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## REVERSE AUCTION ON SPOT TRANSPORT MARKET – INTERCLEAN CASE AND POSSIBLE IMPLEMENTATION FOR OTHER COMPANIES

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**Abstract:** *In order to achieve business requests such as shorten the time of booking the transport of goods at a fair price with best delivery dates specific methodologies need to be applied. This paper presents an application of the reverse auction methodology in booking international transport of goods. It is the real interCLEAN Serbia case described from an idea, proof of concept and test of possible implementation for other companies. This may be used as an example in other businesses and companies in order to improve transport procurement.*

**Keywords:** *reverse auction, spot transport market, e-auction*

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### 1. INTRODUCTION

Small and medium enterprises (SME) usually use a few „reliable,“ carriers in a process of booking of transport of goods. In the best case scenario SME will pay market price for good service (delivery time, prompt communication etc.). For unregular full truck loading and less than full truck loadings situation is even worst, because „reliable,“ carriers have to forward requirement to their own „reliable,“ circle with additional margins included. On the other hand, only in Serbia there are 1.191 companies that are doing international transport of goods, with 10.942 truck all over Europe at this moment. [1] One way to approach to this problem is to increase number of reliable carriers, but for SME it is, even more, time consuming process. Online, so called freight exchanges have emerged (Timocom.com, Cargoagent.net), but there are no price, so SME has to do all process of phone calls/chat conversations to find the „market,“ prices manually. There is also some risk involved doing business with new, unknown carriers. On the other side there is a trend of transport portals, more user friendly for SME (shippers-owners of the goods) with pre-determined prices (uship.com, ucandeliver.ru) and with/without transparent bidding between carriers (uship.com, nestcargo.com).

#### 1.1 Reverse auction

A reverse auction is a type of auction in which the roles of buyer and seller are reversed. In an ordinary auction, buyers compete to obtain goods or services by offering increasingly higher prices. In a reverse auction, the sellers compete to obtain business from the buyer and prices will typically decrease as the sellers underbid each other. [2] E-auction is online, real-time auction

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between a buying organization and two or more invited suppliers, where suppliers can submit multiple bids during the time period of the auction, and where some degree of visibility exists among suppliers regarding the actions of their competitors. [3]

## 1.2 Contract/spot market

Figure 1 presents the structure of the USA trucking industry [4]. Since private carriage refers to trucks and drivers owned and operated by shippers, this sector is not included in the trucking contracting market. In order to procure for-hire services, shippers either write longterm contracts with carriers, usually for one or two years, or outsource to common carriers that mostly operate in spot markets. A spot market is where shipments are handled on a one time load-by-load basis. It is used by almost all shippers and carriers to some extent. Typically shippers and carriers participate in spot markets on a “per job” basis. Spot markets, or in online marketplaces, are increasingly being used to match shipper demand and carrier capacity, because of the ability to generate market prices in real-time.

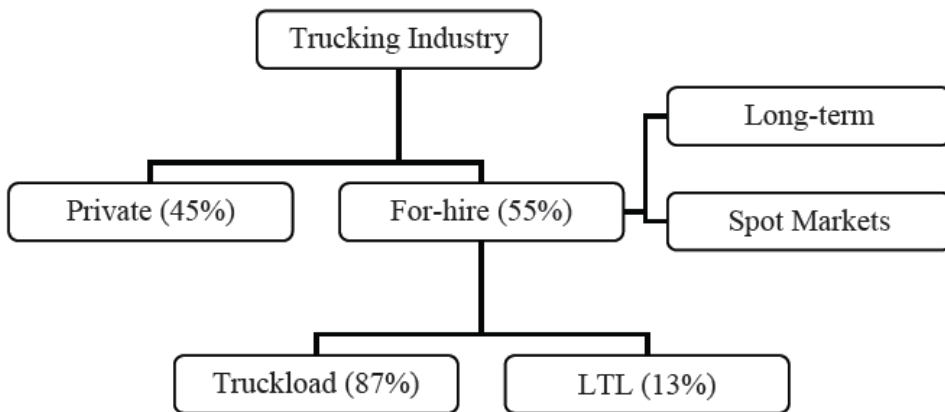


Figure 1. Structure of the Trucking Industry in USA

Spot freight trucking market in USA is responsible for 15 to 20 percent of for-hire trucking freight movements that are worth more than \$10 billion in billings per year for thousands of transportation companies. [5] The best load boards provide rate analysis tools based on actual transactions on every lane in North America, since their databases hold a wealth of pricing information. For example, Dial-a-truck (DAT) offers RateView for carriers, brokers and shippers, providing access to shippers’ contract rates and spot market (broker buy) rates. Spot market rates, the “broker buy” rates that freight brokers (freight forwarders) and 3PLs pay to the carrier, are typically 10 to 15 percent lower than the rates that shippers pay to carriers as part of an ongoing contract. Spot market rates vary with the season, however, so that carriers in certain markets often command top rates during periods of high demand.

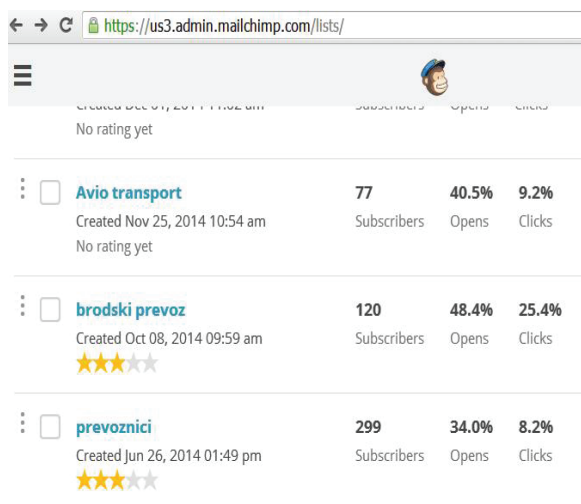
While reverse auction is widely used on contract transport market, there is no much research about usage of reverse auction on spot market. However, some researches [6] have similar results like ours (up to 30% lower prices for shippers).

## 2. HOW IT ALL STARTED?

There was a need for faster, easier, less time consuming booking of transport of goods, according to the budget or market price and level of service. The mix of free on-line tools is used (Google spreadsheet , mailchimp.com ) to create my own auction site [7]. The idea was to save time

through transparent procedure, but after more than 100 auctions it show up that costs savings are significant i.e. 50-400EUR (up to 30% lower costs of transport) per booking compared to other offers or interCLEAN budget.

List of approved carriers is manually added according to previous contact or business experience with them. List of approved carriers is additionally segmented to contacts specialized for truck transportation, container transport and air cargo. Below (Figure 2.) is report from Mailchimp software about open rate of interCLEAN quote request for each mode of transport (for air cargo/Avio, container/brodski and trucks/prevoznici) and statistics about the how many of contact carriers and freight forwarders (agents) have gone to Google spreadsheet (view only) auction site.



List Name	Subscribers	Opens	Clicks
Avio transport	77	40.5%	9.2%
brodski prevoz	120	48.4%	25.4%
prevoznici	299	34.0%	8.2%

Figure 2. MailChimp statistics

Offer from carriers are received through e-mail, skype, phone call and manually added to view only google documents, so carriers could all be aware of the best possible offer at that moment. From SME (shipper-owner of the goods) point of view additional decision parameters, beside price, are important e.g. loading date, unloading date, additional warehouse costs etc. The whole process could be work intensive and time consuming for carriers, so shipper transparency is highly recommended. Regarding, that interCLEAN has manually added all offers to auction site, the main problem was that time limited auctions were the most intensive during the last minutes. The solution for this problem was automatization of the process using web application [8] (technology used: Laravel v.5.1 + JS - JQuery - Google Viz on Azure cloud platform). Together with Mr. Perica Aleksov, web developer, less than full truck loading calculator was developed in order to have idea about the referent market price [9] (google map API is used for distance km input). From shipper point of SME (shipper) the question is are you able to find even lower price pushing container agents to reverse auction bidding. The answer is yes, for both less than full containers loading and full container loadings [10]. Air freight (cargo) deliveries have been also tested successfully for reverse auction bidding [11]. Short review of reverse auction methodology used on spot transport market is the following:

- Create list of preselected carriers and freight forwarders and invite them to participate in online auction;
- All logistic details are available (loading date, gross weight, number and dimensions of pallets, customs clearance contacts etc) or quickly available upon request and confirmed back to all interested parties;

- Auction is time limited (a few hours is usually enough);
- Shipper is accepting one of the offers right after auction is ended

### 3. CHALLENGES

Advantages (benefits) of automated reverse auction on the spot market is transparency, time and costs savings. Automated reverse auction means you are using dedicated online platform like <http://cargobid.me/auth/login> . Costs savings are possible due to large list of preselected carriers and freight forwarders , so you have a better chances to find perfect match between empty truck and shippers goods, as well as freight forwarders are willing to decrease their margin in order to get the job.

A good summary of some of the conditions, which favor a reverse auction, versus those which do not, is provided as Table 1.

Tabel 1. Conditions which favor a reverse auction vs. which do not [12]

<b>FAVOR REVERSE AUCTION</b>	<b>FAVOR ALTERNATIVE</b>
Many qualified suppliers	Few qualified suppliers
Commodity or standardized product	Specialized or custom product
Transactional prevalent supplier relationships	Long-term, strategic relationship is important
Buyer is important to suppliers	Buyer's business is small or transactional to suppliers
Excess capacity in industry	Little or no excess capacity
Price is the key selection criterion	Other issues are as, or more, important than price
Buyer is willing to award business based on results of reverse auction	Buyer is not fully committed to awarding based on results (desire flexibility)

The most important challenge encountered in reverse auctions is the suppliers' impression that buyers are acting opportunistically and taking advantage of suppliers. The most negative feedback was from some carriers and 3PLs. However, it seems that reverse auction is particularly well suited to service industries, such as transportation, whose output can't be stored and its excess capacity would otherwise be lost.

Through startup project CargoBid.co reverse auction has been promoted for other companies as a way to save money and time during booking of transport on spot market. However, the most of auctions for other companies were not successful. There are various reasons for this.

#### 3.1 Possible solutions for some of the challenges:

- Request for offer is standard way to check the price with a few reliable carriers without much obligation. However, automated reverse auction with large predefined list of preselected carriers is more like market research at given point in time and costs of work involved are much higher, so it seems to be that there should be a fee paid by shipper to cover this costs to keep carriers and freight forwarders motivated to send price offers;
- Risk of not being paid by shipper or other business parties could be partly avoided by pre-screening of credit rating of the company through available online services (e.g. Cube.rs,

Coface.com) or manual checking through publicly available services (e.g. nbs.rs , apr.gov.rs). Also, older 5 digit Timocom user numbers are used as a good business rating reference among carriers and freight forwarders. However, real solution is not only advance payment, but so called internet escrow services. Escrow generally refers to money held by a third-party on behalf of transacting parties.[13] uShip.com, USA fast growing startup internet company that operates online marketplace for shipping services is using successfully this internet escrow model. [14] So shipper is sending full amount or booking deposit which is a percentage of the accepted bid price to third (escrow) party. Carrier or freight forwarder will receive money only after prearranged conditions are met. (e.g. as soon as copy of signed CMR is uploaded and confirmed by shipper);

- Although cargo thefts are relatively rare in this part of the world [15] it is one of greatest fear for shippers. Solution for this as well some other risks is cargo insurance by shipper, but it is not a standard practice for the most SME. CMR insurance and third party limited partial insurance could help to relax a tension between new business parties. Lower level of service then usual when dealing with new carriers could be overcome through online rating platforms and/or through more specific escrow contract terms;
- No complete shipping logistic data could usually be overcome by prompt communication, but in the case some problems occurred during transport, escrow negotiations ( through majority voting system) could quickly solved any financial issues;
- Starting auction without target price by shippers and no good will to accept offers should be penalized through advance paid auction fee.

Through future implementation of above solutions, CargoBid.co is hoping to match customer needs for less time consuming, more cost effective and more transparent booking. However, regarding that this is no standard way of doing business like: paying in advance for service, be more responsible for data you are putting on online platform etc. project could move forward, pivot or part of the solution could be use in any different way.

The big picture is that through centralized automated platform, data about average spot market priced could be collected for various destinations, and this kind of data are the building blocks for potential future development of freight derivatives especially for trucking. [16]

### 3. CONCLUSION

During 24 months interCLEAN - import department succeeded from bringing idea to gain enough basic knowledge about reverse bidding auction approach. The first testing started at the beginning July 2014. and now after more than 100 auctions we could confirmed proof of concept, about reverse auction bidding on spot transport market in region. The main goal in this paper was to report a successful use of on-line reverse auction bidding in a company that has not previously used it and, as a result, cost savings in its business operations. Initial interCLEAN solution (view only google documents + email software) is low cost - almost free, with small know-how barrier to test it as a pilot project for most of other companies. However, simple copy/paste of online tools used is not enough, but different mindset approach by shipper is needed to make reverse auction beneficial.

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