

TRANSPORT PROCESSES OPTIMIZATION UNDER THE INFLUENCE OF BIG DATA IN FASHION INDUSTRY

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These days Big Data is becoming a critical source of economic value as well as innovation. We are witnessing of how it radically changes the world. Big Data has much to offer the world of logistics in the sphere of fashion in which customer's desires, wishes, needs are so changeable and difficult for monitoring as well as analyzing. Sophisticated data analytics can consolidate traditionally fragmented sector as well as improve supply chain efficiency and effectiveness, form new successful combinations among the units of logistic supply chains. The article highlights a short review on the primary big data implementation trends in logistic supply chains of fashion industry. Some successful solutions on the issue of transport processes optimization under the influence of big data were developed. The results are presented in the article as well.

Nowadays innovative and forward-looking producers manage 80% of their activities within supply chains outside the enterprise by using Big Data. Systems like ERP are considered restrictors and restraining factors of development for producers building business-processes based on speed and quick life cycle of products (services). The reason is inability of such systems to scale in order to address the challenges facing the supply chain today. The revolution of global supply chains under the influence of the data on the whole can be reflected in three aspects at least:

1. The scale, scope and depth of supply chain data is constantly accelerating providing wide datasets to manage contextual intelligence. More than 52 Big Data sources are available today within supply chains

and generated outside the enterprise. Therefore, forward-looking producers should consider Big Data as a catalyst for closer cooperation.

2. Companies applying Big Data analytics in daily practice increase the performance of supply chains due to the rate of reaction to problems as well as integration among supply chain participants. Delivery times cycles decrease by 4,25 times and increase supply chain efficiency by 10% and more

3. There is the change of focus within logistic supply chains. Development trends show that 7 years ago the key objective of supply chain manager was to find sources of cheaper deliveries. That is why companies tried to ways to reduce logistic costs by 5-10% on the average by various methods of logistic players combination on the market. Today there is a new focus on development of new processes based on the data both inside and outside the company, which at the same time encourages involved participants be more interconnected, dependable, mobile and quick-responsive in order to create greater value across the supply chain.

A special feature of the fashion industry is that demand for new products is 8 – 20 times higher than for example in consumer electronics industry. Modern customers change their mobile phones at least once every 30 months on the average while they buy new cloths twice a month. Though the lifetime of both clothes and mobile phones is approximately the same and amounts 3.5 years and 3.63 years respectively. Numerous research show that 90% of all purchasing decisions are taken on a subconscious level, and such decision making time is not more than 2.5 seconds. Most of the products, especially the fashion products, are bought on the basis of caused emotions. Hence, the main objectives of the participants of the fashion industry supply chains are to transform emotions into a quantitative assessment and find correlations in data in order to understand customer needs and meet them on time. Fashion industry life cycle, the time from the inception of the concept to the delivery of finished goods to the store, taking into account the runway shows and its subsequent production and delivery, as a rule, was 12 – 18 months 7 years ago. However, fashion industry companies have shown a rapid response for the last 5 years and have reduced the life cycle up to 3 – 6 months and in some cases up to 2

weeks. At the same time fashion-industry consumer has become an integral active part of full product life cycle.

All the higher described fashion-industry transformations for the last 7 years have been made on the analysis of big amounts of data increasing in geometric progression as the main source of value, which as a result allows to design more efficient business processes – DDBM, proactively respond to changing market conditions and improve all the promoting processes of innovative products in all links of the supply chain together.

The analyzed development trends of fashion supply chains as well as the given impact assessment of transport company processes on fashion segment led to the discovery of new strategies in logistic supply chains as: Fast Fashion Supply Chains, Social Media Supply Chains, Consumer Facing Supply Chains. Basing on the characteristics of each strategy FFSC was considered as most difficult to manage. Thus, the aim of the present study was to develop the most optimal route of delivery, taking into account the most likely factors affecting the process of transportation (on the example of Metida LLC). The solution was built according to the following steps:

1. Define required datasets for the collection, processing and analysis from manufacturer's side;
2. Define required datasets for the collection, processing and analysis from transportation carrier's side;
3. Define required datasets for the collection, processing and analysis from material supplier's and retailer's sides;
4. Build a simulation model to optimize transport processes of fashion-industry under the influence of Big Data (AnyLogic software);
5. Make calculations and analysis of the logistics performance parameters according to the simulation model of transport processes optimization under the influence of Big Data in fashion industry.

As a result of simulation model, it was found out that by using Big Data the delivery speed of goods could increase from 36.16 km/h to 49.95 km/h in 2014 and from 33.31 km/h to 46.02 km/h in 2015. The increase in delivery speed would allow to transport in 2152 tons and 1379 tons in 2014 and 2015 respectively. As a result of the additional

turnover, the shortfall in revenue from 1 vehicle in 2014 - 2015 was 10 818 – 90 152 euro and 7 024 – 58 531 Euros respectively.

The results of the research can be used at any node of fast supply chain and allow to form much more effective model of interaction between the key elements of the supply chain.

To sum up the optimization of logistic supply chains, increase in their efficiency and responsiveness to changing conditions in the fashion industry become possible due to the collection, processing and analysis of large datasets. Big Data leads to the development of new methods, technologies and systems improving qualitative and quantitative parameters of logistics supply chains as well as new quality of logistic service due to precise and flexible planning. Rapid meeting customers' needs leads to sales and company's profits increase while controlling costs within the logistic supply chain in fashion-industry.

Список использованной литературы.

1. Turovets, A. M., Solodovnikova, T. I. Big Data as a Tool for Logistic Supply Chain Efficiency Improvement / A. M. Turovets, T. I. Solodovnikova. – Minsk, 2014. – 5 p.;

2. Mayer-Schönberger, V. Big Data: A Revolution That Will Transform How We Live, Work, and Think / V. Mayer-Schönberger. – Moscow: Mann, Ivanov and Ferber, 2014. – 221 c.

3. Ghemawat, P. DHL Global Connectedness Index / P. Ghemawat, S. A. Altman – Germany, 2015 – p. 16 – 17, 45 –53;

4. Turovets, A. M., Solodovnikova, T. I. Web-crawling and Web-scraping as a Perspective System of Information Flows Optimisations / A. M. Turovets, T. I. Solodovnikova. – Minsk, 2016. – 7 p.;