

Optimized Third-party Logistics criteria for Fast Moving Consumer Goods
sector in Bangladesh

Submitted by: Saif Alam

Dissertation submitted in partial fulfillment of the requirements for the
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Supervised by: Md. Hasan Maksud Chowdhury

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BRAC Institute of Governance and Development, BRAC University

Letter of transmittal

August 2018

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Subject: Submission of Thesis Paper titled “Optimized Third-party Logistics criteria for Fast Moving Consumer Goods sector in Bangladesh”

Dear Sir,

In correlation with the requirement of partial fulfillment for my degree of Masters in Procurement and Supply Management, I am submitting my dissertation for your kind perusal.

This paper analyzes the present state of the processes (excluding all external factors) which fall under the jurisdiction of Third Party Logistics (3PL) operations in Bangladesh and attempts to theorize the optimal efficiency of the needs and wants from the point of view of the 3PL service providers as well as the client.

I hope you find this report satisfactory as per the requirements stipulated by Brac University.

Sincerely yours

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Statement of the Author

I hereby declare that the undersigned is the author of this thesis. I also declare that this paper has not been submitted anywhere. I authorize the BRAC Institute of Governance and Development (BIGD) BRAC University, Dhaka, Bangladesh to use this paper for any purpose that it deems fit.

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List of Abbreviation

3PL	Third Party Logistics
4PL	Fourth Party Logistics
APICS	American Production and Inventory Control Society
BPO	Business Process Outsourcing
CAPA	Corrective and Preventive Action
CBU	Category Business Unit
DC	Distribution Center
EDI	Electronic Data Interchange
ERP	Enterprise Resource Planning
FEFO	First expired first out
FMCG	Fast Moving Consumer Goods
FMFO	First manufactured first out
FTL	Full Truckload
GIR	Goods Inspection Report
GRN	Goods Received Note
IT	Information Technology
LPI	Logistics Performance Index
LR	Load Report
LSP	Logistics Service Provider
LTL	Less Than Truckload
MFD	Manufacturing Date
MHE	Machine Handling Equipment
MNC	Multi-National Companies
PAR	Put Away Report
PDCA	Plan Do Check Act Cycle
PO	Purchase Order
POD	Proof of Delivery
PSV	Physical System Verification
QA	Quality Assurance
QMS	Quality Management System
RBV	Resource Based View



ROI	Return on Investment
RTM	Route to Market
SAM	Safety Action Meetings
SBO	Safety Behavioral Observations
SCM	Supply Chain Management
SCOR	Supply Chain Operations Reference
SKU	Stock Keeping Unit
STN	Stock Take Note
TCE	Transaction Cost Economics
TO	Transfer Order
VAS	Value Added Services
VLVS	Value Life Value Safety
WMS	Warehouse Management System



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Abstract

In the service industry, the most effective manner in conducting sustainable business is by keeping the customer satisfied. In Bangladesh, external factors often cause unprecedented disruptions in the natural flow goods and services. This paper focuses on finding the criteria to provide the optimal level of services provided within the premises of the storage and distribution centers (warehouses). A list of criteria is formulated based on the *social constructivism perspective*. Respondents have been carefully selected to find an overall understanding of the present services provided by 3PL firms in Bangladesh to their clients. Voice recorded in-depth interviews were taken and an interpretive framework was develop to find the optimal criteria. In addition, various prevailing and updated literature were correlated to the preexisting scenario in Bangladesh in order to decipher the optimal criteria. The findings include ways of increasing efficiency and decreasing costs with the goal of providing the right product to the right consumer of the right quantity. Several criteria were determined in the following areas of operation of 3PL firms: warehousing, inventory management, order processing, VAS and Information Systems and transportation. Three segregation of activities (strategic, tactical, operations) were interpreted to be optimal for each of the five segments. This was done by assessing the present method of conducting 3PL activities. The framework was established through social constructivism perspective considering the respondents' backgrounds and experiences. The conclusive idea was optimizing the in house processes as much as possible as well as taking on some of the managerial decision making burden from the FMCG producers. This will let them focus on their core activities while 3PL providers can increase their flexibility and improve services.

Chapter 1: Introduction

Attaining a competitive advantage in the third-party logistics (3PL) sector services in Bangladesh is a challenging task due to three factors: socioeconomics, politics and infrastructure. These factors intermittently create disruptions in the fluidity of the supply chain, thus reducing the optimal efficiency. Keeping these factors constant will provide a less than accurate depiction of the full potential of the present scenario of the supply chain in Bangladesh, but, it will elaborate the expectations fast moving consumer goods (FMCG) manufacturers have from 3PL firms.

1.1 Relevance of the Study

The cumulative ineffectiveness of holistic IT driven supply chains in Bangladesh and its peers around the world has led the stakeholders to develop unique, localized ones. Developed nations rely heavily on information technology and consequently use it to lay the foundation of entire supply chains. “In contrast, the lack of infrastructure and information systems in developing countries has curbed the effectiveness of a similar approach”.¹ In order to curb the supplementary expenses which do not incur in developed nations and to increase efficiency “it is vital to find the applicability of using experts in logistics that is called the Third Party Logistics (3PL). 3PLs can be generally defined as outsourcing a firm’s logistics function to one or more specialist firms which are known as 3PL providers”.² These organizations strive to achieve the optimal efficiency of the localized practices around the globe and the same theory can be practically utilized in Bangladesh.

1.2 Scope, aims and limitations of the Study

The purpose of this paper is to find the optimal criteria which will enable 3PL firms in Bangladesh to provide the best possible service to FMCG producers by improving factors within their jurisdiction.

¹ Kriel, J. (2016). Providing decision support to FMCG market players in developing economies. *Faculty of Engineering at Stellenbosch University*. 1 (1), 2.

² Heiyantuduwa, M.; Wannisingha, W.M. N.N.; Rupasinghe, T. (2015). A Strategic Analysis of the use of Third Party Logistics Providers (3PLs) in Fast Moving Consumer Goods (FMCG) Industry: A Systematic Review of Literature. *Proceedings of 12th International Conference on Business Management*. 1 (1), 1.

The scope of the study is inclusive of the following questions being answered in relation with the holistic aim of attaining the purpose:

1. What is the present state of the 3PL operation in Bangladesh?
2. What are the primary concerns in the supply chain of FMCG products and the benefits of integrating 3PL services in supply chain of FMCG products?
3. What are the external challenges of providing 3PL services in Bangladesh?
4. What would be the decision support criteria to ensure the optimal utilization of resources at hand?

Finding the optimal efficiency of the services provided by 3PL firms will reduce costs as well as lead times for FMCG manufacturers. This will let them focus on their core activities while 3PL providers can increase their flexibility and improve services. The secondary objective of this paper is to identify the gaps prevalent in conducting the internal tasks of 3PL services by the providers and theorize possibilities of closing those gaps in the best possible manner.

This paper is limited to qualitative methodology due to the lack of valid data and the limitations of firms to provide historical data for the purposes of publication. This limitation is constant for the external aspects influencing the 3PL sector due to absence of updated data available or complete lack of it.

1.3 Research Methodology

In regards to research design, area of study, sample population data collection and analysis, the focus was on attaining qualitative data. Due to the lack of formal supply chains in Bangladesh, 3PL firms unanimously formulate their own methods of providing the services to FMCG manufacturers.

Face to face and in-depth (voice recorded) interviews were conducted with both 3PL service providers and major FMCG producers for primary research and previously published papers were used for secondary research purposes.

The research has been designed based from a *social constructivism perspective*. Interpretive framework of social constructivism was developed by asking the participants open-ended



questions. The general direction of the interviews has been developed in the periphery of common practices in providing 3PL services in emerging nations such as Bangladesh. The role as a researcher was to interpret the respondents' views of the questions regarding each segment. Fundamental correlations were further investigated in order to confirm secondary findings. Data gathered from primary and secondary research was combined in order to theorize the optimized 3PL criteria for the FMCG sector.

1.3.1 Sampling Techniques

The purpose of this paper of theorizing optimized standards of best practices prevalent in the sector in Bangladesh. Three global 3PL service providers presently operating in Bangladesh (DHL, DACHSER, and Yusen Logistics) and 2 major FMCG producers (MARICO and UNILEVER) were selected for in-depth interviews in order to attain a holistic understanding of the best standard 3PL practices currently in place as well as understanding the basic requirement of their clientele.

The respondents of the in-depth interviews included a mix of two management personnel who had ownership of 3PL projects, two project coordinators with substantial experience of conducting 3PL operations and two management personnel involved in the supply chain of a major FMCG producing organization. Due to the sensitive nature of the processes carried out by 3PL service providers for their clients, the respective organizations have requested anonymity. The data collected in regards to the processes mentioned in this paper will not be directly related to any particular 3PL service provider interviewed.

These service providers handle major MNCs as clients in the FMCG sectors as well as a very limited list (or none) of local organizations. Each client has specific requirements regarding the storage and distribution procedure for their products. They are due to factors such as international warehousing procedures they follow around the globe. Some of the products have specific temperature requirements as well. The overbearing factors in terms of warehousing seem to be frequency of distribution to different areas of Bangladesh.

1.3.2 Data Analysis

Content and narrative analysis techniques were utilized to organize the verbal data systematically around the most relevant areas of this paper collected from the primary research.

Additional analysis with a perceptual/conceptual focus was conducted to appropriately theorize the secondary research data in line with the requirement of this paper. The process of analyzing the journal articles, published papers, studies, articles, case studies, published reports, and research papers and the manner of integrating the information conducted is presented in figure 1.1:

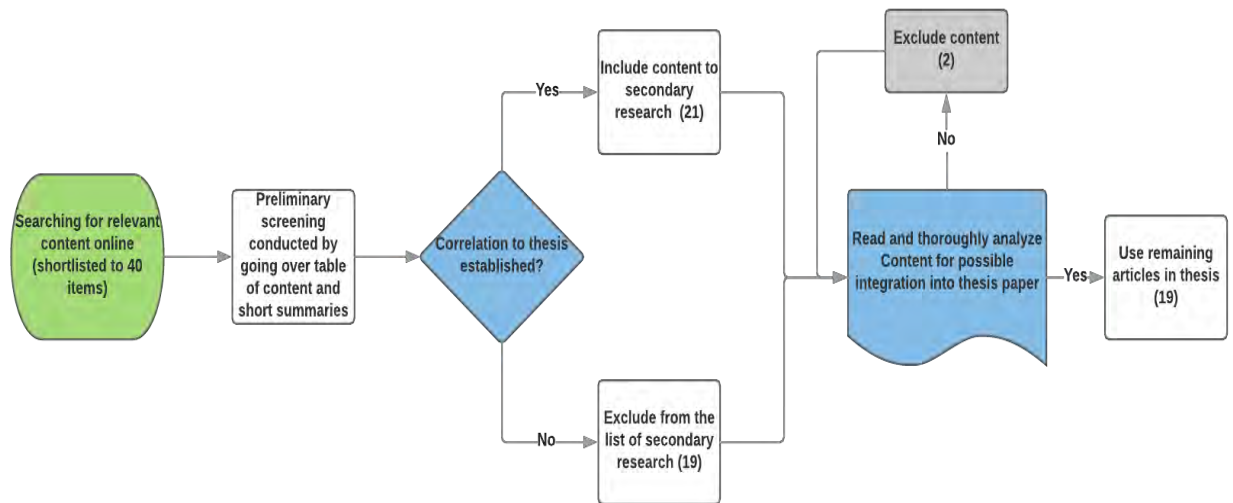


Figure 1.1: Secondary Research Process

1.4 Report Structure

The structure of this report is based on answering the first three research questions and leading up to the final question of finding the optimal decision support criteria for 3PL firms. The focus was not based on problems faced by 3PL firms servicing FMCG clients in Bangladesh due to the vast nature of issues faced by each individual firm on a daily basis. The intention of this report was to understand the type of business activities conducted by FMCG firms in Bangladesh and how 3PL firms presently service them within their jurisdiction. The report includes a thorough overview of the generalized activities undertaken by 3PL firms which is included in Appendices 1 – 5. It includes a comprehensive literature review of the benefits of integrating 3PL services in the supply chain of FMCG products in chapters two, three, and four. The external challenges faced by 3PL service providers are mentioned in chapter five. The decision support criteria answering the final question which was the summation of the first three research questions can be found in chapter six, the final chapter.



Chapter 2: Literature review

This research will aim to improve the storage and distribution operations which are presently implemented by exploring the supply chain, logistics, route to market and primarily the streamlining outsourced activities. Various prevailing and updated literature will be reviewed in this chapter.

2.1 Supply chain management

The concept of the supply chain management (SCM) emerged in the 1990s through collaboration of activities and linking information between the supplier's supplier and ending with the customer's customer. "Subsequently, other functions including physical distribution and logistics were integrated under the new concept known as SCM".³ Due to geographical and more importantly, social factors, the definition of a supply chain is not universal. Therefore, supply chain management is also unique for each region keeping in sync with the local requirement for optimal outcome.

2.1.1 Defining the supply chain

The supply chain in Bangladesh is not an exception to the chain in emerging economies around the globe. A somewhat simplified definition of a supply chain is provided by La Londe and Masters as "a set of companies moving materials forward"⁴ and a broader definition by Lambert et. al. suggests that "a supply chain [is] an arrangement of companies constructed to bring services and products to market".⁵ The latter definition does not differentiate the production of the material from providing the service of moving it from point A to point B in the process of obtaining the raw materials for production all the way to delivering it to the customer inclusive of the reverse logistics involved. This value creation is the essential glue that holds all the pieces of the supply chain together in order to form one large unit. Another dimension of defining the supply chain would be adding the customer's customer and the suppliers' supplier (second-tier) which would be the extended supply chain and finally the ultimate supply chain would be inclusive of the ultimate suppliers and customers as well as comprehensively involving the financiers, researchers and logistics services involved in the whole process.

³ Kriel, J. (2016). Providing decision support to FMCG market players in developing economies. *Faculty of Engineering at Stellenbosch University*. 1 (1), 8.

⁴ La Londe, B. and Masters, J.: Emerging logistics strategies blueprints for the next century. *International Journal of Physical Distribution & Logistics Management*, vol. 24, no. 7, pp. 35_47, 1994.

⁵ Lambert, D., Stock, J. and Ellram, L.: *Fundamentals of logistics management*. 1st edn. Iriwn/McGraw-Hill, Boston, 1998.

2.1.2 Defining supply chain management

The fundamental difference between a supply chain and the management of the supply chain is the fact that a supply chain will exist organically regardless of intervention. However, SCM involves active strategic, tactical and operational decision making in order to maximize the existing efficiency. These three factors are described Mentzer et. al. as a management philosophy, implementation of a management philosophy and a set of management processes. Their paper suggests a set of philosophies integrated actively in the supply chain in order to create value in the supply chain. They are as follows: ⁶

1. Integrating behavior: In order to dynamically respond to the ultimate customer, companies must expand their integrated behavior with both suppliers and customers.
2. Mutually sharing information: For supply chain members to integrate their behavior, information sharing must be prioritized. Information sharing is defined as releasing tactical and strategic data to other members of the supply chain. By sharing information, planning and monitoring processes can be aligned under the umbrella of the SCM philosophy.
3. Mutually sharing risks and rewards: By sharing risks individual companies limit their own exposure to hazards. Equally, as advantageous, risk sharing creates mutual rewards. This promotes cooperation between supply chain members, creating long-term competitive advantages.
4. Cooperation: Through cooperation companies create complementary capabilities and gain access to supplementary resources. Thus cooperation produces superior mutual outcomes that cannot easily be imitated by competitors.
5. Aligning goals: A successful supply chain relationship is characterized by a level of cooperation that increases efficiencies at a lower cost level while avoiding redundancies and overlap.
6. Integration of processes: The SCM philosophy dictates that all processes from procuring raw materials to manufacturing and distribution must be integrated. Supply chain integration is characterized by a focus on cost reduction and ultimately the full visibility of the supply chain.
7. Selecting partners and maintaining relationships: Effective SCM consists of a series of successful partnerships, extending beyond the time frame of the contract. Thus the long-

⁶ Mentzer, J., DeWitt, W., Keebler, J., Min, S., Nix, N., Smith, C. and Zacharia, Z.: Defining supply chain management. *Journal of Business logistics*, vol. 22, no. 2, pp. 1_26, 2001.

term success of supply chain members is determined by their ability to select partners and maintain long-term relationships.

2.2 Logistics

In order to conceptualize the criteria for improvement, a basic understanding of logistics service will provide the necessary information in order to make the adjustments.

2.2.1 Defining logistics

The scope and influence of logistics has evolved over the last couple of decades with increased globalization. The evolution can be seen in the following figure below:

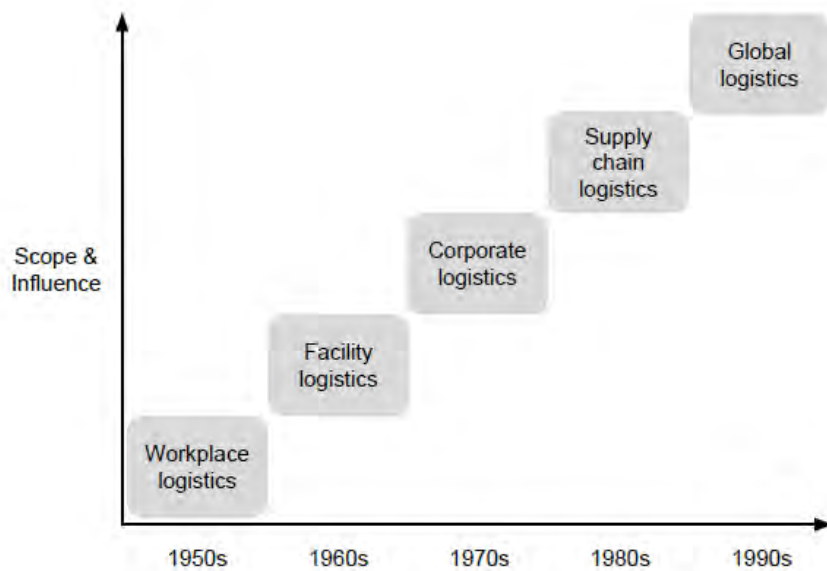


Figure 2.1: Scope & Influence of logistics over the last 50 years⁷

The initial form of logistics was established in order to make the individual workplace more efficient and comfortable followed by facility logistics which created a smoother workflow from one workstation to the next inclusive of physical material. The idea evolved into the first true essence of logistics in 1970s when “interrelated activities such as transport, warehousing and materials handling (facility logistics)” were considered as a separate discipline and “the accompanying concept of business logistics described procurement, marketing”.⁸ The concept was further dissected into corporate logistics which included “physical distribution as it describes the flow of materials and information between facilities”.⁸

⁷ Kriel, J. (2016). Providing decision support to FMCG market players in developing economies. *Faculty of Engineering at Stellenbosch University*. 1 (1), 18.

⁸ Kriel, J. (2016). Providing decision support to FMCG market players in developing economies. *Faculty of Engineering at Stellenbosch University*. 1 (1), 18.

Supply chain and global logistics are interrelated and resulted significantly due to the introduction of information technology (IT) in the 1980s. The primary distinction between the two is that supply chain logistics deals with product, service, finance, and information exchange between organizations while global logistics defines the same activities between countries. According to Frazelle, the five key activities of logistics are warehousing, transportation, supply, inventory management and customer response.⁹ Warehouses are an integral part of logistics because they act as buffers for market volatility as well as decreasing lead times. The transport activity links the entire supply chain together while customer response of ensuring the right product at the right time and place drives the supply and inventory management activities of logistics. The fundamental activity, transportation, includes the following subsets⁹: network design and optimization, shipment management, fleet and container management, carrier management and freight management.

2.2.2 Transportation logistics

The scope of transportation logistics revolves around five primary activities. Logistics service providers (LSP) need to be assessed based on the type and quality of service they provide based on the primary activities. These activities are elaborated in the diagram below in figure 2.2.

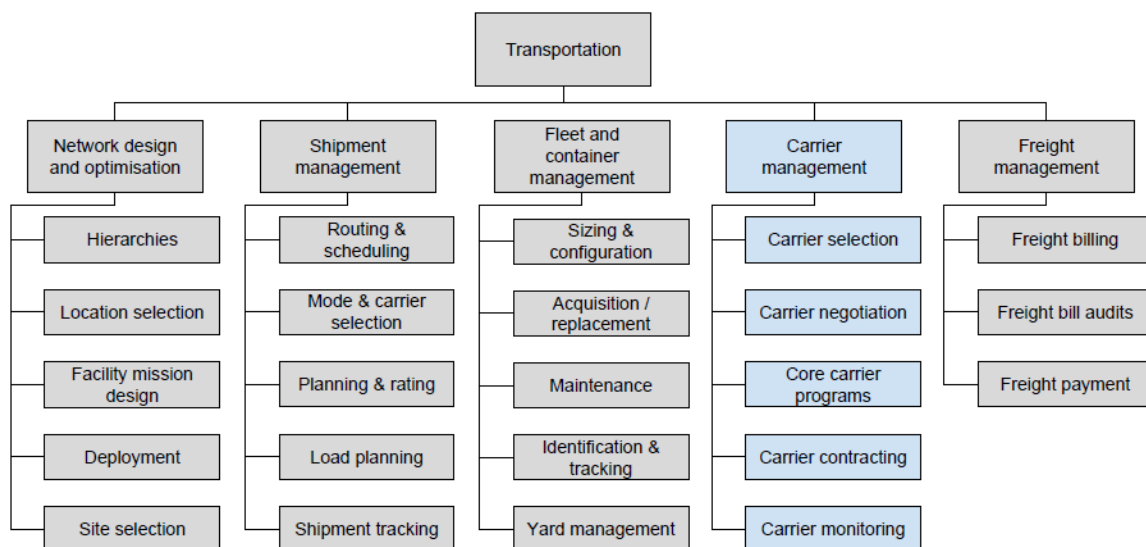


Figure 2.2: Scope of transportation logistics and the five primary activities¹⁰

⁹ Frazelle, E.: Supply chain strategy: The logistics of supply chain management. 1st edn. McGraw-Hill, New York, 2002.

¹⁰ Rushton, A., Croucher, P. and Baker, P.: The handbook of logistics and distribution management. 2nd edn. Kogan Page, New York, 2000.

Based on these integral service requirements of transportation logistics, an organization will be able to assess the viability of providing these services to their clients through in house resources or outsourcing them.

2.2.3 Types of logistics service providers

The decision of nil, partial or full outsourcing of logistics services can be determined by what will be the best fit for the organization. A relatively simple method of classifying LSPs has been extracted from the handbook of logistics and distribution management as shown in figure 2.3.

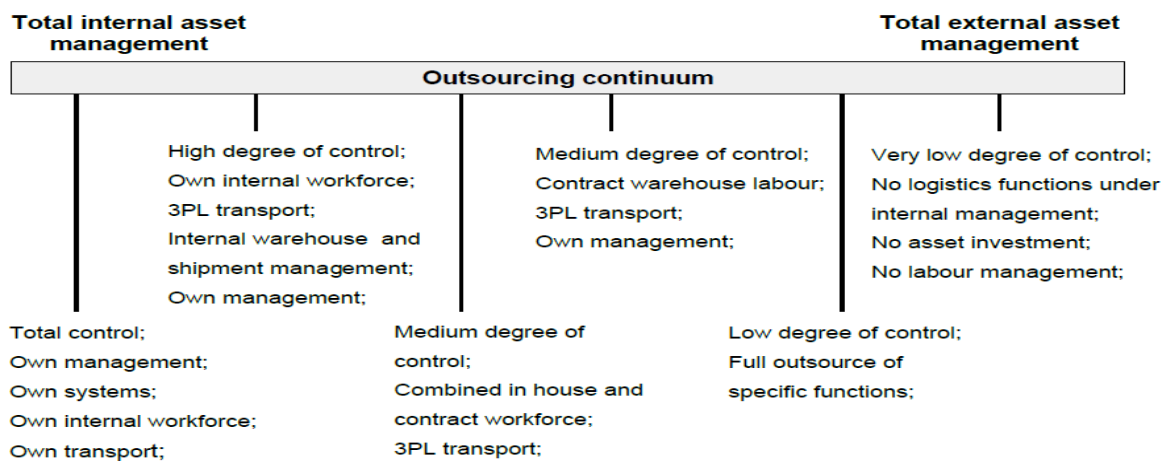


Figure 2.3: Types of LSP based on the scope of work¹¹

Depending on the scale of service to be provided by the LSP, they will offer either of the following services: dedicated operations and multi-user operations. In a dedicated operation, the LSP will provide logistics and/or distribution operations exclusively for one particular client whereas a multi-user operation of LSPs includes grouping clients with similar needs in order to improve efficiency. A particular organization can choose LSPs based on their own size of operations and budget for the particular operation and the LSP's "scope of services offered, degree of control relinquished and the type of operation. According to the three components, six unique arrangements have been identified within the outsourcing continuum. The arrangements are described as: (a) own fleet (b) owner driver (c) crowd-sourced (d) distributor (e) 3PL and (f) 4PL".¹¹

While having your own fleet and owner driver agreement with LSPs offer a high level of control over operations and delivery, crowd-sourced operations relies heavily on the LSP to conduct the

¹¹ Rushton, A., Croucher, P. and Baker, P.: The handbook of logistics and distribution management. 2nd edn. Kogan Page, New York, 2000.

task as well as not having to own delivery vehicles. 3PL service providers in Bangladesh are most comfortable with this type of setup since it decreases liability and increases the overall efficiency. This type of arrangement also does not have binding contracts with LSPs and therefore offers a certain amount of flexibility. 3PL service providers offer an integration of warehousing and transportation as well as certain value added services including procurement of goods. 4PL is the highest level of services an organization can outsource in terms of logistics with no internal assets involved in the whole process besides their core product. Amongst these types of LSPs, 3PL offers the highest amount of flexibility in terms of what type of services the organization wants to outsource.

2.3 Outsourcing

Outsourcing has been officially recognized as a business model in the 1980s prior to which companies used to own most or all of their supply chains. This was brought on by fast moving markets which required a lot of flexibility and quick responses. While vertical integration was undeniably effective in slow moving, mass markets, customer expectations became an overbearing driving force for demand. “The main motivating factors for outsourcing include cost reduction, resource and capability acquisition, a focus on core activities and flexible management”.^{12 13} However, loss of control and issues such as information security breaches may discourage companies from outsourcing.

2.3.1 Defining outsourcing

Outsourcing fundamentally means using outside resources inclusive of only tangible value creating. With the advancement and evolution of markets, intangible value creation has been integrated into the definition. Thus, business process outsourcing (BPO) has been established with processes such as “accounting, finance, facility operations, logistics, legal services, marketing and public relations” being outsourced.¹⁴

A holistic definition of outsourcing by Kedia and Lahiri is “an organizing arrangement to secure external capabilities while developing internal capabilities to ensure future competitiveness,

¹² Yang, D., Kim, S. and Min, J.: Developing a decision model for business process outsourcing. *Computers and Operations Research*, vol. 34, no. 1, pp. 3769_3778, 2007.

¹³ Rushton, A. and Walker, S.: *International logistics and supply chain outsourcing: from local to global*. 1st edn. Kogan Page, Philadelphia, 2007.

¹⁴ Kriel, J. (2016). Providing decision support to FMCG market players in developing economies. *Faculty of Engineering at Stellenbosch University*. 1 (1), 24-27.

flexibility and innovation".¹⁵ Keeping these factors in mind would allow the organization to analyze the types of services which would be most appropriate to outsource with the resources presently available to them.

2.3.2 Outsourcing engagements

Having a clear understanding on the reasons why an organization should outsource its services is absolutely imperative prior to deciding which services they should outsource. Clarifying the rationale for outsourcing will lead the organization level of authority they want to relinquish to outsiders. According to Sanders et. al., the outsourcing engagements can be classified into four different categories depending on the type of relationship the company will have with the organization that they are outsourcing to:¹⁶

1. Out-tasking (only a single task such as stocking the shelves is outsourced);
2. Co-managed services (a large scope of work with shared responsibilities but minimal strategic significance);
3. Managed services (an entire service is outsourced and end-to-end service is provided);
4. Full outsourcing (external company has strategic responsibilities as well as providing end-to-end solutions).

In addition, the criticality of tasks being outsourced determines the type of relationship the organization will have with the external company. They could be non-strategic transactions, contractual relationship, partnership or alliances. These factors determine the level of investment the organization will put into the relationship with the external company. The frequency of interaction, level of mutual trust as well as commitment is correlated to the type of tasks being outsourced. Figure 2.4 below provides a depiction of the type of relationship most appropriate depending on the task assigned to the external company.

¹⁵ Kedia, B. and Lahiri, S.: International outsourcing of services: A partnership model. *Journal of International Management*, vol. 13, no. 1, pp. 22-37, 2007.

¹⁶ Sanders, N., Locke, A., Moore, C. and Autry, C.: A multidimensional framework for understanding outsourcing arrangements. *The Journal of Supply Chain Management: A Global Review of Purchasing and Supply.*, vol. 43, no. 4, pp. 3-15, 2007.

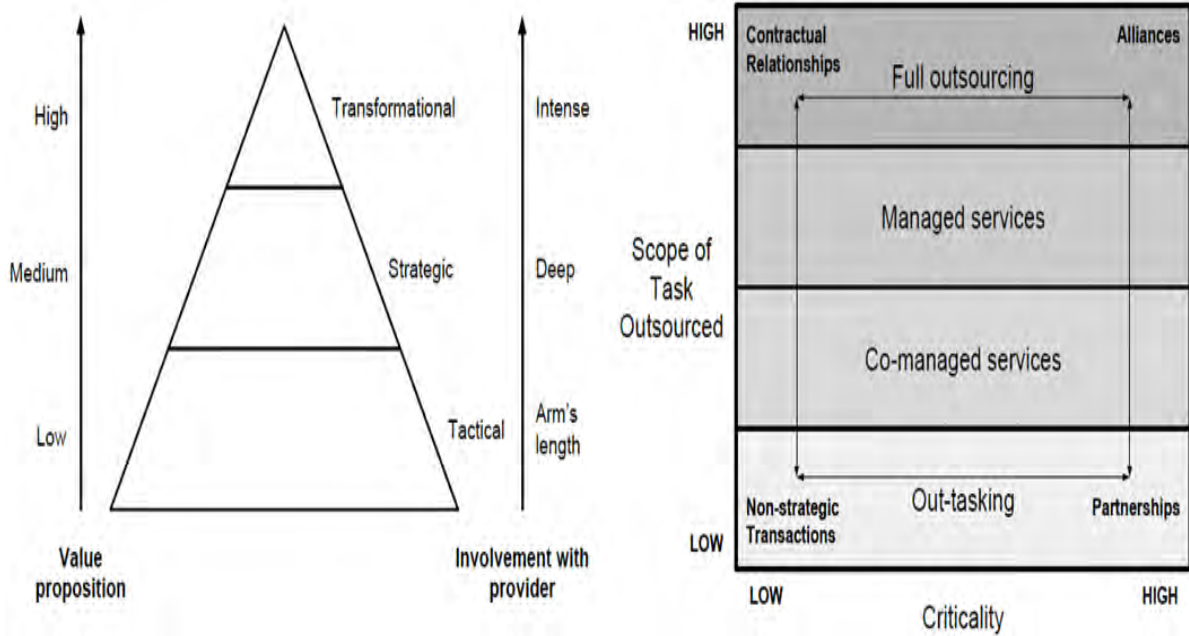


Figure 2.4: Types of partnership in relation to the tasks assigned to external company¹⁷

2.3.3 Understanding tactical and strategic outsourcing decisions

In order to take decisions regarding outsourcing, the organization must address the appropriate points keeping in line with the scope and the boundaries of the organization. Kriel mentioned some tentative questions a firm must address in his paper: “What problem or inefficiency is the company attempting to address? Is reducing costs or asset investment the main motivating factor? Does the company require external knowledge and experience?”¹⁷ He also suggests two different strategies to take while making decisions on outsourcing: transaction cost economics (TCE) and resource based view (RBV).

In essence, TCE contemplates the outsourcing impacts from an economic standpoint inclusive of both internal and external costs as well as the risks involved. “Alternatively, the RBV perceives the company as a collection of assets, which if utilized properly can create a competitive advantage. It is especially relevant to strategic outsourcing as it incorporates both tangible and intangible resources. The primary concern of the RBV is determining how the capabilities of a company determine its competitive position and performance”.¹⁸ Table 2.1 presents a comparison between TCE and RBV.

¹⁷ Kriel, J. (2016). Providing decision support to FMCG market players in developing economies. Faculty of Engineering at Stellenbosch University. 1 (1), 29-43.

¹⁸ Kriel, J. (2016). Providing decision support to FMCG market players in developing economies. Faculty of Engineering at Stellenbosch University. 1 (1), 29-43.

	Transaction cost economics	Resource based view
Unit of analysis	<ul style="list-style-type: none"> • Transactions 	<ul style="list-style-type: none"> • Assets and capabilities
Assumptions	<ul style="list-style-type: none"> • Bounded rationality • Opportunism 	<ul style="list-style-type: none"> • Bounded rationality
Considerations	<ul style="list-style-type: none"> • Asset specificity • Uncertainty • Small numbers bargaining 	<ul style="list-style-type: none"> • Strategic relatedness • Cooperative experience • Complementarity of capabilities • Capability-building mechanisms
Objective	<ul style="list-style-type: none"> • Transaction cost minimisation 	<ul style="list-style-type: none"> • Observe creation of value
Risks	<ul style="list-style-type: none"> • Dependence on supplier • Hidden costs • Post-contractual threat 	<ul style="list-style-type: none"> • Loss of critical capabilities

Table 2.1: Comparative analysis of the decision making factors between TCE and RBV¹⁸

2.4 Outsourcing logistics

Logistics comprises of several segments coming together as one whole component. One of those integral segments includes transportation which is the tangible service amongst many value adding intangible services. “The selection of a [logistics service provider] for partnership is perhaps the most important step in creating a successful alliance. Rushing into buyer-supplier relationship without adequate preparation or understanding of partners’ needs often lead to the failure of relationships”.¹⁹ Therefore, a thorough understanding of each other’s activities is imperative in initiating fluidity between the partnerships. “The ultimate decision is more complex than weighing expected benefits and drawbacks against one another. A company’s strategy is instrumental in determining what benefits are desirable and what drawbacks are acceptable”.²⁰ FMCGs in Bangladesh tend to rely on their 3PL service providers to choose the most appropriate organization who will be providing logistics (transportation) services contemplating their benefits, weaknesses and thorough risk assessments.

2.4.1 Benefits and risks of outsourcing logistics

Contemplating the company’s strategic needs will be instrumental in enabling the selection of the most appropriate logistics service provided who offers the desired services in the best possible price. The decrease or elimination of liabilities related to assets provides an additional source of

¹⁹ Gupta, R; Sachdeva, A; Bhardwaj, A. (2011). Criteria of Selecting 3pl Provider: A Literature Review. *International Journal of Mechanical, Aerospace, Industrial, Mechatronic and Manufacturing Engineering*. 5 (11), 2.

²⁰ Kriel, J. (2016). Providing decision support to FMCG market players in developing economies. *Faculty of Engineering at Stellenbosch University*. 1 (1), 29-43.

funds to invest in further enlarging the scope of services in order to fulfill the needs of the clients in the best possible manner. However, certain long-term costs, “unrealistic fee structures and margins as barriers to outsourcing” in addition to internal costs of converting the processes.²¹

“Although cost objectives are important, it cannot be regarded as the primary factor influencing the outsourcing decision”.²² “A focus on Core functions, LSP competencies and flexibility as the three main drivers for logistics outsourcing.”²³ These are the fundamental aspects which the companies must consider while making the outsourcing decision. In certain conditions, intangible, value adding services often provide the competitive advantage to companies over simply lowering the price or the profit margin. Advantages and disadvantages of outsourcing internal processes to LSPs are show in Table 2.2:

Expected advantages	Expected disadvantages
Elimination of asset ownership	Unaccounted costs
Economies of scale	Loss of control
Cost reduction	Loss of expertise
Allow focus on core competencies	Lack of innovation and improvement
Improved overall efficiencies	Lack of confidentiality
Access to external competencies and value added services	Reduced branding
Increased management capabilities	Driver link to customers lost
Improved flexibility	
Reduced labor exposure	

Table 2.2: Advantages and disadvantages of outsourcing logistics services²⁴

2.4.2 Auxiliary influences

Auxiliary influences of outsourcing logistics services are described by Kriel as follows: “consumer pressures, legal consequences, labor issues, economic considerations and political influences”.²⁴

²¹ Gupta, R; Sachdeva, A; Bhardwaj, A. (2011). Criteria of Selecting 3pl Provider: A Literature Review. *International Journal of Mechanical, Aerospace, Industrial, Mechatronic and Manufacturing Engineering*. 5 (11), 2.

²² Kriel, J. (2016). Providing decision support to FMCG market players in developing economies. *Faculty of Engineering at Stellenbosch University*. 1 (1), 29-43.

²³ Wilding, R. and Juriado, R.: Customer perceptions on logistics outsourcing in the European consumer goods industry. *International Journal of Physical Distribution & Logistics Management*, vol. 34, no. 8, pp. 628_644, 2004.

²⁴ Kriel, J. (2016). Providing decision support to FMCG market players in developing economies. *Faculty of Engineering at Stellenbosch University*. 1 (1), 47.



Infrastructure, environmental factors and sustainability have become increasingly important around the world and amongst the consumers; therefore, reduction of the company's own carbon footprint by consolidating services can provide certain goodwill amongst the clients.

Chapter 3: Role of third-party logistics in supply chain

The essence of third-party logistics lies in providing an enhanced service of getting the right product to the right client in the right quantity and especially the right quality because 3PL aims to add additional value to the existing supply chain in addition to cutting costs. An organization may choose to outsource its logistical functions partially or completely. “3PLs have the resources, scope, scale, and best practice experience in warehousing, distribution and transportation, thus providing services more efficiently and less expensively than what companies can do in-house. The 3PL service provider can enhance the logistics procedure by allowing the firms to concentrate on their basic adequate qualities that probably decreases the production cost and enhances the customer satisfaction”.²⁵ The 3PL firms provide the physical transportation of products and essential peripheral services such as carrier selection, rate negotiation, warehouse operations, auditing and so on.

Theoretically, once the company hands over the product after manufacturing, the 3PL service provider will take care of all the activities until the product reaches the final customer. 3PL firms are also capable of handling the logistical services required prior to production such as transportation and handling of raw materials as part of the same storage and distribution processes. This makes the service an integral part of the supply chain.

Patil and Dolas mentions several reasons which might encourage organizations to outsource the in-house activities of the supply chain which are not their specialization or core activities. They are as follows²⁶:

- Concentrate on core activities and processes;
- Improve customer service level;
- Integrate the entire supply chain;
- Reduce conflict and reciprocate on mutual goal-related matters;
- Increase efficiency, stability and flexibility;
- Establish market legitimacy;
- Avoid extensive capital expenditures;
- Increase productivity;

²⁵ Patil, G. B.; Dolas, D. R. (2015). Role of third party logistics in supply chain management. *International Research Journal of Engineering and Technology (IRJET)*. 2 (8), 1.

²⁶ Patil, G. B.; Dolas, D. R. (2015). Role of third party logistics in supply chain management. *International Research Journal of Engineering and Technology (IRJET)*. 2 (8), 1.

- Reduce risk, uncertainty and fluctuation;
- Leverage resources;
- Improve expertise, market knowledge and data access;
- Create a competitive advantage either locally or globally;
- Reduce personnel and equipment costs.

3.1 Services provided by third-party logistics

3PL providers have the opportunity to play a vital role in optimizing the global supply chain by minimizing the gaps between manufacturers and the customers. A free flowing supply chain allows manufacturers to tap into customer bases previously unreachable and vice versa. This factor can unequivocally enhance local trade and in turn increase global trade.

The types and varieties of services provided by 3PL firms include a wide range of activities surrounding the warehousing and transportation activities inclusive of the following:

1. Reverse logistics: this service provided by 3PL firms is an essential value adding service which aims to attain goodwill from the client by going the extra mile to ensure that their exact needs have been met. This service also reduces the time required by clients to send the wrong or damaged products back to the manufacturer since the same transportation services and network is able to conduct this service.
2. Route and network optimization: with the aim of reducing freight costs, 3PL firms aim to select the most efficient route in order to save time and money for the client.
3. Transportation (carrier) selection: keeping the quality and cost in mind, 3PL organizations take on the responsibility of selecting the best mode, type and size of transportation to ensure that the product reaches the client in the best possible manner.
4. Freight consolidation: combining shipments done by 3PL firm is done to minimize the time required to reach the destination of the product for the client.
5. Information systems: 3PL offers a one stop information technology service to its clients providing close contact with the customer and the manufacturer working as an intermediary to ensure smooth work flow.
6. Value added services: in addition to the regular activities of storage, handling and distribution, 3PL offers many value added services such as consolidation of products on offer, servicing promotional activities, etc.



3.2 Integration of 3PL with supply chain management

Third party logistics service providers can strategically work to provide the maximum service to customers in a cost and time sensitive manner. This will create an expeditious flow of material and information inclusive of raw materials needed for production and ending with the final product at the disposal of the final consumer. This type of integration within the supply chain is the specialization of 3PL firms. Delays in delivery of raw material may cause a disruption in the production line which might disrupt the whole supply chain.

These unnecessary delays can be avoided by utilizing the expertise 3PL service providers whose only focus will be to ensure a smooth flowing supply chain. This type of integration conducted by the 3PL organizations will bring a new dimension to the inter-organizational relationships between firms are to expedite the use of each other's strengths and overcome the weaknesses. This skill of efficiently and effectively connecting the dots and the use of information technology to do it will only increase operation competitiveness, flexibility, productivity and customer satisfaction.

Chapter 4: Importance of Supply Chain Management in the FMCG Sector

FMCG products are directly influenced by the end user because these products generally affect their daily lives. Factors such as consumer’s “choice, like and dislikes, demography, seasonality, brand, marketing, etc.” are amongst the variables which determine what type of FMCG products they will be purchasing. “The volume of products, movements of goods is quite large in comparison with other type of products. Distribution channels are wide and complex in FMCG industries. Hence scope and role of supply chain is crucial considering financial aspect of organization”.²⁷

4.1.2 Global trend of SCM in the FMCG Sector

The involvement of supply chain management in manufacturing, supply and distribution process of FMCG products revolves around value addition starting from the “raw material, extraction stage right through the various transformation value addition processes, to the distribution and end user consumption”.²⁷

The trend of the jurisdiction of global supply chain management has been can be summed up in table 4.1.

Past	Present	Future
1. Reactive, Crisis Management. 2. Service at any cost. 3. No data base. 4. Approach: Confidential/Hide/ Individualistic. 5. Physical presence essential. Lack of commitment.	1. Systematic & Objective Oriented. 2. Service at a cost. 3. Data Management – Available. 4. Approach: Knowledge Sharing. 5. Physical presence not essential. Sense of commitment & Trust	1. Proactive, boundary less approach. 2. Service–Pay by itself– Specialized function. 3. Web based data, Quick, Flexible, Reliable, Accessible –any time any where 4. Approach –Knowledge as a tool. 5. Virtual office and market.

Table 4.1: Jurisdiction Trend of Global SCM²⁷

The Table 4.1 above primarily describes tactical and operational activities in regards to the supply chain. There is little or no mention of the strategic activities involved in supply chain management which includes “network optimization, strategic partnership with suppliers, product lifecycle management, information technology infrastructure, where-to-make and what-to-make

²⁷ N/A. (2018). *Chapter IV: Supply Chain Management in FMCG Industries*. Available: http://shodhganga.inflibnet.ac.in/bitstream/10603/73544/13/13_chapter%204.pdf. Last accessed 25th July 2018.

decision” are included as well as “aligning overall organizational strategy with supply chain strategy”.²⁸

4.1.3 Contribution of 3PL in the FMCG sector

In regards to the involvement of 3PL services FMCG sector, the strategic factors will soon play a vital role in integrating services between themselves and their clientele as well as their client’s client. Involving 3PL organizations in the strategic decision making process may yield more benefits which might trump the risks involved such as relinquishing control or confidentiality aspects. However, comprehensive integration requires eliminating opportunity costs or alternatives almost entirely which can be done through absolute transparency between the 3PL organization and their clientele.

At the present rate of growth of the 3PL industry providing services to the FMCG sector in Bangladesh, comprehensive integration of strategic decision making is still quite a ways according to industry insiders. The primary area of concentration for 3PL service providers include accurately conducting forecasts of storage and distribution requirements by setting up the replenishment program in the most efficient manner. A report by accounting firm KPMG suggests that accurately predicting the aforementioned data can yield the following results²⁹:

- ✓ lower levels of inventory across supply chain partners
- ✓ improved transport and warehouse utilisation
- ✓ improved customer experience through improved availability.

3PL service providers in Bangladesh have the constant challenge of dealing with auxiliary influences which are usually out of their control. Factors such as inadequate infrastructure, political hindrances and socioeconomic factors which drive the demand of FMCG products presents challenges for the 3PL operators which have to be compensated by proving to their clients that they are constantly working towards achieving optimal efficiency. The auxiliary factors are discussed briefly in the next chapter.

²⁸ N/A. (2018). Chapter IV: Supply Chain Management in FMCG Industries. Available: http://shodhganga.inflibnet.ac.in/bitstream/10603/73544/13/13_chapter%204.pdf. Last accessed 25th July 2018.

²⁹ KPMG. (2018). FMCG and retail value chains. *A collaborative study by AFGC Trading Partner Forum and KPMG*. 1 (1), 1-32.



Considering the aforementioned factors, the 3PL firms in Bangladesh tend to focus on their core activity of warehousing. Some 3PL organizations operating in the country have freight forwarding services, customs clearance services as well as their own fleet (an insignificant number of organizations) in their organization or in one of their subsidiaries. This enables them to offer all variants of 3PL services, but the most common form of 3PL services provided is warehousing and transportation (outsourced).

Chapter 5: Overview of auxiliary factors in the SCM of FMCG products in Bangladesh

Fast moving consumer goods (FMCG) are inclusive goods which are sold at a fast pace, fundamentally non-durable and at a relatively low price. These products, commonly known as consumer packaged goods, exclude groceries and pulses and include almost every other product sold at standard retail outlets. These non-durable goods have daily consumption rate and therefore need to be made available for the consumer in at regular intervals in order to retain loyalty towards the brand, to a certain extent.

These factors make the transportation of FMCG products very time-sensitive and manufacturers have to continuously expand their distribution networks across Bangladesh due to the high demand of FMCG products. “Moreover, having large volumes and low margins, FMCG companies must respond quickly to deliver in demand, on-trend products to customers when and where they want them, to avoid getting stuck with undesirable stocks”.³⁰

5.1 Overview of the FMCG sector in Bangladesh

The Fast Moving Consumer Goods sector in Bangladesh can be segregated into three major categories: food and beverage, personal care items and household care items. Tobacco and related products can also be categorized as FMCG but since it is a relatively dominant portion in this sector. The food and beverage category includes milk, dairy products, baked goods, frozen food, processed food and beverages. Personal care items are inclusive of all personal hygiene products. Household products are primarily cleaning products used around the house such as detergents, liquids and aerosol.

Consumer goods in Bangladesh are distributed in two methods, the wholesaler channel (manufacturer – wholesaler – retailer – consumer) and the retailer channel (manufacturer – retailer – consumer). Products distributed through wholesalers include the following products and similar products: laundry detergent, toilet soap, fairness cream, toothpastes, shampoo, hair oil, spices, salt and edible oil. Products such as ice cream and beverages are distributed in the retailer channel.

³⁰ Heiyantuduwa, M.; Wannisingha, W.M. N.N.; Rupasinghe, T. (2015). A Strategic Analysis of the use of Third Party Logistics Providers (3PLs) in Fast Moving Consumer Goods (FMCG) Industry: A Systematic Review of Literature. *Proceedings of 12th International Conference on Business Management*. 1 (1), 1.



The major players in the food & beverage industry includes Acme Agro Vet & Beverages Ltd, ACI Foods Limited, Akij Food & Beverage Ltd, Aarong, BD Foods Limited, Bashundhara Foods & Beverage Industries Limited, Bombay Sweets & Company Ltd, Cocola Food Products Limited, Golden Harvest Agro Industries Limited, Globe Soft Drink Ltd, Haque Group of Industries, Ifad Foods Limited, Ispahani Foods Limited, Meghna Group of Industries, Nestle Bangladesh, New Zealand Dairy Products Bangladesh Limited, Nabisco Biscuits & Bread Factory Ltd, Olympic Industries Limited, Pran RFL Group, Partex Beverage Ltd, Perfetti Van Melle Private Limited, Prome Agro Foods Limited, Square Foods & Beverage, Sajeeb Group, and Transcom Beverages.³¹

The personal care items FMCG sector is predominantly serviced by multinational and local organizations Unilever, Keya Cosmetics, Lily Cosmetics, Marks & Allys, Aromatic Cosmetics, Square Toiletries and Kohinoor Chemical Company.³¹

The lion share of household care items in Bangladesh are provided by Unilever, Reckitt Benckiser Bangladesh, Kohinoor Chemical Company, Square Toiletries Ltd., ACI Limited, RFL Plastics Limited, Bengal Plastic and Partex Plastics Limited.³¹

5.2 SWOT Analysis of FMCG sector in Bangladesh

The SWOT analysis of the FMCG sector is based on in-depth interviews with industry experts. The analysis is based on a generalized overview of the sector in the country. Figure 5.1, extracted from a report produced by EBL Securities, depicts characteristics of FMCG products from the buyer's and seller's perspective.

³¹ Ashik, A. (2018). *FMCG Industry Review of Bangladesh*. Available: http://www.eblsecurities.com/AM_Resources/AM_ResearchReports/SectorReport/FMCG%20Industry%20Review%20of%20Bangladesh.pdf. Last accessed 23rd July 2018.

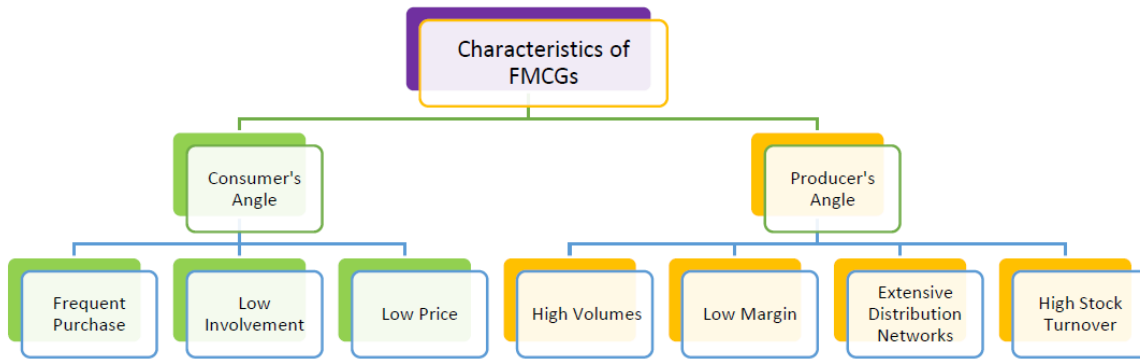


Figure 5.1: Characteristics of FMCGs³²

The SWOT analysis of the FMCG keeping the consumers and producers in mind is produced below:

Strengths

- Sufficient penetration in the urban and rural target areas
- Reasonable operating expenses
- Leading MNCs serving the FMCG sector in Bangladesh

Weaknesses

- Lack of appropriate implementation of ERP software and lack of investment opportunities in technology due to restricted economies of scale/ROI
- Information gaps primarily due to lack of automated systems
- Little or no implementation of intellectual property laws allow fake products to flourish in semi-urban and rural markets
- Lack on innovation in product category due to a predominantly 'pull strategy' applied down the supply chain

Opportunities

- Rapidly expanding rural market with increasing GDP, per capita income and consumption rate
- Potential export to other countries considering the low operating costs
- Declining disruptions due to political instability allow FMCGs providers to take on long term strategies

³² Ashik, A. (2018). *FMCG Industry Review of Bangladesh*. Available: http://www.eblsecurities.com/AM_Resources/AM_ResearchReports/SectorReport/FMCG%20Industry%20Review%20of%20Bangladesh.pdf. Last accessed 23rd July 2018.

Threats

- Inflation poses a threat of increase in raw materials
- Lowering import restrictions might encourage cheap, foreign products to flood the market

5.3 External Aspects (Political, socioeconomic and infrastructural)

Considering the fact that this paper aims to keep the political, socioeconomic and external infrastructural aspects directly or indirectly relevant to 3PL service providers in Bangladesh constant, this chapter focuses on these.

The fundamental reason is due to the inability of 3PL service providers to make improvements in these particular areas by their business decisions. Bundled services (excluding warehousing and distribution) which 3PL firms offer by outsourcing tasks to external parties (sometimes to subsidiaries within their organizations) fall outside the scope of fundamental 3PL services offered in Bangladesh. A brief overview of factors directly related transporting FMCG goods in Bangladesh which are derived from external factors (political, socioeconomic and infrastructural) will be presented below.

The section will be derived from the World Bank database's LPI, comparing Bangladesh to its regional neighbors in South Asia and Southeast Asia. The following dimensions will be used for comparison and a picture of where Bangladesh stands in regards to logistics performance. The logistics performance (LPI) is the weighted average of the country scores on the six key dimensions. The scoring system for each dimension is based on score between 1 (very low) to 5 (very high)³³:

1) Efficiency of the clearance process in Bangladesh

The figure below is not a depiction of the actual customs clearance process in Bangladesh, but a comparison of the speed, simplicity and predictability of the customs agencies compared to its peers. From the figure, we can safely assume that Bangladesh custom processes are performing below the average of 2.5 amongst its peers. This is taken into consideration from the fact that the country with the lowest performance, Pakistan, stands near to 2 and the country with the

³³ World Bank. (2018). *International LPI Scorecard*. Available: <https://lpi.worldbank.org/international/scorecard>. Last accessed 4th Aug 2018.

highest performance in this set of peers, Cambodia, stands near 3. Efficiency of the clearance process by border control agencies, including customs:

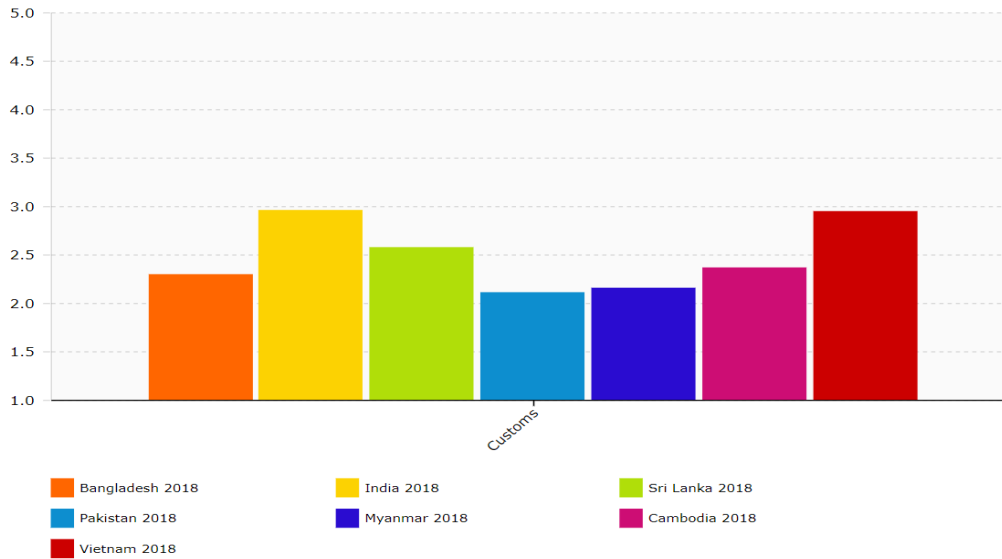


Figure 5.2: Efficiency of the clearance process in Bangladesh

2) Quality of trade and transport related infrastructure

In this figure, we can see that Bangladesh also has sub-par performance compared to its peers. This would suggest that the ports, railroads, roads, and information technology related to those particular infrastructure is not meeting the average expectation of the users amongst the country's peers. In this figure, Cambodia has once again outperformed the rest of its peers by reaching a solid score of 3 whereas Myanmar is lagging behind with a score of 2. Bangladesh once again falls short of falling in between the two with a score of less than 2.5.

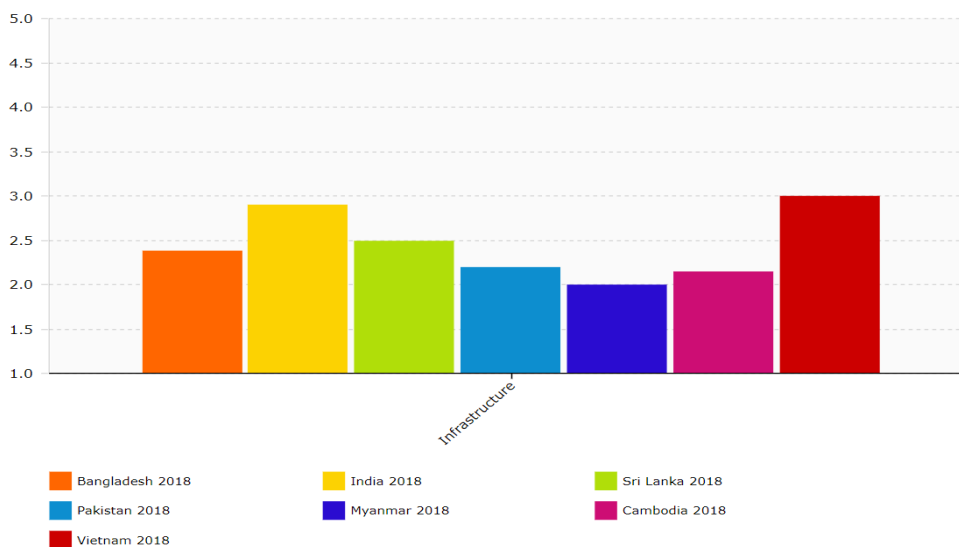


Figure 5.3: Quality of trade and transport related infrastructure in Bangladesh

3) Ease of arranging competitively priced shipments:

This figure paints a brighter picture where the relevant stakeholders think that Bangladesh is able to offer relatively good competitively priced shipments. India has outperformed the rest of its peers in this category with the most competitively priced shipments and Myanmar has once again had a lowest score. This means that shippers are happy with the prices they are offered for their shipments from India and unsatisfied with the shipments to and from Myanmar. Bangladesh has scored slightly above average in this category amongst its peers which means that the prices offered to shippers in Bangladesh are average with room for improvement.

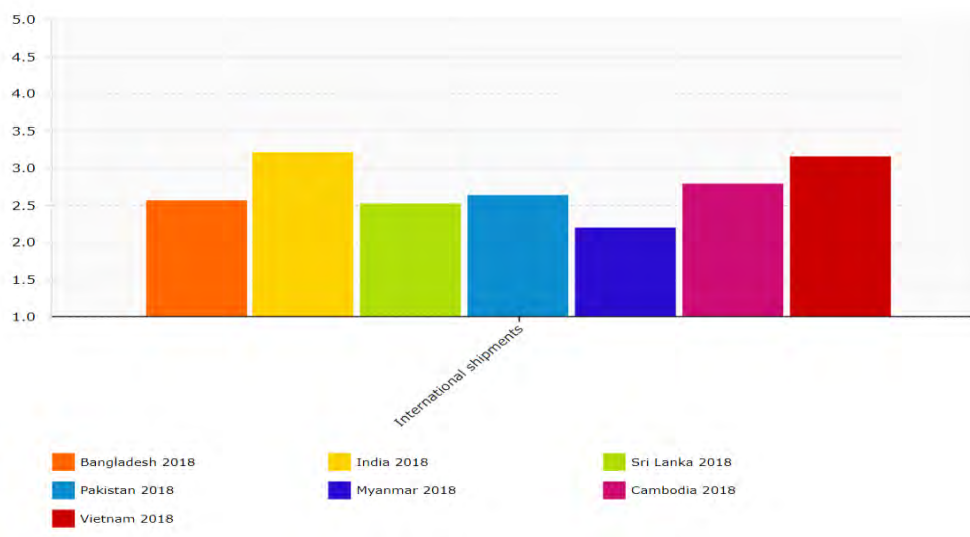


Figure 5.4: Competitively Priced International Shipments in Bangladesh

4) Competence and quality of logistics services

In the category of competence and quality of logistics services, performances of transport operators, customs brokers, etc. are assessed by the stakeholders. These services in Cambodia has been deemed the best amongst its peers by reaching a score of almost 3.5 and the lowest scoring country is Myanmar, scoring a little higher than 2. Bangladesh scored below average amongst its peers in this category meaning that the stakeholders deem these services sub-par.

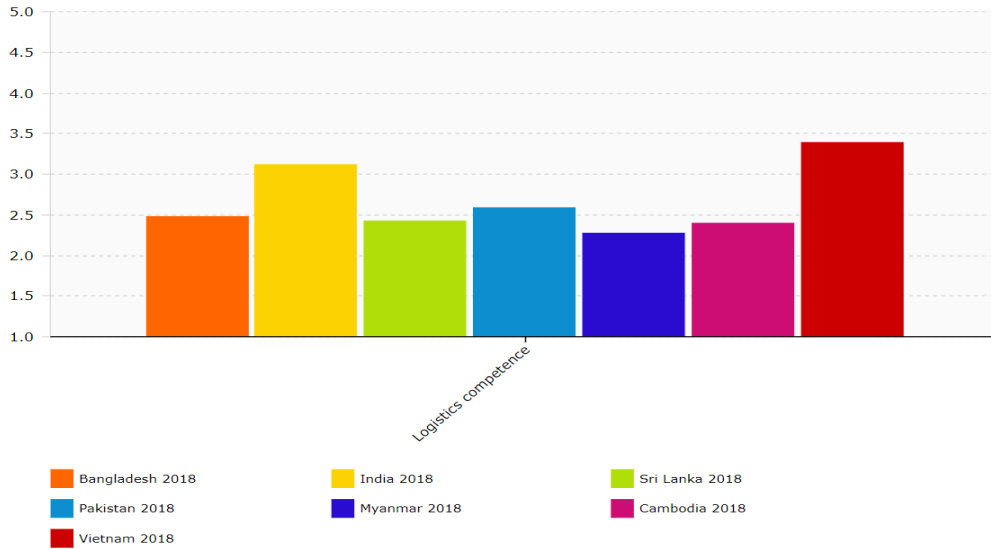


Figure 5.5: Logistics Service Competency in Bangladesh

5) Ability to track and trace consignments

The stakeholders place quite a lot of importance in this category due to the fact that shipment usually is of very high value as well as playing a big role in maintaining goodwill with the clients. Cambodia provides the best chance to the stakeholders to track and trace their consignments along the way with a score of nearly 3.5. Myanmar scored lowest again amongst its peers with a score just tad higher than 2. Bangladesh was average with a score of approximately 2.75.

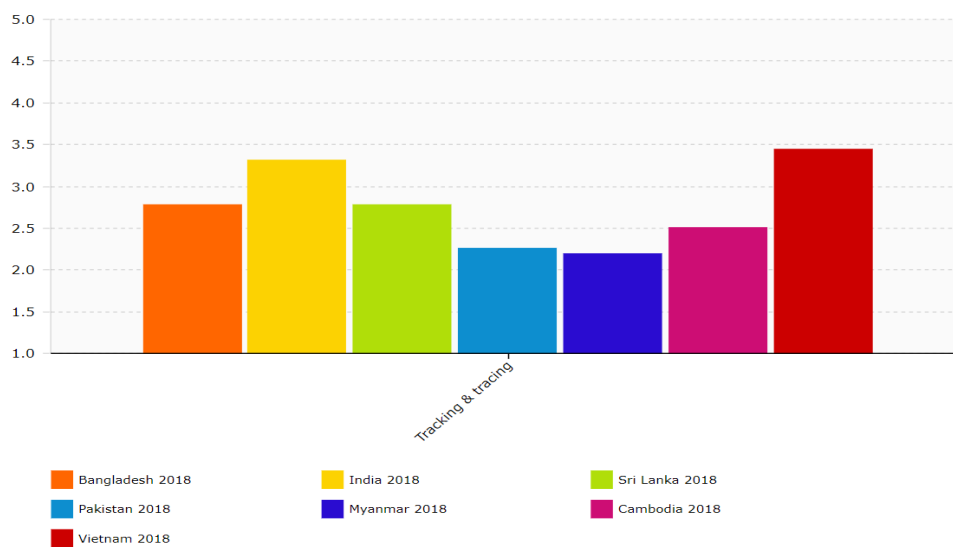


Figure 5.6: Tracking & Tracing Consignments in Bangladesh

6) Timeliness of shipments in reaching destination within the scheduled or expected delivery time
The expected delivery time does not necessarily mean that the time of shipment is speedy, but it means that the estimated time of delivery is accurate. Cambodia scored the highest in this category, slightly above 3.5 and Pakistan scored the lowest with a score slightly higher than 2.5 amongst the peers. Bangladesh scored above average in this category with a score of almost 3.

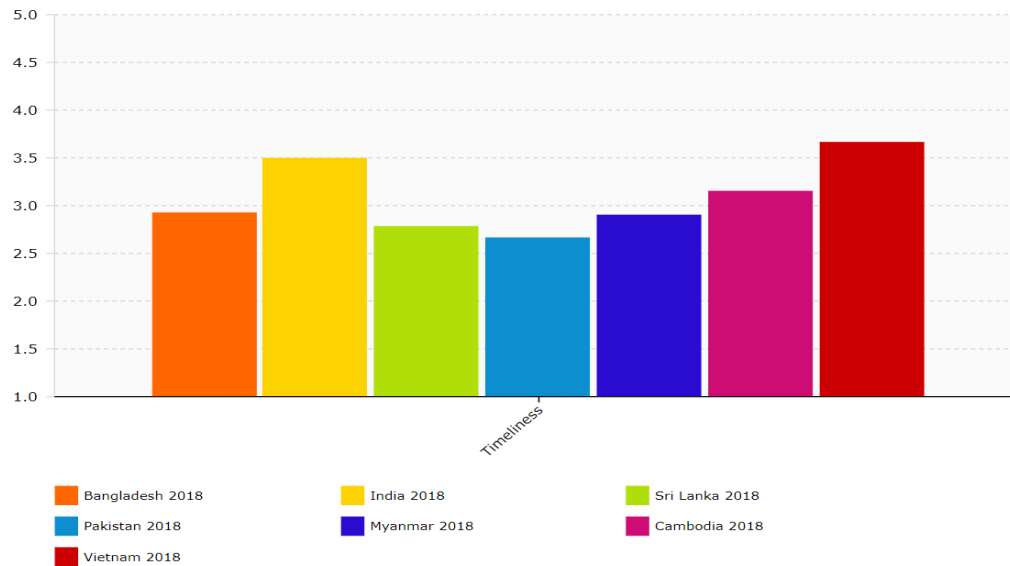


Figure 5.7: Timeliness of Shipments in Bangladesh

5.4 Route to market

The route to market (RTM) theory can be a substantial contributing factor in the transportation of FMCG goods in any market because the consumer typically pay approximately fifty percent of the whole price of the product in getting the product to the market. This is more prevalent in Bangladesh due to the lack of a structured supply chain creating segmented channels of distribution. So, even though the production costs have been constantly decreasing over the past few decades due to the advancement of new technology, the price of distribution has been on the rise increasing the overall cost of the product. “The theory behind RTM aids strategies such as how to physically get to market, exploiting margins in the channel and identifying new market opportunities. RTM attempts to align and optimize spending in marketing, sales and distribution [and it] is characterized by four qualities: (a) it is customer focused (b) coherent (c) balanced (d) and flexible”.³⁴

³⁴ Kriel, J. (2016). Providing decision support to FMCG market players in developing economies. *Faculty of Engineering at Stellenbosch University*. 1 (1), 3-15.

5.4.1 Functional view of route to market

The functional view of route to market is inclusive of three different activities intertwined for further expansion of the activities of the market. They are growing, sustaining and value added activities. Keeping the focus on the desires of the customer, the three types of activities can be subcategorized into their fundamental focus, thus increasing the overall efficiency.

Planning the route critical in any market but especially overbearing in terms of providing 3PL service in Bangladesh. Considering the fact that this paper's scope is limited to keeping external factors constant, this section will focus on certain contingency factors a 3PL service provider in Bangladesh can take into account while providing its service.

Prior to designing new routes to market or redesigning an existing one, it is important to comprehend various factors described by Kriel, such as³⁴:

- Selecting suitable distribution channels in general.
- Selecting specific channel members.
- Establishing specific or broad agreements with channel members.
- Motivating selected channel members.
- Evaluating and benchmarking selected channel members.
- Redefining distribution channels and channel members.

5.4.2 Designing routes to market

According to the 3PL industry experts, it is important to consider various factors when designing to route to market in Bangladesh due to certain demographic aspects since about 62% of the universe is in the rural markets in the country. Access to technology is limited outside all the major cities and the point of sale determines demand priority. Disposable income is also rather limited due to a pre-dominantly agro-based economy bringing varying demand of FMCG goods in those markets. These factors contribute to a less than optimal profit margin thus requiring companies to into contractual agreements with transportation companies rather than investing in their own fleet. The management of transportation is primarily outsourced to companies owning their own fleets to provide the most efficient and cost effective service. This factor is further elaborated in section 1.2 of chapter 6 of this paper.

Interviews with 3PL service providers DHL and Dachser revealed some factors to take into account while planning the route and fulfilling the clients' requirements. These issues have to be



consolidated and balanced when providing the quotation for work to be conducted for the client. They are cost affectivity, road conditions, travel time considering the average speed per hour, prioritizing coverage areas affectively, accommodating the distributors and sales team with the optimum support within the scope of the work and engagement with relevant parties. The frequency of service is roughly based around the Pareto Principle.

It is important to note that although 3PL service providers are involved in planning the optimized RTM in Bangladesh, the transportation service provider to whom this service is outsourced to is ultimately responsible for route optimization. The 3PL service providers in Bangladesh usually rely on the experience and expertise of the carriers to provide the most effective and efficient service to their FMCG manufacturing clients. Although 3PL firms are dependent on the method of transporting products, they play a fundamental part in using their expertise to choose the most efficient route.

Chapter 6: Decision support for optimizing 3PL criteria

One of the most pre-dominant reasons shippers tend to outsource storage and distribution services is to focus on core competencies and stay competitive in the industry. In order to understand what type of services an organization will outsource to a 3PL service provider, they should make a thorough assessment of the 3PL services available in the market. Vice versa, the 3PL service providers must understand their customer requirement to help themselves in providing the best service possible while staying competitive in the field. Table 6.1 from Gupta an overview of factors that defines the types of logistic services which the 3PL service providers offer around the world:

FACTORS INFLUENCING DEGREE OF COMPLEXITY OF THE LOGISTICS SERVICES		
Basic Logistics Service	↔	Advanced Logistics Service
Single Services for Solution	↔	Multiple and Bundled Services
Tangible Service Definitions	↔	Intangible Outcome Requirements
Handling Focus	↔	Value Adding Focus
Execution of Activities	↔	Management
Stable Service Definition	↔	Development & Reengineering
Degree of Complexity of Service		

Table 6.1: Factors Influencing Degree of Complexity of the Logistics Services³⁵

6.1 Impact of 3PL practices on the firms' overall performance

In regards to FMCG products, warehousing or storage is one of the most important and critical operations taking place in the whole supply chain. Due to the sensitive nature for the demand of the product, it is imperative that they supply chain be as efficient as possible in order to expedite the whole availability of products at the retailers.

The backbone of the supply chain is the transportation of goods from one place to another. The 3PL service providing organizations studied for the purposes of this paper revealed that the overwhelmingly vast majority of the organizations outsource its transportation responsibilities to other organizations.

This is due to the fact that owning a fleet of vehicles used to transport goods requires substantial capital investments making it financially unfeasible due to the restricted profit margins the

³⁵ Gupta, R; Sachdeva, A; Bhardwaj, A. (2011). Criteria of Selecting 3pl Provider: A Literature Review. *International Journal of Mechanical, Aerospace, Industrial, Mechatronic and Manufacturing Engineering*. 5 (11), 2.

manufacturers are willing to pay 3PL service providers for their services. The lack of willingness to implement insurance policies amongst the clientele provides a risk during the transportation of products which the 3PL organizations are not willing to take. However, the 3PL organizations must ascertain their clients with a certain amount of goodwill that the transportation company appointed for the task has proven experience as well as a good record of transporting relevant products within Bangladesh.

Reverse logistics can be a focal point of 3PL services because this ensures loyalty from the retailers for the FMCG manufacturers. A dedicated reverse logistics service can make a fundamental difference between the manufacturing firm handling the warehousing and distribution and an expert 3PL service provider conducting the same activities.

6.2 Decision support tool validation for optimized criteria

This validation tool will be used to theorize the thesis statement: Achieving optimal 3PL criteria by keeping the political, socioeconomic and infrastructural (auxiliary) aspects constant. The validation tool is derived from SCOR model established by APICS. This section will attempt to optimize the segments of the corroborated warehouse practices taking place in Bangladesh as listed in case study in the Appendices 2 - 5. The breakdown of processes which is most relevant to the 3PL services conducted in Bangladesh has been derived from the publication about selecting 3PL organizations by Aguezzoul.³⁶

6.2.1 Case study

The case study conducted on the combination of the best practices of the 3PL services provided by major MNCs in Bangladesh is provided in Appendix 1.

6.2.2 Proposed criteria for 3PL organizations serving the FMCG sector in Bangladesh

This section provides an overview of the list of criteria based on the social constructivism perspective which is provided in Appendix 6. The list is based on five major sections of operations within the warehousing premises. The five areas of focus include the following: warehousing, order processing, inventory management, VAS and information systems, and transportation.

³⁶ Aguezzoul, A. (2007) The Third Party Logistics Selection: A Review of Literature. INTERNATIONAL LOGISTICS and SUPPLY CHAIN CONGRESS, Nov 2007, Istanbul, Turkey. p 3.

Adaptation of the proposed criteria should enable 3PL organizations to mitigate the potential risks involved from external threats as well as enabling them to overcome their weaknesses.

A. Warehousing

At the strategic level, it is imperative to formulate a close relationship with the FMCG client in order to develop a sustainable business. Bi-annual meetings have to be held to calibrate strategic processes of both parties utilising tactical information. Solid establishment of communication needs to be established between the FMCG client and the 3PL firm at a tactical level in order to successfully identify, prioritize and aggregate supply chain requirements of the FMCG producing organization for the Bangladeshi consumer. The 3PL firm should partner with suppliers with the intent of collaboration of delivery procedure.

At the tactical level, both FMCG clients and the 3PL service providers should share business process information to consolidate supply chain requirements with supply chain resources quarterly. The personnel must ensure transparency of the 3PL firm's requirements from the FMCG client regarding most efficient schedule of product deliveries with a pre-imposed margin to increase lead time. Close observation must be maintained in terms of authorizing supplier payment internally with the supplier development objective for pre-production material. The 3PL firm must form an audit the method of receiving product, verifying correct product and transferring correct product by the 3PL firm in correlation to the requirements of the FMCG client, internally, once a month.

At the operational level, consolidation of goods received, stocked and shipped between the unloading, stocking and loading departments should be done twice a day. Joint coordination between [supplier – FMCG Client] and [FMCG Client – Retailer] with pre-determined intervals (hours) has to be conducted every day. The 3PL firm should consolidate client process requirement checklist and internal process checklist every 24 hours.

B. Inventory Management

At the strategic level, the management of the 3PL firm must hold bi-annual meetings to jointly forecast category allotments (food & beverage, personal care items and household care items) based on historical data aiming for a pre-determined percentage of improvements in the following categories: minimizing inventory, reduction of working capital and reduction of stock obsolescence. Time and quantity has to be assessed according to the pull strategy in Bangladesh



due to the gap in conveyance and production. The closest possible correlation between rate of pull and rate of supply needs to be established.

At the tactical level, monthly internal staff meeting with the unloading, stacking, picking and loading team leaders to highlight process discrepancies and promote innovation in processes needs to be held. The frameworks established to tolerate risk should be updated and internal PDCA cycles with worst case scenarios should be conducted quarterly. The interdepartmental check and balance methods quarterly taking into account any and all unnatural occurrences should be updated each quarter. A two part cycle count should be conducted weekly to internally analyse trends and forecast location settings of storage according to demand during special occasions.

At the operational level, the employees should conduct a two part cycle count daily for internal inventory management and reconciliation. A daily analysis of better floor space utilization focusing on safety stock throughput should be done. Finally, a daily analysis of errors detected in the inventory management processes should be practiced.

C. Order Processing

The management, at a strategic level should require bi-annual external audit (third party) by quality control/assurance consultancy organization of identifiable check and balance criteria between client, supplier, retailer and the 3PL firm only for internal purposes. In addition, a bi-annual audit of safety stock for based on tactical information with a pre-imposed margin of increment in efficiency should be shared with the client.

At the tactical level, Audit and update internal benchmarks quarterly for pick-to-ship cycle time identifying critical fall-backs and establish for a minimum of 3 contingency countermeasures. The employees should integrate and correlate sales/shipment data and inventory data to prioritize clients, items, loads and maximise space utilization monthly. In addition, they should identify and update each cost component (SKU, pallet, square footage, and load) quarterly for internal records.

At the operational level, the employees must reconcile the pre-determined labor efficiency rate (unloading, loading, stocking, picking and staging) once a day to ensure the most efficient asset



and inventory utilization of the labor force. They should also reconcile a pre-determined customer satisfaction checklist for the following: [FMCG supplier – Warehouse] and [Warehouse – Retailer] daily. Finally, they should reconcile under-stocking and/or over-stocking list according to SKU/CBU daily.

D. VAS and Information Systems

At a strategic level, audit of the present VAS offered to the FMCG manufacturer through immediate customer information available and analysing scopes for investment into a pre-determined increase in the list of VAS services should be done quarterly. The management should then communicate issues which arise in the audit with the client with a minimum of three contingency solutions. Quality audits of VAS services on offer conducted by external audit (third party) by quality control/assurance consultancy organization bi-annually for internal database. Clarification of year-on-year cost increment (if any) related to quality assurance has to be communicated to the FMCG client. Reconciliation of forecasts and predictions made by software in use for overstocking, shortages and other discrepancies should be done twice annually. The management should establish a pre-determined number of viable solutions (financially) to the FMCG client inclusive of: further automation, alternative automation and de-automation of the processes involved. Bi-annual reconciliation of process flows to identify discrepancies between the physical process and the IT systems should be done at the strategic level as well. Establish a pre-determined number of viable solutions (financially) to the FMCG client inclusive of: further automation, alternative automation and de-automation of the processes involved.

At a tactical level, a bi-monthly assessment of disruptions of the VAS offered should be done and the employees should analyse the solutions with the aim of providing more streamlined, cost efficient and innovative VAS services to the FMCG client. Secondly, a bi-monthly assessment of pre-determined set of new VAS services relevant to internal analysis of shipment completed during that period should be conducted. Quarterly refurbishment of FMCG client satisfaction and requirements regarding presently implemented VAS and IT services at the tactical level should be completed. Additionally, the team should present a pre-determined list of process innovation to the FMCG client. Finally, a quarterly analysis of probable complexity management through automated and easily configurable EDI in the different processes in the warehouse without incurring any additional expenses should be conducted.

At the operational level, the team should maintain a daily communication with the point of contact at the operational level of the FMCG client with the aim of building relationship and understanding needs. They should immediately acknowledge any returns/reverse logistics being handled during the day with the FMCG client and the retailer. The team should conduct a daily reconciliation of issues, discrepancies and/or disruptions which occurred during the reverse logistics/returns process. Communicate issues with: [FMCG supplier – Warehouse] and [Warehouse – Retailer] daily. Finally, a daily reconciliation of the physical VAS processes with the presently implemented IT in use besides the real time updates should be done.

E. Transportation

At a strategic level, a bi-annual correspondence with retailers/buyers in accordance with the client with a pre-imposed margin of increment in consolidating shipments (LTL to FTL) should be held. One factor has to be constant and one factor as variable in regards to - time and quantity - depending on the assessment of historical data of customer demand. Additionally, management should bi-annually configure time/quantity equation with carrier (transport) organization upon consultation with FMCG client.

At the tactical level, a monthly internal assessment of preventable movement of FMCG products should be done. Configure a pre-determined number of alternative arrangements. The team should conduct a quarterly audit of internal processes based on attaining transportation efficiency. Additionally, a bi-weekly calibration of most efficient route to market based on external factors has to be conducted.

Daily communication with the point of contact at the operational level of the carrier organization with the aim of building relationship and clarifying needs.

- ⊕ Daily route to market assessment with the carrier organization based on verified news.
- ⊕ Daily reconciliation with the shipping documents with the second inventory cycle count conducted internally.



Chapter 7: Conclusion

The focus of this paper is on providing realistic decision support criteria on providing the optimal service to FMCG clients by 3PL service providers in Bangladesh. The scope of the paper identified the crucial points which ensured the holistic fulfillment of the FMCG clients' needs and wants.

Previous literature provided the backbone of the structure of 3PL operations in countries with biographies similar to Bangladesh as well as a comparison of the most efficient 3PL practices in countries which provide first world amenities.

The qualitative data collected from the face to face in-depth interviews conducted revealed prospects in methods of optimizing present practices in the 3PL operations while keeping auxiliary factors such as socioeconomic, infrastructure and political factors constant. A corroboration of processes involved and the best practices performed by 3PL service providers interviewed in the receiving, picking, loading process and the overall management of the warehouse has been established in this paper. .

The secondary research for this paper focused on a generally accepted understanding of 3PL in the overall supply chain as well as focusing on the FMCG sector. The purpose of the secondary research was to establish globally accepted principles and generalized processes of supply chain and 3PL considered optimal. An overview of the major organizations in the FMCG sector of Bangladesh is presented with a SWOT analysis theorizing their perspective of the business environment in Bangladesh. The paper presents the challenges which they have to presently overcome to be more efficient in their core business of producing FMCG products. The data from previous publications regarding 3PL services and the supply chain in general have been derived from the standpoint of the storage and distribution (excluding carriers) of FMCG products.

The criteria was then assembled from a comprehensive insight on the best 3PL practices currently being implemented by corroborating data form several major 3PL providers. The social constructivism perspective was utilized to identify loopholes and shortcomings which this paper aimed to neutralize with the proposed criteria. The suggested decision support criteria should be adopted by 3PL organizations servicing FMCG clients in Bangladesh to maintain a sustainable business with them.

Appendices

Appendix 1: 3PL Process Overview for FMCG Clients in Bangladesh

This appendix is a corroboration of process information collected from several 3PL service providers operating in Bangladesh. Content and narrative analysis techniques were used on the in-depth interviews conducted to synthesize the procedures commonly taking place in the warehouses/distribution centers around Bangladesh by 3PL service providers.

The 3PL service providers fundamentally outsource their transportation services (carriers) who transport the goods to their destinations in most cases. These organizations have contracts with the carriers who own their own fleets.

The 3PL organizations in Bangladesh use their expertise to enhance the storage and distribution services for FMCG manufacturers. Three models of warehouse management include:

1. Providing the services using the 3PL organization's own assets
2. Providing the services using the client's infrastructure with the company's human resources, processes and systems
3. Leasing the warehouse from the third party

Primary services also include:

- A. Warehouse Design & Setup
- B. Delivery & Distribution Management (Production Line Management)

A warehouse operated by 3PL service providers in Bangladesh are essentially central distribution centers (DC) where orders are placed by the clients based on their sales offices and subsequently inventory information is shared with them. The customer headquarters shares their Purchase Order (PO) information (which usually comes from the retailers) with the DC and goods are sent to the customer's distribution center. Reverse logistics also take place between these two parties. The DC receives goods either from local factories or via imports. The whole process is essentially *Value Addition*. The warehouses commonly follow a FEFO/FMFO method of operation.

The basic procedure is as follows:

Sales office -> Order Placed -> Picking -> Loading -> Dispatch

Appendix 2: 3PL Process - Inbound, picking, loading

<u>Process</u>	<u>Actions</u>
INBOUND SHIPTMENT	<p>- Take stock of empty pallets available at the warehouse to be reused or re-palletization. In case of certain clients' requirements, empty pallets sent to back to manufacturing units or other warehouses for reuse/palletization (depending on pre-existing agreement with carrier)</p> <p>- Stock transfer documents provided to vehicle operators by the point of origin of inbound goods are presented at the receiving office at the warehouse</p> <p>- Consequently, the receiving team starts to process sales orders hourly for each client in preparation for the outbound products. These include order placed in the system and manual orders (usually placed over the phone or via email). Reserved consignments by particular retailers are prioritized over other orders. The replenishment list of goods to be stored at the warehouse is made accordingly.</p> <p>- The receiving supervisor starts the unloading process according to the replenishment plan using the tally sheet to keep count. A thorough visual inspection of the goods is conducted while on board the vehicle prior to unloading in order the check for goods hampered due to transit damage. In the instance where goods mismatch, the relevant warehouse/plant must be notified to rectify it both physically as well as on the system</p> <p>The factors which are checked during unloading include:</p> <ol style="list-style-type: none"> 1. Name of the product 2. Quantity per unit 3. Price per unit 4. Manufacturing date 5. SKU/CBU Code <p>- After unloading in successfully completed (including any re-palletization, if necessary for stocking goods at the warehouse), the tally sheet including the stock take note (STN) is submitted to the</p>

INBOUND SHIPMENT	<p>receiving office.</p> <ul style="list-style-type: none"> - The receiving office then completes the Goods Receive Note (GRN) on the system and prints it. Until the GRN is completed, the goods are still in transit. - Subsequently, the Put Away Report (PAR) is completed by at the receiving area and the End Labels which are pasted on pallets to be stored or racks are completed. - The End Labels are then glued to the relevant pallets containing item count (SKU), manufacture date of the product and rack ID. - The Put Away Report is handed over to the reach operator who stacks the pallets with the reference of the End Labels. He submits the Put Away Report back to the receiving office after completion. This report is generated automatically by the WMS. - In addition, the receiving office is in charge of ensuring the pallets are in good order and if not, they should be sent to the repairer. <p>The receiving office is also responsible for data tracking of the good received at the warehouse, which are updated on their database (Microsoft Excel) including:</p> <ol style="list-style-type: none"> 1. Serial Number 2. STN Number 3. Date of the receipt of goods 4. Sending plant 5. Truck number 6. GIR number 7. Material number 8. Additional remarks
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<u>Process</u>	<u>Actions</u>
PICKING	<ul style="list-style-type: none"> - The picking process starts once the first batch of sales orders are processed and allocated for the day. - Following the allocation run, individual shipments are created by the Sales Office. Usual practice by the Sales Office is to submit the Shipment Orders for a number of shipments so the picking process can commence.

PICKING

- Once the shipment orders are received from the Sales Office, Delivery Orders (DO) are generated to incorporate the orders in correspondence to the goods available at the warehouse in the individualized software for each particular client.
- Once the shipment numbers have been generated by the system operators, a Transfer Order (TO) is created to move the relevant good of the order from the racks where they are stored to a more convenient (lowest) rack. This process has been established to expedite the picking process. This transfer is done in full pallets (regardless of the number of items required for the shipment). The pallet will be placed back on the designated racks for storage with the remaining items once the picking process has been completed.
- The TO is subsequently handed over the MHE operator who then proceeds to complete the transfer.
- The Pick report and the Load report is generated by the WMS at the loading office. These two reports are printed out along with the TO.
- The loading office then hands over the pick documents to the Rack Supervisor who then allocates Pickers to commence the picking process from the lowest racks.
- The pickers are required to note the following factors while picking:
 1. SKU/Material Code
 2. Quantity
 3. Price
 4. MFD
- Once the picking is completed, the pickers bring the goods on a pallet to the staging area which is next to the loading bay where the transportation vehicle will dock.
- The pickers then drops the pick report at the loading office in order to provide proof of picking.

<u>Process</u>	<u>Actions</u>
LOADING	<ul style="list-style-type: none"> - The Load Report (LR) consists of two copies. The one report is allocated for the loading bay supervisor and one copy for the lorry driver/helper. This method let both the bay supervisors as well as the transporters to keep a tally of the items being loaded onto the trucks. - The loading supervisor also has to attach a transport vehicle inspection checklist to the load report ensuring that the transport vehicle is in appropriate condition for loading. - Once the loading is completed, the bay supervisor takes the signature of the transporters, records the start and end time of the loading and then submits the loading documents to the loading office. Subsequently, the invoice is prepared. - The loading office provides the bay supervisors with seals which are put on the truck (only in the case of covered vans) by security officers present at the warehouse. The security officers are appointed by an outsourced security firm who oversee the loading process. - Once the lorry has been loaded and sealed, the system operators produce the invoice of the goods from the WMS. - The invoices includes the following original copies: <ol style="list-style-type: none"> 1. Customer Copy 2. Delivery Copy 3. Gate Pass 4. Warehouse Copy <p>The first two copies are for the transporters. The Gate Pass copy is presented at the front gate of the warehouse compound and the final copy is kept at the warehouse.</p>

DATA TRACKING FOR PICKING & LOADING SECTIONS:
<ol style="list-style-type: none"> 1. Attendance sheets (Pickers, Bay Supervisors & Rack Supervisors) 2. Housekeeping documents 3. Safety documents 4. Error Reports



- A. Picking errors (Rack supervisors are accountable)
- B. Loading errors (Bay supervisors are accountable)
- C. Replenishment errors (MHE operators are accountable)

Appendix 3: 3PL Process - Cycle Count

- The cycle counts are done daily, monthly and quarterly (Physical System Verification – PSV).
- The process starts with the loading office which prints the cycle count sheet from the WMS. The person then converts it to an excel sheet (for ease of use of the counters) and provides it to the rack supervisor.
- The rack supervisor then assigns the counters (pickers) who conduct the count. In case of short or excess, a second count is conducted and the system is checked again to ensure the balance of items is complete.
- In case of a difference between the system and the physical count, it is either added or deducted from the system.
- In case of shortage in the cycle count, a debit note is created for the particular item (usually during the quarterly count/PSV)

Appendix 4: 3PL Process - Quality Assurance – Reverse Logistics

The Quality Assurance (QA) section primarily deals with reverse logistics as well as several other key areas. 2 categories of reverse logistics includes:

1. Customer Returns
 - A. Production Error
 - B. Warehouse Error
2. Customer Complaints
 - A. Short
 - B. Mixed items
 - C. Excess
 - D. Unloading error
 - E. Transport damage

Customer Complaints

- The customer with a complaint (in cases other than missing goods – short delivery) returns the goods with the allocated carriers (transportation) and a written complain on the Proof of Delivery (POD)/Delivery Copy of the invoice.
- The driver of the allocated transport checks in at the front gate of the warehouse compound with the returned items and returns the POD with the written customer complaint to the QA section of the warehouse.
- The QA section then checks all the documents and issues a note acknowledging the complaint.
- The driver then proceeds to bring the returned goods to the QA section.

Customer Complaints

The items are then recorded on a tally sheet of returned items with the following details:

1. Invoice number
2. Transporter name
3. Name of the Client
4. Vehicle number (transport used to deliver and transport used to return the goods)
5. CBU/SKU code
6. Quantity
7. Reason/remark

The transporter is then given the Lorry Receipt back inclusive of the Tally sheet to take back

to the front gate of the warehouse compound in order to close the receipt.

Customer Complaints

- In the case of a short delivery, a temporary note is issued from the QA section and the Lorry Receipt is withheld at the QA section pending investigation.
- If the investigation finds the transporter's fault in regards to the misplaced items, the invoiced amount for the items will be deducted from the transport company's payment.
- The investigation is conducted through cycle counts, viewing CCTV footages, pick reports, load reports and audits.
- If the investigation finds no fault of the transporter, the Lorry Receipt is returned accordingly.
- Then the warehouse is checked in case of excess of the items missing in the delivery of the client.

Negative Invoicing

- Once all the PODs with the Customer Return and Customer Complaints are collected for the day, they are divided into two sections in an excel file.
- They are sent to the system operator who does the reverse logistics and that person then generates a negative invoice against the returned/missing items.
- That invoice is sent to QA for approval which includes a reference of the original invoice as well as a copy of the original invoice.
- Once QA approves the negative invoice, it is sent to the client.
- Afterwards, a Put Away report is generated to return the approved units to the racks.
- The damaged cases are set apart to be sent to the repacking unit.

Damage Collection

The damaged cases are collected every day and the details of the damaged items are confirmed by QA, Rack Supervisor (picking section) and the personnel at the loading office. The damaged items are then taken to the repacking unit.

The damaged items are inclusive of:

1. Warehouse Damage
 - A. Handling Damage
 - B. Factory Damage
 - C. Other Contamination
2. Receiving (unloading) Damage
 - A. Transport Damage (due to mishandling by the allocated transportation company)

3. Customer Returns

- A. Short Packed
- B. Damage to Packaging
- C. Poor Sealing

Damage Collection – Updating the Internal System

- The damaged goods are initially shown as in good condition in the WMS. QA department generates 4 copies of the list of damaged items.
- One is sent to the Rack Supervisor (picking) and one copy is sent to the loading office. The third copy is kept at the QA section.
- This list includes receiving damage as well, so a corresponding list of the receiving damage is sent to the unloading section.
- The 4th copy of the list of damaged goods is sent with the pallet to the repacking unit.

Repacking Process

- In the repacking unit, the acceptable units are removed from the damaged corrugated boxes (secondary damage) and placed in new boxes. The same procedure is followed for products packaged in jute sacks, etc. A special brown tape is usually used for the repacked cases to mark the repacked items.
- In the repacked cases, the same units with several MFDs are packed together, so the first expiry date is used for reference of delivery.
- The damaged units unfit for repacking is sent to a 3rd party warehouse and is written off from the warehouse accounts.

Write-off Process

- A write off of any kind requires special approval from the FMCG manufacturer.
- The following documents are generated in the Write Off process:
 1. STN or similar document
 2. Invoice
 3. Write Off document

DATA TRACKING FOR QUALITY ASSURANCE SECTION:

1. Inventory Returned (Daily, weekly, monthly, annual)
2. Master FMCG Inventory Returned
3. Damage Tracking
4. Complain Tracking

Appendix 5: 3PL Process - Quality Assurance – Audits & KPIs

External Audit Checklist for FMCG Manufacturer

1. QMS and Management Responsibility
2. Factory Design & Layout
3. Personal
4. Risk Assessment & Risk Management
5. Document Control & Records
6. Storage, Transport & Distribution
7. Hygiene, Cleaning & Personnel
8. Pest Control
9. Customer Contracts
10. Complain Handling & CAPA

Internal Safety KPIs

1. SBO
2. Hazard List
3. Near Misses
4. SAM
5. VLVS
6. Tool Box Knowledge Sharing
7. Special Events

Safety Checklist

1. Shut Down Checklist
2. Hazard Tracker
3. MHE Checklist
4. Site Safety Inspection Checklist
5. Vehicle Checklist
6. Random Audit Checklist

Appendix 6: Optimized 3PL Criteria

	Strategic	Tactical	Operational
Warehousing	<ul style="list-style-type: none"> ● Bi-annual meetings with clients (overview) ● Partnership with suppliers 	<ul style="list-style-type: none"> ⊕ Quarterly business process information meetings with clients ⊕ Monthly audit of products received 	<ul style="list-style-type: none"> ✓ Consolidation of goods twice a day ✓ Daily joint coordination ✓ Daily process consolidation
Inventory Management	<ul style="list-style-type: none"> ● Bi-annual meeting with clients (allotment forecast) 	<ul style="list-style-type: none"> ⊕ Monthly staff meeting (process innovation) ⊕ Quarterly update of risk tolerance framework ⊕ Quarterly PDCA cycle – Worst case scenario ⊕ Update internal check and balance methods quarterly ⊕ Weekly two part cycle count (trend analysis) 	<ul style="list-style-type: none"> ✓ Daily two part inventory cycle count ✓ Daily analysis of floor space utilization ✓ Daily error analysis
Order Processing	<ul style="list-style-type: none"> ● Bi-annual quality assurance/control audit by a third party ● Bi-annual audit of safety stock 	<ul style="list-style-type: none"> ⊕ Quarterly audit of internal benchmarks ⊕ Monthly correlation of sales data with inventory data ⊕ Update cost components quarterly 	<ul style="list-style-type: none"> ✓ Daily reconciliation of labor efficiency rate ✓ Daily reconciliation of customer satisfaction checklist ✓ Daily reconciliation of stock (over/under)
VAS and Information Systems	<ul style="list-style-type: none"> ● Quarterly audit of VAS services by internally ● Bi-annual quality audit of VAS services by a third party ● Bi-annual reconciliation of forecasts internally ● Bi-annual reconciliation of process flows 	<ul style="list-style-type: none"> ⊕ Bi-monthly assessment of VAS disruptions ⊕ Bi-monthly assessment of new VAS services ⊕ Quarterly refurbishment of client requirements ⊕ Quarterly analysis of complexity management 	<ul style="list-style-type: none"> ✓ Daily communication with point of contact ✓ Immediate acknowledgement of reverse logistics ✓ Daily reconciliation of discrepancies in reverse logistics activities ✓ Daily communication of issues with relevant parties ✓ Daily reconciliation of physical VAS processes
Transportation	<ul style="list-style-type: none"> ● Bi-annual assessment of consolidation increments ● Bi-annually configure time/quantity equation with client 	<ul style="list-style-type: none"> ⊕ Monthly assessment of preventable movement of goods ⊕ Configure alternative arrangements ⊕ Quarterly internal audit of transportation efficiency ⊕ Bi-weekly calibration of routes 	<ul style="list-style-type: none"> ✓ Daily communication with point of contact of the carrier ✓ Daily route to market assessment ✓ Daily reconciliation of shipping documents with the second cycle count