determined that current PPA process at Company A is not well standardized to support buyers’ activities in identifying and evaluating the cost reduction items. Thus, on one hand, the process should be streamlined by reducing all non-value adding activities, and on the other hand, it should be reengineered in a way that buyers will have needed IT system support, which, according to Gunesekaren & Kobu (2002), will facilitate the smooth flow of information. Overall, new intra-organizational PPA process should bring improvement to net productivity and shift resources to highly value added operations. It means that as a result of pricing process reform, buyers should be eliminated from performing non-value adding activities (administrative tasks and information gathering) and rather be able to direct their efforts towards more value adding activities such as developing cost reduction ideas, best practice sharing in cost improvement between regions, and actual supplier shop floor visit for process cost improvement. This findings also supports the existing research highlights regarding the importance of buying expertise, which is crucial element in ensuring the control over pricing. As Tassabehji & Moorhouse (2008) have explained, control over pricing process can be enhanced through improved buyer capability. Hence, if buyers at Company do not possess highly developed skill set, they will be unable to achieve high status levels irrespective of organizational support such as through commodity teams.
Obviously, achievement of considerable process reengineering with PPA is not possible without IS support. Therefore, as a result of this study it has been identified that there is a need for collaborative IT platform where buyers from different regional affiliates can share necessary purchasing data, learn and gain new knowledge from each other on suppliers, technologies, trends. As Figure 4.4 summarizes, IT platform or infrastructure should bring three principal changes to current way of conducting PPA process: structured approach to PPA, less time-consuming and accurate data processing, and analytical tool support for buyer’s commercial strategy.

Figure 4.4 Three Principal Pillars of PPA IT Platform

However, at this stage of the project, only the principles of IT platform have been determined. Further, the extent and strength of needed IS integration, explained by the intensity of integration process (scope of integration and type
of integration), should be clarified. Because the level of integration can be used to judge the results whether the initial objectives of integration are met (Stelzer et al., 2006). In parallel to intensity of integration it is necessary to analyze the flexibility of integration. “Flexibility of integration denotes the ease of with which integration implementations can be redesigned and collaborating partners can be replaced by other organizations” (Stelzer et al., 2006). Flexibility dimension is further highlighted by criteria elements which are: scope of standard usage and type of compliance with standards. On top of that, referring to Lu et al. (2006), for successful the intra-organizational integration of PPA process, following critical success factors for the implementation of Inter-organizational Information System (IOS) should be taken into account: 1) shared vision; 2) cross-organizational implementation team; 3) high integration with internal information systems; 4) intra-organizational business process re-engineering; 5) advanced legacy information system; and, 6) infrastructure and shared industry standard.

4.5 Conclusion

The goal of the this thesis was to investigate and analyse the impact of intra-organizational purchasing synergy on PPA process. As a result of the part one of the analysis, we could identify that PPA process at Company A consists of five main steps: scope identification, target proposal, evaluation of supplier offer, negotiation and agreement, and PPA authorization. Out of five steps, buyers experience high workload, least visibility and control, and non-standardized approach in supplier proposal evaluation. And the reason for those process concerns are because of lack of detailed information visibility, high reliance on supplier input, unbalanced division of roles and responsibilities, regional differences in cost comparison.

Through the second part of the analysis we found out that intra-organizational purchasing synergy project creates process reengineering opportunities as within both industrial sourcing and pricing; specifically, as we address pricing process in this study, we recognize that synergy helps to enhance the visibility and control over PPA process. Buyers at each regional affiliates will gain improved visibility on supplier PPA performance and as well as control over process execution due
to company-wide information sharing, global collaboration through GBC, common specifications and standards, automatic reporting and analytics. Apparently, reengineered PPA process has big impact on the ability of purchasing professionals to fulfil their role proficiently; it improves buyers development and optimizes their role to achieve added value and competitive advantage for the organization. In fact, through company-wide information sharing and collaboration in GBC buyers develop technical (including new technology trends, cost reduction ideas procurement process skills), interpersonal, internal and external enterprise and strategic business skills.

Finally, results of the study is compiled into an intra-organizational purchasing synergy framework. This framework integrates strategic, organizational, system, and operational levels of global purchasing synergy. On strategic level synergy aims to achieve three main goals: 1) economies of scale through commonization of requirements, specifications, and work standards; 2) economies of information and learning through global collaboration of purchasing functions on best practice sharing and cost reduction activities; 3) economies of process through PPA reengineering using the operational IT platform. Next, framework also illustrates that there are many contextual factors on the organizational and regional levels that may impact the successful implementation of intra-organizational purchasing synergy. In fact, legal compliance requirements in commercial and technical data sharing is considered as one of the main blocking points in achieving economies of information and learning between affiliates. Moreover, differing purchasing practices such as supplier evaluation, quotation break-down standards, supply base structure (number of common-global suppliers versus regional suppliers) might as well impact the economies of scale and process. Additionally, framework highlights that the fundamental basis for global synergy projects ought to be the flexible IT system. Further, as shown in Figure 4.5, on the operational level, each regional affiliate, first, should examine their own existing PPA process and identify challenges and gaps to be reengineered in order to improve the operational efficiency; next, it should try to align its process with regional affiliates in order to close process gaps and benefit from global synergy opportunities.
Figure 4.5 Intra-Organizational PPA Process Synergy Implementation Framework
5. CONTRIBUTION AND RECOMMENDATION

The following chapter provides an overview on contributions, limitations of the study and as well recommendation for further research.

5.1 Contribution

The paper contributes to theory and practice by providing a unique in-depth description of PPA from industrial customer perspective and some of the opportunities that may be present when organisations attempt to implement a global/intra-organizational purchasing process synergy through an operational IT platform. Specifically, the topic of collaboration on global commodity level is emphasized on both a theoretical and practical level: how can buyers can further develop their skills and learn more with regards to continues cost reduction activities, manufacturing process improvement, and supplier development within the commodity team? Current purchasing literature has not so far addressed pricing and cost reduction activities from industrial customer perspective and also there is a lack of empirical studies on how global purchasing synergy projects impact the industrial pricing processes. So, to fulfil those gaps, our current study has two main theoretical contributions: (1) Detailed step-by-step description of PPA process between OEMs and their suppliers happening after SOP; and (2) groundwork for implementation guidance on intra-organizational price revision process synergy.

5.2 Limitation

Although our study provides detailed insight on the PPA process and how intra-organizational purchasing synergy impacts it, there are also several limitations to our research. Primarily, this study was conducted on single in-depth case study which makes it difficult to completely generalize the findings to other cases or industry settings. So, we consider this as a primary limitation of this research and would like to see further studies with multiple case studies, preferably from different industries
not limited to automotive. Next, we consider that current study results provide good conceptual and process level understanding about the context being studied, but it may not be fully generalized to other contexts (different industry, other company within the same industry). Therefore, we recognize that quantitative study with positivistic approach will shade more insights onto the relationship between factors effecting the successful implementation of intra-organizational purchasing synergy, which further improve the external validity of the current study. Moreover, we do also realize that there are many factors impacting intra-organizational pricing process besides global synergy projects. In fact, regional and organizational contexts are of high importance, which are addressed but not tackled in detail in the current study.

5.3 Recommendation: Areas for Further Research

Finally, based on the limitations, we propose further areas for research. First, we believe that detailed review on contextual factors effecting intra-organizational PPA process synergy can be analyzed. In fact, from observations we could identify that organizational factors (power-relationships between affiliates, centralized control from head quarter, organizational structures of functional areas) and regional factors (buyer-supplier relationships, legal requirements, regional supply market strategy) have high impact on successful implementation of purchasing synergy project. Second, analysis of intra-organizational IS integration impact on pricing process should be further elaborated. For instance, flexibility of IS integration: standard and compliance issues related to intra-organizational and inter-regional price sharing can be studied from multi affiliate perspective. Lastly, intra-organizational PPA process synergy can be studied with completed process reengineering loop through longitudinal study with multiple case study strategy. We believe, this will provide holistic view on the phenomena of intra-organizational PPA process synergy and also improve validity of the results.
Appendix

1. Sample of Interview Questions

A. Semi-structured Interview

- Can you briefly describe your current position and what are your roles?
- Which commodities are you responsible for?
- How would you define the PPA process?
- How often PPA process is conducted?
- What are the main process steps within PPA process?
- Can you please put process steps into a timeline?
- Which cost elements are covered through PPA process?
- What are the roles and responsibilities of buyers during the PPA process?
- In your opinion, which are the main process challenges within current PPA?
- In which process step do you think buyer spends most of his or her time?
- How the PPA process could have been improved?
- What are inputs from other supporting divisions?
- Do you think purchasing division has full control on PPA process?
- Do you have all the data needed for PPA review with suppliers?
- How reliable is the data supplied by suppliers?
- How do you collaborate with suppliers and track their performance progress on cost reduction activities?

B. In-depth Interviews

- Can you briefly describe your current position and what are your roles within the GPS project?
- What do you think about the GPS project and how it can impact the purchasing processes at Company A?
- Which specific goals and scope of impact does GPS project pursue?
- What are the potential consequences of this synergy on sourcing and pricing, specifically, on the PPA process?
- What level of synergy integration do you think regional affiliates are able to achieve?
- What do you think about the impact of the strategic fit and governance structure between regional affiliates on successful implementation of GPS project?
- In your opinion, what might be the main challenges in implementation of GPS project?
• In your opinion, which regional requirements and needs should be highlighted in case of Company A?
• Does the GPS project pricing process reform offer solution to challenges and improvement in operational efficiency within current PPA process?
• Do you think that IS integration is an integral part of GPS project?
• How would you imagine the future PPA IT platform?

C. Focus Groups

1. PPA Process

• How would you define PPA process?
• What are the main goals of PPA process?
• What should the standard PPA process look like at Company A?
• Which cost elements are covered during the PPA Negotiation?

2. PPA Process Challenges

• What are the main challenges in PPA process?
• Specifically, which PPA process step requires highest workload with little value addition?
• Why do you think each buyer has his or her own way of approach to PPA process?
• What can be the potential consequences of too much reliance on supplier input?

3. GPS impact on PPA

• What do you think about the process reforms awaited through the GPS project?
• Which process challenges and gaps should the GPS project should address within the PPA process?
• How different is the PPA process at Company A compared to other regional affiliates?
• How the IT platform can close the gap between regional PPA process collaboration?
## 2. Periodic Price Adjustment (PPA) Optimization Questionnaire

### PERIODIC PRICE ADJUSTMENT (PPA) OPTIMIZATION SURVEY

**Purpose:** To review the current PPA process in order to identify areas to improve

Please select the section you belong to

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<th>Body 1</th>
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<td></td>
<td>Stamping</td>
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<td>Plastics 2 &amp; NVH</td>
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Please check the response that best fits your judgement

<table>
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<tr>
<th>COMMENTS</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Strongly Disagree</th>
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<tbody>
<tr>
<td>1. TME Purchasing has full control on PPA Process</td>
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<td>2. PPA Process is quite standardized and it is easy to follow</td>
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<td>3. I have clear knowledge about steps to follow in PPA Process</td>
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<td>4. There is sufficient training material about PPA Guidelines</td>
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<td>5. My suppliers are aware about PPA Requirements</td>
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<td>6. I always fill the PPA PxP list before sending it to supplier</td>
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<td>7. Suppliers have better knowledge and they should fill the PPA PxP List</td>
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<td>8. Suppliers usually manipulate the data in PPA PxP List</td>
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<td>9. Suppliers often give PPA for inactive parts</td>
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<tr>
<td>10. Suppliers often make mistakes in filling PPA PxP List</td>
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<td>11. I spent quite a lot of time to correct mistakes in Supplier’s PxP Proposal</td>
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<td>12. I have required data available to fill the PPA PxP List</td>
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<td>13. Production Volume data is difficult to understand and I prefer not to use it</td>
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<td>14. Raw Material Impact Reporting does <strong>not</strong> require a lot of workload</td>
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<td>15. Following Raw Material Cost Impact is a value adding activity</td>
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<td>16. I have clear knowledge on Tier 2 Part Content in my commodity</td>
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<td>17. Late Tier 2 PPA Negotiation delays my PPA Authorization</td>
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<td>Question</td>
<td>Options</td>
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<td>-------------------------------------------------------------------------</td>
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<tr>
<td>1. With how many suppliers you had PPA Negotiation for FY 16?</td>
<td>Answer: …………..</td>
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<tr>
<td>2. Do you fill the PPA PxP List before sending it to supplier?</td>
<td>a. In some cases   b. Yes, always.   c. No, supplier fills it</td>
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<td>3. Why it is not a good choice to fill the PPA PxP List before sending it to suppliers, because…</td>
<td>a. Suppliers have more knowledge to fill it   b. I do not have data available on time</td>
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<td></td>
<td>c. Data I have is unreliable   d. Too many parts to fill</td>
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<td>e. If other, please specify: ………………………………………………………</td>
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<td>4. How many hours in average you spend to fill the PPA PxP List before sending it to supplier?</td>
<td>a. less than 5   b. 5 to 10   c. more than 10   d. None</td>
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<td>5. How many hours in average you spend to check the PxP PPA Proposal from Supplier?</td>
<td>a. less than 5   b. 5 to 10   c. more than 10   d. None</td>
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<td>6. For how many inactive parts your suppliers have given reduction during the last PPA?</td>
<td>a. 1 to 5   b. 5 to 10   c. 10 - more   d. None</td>
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<td>7. When you have closed your Negotiation with supplier during the last APR period?</td>
<td>a. before April   b. in April   c. around June   d. in September or later</td>
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<td>8. Usually the PPA Closure gets delayed due to….</td>
<td>a. Suppliers’ late response   b. Long negotiation   c. Suppliers’ data manipulation</td>
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<td>d. Delay with internal consensus   e. If other, please specify: ………………………………………</td>
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<td>9. I can not authorize my PPA results on time because of ……</td>
<td>a. Delay in Tier 2 part price update   b. Error-proofing in PxP List   c. Delay in RM price update</td>
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<td></td>
<td>d. If other, please specify: ……………………………………………………..</td>
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<tr>
<td>10. How many hours in average you spend to fill out the Raw Material Register?</td>
<td>a. less than 5   b. 5 to 10   c. more than 10   d. Not applicable</td>
<td></td>
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</table>
Reference List


Industrial Marketing Management, 34, 115–121 (this issue).


**References to the respondent for the study**

References for respondents are excluded for confidentiality reasons.