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ANALIZA WPLYWU OUTSOURCINGU LOGISTYKI NA ZARZĄDZANIE POPRZEZ JAKOŚĆ

Streszczenie: Skoro firmy szukają sposobów redukcji kosztów, podniesienia efektywności działania oraz efektywnego zaspokojenia potrzeb swoich klientów, więc potrzeba outsourcingu logistyki jest coraz częściej rozważana. Nawet wtedy gdy firmy współpracują z zewnętrznymi dostawcami (3PLs) – poprzez outsourcing usług logistycznych - nadal muszą uwzględniać TQM (zarządzanie przez jakość).

Słowa kluczowe: 3PLs, outsourcing, logistyka

ANALYSING THE EFFECTS OF LOGISTICS OUTSOURCING ON QUALITY MANAGEMENT

Abstract: As companies seek to reduce costs, improve operational efficiency, and effectively cater to their customer's needs, the need for logistics outsourcing has increasingly become prevalent. But even as companies move to third-party providers (3PLs) quality management should be considered by companies outsourcing these services.

Keywords: 3PLs, outsourcing, logistics

1. Introduction

Changing consumer needs, rapidly evolving technology, change in the global supply chain, geopolitics, and increased competition are some of the factors that have made necessitated the need for companies to re-examine their business strategies. To continue thriving in the highly competitive market, companies in the logistics industry have had to reconsider how and when to utilize outsourcing services. The process involves delegating some of their logistic operations to 3rd-party logistics providers (3PLs) while allowing the involved companies to concentrate on other core processes. 3PLs play an auxiliary role in the supply chain by delivering products from the

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manufacturer to the company, with their main role focused on the shipping process (Yang and Yu) as well as value-added services.

Armstrong's report indicates that 90% of Fortune 500 companies rely on 3PLS (Berfman). The need for 3PLs has increased significantly over the years. Companies want to stay ahead of the competition, gain a good chunk of the market share, and satisfy their customers' needs. Even though the shipping of products started around the 19th century, it wasn't until the 20th century that companies realized the importance of hiring specialized service providers to outsource warehousing and transportation functions. After World War II, businesses became more "global" (Gonzales, Dorwin and Gupta) and there was a need to hire outsourcing specialists. The period between the 1970s and 1990s saw rapid changes in technology and the transportation landscape and this is when the emergence of 3PLs began to take shape with some saying this industry was born via the Motor Carrier Act (Krug). As global trade reached new heights, the complexity of supply chain operations started to increase. This in addition to the integration of information technology in the 2000s into sophisticated computer programs led to better visibility and efficiency of logistics operations. With the rise of e-commerce, companies have been seeking specialistic services to cater to the growing and diverse customer demand and deal with challenges such as the last mile problem and e-fulfillment.

Business operations, just like consumer needs are dynamic but quality management is a critical component of any business's success. This is because it determines the brand's reputation, client satisfaction, trade regulations, and overall performance. Thus, companies must first critically analyze their needs to determine if they need the services of 3PLs. this research aims to determine:

- How logistics outsourcing positively influences quality management.
- Drawbacks of using 3PLs for logistics outsourcing on quality management.
- Recommended assessment criteria for choosing 3PL service providers.

By highlighting these, the study aims to provide business owners, policymakers, industry practitioners, and managers with important insights and valuable recommendations regarding the impact of using 3PLs in logistics outsourcing and quality management.

2. Literature Review

2.1. Services provided by 3PLs to logistics companies

Companies use 3PLs for value-added services which help to improve the efficiency of their core operations and enhance customer satisfaction. This includes services such as product customization, labeling, or collection. Outsourcing companies are known for their custom brokerage services and come in handy when companies don't want to get involved with the long and complex custom clearance process when dealing with international shipments.

In transport, 3PLs help to manage the movement of goods from different points by offering shipment tracking, mode of transportation, and freight management, alternatively, companies can use warehousing and distribution for storage management purposes including order picking and processing, product packing, and inventory management. Most of the 3PLs apply the latest technological solutions including software applications such as warehouse management or transport management systems that make the whole outsourcing process easier and more efficient.

2.2. How logistics company collaborate with 3PLs

Logistics companies and 3PLs work using Service-Level Agreements (SLAs) which specifically outline the type of service expected, performance indicators such as order accuracy and delivery time, and performance metrics. This is reinforced with information sharing and constant communication. Both parties must share information including product features, processing time, distribution channels, etc. All these must be supported by regular communication to ensure that business objectives are met, and issues resolved on time. With digitization, a collaborating system such as cloud-based applications can help enhance logistic operations by allowing real-time monitoring, improved visibility of the operations, and inventory management by using technological tools such as automated order processing systems and warehouse management systems.

3. How logistics outsourcing positively influences quality management

3.1. Product Quality

Companies working alongside 3PLs can enhance the quality of products delivered to clients. Outsourcing companies focus on specialization and have the vital expertise needed to ensure that product quality is maintained throughout the sourcing and delivery process. To do this, they have implemented high-quality or specialized product packaging systems, real-time tracking and monitoring as well as temperature-moderate warehouses and containers. These are implemented in technology platforms related to order management systems, warehouse management systems, and transport management systems (Bernabe).

Product packaging is vital in retaining the quality of products by preventing the potential of contamination, environmental factors such as rain and sunshine, and physical damage. Besides that, packaging is important in enhancing the brand's profile and this is important for customer satisfaction.

From sourcing to delivery, products usually pass through a wide range of environments as well as handlers. For instance, fragile products such as glassware should always be packaged with cushioning material such as bubble wrap and foam. During distribution and transportation, products should be packaged appropriately to minimize the likelihood of contamination by air pollutants and bacteria. This is

important especially when dealing with medical and edible food products that require a high level of handling integrity.

Environmental factors such as sunlight rays, rainfall, and dust can diminish the quality of products, especially those that require vacuum storage. That's why certain vegetables must be transported in air-tight containers to maintain their freshness and edible quality.

Lastly, packaging can be used in marketing for brand differentiation (7 advantages of 3PLs for packaging operations of ecommerce businesses). Appealing packages that match the type of the product not only help to attract new customers and retain new ones but also ensure that a company's product is different from its competitors. Some packaging information that companies should seek when dealing with 3PLS apart from product names includes weight, color, usage instructions, and ingredients. It's important for companies to ensure that products are safe, and that the integrity of the quality is retained throughout until it's delivered to the final consumer.

Outsourcing makes this possible since businesses that offer such services usually have specialized tools as well as the expertise needed throughout different stages of the logistic process. By partnering with such institutions, handling and transportation of goods can be a seamless process and, in the end, a company can win a huge market share by staying ahead of the competition and meeting customer expectations by ensuring the product is delivered on time and in an optimal condition.

3.2. Access to technology

The current nature of the logistics industry requires companies to stay up to date with the latest technology to optimize the quality of their products and customer service. (Rahman) states that tracking and tracing devices used by 3PLs make them highly responsive, leading shippers to render better customer services. By leveraging the advanced technological know-how of 3PLs through business partnerships, working contracts, and work collaborations, companies can experience efficiency in their overall business processes.

Access to new technology allows the company to enhance its quality testing metrics or keep track of shipments in real-time and notify customers in case of possible delays. 3PLs that want to stay ahead of the competition are using modern solutions to manage inventory systems, warehouses, and distribution channels. Companies can apply the same mechanisms when looking to improve product quality, costs, and overall customer experience.

3.3. Cost savings

The process of outsourcing logistics services from 3PLs can be a great way for companies to significantly cut down on their logistics costs (Batarliene and Jarasuniene), especially if this is not their area of specialization. The lower costs can be accumulated in the form of purchasing equipment, paying staff, operating distribution networks, and costs related to transportation. By using other providers,

companies can only use these things only when needed and can therefore help to reduce operating costs.

The saved costs can thereafter be utilized in various quality management products. for instance, training staff on how to handle customers, how to improve their productivity, and using the latest digital devices to improve the efficiency of business operations and reduce the likelihood of error. In addition to that, companies can implement various quality standards programs and overall improve the quality of their logistics services. This way, they can stay ahead of the competition.

Improved customer experience (Fleming) by outsourcing logistic services from 3PLs, companies can improve their customer experience by shifting focus on improving their core competencies related to their business operations (Qureshi, Kumar and Kumar), helping shippers to enhance and retain their competitive advantage by fulfilling customer expectations. Customer service is essential for business sustenance and growth and almost 80% of customers have stated that they are more likely to stop purchasing from a company if the customer service is poor. These competencies include product/service refinement including better pricing options and inventory management, analyzing the changing customer needs, and looking for solutions for existing problems such as delivery times and locations. Besides that, the company can focus on improving order fulfillment which includes order accuracy. This can consequentially translate into improved quality of logistics services and improved customer experience.

3.4. Offer insights into best practices

Best business practices and quality management in logistics are often related to how a business can adopt technology and keep up with new trends. Using 3rd-party providers and leveraging their industry expertise, a company can gain deep insights related to new trends and technologies which can lead to best business practices in the supply chain. According to (Zacharia, Sanders and Nix), 3PLs have emerged as reliable “orchestrators” within the supply chain management, taking a leadership role that can facilitate best business practices.

Understand that 3PLs always must stay ahead of the game to retain their market dominance and retain and attract new customers and this includes being aware of what’s trending and the latest technology in the sector including software applications and other digital tools.

3rd-party providers are the best place to provide companies with access to data and information that can be used to establish current and best practices in the industry. This may include market opportunities for new growth and comparison against similar companies in the same industry. Besides that, companies seeking such services can benchmark against areas in their business operations that need changes or improvement. Thus, a business can end up focusing on continuous improvement which is ultimately important for quality management.

Overall best practices give a company more time to think strategically and do more planning. Information from benchmarking can be used to redefine company goals and how business processes can be improved. This may also present the perfect opportunity to stock up on all the company think pieces related to functionality and identification of new areas where the company can thrive on and operate more efficiently.

3.5. Quick access to new markets

Strategic alliances have proved to be important in formulating inter-organizational cooperation that can lead to access to new markets (Gurcan, Yazici and Beyca). To improve the quality of goods and services, companies are often looking for new and better product suppliers. However, it takes time and money to ultimately find the right supplier that suits a company's specific business needs.

However, using 3PLs can lead to quick access to new markets with better-quality of products and services. 3PL businesses are experienced providers in their specific niches and by accessing their deep wealth of market expertise as well as resources, companies can effectively access newer and better entrants into the market.

To access new markets with better quality goods and services, 3PLs often have well-established business networks as well as industry partnerships that allow them to handle market challenges. This includes an understanding of suppliers' changing needs, business regulations, transport systems, as well as the existing distribution network in the logistic system. Generally, it's difficult for companies to have in-house expertise that can provide a quicker and best overview of new markets. By outsourcing such services, companies can significantly reduce resources such as time and money set aside for supplier identification.

Meanwhile, digitization of the logistic system has also played a vital role in facilitating 3PLs access to new entrants in the market. Outsourcing companies can employ AI and other automation integration tools to understand marketing trends including metrics related to the number of new entrants in the market, area of specialization, and quality of products or services. By leveraging such tools, 3PLs can quickly get an overview of the dynamic market shift, adjust accordingly and help companies meet their logistic needs by ensuring they get the highest quality of products or services in the market and stay ahead of the competition.

3.6. Improve performance

The aim of companies seeking to outsource logistic services is to improve product/service quality which will consequentially improve the business performance. By collaborating with 3PLs, shippers can expect on-time and reliable delivery which can improve both market and efficiency performance (Sinkovics and Roath). Client access to new technologies that give data insights and analytics allows businesses to make data-driven performance decisions and correctly identify areas that need improvement. Access to global reach by leveraging 3PLs access to international expertise and market is crucial in enabling companies to reach new markets while still

managing their cross-border business operations efficiently. Companies using such services are more scalable and flexible hence they are capable of quickly adapting to changes in customer demand, and market regulations, and effectively launching new products without significantly investing in infrastructure and other operational resources.

4. Drawbacks of logistics outsourcing in quality management

4.1. Poor communication

Communication is the 'formal as well as information sharing of meaningful and timely information between firms' (Anderson and Narus). It's an important factor for performance improvement, especially at the onset of partnerships. It's demanding to maintain communication between three different bodies, the 3PL, the supplier, and the company seeking outsourcing services. Due to different locations and communication channels, the chances of errors and misinterpretations are high. This is often made worse by a lack of communication coordination i.e., response time, message contents, and frequency of communication often leading to frustrations between the involved parties. An overall poor communication framework often results in poor services.

However, the involved parties can solve communication issues by establishing main channels of communication, determining the communication frequency, and providing prompt responses by defining their expectations earlier on. Having the same business priorities and a mutual understanding of different business needs can help establish long-lasting relationships based on transparency and reliability in communication.

4.2. Loss of control

For companies seeking to outsource their logistic processes, this strategy can lead to the loss of control in handling supply chain operations. Per (Boyson, Corsi and Dresner), many firms have opted out of this business agreement due to the fear of loss of functional business control and uncertainties. This is because this strategy requires the company to surrender a significant portion of the logistic process to third-party service providers. While this can help improve the turnaround time in terms of delivery, enhance reliability, and reduce operational costs, the company won't have total control over the whole process. Besides that, tracking the whole process through third-party logistic providers (3PL) requires a well-established communication network. Due to the lack of real-time tracking information, companies using this strategy may not effectively keep track of product location and shipment status.

This can consequentially affect customer experience due to reduced control and visibility of the supply chain process leading to possible delays or sourcing products or services of poor quality, etc. Besides that, there is rigidity in company operations, and this could be due to strict work agreements and contracts. This may make it

difficult to alter the logistic process e.g., changing the supplier, amount of products, shipping routes, etc.

4.3. Risk of disruption

Quality issues related to logistics outsourcing include delays in delivery, product shortages, and low quality. This may occur due to poor communication. Generally, communication is vital in the logistics management process, but sourcing can complicate this due to different channels of communication as well as geographical locations. Communication breakdown can lead to delays, prolonged shipment, wrong shipment, and inaccurate inventory records.

A bad selection of suppliers means that the outsourcing company may face service disruption due to inefficiency by the outsourcing provider. Besides that, a lack of precise performance measurements means that the service provider may fail to meet the quality of services desired, and with bad planning, unexpected events such as natural disasters and political unrest may lead to service disruption.

A company seeking to outsource its logistic services will end up losing total control over its supply chain. This is because the service provider may have different ways of operations and priorities, including quality standards and this can disrupt the supply chain.

4.4. Loss of confidentiality

Confidentiality is one of the quality components in the logistic process as it guarantees the involved parties' protection. As (Jenkins) indicated, 3PLs need to be trustworthy since information sharing is important for boosting trust and business compatibility. Loss of confidentiality can happen because of 3PLs accessing unauthorized information or due to data breaches due to hacking. Factors such as poor communication and loss of control in the logistic process can make this worse. Besides that, conflicting business interests between 3PL providers and the company can only excavate everything as the former may use the company's private information for personal gains to benefit another competitor in the industry.

To maintain confidentiality, rules of business agreements should be established from the onset. The 3PL should prove that it has a data protection mechanism in place. Besides that, the contract should state clearly how the company information should be protected, and the next step of action increases if there are contractual breaches. Furthermore, companies should do extensive due diligence to look for a 3PL by checking business profiles and previous customer reviews.

4.5. Increased costs

Outsourcing logistics services has become a way of helping companies to cut down on operation costs. However, it is not immediately obvious that this mode of business operation can lead to increased costs in some cases and increase the company's overall spending. This is because the 3PL payment model can be complex as (Rickerby)

indicates, there are vendor costs such as receiving fees, warehousing fees, pick & pack fees, shipping fees, and others.

Additionally, companies using multiple 3PLs can run into more costs due to the disruptions, unreliability, and different contracts offered by the service providers. It should be noted multiple outsourcing providers are more likely to have different transport mechanisms, warehouse locations, and inventory management. Coordinating business operations among different providers while trying to maintain communication is highly likely to lead to delays, poor quality of goods, and overall poor customer experience which can result in higher costs.

5. Recommended assessment criteria for choosing 3PL service providers

Sourcing of logistic services from 3PLs is increasingly becoming popular as companies try to reduce their operation costs, improve performance, and gain important insights relating to new markets. However, in some instances, this may lead to increased costs, loss of confidentiality, and disruption of services. Companies must therefore analyze both the benefits and downsides of using 3PLs. Based on the information highlighted above, these are some of the recommendations on the effects of outsourcing logistic services on quality management:

Quality of service: An empirical survey by (Van Hoek) and (Spencer, Rogers and Daugherty) indicates that the development of measurement systems has been critical in improving the expansion of 3PLs alliances. Shippers should examine the quality system of their existing supply chain against the benefits of using the same services: it's important for the company to determine which supply chain has the best quality standards. If it's possible for the company to mitigate inefficiencies quickly and cost-effectively and improve its quality standards, then it would be unnecessary to outsource such services and vice-versa.

Choose an ideal service provider: if a company decides to outsource logistic services, then it must conduct a comprehensive background check and analyze various providers who suit the company's profile. Analyze other customer reviews, their target customers, the cost of services, their quality standards, suppliers they collaborate with, etc. As per (Bowersox, Daugherty and Droge), compatibility of shared values and business culture is one of the important factors for a successful outsourcing partnership and help build long-term relationships due to ease of working, reliability, and flexibility.

Identify the communication channels and process: the only way to ensure that companies and service providers collaborate there should be clear communication channels to ensure that both the company and 3PL are on the same page. The service provider should communicate regularly with the company by giving updates regarding the outsourcing process. besides that, issues and arising disputes can be resolved amicably and on time.

Evaluate performance: whether the company is using its own logistic components or outsourcing. Evaluating performance is important in determining the effectiveness of the system, especially when it comes to possible risks, how to mitigate them, and how quality standards can be improved or maintained.

6. Conclusions

The logistics industry is highly dynamic and rapidly growing. The introduction of new technologies, new players, changing consumer needs, and an uncertain global environment have forced companies to think outside the box and consider using 3PLs to supplement their core business operations. 3PLs can help streamline the product sourcing process, help to reduce operation costs, give companies insights into new technologies, and improve customer experience. Will it's evident that 3PLs are important players in logistics, companies that work with them may risk disrupting their operations in case of delays. Companies also risk losing control of their business activities and confidentiality. To counter these downsides, companies seeking the services of 3PLs should conduct comprehensive research regarding the businesses they wish to work with to find a suitable collaborating partner to work with.

REFERENCES

1. 7 advantages of 3PLs for packaging operations of ecommerce businesses. November 2012. May 2023. <https://www.allthingsupplychain.com/7-advantages-of-3pls-for-packaging-operations-of-ecommerce-businesses/>.
2. ANDERSON J. C, NARUS JAMES A.: A model of distributor firm and manufacturer firm working partnerships. *Journal of marketing* 1990, 42-45.
3. NIJOLE B., JARASUNIENE A.: 3PL service improvement opportunities in transport companies. 10th International Scientific Conference Transbaltica 2017: Transportation Science and Technology. *Procedia Engineering*, 2017. 67-76.
4. BERFMAN J.: Armstrong report points to continued increase in 3PL usage by shippers. 24 May 2017. May 2023. https://www.logisticsmgmt.com/article/armstrong_report_points_to_continued_increase_in_3pl_usage_by_shippers/.
5. BERNABE H.: 5 Modern advancements revolutionizing third-party logistics. 20 September 2022. 20 May 2023. <https://www.mytotalretail.com/article/5-modern-advancements-revolutionizing-third-party-logistics/>.
6. BOWERSOX D. et al. *Logistical Excellence: It's Not Business as Usual*. Burlington, MA: Dital Press, 1990.
7. BOYSON S. et al.: Managing effective third party logistics relationships: what does it take. *Journal of Business Logistics* 1999, 73-100.
8. FLEMING H.: 10 Benefits to Outsource Logistics in 2023. January 2023. May 2023. <https://www.dropoff.com/blog/benefits-to-outsource-logistics/>.
9. GONZALES A., et al.: Outsourcing: past, present, and future. University of Washington (n.d.).
10. GURCAN OMER FARUK, et al.: Third party logistics (3PL) provider selction with AHP application. *Procedia-Social and Behavioral Sciences* 2016, 226-234.

11. JENKINS M.: One, tow, 3PL: choosing the right third-party logistics provider." *Materials management and Distribution* 2000, 29.
12. KRUG KYLE. The evolution of 3PL and how it can solve your business' supply chain challenges. n.d. May 2023. <https://legacyscs.com/evolution-of-3pl-supply-chain-challenges/#:~:text=1980's%20%E2%80%93%20A%20change%20in%20the,Motor%20Carrier%20Act%20of%201980>.
13. QURESHI M N, DINESH KUMAR, PRADEEP KUMAR.: An integrated model to identify and classify the key criteria and their role in. *Asia Pacific Journal of Marketing and Logistics* 2008.
14. RAHMAN Z.: Use of internet in supply chain management: a study of Indian companies. *Industrial Management and Data Systems* 2004, 31-41.
15. RICKERBY M.: 3PL Pricing by Service & How to Maximize Value on Your Fee Structure. 15 September 2022. 5 May 2023. <https://www.extensiv.com/blog/3pl-pricing>.
16. SINKOVICS R R., ROATH S A.: Strategic orientation, capabilities, and performance in manufacturer—3PL relationships. *Journal of business Logistics* 2004, 43-64.
17. SPENCER M S, ROGERS D S., DAUGHERTY P J.: JIT systems and external logistics suppliers. *International Journal of Operations and Production Management* 1994, 60-74.
18. Van HOEK R.: The contribution of performance measurement to the expansion of third party logistic alliances in the supply chain. *International Journal of Operations & Production Management* 2001, 15-29.
19. YANG JINGCHENG, KAI YU: The role of an integrated logistics and procurement service offered by a 3PL firm in supply chain. *Journal of Management Analytics* 2019, 49-66.
20. ZACHARIA ZACH G, NADA R SANDERS, NANCY W NIX: The emerging role of the third-party logistics provider (3PL) as an orchestrator. *Journal of Business Logistics* 2011, 40-54.

