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IMPROVEMENT OF BUSINESS PROCESSES OF A FREIGHT-FORWARDING COMPANY

A.A. Chugunov, PhD in economics, Associate Professor

T.P. Trufanova

I.M. Nasikivskyy

Odessa National Polytechnic University, Odessa, Ukraine

Чугунов А.А., Труфанова Т.П., Насіківський І.М. Удосконалення бізнес-процесів експедиторського підприємства.

У статті розглядається проблема необхідності удосконалення бізнес процесів на прикладі компанії транспортно-експедиторської галузі. Були виокремленні основні проблеми, які потребують вирішення задля подальшого покращення фінансових показників та запропоновано кроки та засоби для вирішення знайдених проблем.

Ключові слова: бізнес-процеси, задача комівояжера, CRM-система

Чугунов А.А., Труфанова Т.П., Насиковский И.Н. Усовершенствование бизнес-процессов экспедиторского предприятия

В статье рассматривается проблема необходимости усовершенствования бизнес процессов на примере транспортно-экспедиторской компании. Были выделены основные проблемы, которые требуют решения для дальнейшего улучшения финансовых показателей и были предложены шаги и методы решения найденных проблем.

Ключевые слова: бизнес-процессы, задача коммивояжера, CRM-система

Chugunov A.A., Trufanova T.P., Nasikivskyy I.M. Improvement of business processes of a freight-forwarding company.

The need to improve business processes is explored in this article on an example of a freight forwarding company. We have pointed out main problems that need to be solved in order to improve financial results and suggested steps and methods to solve these problems.

Keywords: business processes, traveling salesman problem, CRM-system

With strengthening of competition in any business including transport-dispatch branch a further competitive edge of company getting is on the field of improvement its business processes.

A research object is business processes that will be realized at transport-dispatch firm engaged the international multimodal transportations. A company offers and carries out the wide complex of transport-expeditionary services among load- unloading works, storages, sorting, marking and remarking, insurance of loads, chartering of ships and calculations after freight, auto transportation. The product of transport-dispatch companies is always complex and consists of many the constituents, each of that can be given and executed by extraneous organizations.

For this reason, except characteristic factors that influence on profitability of company's activity (the buyers market, services' demand, economic situation in the government and other) an important role is played by efficiency of all subjects involved in creation of product.

Analysis of recent researches and publications

Improvement and optimization business processes is a popular thesis for researches and publications among domestic and foreign editions [1, 2, 3]. In fact the boom of development of information technologies took place for the last decades every iterations open new horizons for perfection and optimization. Considerable attention to this question was spared by Tristan Boutros and Tim Purdie [3], who light up the importance of effective system construction inside a company for perfection the already existent processes and also propose the row of methodological approaches and practical steps for introduction and support of such measures.

A key idea is such perfection of existent infrastructure should be a necessity according to point of view of current indexes improvement so allows companies to be better prepared for possible shocks of any character.

The main part

A research object is a transport-dispatch company there have already been incarnated programmatic

products for a conduct financial accounting according to a current legislation. The working process of employees also takes place due to using the computer technique and software.

Nevertheless the question of processes optimization related to treatment of current information, timely reacting to changes in processes, presence of far of errors, heterogeneity of information, is remained opening. For this reason the aim of this work is research and improvement business processes of company. For this purpose there was the conducted analysis providing industrial and economic activity of company business processes.

We analyzed the financial indexes, circulation of documents, quality of clients' working, public organs and structure of expenses from providing of transportations. The parameters of the rendered services were shown in a table 1.

Table 1. Analysis the volumes services of international loads' expedition

Index	Unit	2010	2011	2012	2013	Difference 2011/2010		Difference 2012/2010		Difference 2013/2010	
						Absolute	Comparative (%)	Absolute	Comparative (%)	Absolute	Comparative (%)
Volumes services of international loads' expedition	mln. UAH.	9,9	13,2	16,0	17,5	+3,3	+33,3	+6,1	+61,6	+7,6	+76,8
Total amount of agreements	units	180	230	270	272	+50	+27,8	+90	+50	+92	+51,1
Amount of customers	units	110	180	250	240	+70	+63,6	+140	+127,3	+130	+118,2
Average sum of one expedition agreement	mln. UAH.	0,055	0,057	0,059	0,064	+0,002	+3,6	+0,004	+7,3	+0,009	+16,4
Average amount of agreements to one customer	units	1,64	1,28	1,08	1,13	-0,36	-22,0	-0,56	-34,1	-0,51	-31,1

The enterprise' activity analysis (table 1) showed that increasing volumes of international container-traffics in 2011 had been attained due to increase the middle sum of one contract and amount of customers.

However there was reduction to the amount of agreeing to one customer. In 2012 the same tendency was saved: the middle sum of one agreement grew, the amount of customers and amount of agreements had grown, and the AV amount of agreements on one customer went down again. In 2013 the AV amount of agreeing to one customer comparatively with 2010 diminished, but a bit grew comparatively with 2012.

Unfortunately 2013 year showed that the common amount of customers had diminished, that it follows to examine as an alarm signal, because for successful development the firm should not lose the clients but extend their amount. Decline of index "amount of agreements to one customer" testifies that amount of permanent clients given advantage exactly to this enterprise insignificant and unstable that can signal about not quite successful politics of LTD "Ukrspecconteiner" according to clients' necessities satisfaction. it follows to count The permanent increase of freightage the one container should estimate as also negative fact.

The level and quality of implementation the motor-car transportations of loads activity can be investigated by the characteristic indexes of work of enterprise for 2010-2013. These data are presented in a table 2.

Table 2. The enterprise activity description for 2010-2013 in motor-car transportations sphere

Years	Indexes								
	Total sum of orders	Amount of motor-car voyages		Amount of lose executed motor-car voyages		Amount of voyages with spoilt load through the inopportuneness of delivery		Amount of voyages that a few customers has delivery	
		Absolute	% from total number of orders	Absolute	% from total number of orders	Absolute	% from total number of orders	Absolute	% from total number of orders
1	2	3	4	5	6	7	8	9	10
2010	185	5	2,7	0	0	0	0	0	0
2011	250	20	8,0	1	5,0	0	0	1	5,0
2012	320	50	15,6	3	6,0	1	2,0	5	10,0
2013	332	60	18,1	4	6,7	3	5,0	8	13,3

Beginning from 2010 the amount of motor-car transportations grew from 2,7% to 18,1%, the work-load of employees increased, the logistic became less operative and as a result, size of the penalty approvals, paid by a company after over the normative use of the leased containerships, outages of motor transport in port, delays with declaration and penalty approvals are related to it. Taking into account the analysis of enterprise's activity for 2010-2013 in the motor-car transportations sphere it is possible to draw conclusion that an enterprise grows its volumes from year to year, presented on fig. 1.

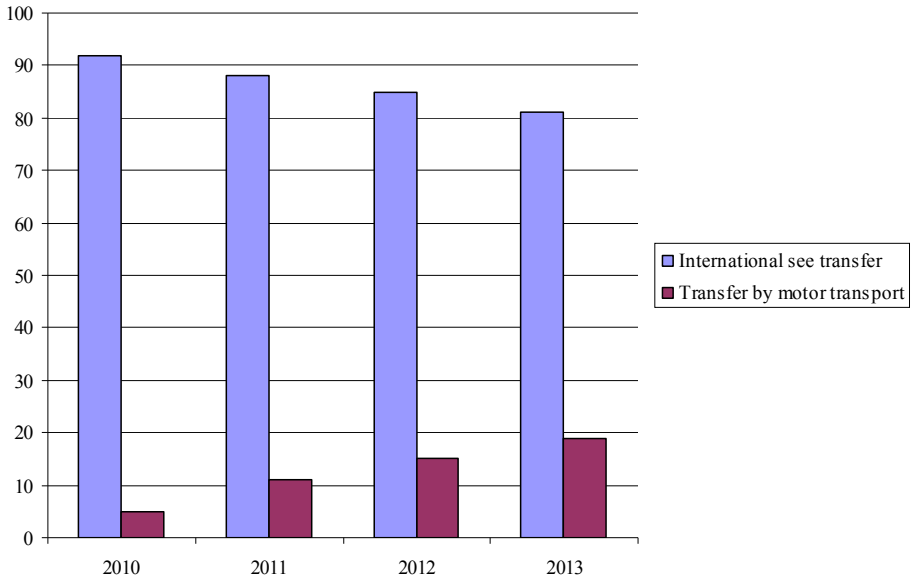

Fig. 1. A volume of sales of services for 2010-2013

It is important to underline the amount of transportations grows among motor-car transport-tations, when for one voyage a load is delivered a few load-getter or for some customers wait the load from Odessa port (from 0% in 2010 till 13,3% in 2013). However together problems grow: ill-timed delivery the load – in 0% in 2010 and 6,7% in 2013, load spoil – 0% in 2010 and in 5% in 2013, sometimes loads are delivered to wrong quarter.

For ill-timed delivery the load and its spoilage an enterprise paid the fines in 2013 about 65,00 thousand UAH, 70% was on voyages, when a load was delivered to a few customers, or for a 1 customer it was needed to convey a load on different cities. It characterizes the not optimality of delivery routes.

According to cooperating with public organs for analyzed period, penalty approvals for the ill-timed grant of necessary documents to the custom, ill-timed declaration, over normal locating of motor transport on customs' territory equal about 130000 UAH that certainly signals about the necessity of improvement business processes of company in this direction.

As a result of business processes' analyze taken place in a company, we distinguished 3 basic directions where we have possibility for improving. Defined basic and major problems are next:

1) low efficiency of organization the company's motor transport component activity on a background of motor transport transfer's volume increasing;

2) considerable structured of information and complication of informative, organizational and financial streams treatment according to every transportation;

3) considerable charges of time for formalities implementation after the requirement of public organs, low efficiency of these organs cooperating, in particular of custom.

For solve the problem of not enough efficiency of motor transfer we paid attention to development of optimal routes of loads' delivery. The task of salesman was used; it was formed as integer task due to enter zero variables.

Objective function: $\sum_{i=1}^{n}\sum_{j=1}^{n} l_{ij}x_{ij} \to \min$.

Limits:

$$\begin{cases} \sum_{i=1}^{n} x_{ij} = 1 \left(\forall_j \in \{1,2,3,...,\ n\}\right), \\ \sum_{j=1}^{n} x_{ij} = 1 \left(\forall_j \in \{1,2,3,...,\ n\}\right), \\ u_i - u_j + n * x_{ij} \le n - 1 \left(\forall_{i,j} \in \{2,3,...,\ n\}, i \ne j\right), \\ x_{ij} \in \{0,1\} \left(\forall_{i,j} \in \{1,2,3,...,\ n\}\right), \\ u_i \in R^1 \left(\forall_i \in \{2,3,...,\ n\}\right). \end{cases}$$

For solve the problem related to the large volumes of data, it was decided to choose and inculcate CRM-system to company. It was made decision to use already prepared product and thus to avoid high

charges for development, testing and support of own product. Especially at the market the wide enough spectrums of the prepared decisions are presented. For preparation this decision the method of expert estimation was selected. On the basis of expert estimations by below indicated parameters one system answered the put queries better in all was selected.

CRM-systems were analyzed by ten positions that best of all answer the real today necessity:

1) possibility of using free/demo version;
2) identify the programs for integration;
3) characterize the generation possibility of necessary documents (1 – yes, 0 – no);
4) show by points (from 1 to 5) useful work in a transport-dispatch sphere;
5) characterize possibility of export information to Excel (1 – yes, 0 – no);
6) characterize possibility of e-mail distribution (1 – yes, 0 – no);
7) show possibility of marketing measures realization;
8) show possibility of reports' creation;
9) estimate the interface clearness (from 1 to 5);
10) estimate the interface comfort (from 1 to 5).

Summarizing the amount of points by all positions we can make conclusions that the best CRM-system that can be recommended for introduction to company "Ukrspecconteiner" is Axis on this stage. The results of expert estimation (average values) are brought on a table 3.

Table 3. Comparison the CRM-systems

№	Parameters	FreshOffice	Asoft CRM Stan.	Axis	MS dynamics	amoCRM	SalesForce	1c 8 CORP
1	Term of free using (days)	10	7	free, online	30	30	30	14
2	Integration/synchronization (web, Google apps, MS, mail)	1C, Outlook	MS Office, Open Office, 1C	MS Office, Open Office	Outlook, Word, Excel, Share point	Google apps	Outlook, G-mail	MS Word, Open Office, Outlook
3	Documents, generation need documents (acts, bills, connaissements, commercial propositions)	1	1	1	0	0	0	1
4	Useful work in a transport-dispatch sphere	2	2	5	3	1	4	4
5	Export to Excel	1	1	1	1	1	1	1
6	Delivery (Email)	1	1	1	1	0	1	1
7	Marketing (measures, plan, analyze)	1	1	1	1	0	1	1
8	Analytics / Reporting	1	1	1	1	0	1	1
9	Understandable of interface	5	3	5	4	5	3	3
10	Comfortable of interface	4	4	5	3	3	2	1
Total:		16	14	20	14	10	13	13

Functional classification of budget charges is used for international comparison of budget charges. This classification is used in analytical and statistical documents. On the basis of functions the analysis of charges that can serve for forming of branch politics at the level of the state, is conducted.

During economic classification charges are understand irretrievable state payments. For necessity problem's decision of improvement the cooperating with public organs, in particular by a custom, was made proposition to inculcate the electronic declaration system and connect to Unite Informative Port System. The choice of programmatic package for realization this electronic cooperation and circulation of documents is not presented at the market, except recommended by the public organs the software worked out on its order.

Conclusions

We consider that introduction the mentioned decisions and instruments will be interest for a company because will allow minimizing the time expenses for conservative and alike actions, improve and accelerate circulation of documents both into a company and with clients and partners. It will allow to react on nascent questions and thus and will increase company's incomes due to increase the rendered services volume more operatively. Therefore it is possible to draw conclusion, that decisions are advantageous enough for an enterprise because they give an opportunity to less service time for customers, in future it will bring the increase of customers' amount, improvement the image of enterprise and will allow to decrease the sizes of financial approvals.

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Чугунов Анатолій Анатолійович / Anatoliy A. Chugunov
tol_tolich@mail.ru

Труфанова Тетяна Петрівна / Tatiana P. Trufanova
paramon85@te.net.ua

Насіківський Іван Миколайович / Ivan M. Nasikivskyy
nasikivskyy@gmail.com

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