



Building your own logistics or it's outsourcing?

E-book by Skladon

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Introduction

WELL-MANAGED LOGISTICS IS THE BASIS OF EVERY SUCCESSFUL BUSINESS.

The e-commerce market is growing year-on-year in double digits, which constantly brings new demands on the quality of logistics. It is not only external logistics, provided through contracted partners – carriers, but also internal in the warehouse, which in most cases is handled by e-shops on their own (so-called intralogistics). Only a small number of domestic e-shops use warehouse outsourcing, or external fulfillment*, which is popular especially in the USA and our western neighbors.

Deciding whether to build your own logistics or go the way of third-party outsourcing (so-called 3PL**) is a complex process in which you should take into account many factors. So what to focus on before making a final decision?

As with most decision-making processes, it is first necessary to analyze the current situation well and know in detail all the processes associated with logistics.

YOU SHOULD BE ABLE TO ANSWER THE FOLLOWING QUESTIONS:

- **Do you know your intralogistics costs?**
- **Can you say exactly how much it costs you to pick up one shipment?**
- **Can you include one-off investments, such as warehouse equipment or the acquisition of a warehouse system, in these costs?**
- **Can you evaluate your time, as well as the time of managers and other employees in logistics?**

In this e-book, we will focus in more detail on all the costs that you should take into account when calculating logistics costs. We will also focus on the costs associated with shipping one shipment. At the end, you will be able to effectively compare both options – your own logistics and the outsourcing of intralogistics processes.

* Fulfillment – a process that provides a complete service from receipt, through storage, management and handling of shipments to delivery of goods to the customer.

** 3PL – third party logistics; a company that provides its clients with partial or full fulfillment in supply chain management.



HOW TO CALCULATE YOUR OWN LOGISTICS COSTS AND WHAT TO INCLUDE

CHAPTER

01



1 How to calculate your own logistics costs and what to include

In order to be able to calculate your logistics costs, you need to include the monthly costs associated with storage, packaging materials, labor and transport. You then divide these monthly costs by the number of orders and find out the cost of processing one order. This simplified calculation works best for projects with similar type products. Otherwise, when your orders differ significantly (eg in weight, complexity of packaging, etc.), you can go the way of coefficients of individual products (eg picking the refrigerator will be more expensive than picking a kitchen spoon).

COST OF PROCESSING ONE ORDER:

$$\text{CPO} = \frac{\text{monthly costs}}{\text{number of orders per month}}$$

Explanations: CPO – cost per order, monthly costs – for storage, packaging material, labour and transport

1. 1 Storage

Under the concept of storage, most entrepreneurs imagine primarily the lease of a warehouse, which is certainly an important item in the calculation. This is a fixed cost that you will pay, whether you have the warehouse fully occupied or use only part of it. And it is, for example, seasonality that is a factor that significantly affects warehouse occupancy. This fact must be taken into account when calculating storage costs.



IN ADDITION TO THE SEPARATE LEASE OF THE WAREHOUSE, THE FOLLOWING ITEMS MUST ALSO BE TAKEN INTO ACCOUNT:

- **Warehouse insurance** – it all does not end with the negotiation of an insurance contract with an insurance company. You also need to make sure that you store the goods in accordance with the insurance contract and that you meet all legal requirements for the storage of your type of goods. These restrictions must be taken into account especially when storing perfumes, flammables, sprays, etc.
- **Warehouse security** – insurance and security often go hand in hand, because without proper security, usually no one will insure you. Security is associated with a large number of initial (cameras, security doors, security sensors) and regular (connection to the central security desk) investments.
- **Energy, internet and other fees** – the warehouse itself cannot do without regular maintenance and heating. The warehouse needs to be kept at a temperature suitable for work where a range of 16 – 20 degrees Celsius is recommended. Your monthly energy bill will also depend on the quality of the insulation of your warehouse.
- **Health and safety, cleaning of storage and common areas, disposal of waste and packaging material**
- **Warehouse equipment** – when building your own logistics center, equipment, together with software, is often one of the biggest investments. In addition to the technology itself (eg racks, trolleys, packaging tables, etc.), it is mainly hardware, such as readers, printers, terminals, etc. Another part is the equipment of office space and warehouse facilities, such as toilets, kitchen, locker rooms – just everything needed for the work of your employees.
- **Software, hardware and IT** – with larger volumes of shipments, every second matters. Therefore, it is essential to have a warehouse system (WMS – Warehouse Management System) ready, which will facilitate your storage, provide an overview of your goods, and to which you will be able to connect all storage hardware. Another cost is the server, which will be able to withstand the onslaught of all orders at peak load. For such cases, you will decide whether to choose a physical or cloud server. In both cases, you will have to count with the fact that it is both a one-time entry fee and a regular investment in the form of routine maintenance.



1. 2 Staff

1. 2. 1 Employees in operation – warehouse

In addition to money, time is the biggest expense in your business. Whether directly yours or the time of your employees. From the beginning, it is almost a rule that you do most of the work yourself, or with the help of family members or friends. Even though this time theoretically costs you nothing, it must be valued at the appropriate amount of money, like any other expense. In economics, this is called the “opportunity cost” and is a value you have to give up in favor of another activity – for example, instead of packing packages, you could focus on marketing, customer care, negotiating better terms with suppliers, or simply spending more time with family. Only with this approach will you be able to compare the costs of your own logistics with the costs of outsourcing.

WE CAN EVALUATE YOUR TIME IN TWO WAYS:

- **Your actual hourly wage** – corresponds to the wage for which you could work on other projects for the time you devote to work related to internal logistics. It does not count your work which is associated with other activities, such as marketing, graphics, web work and more.
- **The lowest wage this work would be done for by an employee** – this wage corresponds to the standard for the given position in the given location. Learn how to calculate staff costs below.

If you already have employees, whether part-time or full-time, you need to count the time you spend working on internal logistics.

SO TYPICALLY ON ONE OF THESE ACTIVITIES:

- | | |
|---|--|
| ■ Receipt of goods | ■ Packaging |
| ■ Inspection, inventory and storage of goods | ■ Printing labels and invoices |
| ■ Selection and ordering of packaging materials | ■ Journey to the post office, or cooperation with a courier |
| ■ Processing orders from the e-shop | ■ Processing of returns, complaints and uncollected cash on delivery |
| ■ Picking goods | |



The time spent on these activities is then proportionally divided between the total personnel costs. In other words, you separate the personnel costs that are associated with logistics from those that are associated with another center. The basis of this calculation will be our gross salary, including all levies and benefits.

EXAMPLE:

Employer's costs: 1 080 EUR

Internal logistics costs:

80% of 1 080 = 864 EUR

Number of shipped shipments: 1 000 pcs



80% of the time is spent by the warehouseman doing the activities described above



20% of the time is spent by the warehouseman communicating with customers

$$\text{CPO} = \frac{864}{1\,000} = 0,86 \text{ EUR}$$

THE MOST COMMON CALCULATION ERRORS ARE:

- **Excluding the time of people out of operation** – administration, manager, shift planner, etc.
- **Ignoring gross wages and benefits** – the difference between wage and personnel costs
- **Excluding temporary workers** – in case of seasonal fluctuations, or in case of illness of a worker on the main employment relationship
- **Excluding the downtime of an employee** – for example, you know that the warehouseman will complete the entire shipment in 10 minutes. You only count on the load for these 10 minutes, but for example the next 5 minutes the worker is idle, has a "break". You have to count this time as well.
- **Excluding your own time**



1. 2. 2 Employees out of operation – management, administration, HR

The most frequently neglected cost, which is being forgotten when calculating the total logistics costs, is the item associated with the so-called admin – typically management (logistics manager), human resources and administration (recruitment and training of employees, administration of company benefits, administration of payroll, guarding attendance, etc.), warehouse manager (shift planning, process setting, responsibility) and other positions that have their work overlap into logistics costs (this may include, for example, a night watchman or a receptionist).

1. 3 Material

The price of packaging materials depends mainly on the nature of your goods. For light and unbreakable products, classic bubble envelopes will be suitable, which will fulfill their function and do not burden the budget. Some of these envelopes are even provided by the carriers themselves when certain monthly shipment volumes are met. For more demanding products, you always have to think about how to pack the product so that it is not destroyed on the way (carriers often handle shipments carelessly). The 3PL provider or the packaging material manufacturer should help you to choose the right packaging effectively.

A simple rule applies when choosing packaging materials – the more standard, the more cost-effective. This will avoid deciding which box to choose and, in addition, you will buy individual types in larger volumes, thus achieving better prices. Most 3PL solutions also work on this principle – due to the fact that they accumulate similar types of products, they are able to buy packaging materials with high volume discounts.

WHAT TO KEEP IN MIND WHEN CHOOSING PACKAGING MATERIAL:

- **Standardize packaging materials** – make them as efficient as possible (monitor dimensions and bulk density), especially when sending abroad
- **Add tax on packaging materials**
- **Purchase of small materials** – papers for printing invoices, toner for the printer, labels, folders, etc.



1. 4 Transport

Transport costs are one of the most significant in logistics. They are also one of the important factors on the basis of which the customer decides whether to buy your product. Fortunately, unlike sudden investments in equipment or systems, transportation costs are relatively easy to calculate from the carrier invoices.

THE TOTAL PRICE OF TRANSPORT IS THEN AFFECTED BY SEVERAL FACTORS:

- **Shipment weight**
- **Consignment dimensions** – for oversized consignments or for consignments to abroad (see bulk density)
- **Carrier quality**
- **Carrier speed**
- **Recipient's location**

In order to correctly calculate the total logistics costs, it is also necessary to include the costs of revenue logistics – in this case the costs of transporting the goods from the manufacturer / supplier to you. These costs should ideally be calculated in the number of pieces that will be delivered to you.



1. 5 Reception and reverse logistics

The costs of reception and reverse logistics are, when compiling the calculation, one of the most neglected. Basically, you can divide reception logistics into the receipt of goods from the manufacturer / supplier and into the receipt of returns, complaints or uncollected COD.

1. 5. 1 Receipt of goods from the manufacturer / supplier

The cost of receiving goods from the manufacturer or supplier to the warehouse must be taken into account when pricing. Ideally, calculate the costs among the number of delivered products and then include them in the calculation of the production price. Here, too, the more products you receive within one receipt, the cheaper it will be for you after calculating the total cost of 1 piece.

1. 5. 2 Receipt of returns, complaints or uncollected COD

Returns, complaints and uncollected cash on delivery can complicate the operation of any company. It is therefore necessary to include them in the total costs from the very beginning. Especially in industries where they are absolutely common and frequent (fashion). This process can be compared to the process of picking a shipment, just look at it the other way around. As soon as the consignment arrives back from the carrier, it must be taken over, unpacked, inspected, in some cases repackaged in the original packaging or ironed (fashion) and put back in stock. In some cases, ensure ecological disposal. This process is often paradoxically even more demanding and longlasting than the assembly itself, so it is good to prevent it as much as possible. This can be achieved, for example, by watching consignments that have been lying at the depot or dispensing point for a long time – so the deadline when they will be sent back to you is approaching. Or customize your e-shop so that you give the customer as much information about the shipment as possible before ordering.



HOW TO CALCULATE THE TOTAL COST FOR COMPARISON

CHAPTER

02



2 How to calculate the total cost for comparison

In the previous chapter, we explained what needs to be included in the cost of intralogistics. Now we need to get everything to a number that we will be able to financially compare with the price of the service of a professional logistics outsourcing provider.

EXAMPLE:

We will perform the calculation on the example of an e-shop with an annual average of 1 000 shipments per month and one person who takes care of customer service (50%) and logistics (50%). This person works full time and has a gross salary of 1 200 EUR. Let's assume that the e-shop has a 0% return rate and no complaints. To calculate the total costs for 1 shipment, it is necessary to add up the related variable and fixed costs.

VARIABLE COSTS (DEPENDING ON THE NUMBER OF SHIPMENTS SENT):

- **Personnel costs + costs of administration and management of the employee (your time)**
- **Costs of packaging materials**
- **Transport costs**

Half of the gross wage (see 50% above) is 600 EUR. The entrepreneur will spend 20% of his time with administration, control, administration of the employee, schedule of shifts, search for part-time workers, etc., which will be 240 EUR per month with the same gross salary. They pay 840 EUR once every 3 months for packaging materials (boxes, filling, tape, printing of invoices and promotional materials), which is 280 EUR per month. For transport, the e-shop will pay a total of 3 200 EUR per month for all carriers.

IN TOTAL, THE E-SHOP WILL PAY THE FOLLOWING VARIABLE COSTS PER MONTH:

- **Staff** – 864 EUR = 0.86 EUR / shipment
- **Material** – 280 EUR = 0.28 EUR / shipment
- **Transport** – 3 200 EUR = 3.2 EUR / shipment
- **Total: 4 344 EUR = 4.34 EUR / shipment**

With an average of 1 000 shipments per month, the e-shop will pay a total of **4.34 EUR / shipment** at variable costs.



FIXED COSTS (COSTS TO BE INCURRED REGARDLESS OF THE NUMBER OF CONSIGNMENTS SO AS TO COVER THE MAIN SEASON):

- **Storage**
- **Software**
- **Warehouse equipment**

When calculating fixed costs, everything becomes more complicated, as we also calculate the costs that we have to incur once (or regularly in the form of leasing or credit). We call them fixed costs because they are set to cover the largest seasonal order volumes. Unfortunately, this means that in the off-season we will also have to pay for a place that is full during the season, but we do not use it for the off-season. A typical example in this case is rent. In order to calculate storage, it is therefore necessary to take into account the monthly costs of rent, energy, insurance and security. We calculate these costs among the total number of shipments in 1 month. With equipment and software, the whole thing is a little more complicated, especially in the case of a one-time investment. This investment must then be taken into account as the difference between the purchase price and the estimated selling price, taking into account the total length of use in months.

The e-shop pays an average of 600 EUR / month for rent, insurance, security and energy in a small warehouse in a regional city that can handle the seasonal onslaught. Furthermore, the e-shop bought storage racks, a printer, a label printer, a packaging table for 8 000 EUR. He assumes that he will use the device for 2 years and then sell the used one for 2 400 EUR. The cost for the equipment is therefore 5 600 EUR (the difference between the purchase and sale price). After budgeting for up to 24 months, it is 233 EUR / month. At the same time, he purchased software with an initial license of 4 000 EUR and a monthly fee for use and maintenance, including payments for servers, is 200 EUR. Again, it assumes that this system will be used without major changes for 2 years. After budgeting these costs, the system will cost him 366.67 EUR / month.

IN TOTAL, THE E-SHOP WILL PAY THE FOLLOWING FIXED COSTS PER MONTH:

- **Storage and related items** – 600 EUR = 0.6 EUR / shipment
- **Warehouse equipment** – 600 EUR = 0.6 EUR / shipment
- **Software** – 367 EUR = 0.37 / shipment
- **Total: 1 200 EUR = 1.2 EUR / shipment**

In total, the e-shop will pay **1.2 EUR / shipment** per month at a fixed cost.

The total costs of this e-shop are 5.54 EUR / shipment.



COMPARISON OF YOUR OWN SOLUTION WITH OUTSOURCING

CHAPTER

03



3 Comparison of your own solution with outsourcing

Finally, we have the calculated value of our own logistics, specifically the total cost of 1 shipment. This price will come in handy in any case. Now it's time for a comparison with logistics outsourcing. First, you need to answer two basic questions.

3. 1 Is logistics outsourcing suitable for me?

Most logistics outsourcing providers focus on a specific type of business. Some focus on small e-shops, others on large ones. Some look for e-shops with books, others with frozen products. Some see the greatest added value in complete outsourcing, others only in individual approach.

Next, you need to think about whether you have a product that is suitable for logistics outsourcing. If you produce hand-knitted hats, which you finalize when the order arrives, then outsourcing does not make sense to you. If your service is based on product personalization (eg printing) and you have 80% of such orders, again, outsourcing will not be the right choice for you.

3. 2 How much will I save and what are the other benefits of logistics outsourcing?

Sometimes outsourcing saves you money right from the start, other times it brings other benefits that are interesting for your business. The cost comparison itself should be relatively easy after you have calculated your own logistics costs.



OTHER BENEFITS THAT LOGISTICS OUTSOURCING BRINGS INCLUDE, FOR EXAMPLE:

- **Faster delivery to customers** – 3PLs have arranged later pick-ups at carriers and are often also close to logistics hubs. They can therefore process later orders.
- **Big discounts on transport and packaging materials** – probably the biggest advantage of 3PL is that by accumulating shipments, they achieve cheaper prices for transport and packaging materials, from which the e-shops themselves often benefit.
- **Know-how in the logistics** – as an e-shop, you solve worries associated with purchasing, sales, marketing, etc. The logistics partner has one main expertise and should be the best. You can draw on and use its know-how to build your own “external logistics division”.
- **Transfer of responsibility** – the 3PL partner negotiates with the carriers for you, it will guarantee you better conditions, because it has a stronger negotiating position. It solves for you, for example, your complaints or other grievances. You are not even liable for lost products in the warehouse, you do not have to worry about warehouse operating staff, insurance, etc.
- **Own development of warehouse software, connection to carriers and marketplaces** – you do not have to invest time and energy in the development of your own logistics system. You don't even deal with connections to individual carriers, Amazon or other marketplaces. For everything, you use the existing connections of your logistics partner.
- **No need for one-time investment** – you only pay for what you really need. Whether you have a season or not. All your fixed costs and investments become variable. Sales are below expectations and you need to reduce inventory? Or, on the contrary, are you growing unexpectedly and need to stock more products quickly? The right 3PL partner will offer you a solution and help you grow your business.

In conclusion, the decision should always be preceded by a correct calculation of logistics costs. In Skladon, we have developed this methodology and we will be happy to provide it to you. Ask for our calculator at sales@skladon.cz or download it for free at www.skladon.cz/en/fulfillment_pricing



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