

FINANCIAL BENEFITS OF LOGISTICS OUTSOURCING: A STUDY OF SELECTED HIPERMARKET

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Abstract. The paper presents selected financial benefits for organizations resulting from the use of outsourcing in logistics services. The research conducted in the organization indicated that conducting transport services on their own requires significant cash outlays related to: the employment of employees, purchase and maintenance of means of transport, insurance, purchase of fuel, etc. Estimated costs were compared with expenses incurred by the hypermarket as a result of employing an outsourcing company. The results of the research have confirmed the importance of using outsourcing in the analyzed organization. The aim of the study is to compare the costs that the organization would incur without excluding transportation services and the outsourcing costs of the aforementioned services, the profit of a company can have from using outsourced services is estimated in the paper.

Keywords: outsourcing, logistics processes, transport, outsourcing of logistics services, logistic services.

1. Introduction

The aim of the study is to compare the costs that the organization would incur without excluding transportation services and the outsourcing costs of the aforementioned services, the profit of a company can have from using outsourced services is estimated in the paper. We have following research questions:

- What is the average salary level of serial employee and deputy manager?
- What are the costs of third-party services use?
- What solution is better – to use own activities or outsource it?

The four-year hypermarket was in operation. The company's financial policy was analyzed, the average salary of the employees and deputy manager was calculated and the costs related to maintenance of the employee in the years were calculated. The costs of outsourcing logistics services were also calculated. Estimated costs incurred if the company did not use outsourcing,

including: the cost of purchasing the cars necessary for the proper functioning of the transport logistics, the cost of employment of additional employees, insurance costs, fuel etc. The calculation does not include depreciation.

2. Literature review

Logistic service is an activity aimed at satisfying logistic needs of business entities and people. The area of operation of logistic operators increases as the complexity of production processes increases. This phenomenon can be seen primarily in the automotive industry, a leading industry in the areas of modern management, production and logistics Grabowska, 2012; Wolniak 2012; Domagała, and Wolniak, 2014; Wolniak et al., 2014; Wolniak et al., 2015; Markowska 2008; Odlanicka-Poczobutt, 2011; Pałucha 2012).

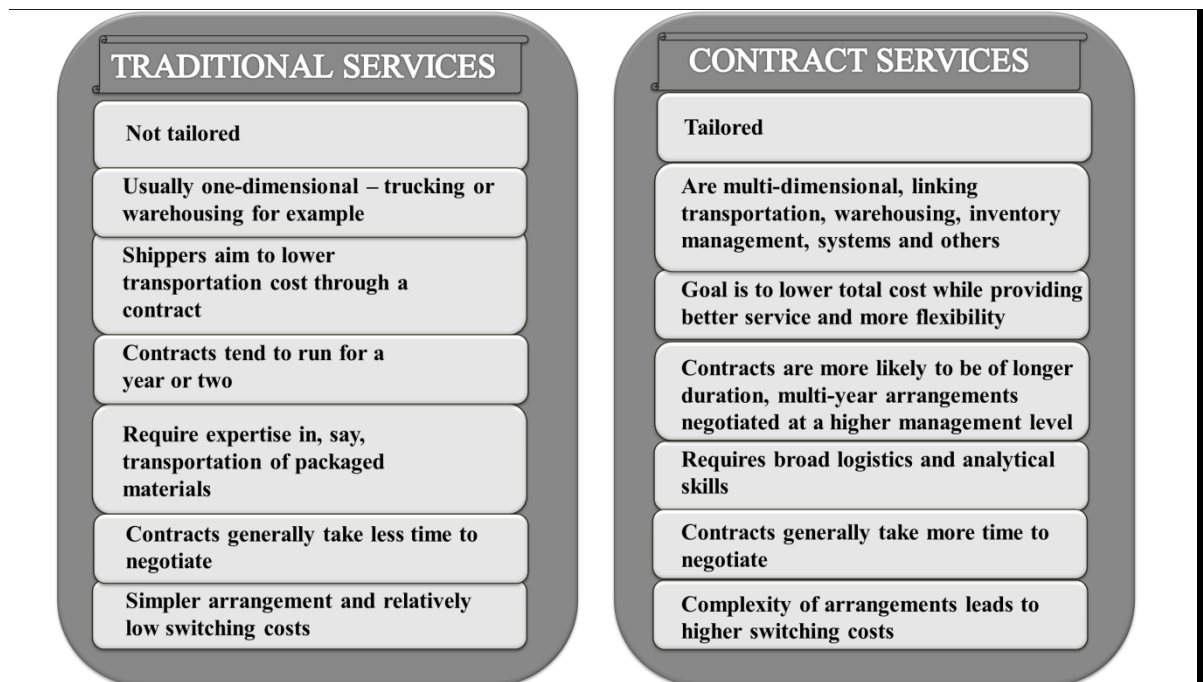


Figure 1. Differences between traditional and contract transport service. Source: Adapted from (Razzaque, and Sheng, 1998).

In organizations logistic services like transport are the most often transmitted to an external unit (fig.1). Such a process is referred to as "outsourcing". The word itself comes from English and stands for outside-resource-using (the word "outside" means outside, "resource" "using"). Outsourcing is now considered one of the most important concepts in the field of management. Outsourcing is defined as the “practice of turning over all or part of an organization’s function to an vendor” (Peslak, 2011; Odlanicka-Poczobutt, 2006; Matusek, and Odlanicka-Poczobutt, 2012; Pacana et al., 2016).

The concept of outsourcing came from American terminology “outside resourcing”, meaning to get resources from the outside. The term was later use in the management and economy terminology to indicate the external use of sources to help developing the business, which typically were using internal sources. The process of outsourcing is often accompanied by a transfer of material and human resources to chosen provider. The phenomenon brings many benefits to the partners and is mostly used by organizations in advanced economies, which directs part of the work by companies located in developing countries in particular to reduce costs (Troaca, and Bodislav, 2012).

We can define outsourcing as contracting out of a business function to an external supplier, involving the transfer of people, processes and assets. This contracting activity can be done by either an onshore or off-shore location, and to one (single-sourced) or more (multi-sourced) outsourcing partners (Deloitte, 2013).

Delivering some or all processes using the outsourcing results in logistical processes often carried out by external operators even at the manufacturer's premises. These logistics processes, in addition to transport and transshipment, include: packaging, warehouse management or handling such as sub-assemblies (Deloitte, 2013). The process of logistics outsourcing is one that often involves the use of external logistics companies (third-party) to perform activities that have traditionally been performed within an organization. A third party is neither the seller (first party) nor the buyer (second party) in the supply chain. The term “logistics company”, “logistics service provider” or “outsourcer” is used to denote the firm that operates the logistics activities; and the term “service user” or “outsource” is used to denote the firm to who the contract for services is given (Ksin-I Hsiao et. al., 2011; Srabotic, and Ruzzier, 2012).

The decision to outsource is often made in the interest of lowering firm costs, redirecting or conserving energy directed at the competencies of a particular business to make more efficient use of labor, capital, technology or resource. The business case of outsourcing varies according to particular situation. We can distinguish followings reasons of outsourcing (Constantin, 2007):

- lower costs (due to economies of scale or lower labor rates),
- variable capacity,
- the ability to focus on core competencies by ridding yourself of peripheral ones,
- lack of in-house resources,
- getting work done more efficiently or effectively,
- increased flexibility to meet changing business and commercial conditions,
- tighter control of budget through predicable costs,
- lower ongoing investment in internal infrastructure,
- access to innovation and thought leadership.

By we also can distinguish some risks of outsourcing the logistic processes outside the organization (Denisa et al., 2015):

- Contract risk – the risk that a third party logistic provider cannot fulfil all requirements in required quality or required time.
- Management risk – this type of risk can be caused by the difference between the management methods and the culture of the company used by the provider and client.
- Information risk – the risk of poor quality information sharing which can result in serious problems and dramatic losses.
- Market risk – this type of risk refers to market fluctuations such as labor price, raw materials price, the changes in customer demand, etc.
- Financial risk – financial risk means that the real return on investment of logistic outsourcing is lower than the expectation.

External services benefit both private companies and public institutions. According to the data contained in about 65% Managers outsource their services to outsourcing companies (Orzechowska-Przybyła, 2009; Wieczorek 2004; Gajdzik, 2016; Bahha et al. 2015). This direction is mainly related to the search for savings in the organization. Using outsourcing aims at optimizing customer service costs, improving your organization's security, and accepting more orders. It also reduces the risk of employee acquisition costs, training, and reduces the cost of contract management. An undoubted advantage of outsourcing is the ease of access to professionals in many areas, and thus the higher is the flexibility of the organization. Outsourcing solutions allow reducing the cost of business activities by about 20-70% of their value. The aim of the work is to estimate the financial benefits for the hypermarket resulting from replacing outsourced services.

3. Research methodology

In our study we analyzed cost of logistic activities in hypermarket. We use the case study method using one of the biggest hypermarkets existing on the market. To analysis we use actual cost comparison method to compare various costs of hypermarket activities in the case of: salary and third-party services. We compare some variants of decision taking by hypermarket, especially possibility of using outsourcing.

The estimated costs of buying cars were based on the lease of commercial vehicles with parameters similar to the cars offered by the outsourcing company. The aim of the study is to compare the costs that the organization would incur without excluding transportation services and the outsourcing costs of the aforementioned services, the profit of a company can have from using outsourced services is estimated in the paper.

4. Calculation and analysis of results

Table 1 and table 2 shows the average monthly remuneration of the employees and the deputy manager, including retirement, disability, sickness and NFZ (National Health Fund) benefits, as well as the average annual cost of living for the employee in the calendar year. The result was increased by a factor of 1.5 resulting from guaranteed bonuses. The estimated cost of maintaining the serial worker and deputy head of the transport department is shown in Table 3. The data is based on the accounting data provided by the company.

On the basis of data collected in the table 1 we can say that the gross salary of serial employee is 2460zł and the net salary is 1782,82zł. The cost for the employer is 3922,55zł. In the case of deputy (table 2) we can say that the gross salary is 2807zł and the net salary is 2022,17zł. The cost for the employer is 3329,89zł. In the table 3 we have the comparison of the salary and the estimated cost of living.

Table 1.

Average salary of a serial employee

Average salary of a serial employee:											
	social security contributions [PLN]						the cost of the employer [zł PLN]				
1	2	3	4	5	6	7	8	9	10	11	12
I	1 663,00	162,31	108,10	40,74	311,15	121,67	84,00	1 146,18	300,34	42,40	2 005,74
III	1 827,00	178,32	27,41	44,76	250,49	141,89	107,00	1 327,62	293,43	46,59	2 167,02
III	2 154,00	210,23	32,31	52,77	295,31	167,28	124,00	1 567,41	345,93	54,92	2 554,85
IV	2 464,00	240,49	36,96	60,37	337,82	191,36	152,00	1 782,82	395,72	62,83	2 922,55

Caption: 1 – year, 2 – gross salary, 3-5 retirement, disability, sickness contributions, 6 – sum of contributions, 7 – NFZ (National Health Fund), 8 – payment on account, 9 – net amount, 10 – ZUS (Social Security), 11 – FP (Labour Fund) i FGŚP (Guaranteed Employee Benefits Fund), 12 – sum, I-IV – years of hypermarket operation.

Source: Based on (Kotarz, 2011).

Table 2.

Average salary of the deputy manager

Average salary of the deputy manager											
	social security contributions [PLN]						the cost of the employer [zł PLN]				
1	2	3	4	5	6	7	8	9	10	11	12
I	2 097,00	204,67	136,31	51,38	392,36	153,42	123,00	1 428,22	378,73	53,48	2 529,21
II	2 213,00	215,99	33,20	54,22	303,41	171,86	145,00	1 592,73	355,41	56,43	2 624,84
III	2 573,00	251,12	38,60	63,04	352,76	199,82	161,00	1 859,42	413,22	65,61	3 051,83
IV	2 807,00	273,96	42,11	68,77	384,84	217,99	182,00	2 022,17	450,91	71,98	3 329,89

Caption: 1 – year, 2 – gross salary, 3-5 retirement, disability, sickness contributions, 6 – sum of contributions, 7 – NFZ (National Health Fund), 8 – payment on account, 9 – net amount, 10 – ZUS (Social Security), 11 – FP (Labour Fund) i FGŚP (Guaranteed Employee Benefits Fund), 12 – sum, I-IV – years of hypermarket operation.

Source: Based on (Kotarz, 2011).

Table 3.

Average cost of living

	Average cost of maintaining K_{SPS} - a serial employee [zł PLN]				Average cost of maintaining K_{SZK} - deputy manager [zł PLN]			
formula	$K_{SPS} = L_M \cdot K_p + 1.5 \cdot K_p$ (1) L_M – NUMBER OF MONTHS K_p – MONTHLY EMPLOYER COST 1.5 - the premium resulting from the bonus				$K_{SZK} = L_M \cdot K_p + 1.5 \cdot K_p$ (2) L_M – NUMBER OF MONTHS K_p – MONTHLY EMPLOYER COST 1.5 - the premium resulting from the bonus			
Year	I	II	III	IV	I	II	III	IV
Cost [PLN]	27077.49	29254.77	34490.48	39454.43	34144.34	35435.34	41199.71	44953.52

Caption: I-IV – next years of functioning hypermarket.

Source: Authors own work.

5. Cost analysis in case of non-use of third-party

An analysis of the state of the existing logistic allows finding that carrying out transport services on its own requires:

1. Employment of at least 4 employees serving as drivers to ensure the continuity of transport services (at present the company has 3 employees and two deputy managers).
2. Purchase of three delivery vehicles with a maximum permissible weight of 3.5 tonnes.

Transportation costs will also increase with vehicle maintenance (insurance, inspections, repairs, fuel purchases, etc.). These costs would be transferred to customers (transport charges). Estimated costs of maintenance of newly hired transport staff are shown in Table 4.

Table 4.

Estimated maintenance costs for newly hired transport staff

	The cost of maintenance of 1 employee				The cost of maintenance of 4 employee			
Year	I	II	III	IV	I	II	III	IV
Cost [PLN]	27077.49	29254.77	34490.48	39454.43	108309.96	117019.0	137961.92	157817.72

Caption: I-IV – next years of functioning hypermarket.

Source: Authors own work.

The costs associated with buying a car in the form of a lease are based on the data of the Authorized Dealer. They were respectively: 90400.00 PLN, 106150.00 PLN and 86450.00 PLN for selected 3 vans. Leasing term was assumed 48 months, assuming installments (Table 5).

On this basis, the total cost of the lease of 3 cars in the 4-year period was estimated at PLN 360,775.47.

Table 5.

Lease installments for selected vans

No. of car:	R ₁ – Instalment 1	R ₂ – Further installments	Form of insurance AC/OC/NW- proposed by the lessor 3.2% of the invoiced value of vehicles
Car 1	9040	2259,36	$3.2 * 110288.00 / 100 = 352921.6$
Car 2	10615.00	2653.00	$3.2 * 129503.00 / 100 = 414409.6$
Car 3	8645.00	2160.00	$105468.00 / 100 = 337497.6$

Source: Based on (Kotarz, 2011).

Car insurance in 1th year was estimated at 11048,29 and in the period of 4 years over 44 000 PLN. In addition, the cost of inspections should be added every 30 000 km of mileage, which in comparison to the amount of assumed km running by the car during the year (30 000 km) gives min. 1 review/year. The price of the first review is about 819 PLN, the next inspections is about the range of 1400-2000 PLN and depend on the maintenance of the technical condition of the vehicle. Estimated value of reviews (assuming 1700 PLN for reviews in years 3th and 4th) is approx. 12 657 PLN. Consumption of diesel (depending on the market price in the given year) and the so-called. car burning (assumed 12000 l/year) was estimated at 153,480 PLN. Estimated additional expenditure related to maintenance of the transport department is presented in Table 6.

Table 6.

Sum of incurred costs (PLN)

Year	Total costs incurred (employee retention, vehicle purchase, vehicle insurance, vehicle inspection, diesel consumption) [PLN]	Sumy paid by the customer (transport costs) [PLN]
I	$(108\ 309 + 106\ 147 + 11\ 048 + 0 + 36\ 600) = 262\ 104$	196 452
II	$(117\ 019 + 84\ 816 + 11\ 048 + 2457 + 40\ 200) = 255\ 600$	218 265
III	$(137\ 961 + 84\ 876 + 11\ 048 + 5100) = 274\ 385$	223 550
IV	$(157\ 817 + 84\ 876 + 11\ 048 + 5100) = 300\ 121$	190 972

Source: Authors own work.

The data analysis shows that the total costs incurred to maintain the transport department's resources are 1092,220 [PLN], and the total costs (maintenance costs minus the sums paid by the customer) are approximately PLN 263,000 [PLN] over a 4 year period.

6. Cost analysis in case of outsourcing

The number of courses performed was analyzed by the carrier (Table 7) in the given zone and year, as well as the price list of transport services (Table 8), depending on the delivery zone: zone I – distance to 5 km, zone II – distance 5-15 km, zone 3 – distance 15-30 km and zone IV – distance over 30 km.

Table 7.*Number of courses performed by the carrier [number]*

Year	Zone 1	Zone 2	Zone 3	Zone 4
I	1477	2644	728	22
II	1729	3108	642	27
III	1663	2854	847	34
IV	1403	2482	748	33

Source: Authors own work based on internal data of the company.

Table 8.*Price of outsourcing services*

Delivery area	Price list
Zone I	30
Zone II	40
Zone III	70
Zone IV	70 + 2,2 zł for every one started km

Source: Based on (Kotarz, 2011).

Analysis of the data in tables 7 and 8 shows that the carrier made 4871 courses in year I, 5506 courses in year II, 5398 in year III and 4666 courses in year IV. Taking into account the price of services (Table 8) and taking into account the amounts paid by the customer (Table 9), the cost incurred by the hypermarket associated with the outbound transport service is estimated at (net) level:

- 5713,11 [PLN] in year I,
- 4748,36 [PLN] in year II,
- 2808,19 [PLN] in year III,
- 5434 zł [PLN] in year IV.

Table 9.*The amounts paid by the customer*

Year	Total cost incurred (depending on the number of kilometers traveled, zones and prices in a given zone) [PLN]	Sums paid by the customer (transport costs) [PLN]
I	203422	196452
II	218265	218265
III	226976	223550
IV	197602	190972

Source: Authors own work.

The total cost of the hypermarket is estimated at over 18,500 [PLN].

7. Comparison of expenditures

The calculations (data in column 3 – Table 10) show that, as a result of the use of outsourced transport activities, the company saved over 240 000 PLN net in 4 years. This is the better solution comparing to using own transport activities.

Table 10.
Total cost incurred [PLN]

Year	Costs – own activities [PLN]	Costs – outsourcing [PLN]	Estimated net profit [PLN]
I	65652	5713	59939
II	37335	4748	32587
III	50835	2808	48027
IV	109149	5434	103715
Sum	262971	18703	244268

8. Conclusion

On the basis of data we can say that the gross salary of serial employee is 2460zł and the net salary is 1782,82zł. The cost for the employer is 3922,55zł. In the case of deputy we can say that the gross salary is 2807zł and the net salary is 2022,17zł. The cost for the employer is 3329,89zł. In the table 3 we have the comparison of the salary and the estimated cost of living.

The data analysis shows that the total costs incurred to maintain the transport department's resources are 1092,220 [PLN], and the total costs (maintenance costs minus the sums paid by the customer) are approximately PLN 263,000 [PLN] over a 4 year period.

Utilization in the supply chain of an outsourced transport company allowed to obtain financial benefits in the examined enterprise at the level of over 240 000 [PLN]. This is the better solution comparing to using own transport activities. Within four years of hypermarket existence the company reduced its own costs. It would be wise to consider whether or not to use outsourcing companies in other departments such as the security or maintenance department.

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