

Reverse auction bidding in transport of goods - interCLEAN case

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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 bidding methodology in booking international transport of goods. It is the real interCLEAN Serbia case described from an idea, proof of concept and concluding remarks. This may be used as an example in other businesses and companies in order to improve transport procurement.

I. 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. 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 (shipper) has to do all process of phone calls/chat conversations to find the „market,, prices manually. 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, cargoduck.com) and with/without transparent bidding between carriers (uship.com , nestcargo.com).

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II. RELATED WORK

In the modern world, USA mostly, reverse auction bidding is greatly used. Since its deregulation in 1980s, the US freight transportation market has grown significantly and become very competitive and

advancement of information technology leads to the online marketplaces for transportation services where the transportation capacities (carriers' offer) are dynamically matched with loads (shippers' demand) through auction mechanisms [1].

However, there are no sources, about reverse bidding auction application experiences in Serbia. This emphasized importance of this paper, which by described experience may positively influence on bigger reverse bidding auction application in our country, as well as on increasing company competitiveness, which uses this methodology.

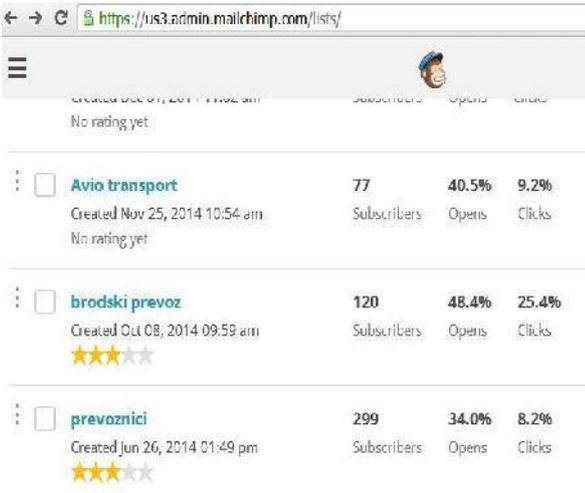
There are several types of reverse auctions. For example it is not uncommon for buyers to use the terms a bundled bid, cherry picked or a scorecard auction [2]. In the case of a bundled auction the buyer usually bundles together his/her requirements into a single lot. Suppliers then bid for the total package. Usually they will submit a bid for each item, but these will be totaled up and one supplier usually wins the whole bid. (e.g. booking of shipping containers usually include port to port transport services, as well as truck container transport from port to local warehouse [3]). A cherry picked auction is slightly different. As the name suggests, suppliers have the opportunity to 'cherry pick 'certain lines from an auction and only bid for these. A buyer can then choose to award the contract to several different suppliers for different lots, or award to one supplier. (E.g. putting a more than one less than full truck loading in the same country could give you combined or separated logistic solutions [4]). A scorecard auction is slightly more complicated in that the buyer can assign an internal scorecard to each potential supplier. Each bid a supplier submits is then recalculated against the values assigned by the value on the scorecard to produce a weighted bid. The buyer may choose to share the scorecard information with the suppliers. This may improve their performance as they will know what they are up against and where they need to improve. (E.g. priority in some cases is speed of delivery over the lowest price [5]).

III. HOW IT 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. I have used mix of free

on-line tools (Google spreadsheet , mailchimp.com) to create my own auction site [6] . 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. Similar savings about 30% were also found in other studies [7].

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 (Picture 1.) is report from Mailchimp software about open rate of my 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 my 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%

Picture 1. 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. In cooperation with other carriers and freight agents additional rules are added like „in latest 30 minute of time limited auction, reverse bidding ticker is -30EUR”. 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 future solution for this problem will be 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 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). However, calculator

development for full truck loadings seems even more challenging because other factors like trade deficit and surplus between two countries plays one of mayor rolls in determine market price as well as period of the year. Data sources like Timocom barometer and Statistical Office of Republic of Serbia will be used for fine tuning of truck transportation cost calculator.

Shipping freight rates for transporting containers from ports in Asia to Europe in US\$ per 20-foot container (TEU) could be check weekly on Shanghai Shipping Exchange or through new ones [10] , but from point of SME (shipper) the main 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 [11]. Air freight (cargo) deliveries have been also tested successfully for reverse auction bidding [12]. Future testing will include rail transportation service.

IV. FUTURE

As more of the spot market truckload freight transaction process moves online and gets conducted from a mobile device rather than a laptop, truckload freight matching gets closer to the Uber model. However, “Uberization of trucking” is maybe more buzzword than reality [13], but above analysis is from unique shipper point of view - the owner of goods who is paying at the end for the transportation services. However, there are research that are more focus on carriers’ point of view [1]. Transparency is also a trend in container shipping industry with online platforms such as tryFLEET.com , Flexport.com , Freightos.com, Xeneta.com , Haveninc.com , 45hc.com , but this are still tools for innovators/early adopters in other regions. There is a range of software and service providers offering e-auction capabilities Oracle, SAP+Arriba, IBM+Emptoris , en.Vortal.biz , Bravosolution.us . It is debatable whether it is better to enjoy the flexibility and functionality from providers who concentrate on eSourcing suites or if it is better to wait and take up functionality from existing ERP/eProcurement providers. In any event it would be unwise to ignore this issue altogether and let competitors take advantage of the potential savings which such functionality has to offer [14]. E-auction users should be aware of agreeing to pay a supplier a fixed percentage of savings (ie,5%) if outsourcing the e-auction process. There are also advantages to buying the e-auction expertise and software to host e-auctions in-house. Although initially expensive and time consuming, the ability to build upon an e-auction programme year on year, introducing an expanding range of products and services provided, does have its advantages. Many large companies who have introduced an in-house e-auction programme started off outsourcing the process to test the process and prove the process internally.

V. CONCLUSION

During 18 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 successfully confirmed proof of concept, about reverse auction bidding on spot transport market in region .

For companies that are just starting to conduct reverse auctions, the best practice would be to use an RFP (request for proposal) process followed by an auction [15].

Above interCLEAN solution is low cost - almost free, with small know-how barrier to test it as a pilot project for most of companies.

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