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TECHNOLOGICAL INTEGRATION OF MARKETING IN THE SUPPLY CHAIN OF A TRANSPORT COMPANY

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Abstract. The speed of movement of goods, information and services determines the success and the efficiency of a transport company that wants to meet the needs of the customer. Consumers want better quality services, greater variety of products, more innovation and better service, but at a lower price, and in a shorter time. To fully satisfy the expectations of the consumers, a very large part of the role in business enterprises is played by the supply chain, the management of its processes, and ensuring the efficiency of them. The study involved 8 experts. One of the most important characteristics of experts is competence, therefore experts were required to have competence and experience in the field under investigation. Everyone must have a higher education and work experience of at least 5 years. All experts have 5–10 years of management experience in the supply chain of Lithuanian transport companies and have a higher education. The experts were asked to evaluate the main factors that determine the effectiveness of technological integration of marketing in a supply chain of a transport company. According to the experts' assessments and calculations, the list of the importance of the main criteria of the impact of marketing technological integrations in the supply chain of a transport company should be arranged in the following order: customer relationship management in the supply chain, fast transmission of the information in the supply chain, electronic auctions in the supply chain, product innovations in the supply chain, and electronic catalogs in the supply chain.

Keywords: marketing, technological integration, supply chain, marketing integration, transport company, transport management.

JEL Classification: M31, M37, O14, R41.

Introduction

Supply chain management includes many operational processes of a production management company, that include the management of orders to suppliers, the supply of raw materials needed for production, supply management, planning the supply of manufactured products according to orders to the customer, transportation, and supply requests. A supply chain is interconnected, or related to various networks, processes, activities, that start with sending the submitted order or supply request, and take place in the production and the services that reach the terminal user, before the analysis and reporting. A supply chain also includes logistics management, delivery and removal of goods, also, the ability to include suppliers in the supply chain, that take delivery and transportation services. Supply chain management ideally focuses on the management of information technology and internal processes, and supply chain risks are frequently reviewed. All companies want their supply chain to run as smoothly as possible, etc. forgetting or overlooking risk management which may cause problems in the future. However, the further along, the more companies noticed the mistakes made and began to pay the necessary attention to supply chain risk management. The changed approach helped to anticipate potential risks in the future or at least how to mitigate those risks in the supply chain so that there would not be a huge impact if something went wrong. Global supply chains themselves can combine many systems, programs, which themselves can be formed from thousands of production facilities, areas, roads, nodes, connections, customers, suppliers. Production management does not end with the production of ordered products. The next stage is the delivery of the product to the customer. It combines

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the necessary modules that allow the company to manage the delivery of its orders to the terminal user. Each product delivery is included in the supply chain, therefore, the system processes data quickly and easily, and provides clear results and solutions. Selection and application of modern technologies provides the opportunities to be the leader of these services among specific services provided by a transport company. Besides, the effectiveness of various modern information technology tools for business processes is relevant. Information marketing and technology management systems are necessary for modern transport companies, and they speed up the delivery of goods to the clients. Marketing channels play an important role in supply chain management. Current supply chain management research deals with the topics of sustainability and risk management, among others. Supply chain management is a broad spectrum of activities required to plan, control and execute the flow of a product from materials to production and distribution in the most cost-effective manner. SCM involves the integrated planning and execution of processes needed to optimize the flow of materials, information and capital across functions that essentially include demand planning, supply, manufacturing, inventory management and logistics – or warehousing and transportation.

Scientific issue. The problematic question is arising how the technological integration of marketing affects the supply chain of the transport company.

Relevance of research – the topic is relevant because technological marketing integration in the supply chain transport companies are very little studied in the scientific literature. Agan (2011) observed that marketing capabilities play an important role in supply chain integration. Tavana et al. (2022) mentioned digital transformation technologies such as Industrial Internet of Things (IoT) between the digital and physical worlds.

The research aims to investigate technological integration of marketing in the supply chain of a transport company.

Objectives of the research:

- to present supply chain integration concept, role in scientific literature;
- to determine the marketing integration in supply chain and technology integration in supply chain;
- to investigate experts opinion about technological integration of marketing in the supply chain of a transport company;
- to presented technological integration of marketing in the supply chain of a transport company model.

Methodology. The article uses the method of theoretical analysis, comparative empirical analysis, and qualitative methods - research experts opinion.

1. Theoretical background

1.1. Supply chain integration

Supply chain management (SCM) as a discipline, has evolved rapidly. The early focus of SCM began when organizations started to improve their inventory management, production planning and control. The aim of these practices was to improve production efficiency, and to ensure that the capacity of capital assets and machinery was utilized efficiently. This evolved to the tendency to include the management of transport of raw materials at a time when firms were relatively vertically integrated (Stevens & Johnson, 2016).

When constructing a global supply chain, manufacturers and traders must depend on an effective maritime supply chain to integrate cargo and information flows (Tseng & Liao, 2015).

Khanuja and Jain (2018) mentioned that supply chain management (SCM) has been considered as an effective strategy organization that streamline internal and external operations to improve performance and competitiveness. Today organizations in the supply chain compete for supplying fast delivery, innovative and diverse range of products and services to meet customer needs and to create value for them.

Zolait et al. (2010) mentioned that their study proposed a direct positive relationship between supply chain process integration and business performance. In addition, this current study highlights that the integration of supply chain processes is restructuring activities aimed at realigning resources within and between companies, with a resource-based view.

Hendijani and Saei (2020) noticed that supply chain integration (SCI) is becoming increasingly important among companies. Several studies have examined the impact of SCI on a company performance. However, many dampening factors, such as demand uncertainty, can influence this kind of impact. Hendijani and Saei (2020) empirically examined the moderating effect of demand uncertainty on the relationship between SCI and company performance.

Supply chain integration and its processes that help to develop a high-level collaboration and partnership with the supplier and the buyer, were considered as indisputable factors of supply chain success (Droge et al., 2012; Wilden et al., 2013). However, with increasing supply chain complexity and global diversity, the last decade has seen calls to reconsider the global necessity and theoretical validity of supply chain integration (SCI) in the updated business environment, given its highly recognized supply contribution competitiveness of the chain.

Asnordin et al. (2021) examines the central role of supply chain integration in achieving success in a competitive business environment and thereby improving company performance and supply chain performance. This study is one of the pioneers in exploring and conceptualizing the relationship between supply chain performance and supply chain integration.

Kumar et al. (2020) investigates individually the impact of each operational strategy dimension on innovation performance and supply chain integration. Future researchers may consider a combination of performance strategy dimensions (cost, quality, flexibility and delivery).

Supply chain integration has several dimensions (supplier integration, customer integration, internal integration), which did not exist considered separately in this study. Therefore, the authors recommend future researchers to re-examine the above – mentioned model by separating these dimensions. Integration and cooperation with other companies, especially in the supply chain, research forms can be exploited, and each has a different innovation results.

The supply chain is complex, depending on the sector, region, company size and activity. In the past, delivery was a self-evident function. In the conditions of the pandemic, companies have started to analyze various nuances. A deeper analysis of relations with strategic suppliers has begun, the business seeks to understand the strategic supplier's business model, risks, dependencies, production principles, etc. Business is moving away from the just-in-time model. The goal was to make the supply work almost like clockwork, and the just in time model was almost the aspiration of the organizations. However, as uncertainty around inventory management has increased, so has the need to manage risk. Companies agree to hold larger inventories and bear the cost of holding them, avoiding supply disruptions. Another relevant aspect is the diversification of suppliers and supply channels. The business is looking at alternative, less risky supply markets.

1.2. Marketing integration in supply chain

Agan (2011) noticed IT infrastructure has a significant impact on integration as well as performance directly. Market orientation also has a significant impact integration. Market orientation has both a direct impact on financial results and indirect effects through supply chain integration. Supply chain integration has a significant impact on the company's operations and with customers.

Arredondo and Alfaro Tanco (2021), Ellinger (2000) state that is essential for companies to get right interpretations about their SCM. This overview of the evolution of SCM helps managers understand from which standpoint to solve strategic aspects of SCM, how to become a manager that makes companies more efficient when working together and defining levels of coordination and cooperation with suppliers or customers.

Baharanchi (2009) examine how various aspects of integration are related to some product characteristics. Integration in this study is interpreted as \internal", \upstream" (supply) and \downstream" (demand). The results show that supply chain integration has a greater impact on product quality compared to internal and supply chain integration. It is found that supply chain integration further integration into product innovation is greater than other variables.

Hallikas et al. (2019), Madhani (2011) mentioned that information technology enables the integration of activities in the supply chain and supports the integration of supply chain processes from suppliers to customers, including logistics and finance. Through these changes, new technologies, methods and applications have emerged, and there appeared opportunities to respond faster to customer needs, to better adapt to market needs, as well as to have new practices in various phases of processes. In addition, companies are increasingly making use of e-business applications, e.g., electronic auctions, electronic catalogs and customer relationship management applications to improve their business processes throughout the supply chain.

Mentzer and Gundlach (2009) stated that application of information technologies to improve productivity is the focus on marketing and SCM. But there was no relationship between IT investment and productivity firmly established in the literature, so some marked the productivity of information technology.

Alvarado and Kotzab (2001) mentioned that on the threshold of the new millennium, the academic community is witnessing major changes in business practices. Many companies have gained and continue to gain a competitive advantage by implementing powerful IT-based logistics solutions in their distribution systems. Alvarado and Kotzab (2001) noticed that SCM is defined as the integration of business processes among channel members to achieve better performance of the entire channel system.

Pattanayak and Punyatoya (2020) notice that supply chain managers should first focus on the effective use of the various technologies used to support the supply chain. Second, the study provides guidance for supply chain managers and project managers on the benefits of EP. They should focus on proper implementation of EP in their organizations.

1.3. Technology integration in supply chain

Sarite et al. (2018) note, that information (and communication) technologies play a central role in supply chain management in the following aspects. Firstly, IT enable businesses to increase the scale and complexity of information to share with trading partners. Secondly, IT enable companies to provide real-time supply chain information including inventory levels, delivery status, production planning and scheduling; enabling companies to manage and control supply chain activity. Thirdly, IT also facilitate the alignment of forecasting and planning transactions between companies and suppliers, allowing better coordination between companies.

Singh (2013) stated that organizational factors contributing to product visibility would be extent of implementation of the following practices: advanced planning and scheduling, bar coding, computer-aided design (if it is a manufacturing company), computer integrated manufacturing (if it is a manufacturing company), computerized maintenance management, enterprise resource planning (ERP), forecasting/demand management software, production execution systems, product data management, transport management systems.

Tavana et al. (2022) mentioned digital transformation technologies, such as the industrial internet of things

(IoT) between the digital and physical worlds. Industry 4.0 significantly changes SC behavior to be smarter and more flexible processes, automation and optimization tools, resource efficiency, and, in general, welfare of workers and society.

Srinivasan (2017) states that the different roles of IT in logistics and supply chain are:

1. Electronic commerce.
2. Electronic data exchange.
3. Barcoding and scanner.

Veynberg et al. (2020) mentioned that logistics is integral to most trade and market relations, and logistics must be constantly improved to ensure efficiency economic processes in which it participates. Technology and the internet environment can be one of these necessary transformations. First of all, using Blockchain technology in logistics can provide a good incentive to carry out the tasks that have been set state today. Veynberg et al. (2020) present topics such as digital supply chain management and the scope of blockchain technology as well as the challenges of blockchain implementation technology in logistics. The transformation of supply chain management is an integral part of digital transformation of the entire global economy.

2. Research methodology

Quantitative research proposed by scientists (Kardelis, 2016; Tidikis, 2003) and their method, a questionnaire, were chosen to evaluate the technological integration of marketing in the supply chain of a transport company. An expert evaluation questionnaire was developed and prepared. Special questions were provided to the experts in the questionnaire. One of the most important characteristics of experts is competence, therefore, the experts were required to have competence and experience in the field of the study. The data obtained from the expert survey has been processed. The consistency of more than two expert opinions can be quantified by the value of the concordance coefficient (Sivilevičius, 2011). The concordance coefficient indicates the level of agreement of the expert group if the number of experts is greater than two. 8 experts participated in the study, all of whom had 5–10 years of management experience in Lithuanian transport companies. The experts were asked to evaluate the main factors determining the effectiveness of marketing technological integrations in the supply chain of the Lithuanian transport company and had to use a multi-criteria ranking method to assess the importance of the criteria for the integration of the technology of the Lithuanian transport company into the supply chain. Expert assessments obtained from the completed questionnaires are listed in the table. The expert group (8 experts) quantifies m objects. The evaluations form a matrix of n rows and m columns (Sivilevičius, 2011). Evaluations can be indicator units, unit parts, percentages, in a ten-point system. The ranking of expert indicators is suitable for calculating the concordance coefficient. Ranking is a procedure in which the most important indicator is given a rank (R) equal to one, the second indicator a second rank, and the last indicator a rank m (m is the number of benchmarks). The average of the sum of ranks is calculated (Podvezko, 2005):

$$\sum_{i=1}^{n} R_{ij} = \frac{1}{2} n\left(m+1\right). \tag{1}$$

In the light of the experts' evaluation indicators, the consistency of their opinions is determined by calculating the concordance coefficient of the Kendal ranks. If S (variance) is the real sum of the squares calculated according to Equation (1), then the concordance coefficient (W) (Equation (2)), in the absence of related ranks, is defined as the ratio of the resulting S to the corresponding maximum $S_{\max}$ (Equation (2)):

$$W = \frac{12S}{n^2 m\left(m^2-1\right)} = \frac{12S}{n^2\left(m^3-m\right)}. \tag{2}$$

The competency coefficient of each expert is calculated using the method of calculating the expert competence coefficient (Baležentis & Žalimaitė, 2011). In Equation (3), all experts are given the same competence coefficient (Augustinaitis et al., 2009). Giving the same weight to all experts shows whether the views of the experts are unanimous and competent. For this purpose, the competence factor of experts is calculated:

$$K_j^0 = \frac{1}{n},\ j = 1, \ldots,\ n. \tag{3}$$

The sums of the initial rank values in the columns are then multiplied by the initial competency coefficient. Group estimates of alternatives (Equation (4)) and a new matrix for calculating the competence factor were obtained. The competence coefficient (Augustinaitis et al., 2009) is calculated according to Equations (4)–(6):

$$X_j^t = \sum_{i=1}^{m} K_i^{t-1} \times x_{ij},\ j = 1,\ldots,n, \tag{4}$$

X_j^t – new matrix values; $\sum_{i=1}^{m} K_i^{t-1}$ – group assessments; x_{ij} = i-experts; j – the rank of the alternative.

$$\lambda^t = \sum_{j=1}^{n}\sum_{i=1}^{m} x_j^t \times x_{ij}, \tag{5}$$

λ^t – which is all matrices – x_j^t – the sum of the values, n – number of experts, m – number of alternatives.

$$K_i^t = \frac{1}{\lambda^t} \times \sum_{j=1}^{n} x_j^t \times x_{ij},\quad \sum_{i=1}^{m} K_i^t = 1. \tag{6}$$

In the direct method weighting of criteria, c_{ik} the sum of the weights of all the evaluations of each expert must be equal to one (or 100%). The method used to indirectly determine the weights of the criteria uses the chosen scoring system (5, 10, 20, etc.). Evaluations may be repeated. The

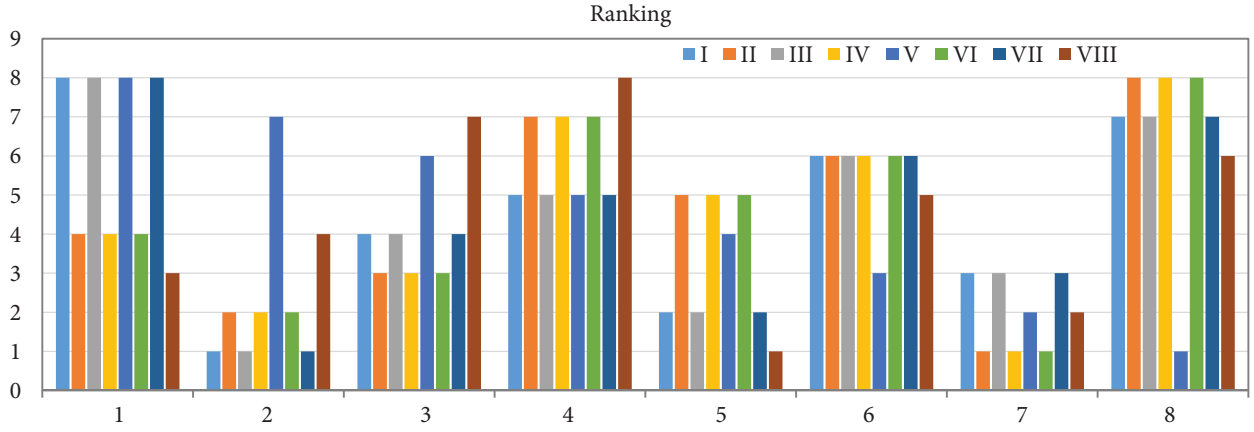

Figure 1. Distribution of the ranks of the main factors

weights w (Equation (11)) of the criteria are calculated by the direct and indirect estimation method according to the formula (Podvezko, 2005).

$$w = \frac{\sum_{k=1}^{r} c_{ik}}{\sum_{i=1}^{m}\sum_{k=1}^{r} c_{ik}}. \quad (7)$$

Expert evaluations are noted as c_{ik} (i = 1, ..., m; k = 1, ..., r), where m – is the number of applied criteria, r – is the number of experts.

3. Research results

The study involved 8 experts, all of whom have 5 to 10 years of management experience in the supply chain of a transport companies.

The experts were asked to assess the main factors determining the effectiveness of the technological integrations of marketing in the supply chain of a transport company: 1) customer satisfaction and profit in the supply chain; 2) High-speed of information in the supply chain; 3) product innovation in the supply chain; 4) product quality in the supply chain; 5) electronic auctions in the supply chain; 6) electronic catalogs in the supply chain; 7) customer relationship management in the supply chain; 8) low-cost supply chains in the supply chain.

The distribution of ranking is shown in Figure 1.

The data of the analysis and calculation of the distribution of the rankings of the expert questionnaires were listed in Table 1.

The concordance coefficient W is calculated according to Equation (8) when there are no associated ranks.

$$W = \frac{12S}{n^2\left(m^3 - m\right)} = \frac{12\times 1370}{8^2\left(8^3 - 8\right)} = 0.5096. \quad (8)$$

The number of important criteria (m) for the influence of the technological integrations of marketing in the supply chain of a transport company is 8, i.e. $m > 7$. Then the weight of the concordance coefficient χ^2 is calculated according to Equation (9) and a random quantity is

Table 1. Ranking table of the importance of the main factors determining the efficiency of the technological integrations of marketing in the supply chain of a transport company

Respondent's queue. No.	Factor encryption symbol (m = 8)							
	1	2	3	4	5	6	7	8
$\sum_{i=1}^{n} R_{ij}$	47	20	34	49	26	44	16	52
$\bar{R}_j = \frac{\sum_{i=1}^{n} R_{ij}}{n}$	5.875	2.5	4.25	6.125	3.25	5.5	2	6.5
$\sum_{i=1}^{n} R_{ij} - \frac{1}{2}n(m+1)$	11	-16	-2	13	-10	8	-20	16
$\left[\sum_{i=1}^{n} R_{ij} - \frac{1}{2}n(m+1)\right]^2$	121	256	4	169	100	64	400	256

obtained.

$$\chi^2 = n(m-1)W = \frac{12S}{nm(m+1)} = \frac{12\times 1370}{8\times 8(8+1)} = 28.541. \quad (9)$$

Since χ^2 the estimated value is higher than the critical value (equal to 14.0671), the opinion of the respondents is considered to be consistent, and the average ranks show the general opinion of the experts

$$W_{\min} = \frac{\chi^2_{v,\alpha}}{n(m-1)} = \frac{14.0671}{8(8-1)} = 0.2511 < 0.5096. \quad (10)$$

The lowest value of the concordance $W_{\min}$ coefficient calculated according to Equation (10), where $W_{\min}$ = 0.2511 < 0.5096, states that the opinions of all 8 respondents on the 8 main criteria of the technological integrations of marketing in the supply chain, which are important for a transport company, are still considered harmonized.

The main indicators of the importance of the technological integrations of marketing in the supply chain, which are important for a transport company, are calculated – Q_j

Table 2. Significance indicators Q_j of the main technological integrations of marketing in the supply chain, which are important for a transport company (compiled by the authors)

Indicator marker	Factor encryption symbol (m = 8)								Sum
	1	2	3	4	5	6	7	8	
q_j	0.163194	0.069444	0.118056	0.170139	0.090278	0.152778	0.055556	0.180556	1
d_j	0.836806	0.930556	0.881944	0.829861	0.909722	0.847222	0.944444	0.819444	7
Q_j	0.119544	0.132937	0.125992	0.118552	0.12996	0.121032	0.134921	0.117063	1
Q_j'	0.086806	0.180556	0.131944	0.079861	0.159722	0.097222	0.194444	0.069444	1
Factor layout	6	2	4	7	3	5	1	8	

(significance indicators). The obtained data are presented in Table 2.

Based on expert assessments and calculations, the list of importance of the main criteria for the impact of the technological integrations of marketing in the supply chain of a transport company should be arranged in the following order and the 5 main ones are presented:

– customer relationship management in the supply chain (7);
– high-speed of information in the supply chain (2);
– electronic auctions in the supply chain (5);
– product innovation in the supply chain (3);
– electronic catalogs in the supply chain (6).

Experts had to use a multi-criteria ranking method to assess the importance of the criteria (in order of importance: 1 most important, 10 least important) for the transport company's technology integration in the Supply Chain (Figure 2): 1) the industrial internet of things; 2) inventory levels; 3) delivery status in the supply chain; 4) production planning and scheduling, enabling companies to manage

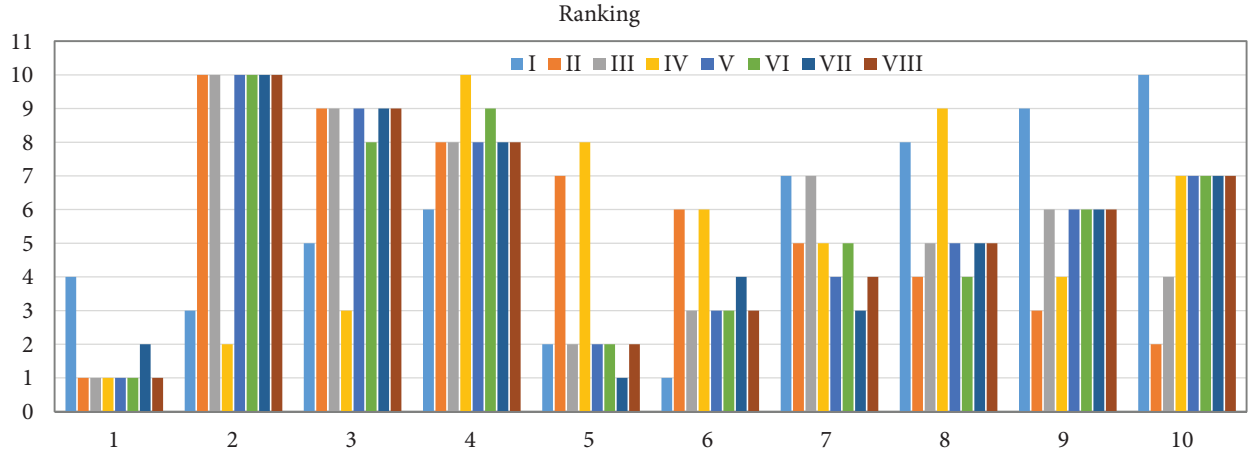

Figure 2. Distribution of expert ranks (compiled by the authors)

Table 3. Ranking table of the main criteria of the transport company's technology integration in the Supply Chain (compiled by the authors)

Respondent's queue. No.	Factor encryption symbol (m = 10)									
	1	2	3	4	5	6	7	8	9	10
$\sum_{i=1}^{n} R_{ij}$	56	52	28	22	62	76	42	38	48	16
$\bar{R}_j = \frac{\sum_{i=1}^{n} R_{ij}}{n}$	7	6.5	3.5	2.75	7.75	9.5	5.25	4.75	6	2
$\sum_{i=1}^{n} R_{ij} - \frac{1}{2} n(m+1)$	12	8	–16	–22	18	32	–2	–6	4	–28
$\left[\sum_{i=1}^{n} R_{ij} - \frac{1}{2} n(m+1)\right]^2$	144	64	256	484	324	1024	4	36	16	784

and control supply chain activity; 5) advanced planning in the supply chain; 6) bar coding; 7) forecasting / demand management software; 8) transport management systems; 9) shared databases and magnetic / optical data capture; 10) Electronic data exchange in the supply chain.

The data of the analysis and calculation of the distribution of the rankings of the questionnaires of the eight expert questionnaires were summarized in Table 3.

The concordance coefficient W was calculated according to Equation (11) when there are no associated ranks.

$$W = \frac{12S}{n^2\left(m^3 - m\right)} = \frac{12 \times 3136}{8^2\left(10^3 - 10\right)} = 0.5939. \quad (11)$$

The number of important major transport companies technology integration in the Supply Chain (m) is 10, i.e. $m > 7$. Then the weight of the concordance coefficient χ^2 is calculated according to Equation (12) and a random quantity is obtained.

$$\chi^2 = n\left(m-1\right)W = \frac{12S}{nm\left(m+1\right)} = \frac{12 \times 3136}{8 \times 10\left(10+1\right)} = 42.763. \quad (12)$$

Since χ^2 the estimated value is higher than the critical value (equal to 16.919), the opinion of the respondents is considered to be consistent, and the average ranks show the general opinion of the experts.

According to Equation (12), the lowest value of the concordance $W_{\min}$ coefficient was calculated, where $W_{\min} = 0.2349 < 0.5939$, that the views of all 8 respondents on the 10 key criteria for the transport company's technology integration in the Supply Chain, which are important for the management of the transport company's supply chain information flows, are still considered harmonized.

The importance indicators of the influence of technology integration in the Supply Chain, which are important for the transport company to manage information flows, are calculated – Q_j. The obtained data are presented in Table 4.

Based on expert assessments and calculations, the main list of importance of the transport company's technology integration in the Supply Chain should be arranged in the following order and the main presented:

- electronic data exchange in the supply chain (10);
- production planning and scheduling, enabling companies to manage and control supply chain activity (4);
- delivery status in the supply chain (3);
- transport management systems (8);
- forecasting / demand management software (7).

In summary, the analysis of the technological integration of marketing in the transport company's activities shows a connection with the supply chain of the transport company's.

The calculated Kendall concordance coefficient does not identify those experts whose evaluations may differ from others. The competence coefficient (Augustinaitis et al., 2009) is calculated according to Equations (3)–(7).

In this respect: $K_j^0 = \frac{1}{8} = 0.125$. The sums of the initial values in the columns (Figure 1) are then multiplied by the initial competency coefficient. Group estimates of alternatives (Equation (4)) and a new matrix for calculating the competence factor were obtained. To calculate the final Kendall expert competence coefficients, the sum of each row of the matrix is divided by lambda (Equation (5)), the size of which is 2089. It is important to note that the sum of the competence estimates thus calculated must be equal to one. According to the analysis and the obtained results in Table 5 it can be stated that the 7th and 1st experts have the highest (equal) competence in comparison with all the experts who participated in the survey.

Table 4. The main indicators of the importance of the technology integration in the Supply Chain of a transport company are Q_j (compiled by the authors)

Indicator marker	Factor encryption symbol (m = 10)										
	1	2	3	4	5	6	7	8	9	10	sum
q_j	0.127273	0.118182	0.063636	0.05	0.140909	0.172727	0.095455	0.086364	0.109091	0.036364	1
d_j	0.872727	0.881818	0.936364	0.95	0.859091	0.827273	0.904545	0.913636	0.890909	0.963636	9
Q_j	0.09697	0.09798	0.10404	0.105556	0.095455	0.091919	0.100505	0.101515	0.09899	0.107071	1
Q_j'	0.072727	0.081818	0.136364	0.15	0.059091	0.027273	0.104545	0.113636	0.090909	0.163636	1
Factor layout	8	7	3	2	9	10	5	4	6	1	

Table 5. Competence coefficients of experts of the main technological integrations of marketing in the supply chain (compiled by the authors)

Expert competence coefficients							
E1	E2	E3	E4	E5	E6	E7	E8
0.1513	0.1072	0.1097	0.1074	0.1207	0.1074	0.1514	0.1449

To check that all experts are competent, calculate according to formula $\overline{K}_i^t - 1.96s \le K_i^t \le \overline{K}_i^t + 1.96s$ $\overline{K}_i^t$ – the average of the competence coefficients; s – is the standard deviation and obtain intervals [0.0935; 0.1565] and Median is 0.1152.

The competence of the 2nd expert in this group is the lowest (0.1072), but not so low that the expert assessment should be eliminated during the research. In summary, it can be stated that the experts with the highest length of service in managerial positions for more than 5 years and the same coefficients of competence were 0.1514. Other experts had a sufficient level of competence to take their assessments into account.

4. Model technological integration of marketing in the supply chain of a transport company

Figure 3 presented technological integration of marketing in the supply chain of a transport company model.

Customer relationship management in the supply chain. Customer relationship management in the supply chain is a solution for supply chain management, designed to enable the company to analyze and effectively control the entire main business process – from logistics (purchase of raw materials and inventory management) and warehouses (including product quality control) to production (planning, organization and sales control) and special functions (such as delivery cycle management, delivery planning and linked ordering).

High-speed of information in the supply chain. Information speed and processes are instant. Decisions must be made faster. There is no long-term planning, Real-time performance monitoring provides more benefits than periodic reports that are no longer informative.

Electronic auctions in the supply chain. During an electronic auction, suppliers, that do not know the identity of other suppliers participating in the auction, but seeing their offered price, compete for the lowest offered price. By actively competing and having the opportunity to offer the proposed price several times, suppliers tend to submit much more competitive prices.

Product innovation in the supply chain. The improvement of logistics processes has become the area to which a lot of attention is paid in the transport company. The main goal is to increase efficiency.

Electronic catalog in the supply chain. The organization may require suppliers to submit a proposal in the form of an electronic catalog or using an electronic catalog. The offer submitted in the form of an electronic catalog can be supplemented with documents of a different form. Suppliers prepare electronic catalogs according to the format and technical specifications determined by the procuring organization. Electronic catalogs must meet the requirements for electronic tools and additional requirements set by the contracting authority.

Electronic data exchange in the supply chain. The main purpose of such an exchange is to reduce the costs of logistics and administrative processes and to minimize the possibility of possible human error. EDI standardizes documentation (invoices, departure notices, purchase orders, etc.), making work much easier. That is why the system is actively used by entrepreneurs all over the world.

Production planning and scheduling, enabling companies to manage and control supply chain activity. Integrated Digital Planning solution is built by combining the latest technologies such as artificial intelligence, machine learning and cloud platforms.

Delivery status in the supply chain. When handing over to the recipient, the product packaging, protective film, packing tape, package stickers must be intact, and the weight of the package must be as specified. If you notice any violations, you have the right not to accept the goods and file a claim.

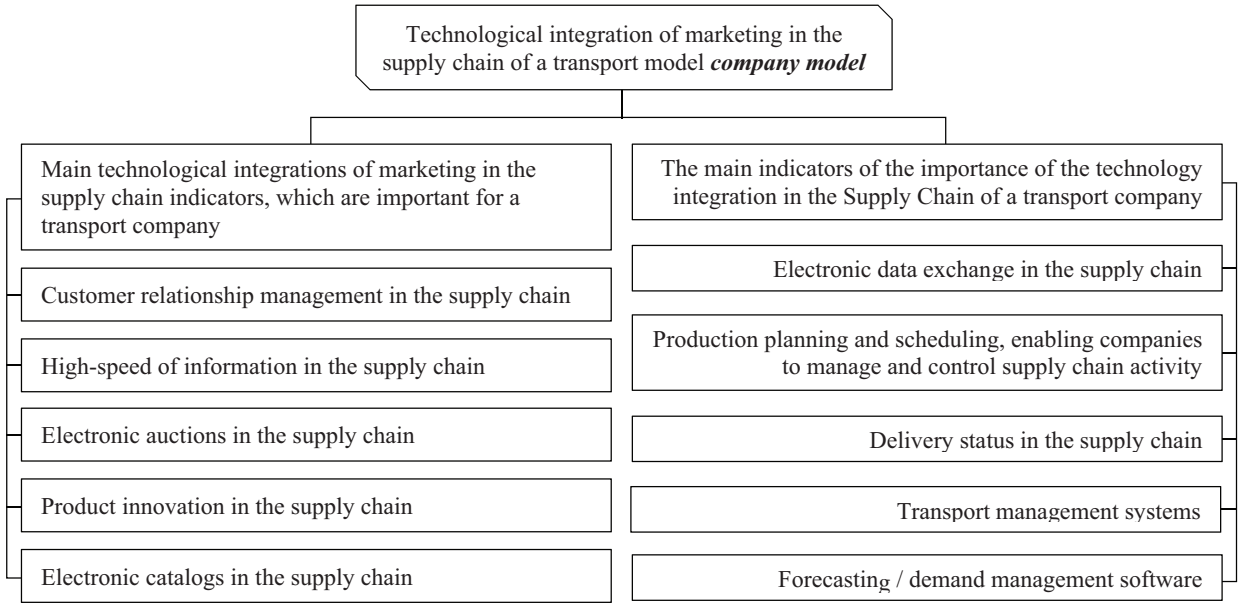

Figure 3. Model technological integration of marketing in the supply chain of a transport company

Transport management systems. The transport management system includes all transport business processes taking place in a transport service company, starting with a customer's request or order, trip planning, and ending with financial analysis on how profitable are the orders or invoicing. All business processes have the possibility to be managed remotely, since the system has adapted mobility, i.e., the possibility to manage business processes remotely.

Forecasting / demand management software. Maintaining a constructive and successful warehouse and production regulation, can guarantee that products are easily distributed between regional points or partner warehouses. Goods are delivered faster and easier.

5. Discussion

Ali (2020) describes supply chain management, supply chain collaboration, and technology-based marketing. Above mentioned author highlights the need for technology-enabled marketing to collaborate in the supply chain, found that an organization could use synergy by integrating marketing strategies and collaborating with supply chain.

Tseng and Liao (2015) the result shows that a market-oriented company responds quickly to market information and competitors' strategies; thus, it will strive to offer satisfactory customer service in dynamically fluctuating markets and achieve better company performance. In addition, integration provides greater operational efficiency and improves performance. Tseng and Liao (2015) observe that companies can develop their market-oriented strategies using an electronic information transfer and exchange platform.

Srimarut and Mekhum (2020) notice that studies the effects of various dimensions of process integration compatibility a supply chain that leads to corporate development performance and market performance. This study also examines the effects of information mediation technology opportunities between supply relationships chain process integration (SCPI) and enterprise performance. A survey was conducted through a structured questionnaire using online data collection method from supply chain and production managers of retail chains. The results showed the main important dimensions compatibility is facilitated by SCPI, which contributes to dynamic opportunity theory. IT capabilities proved to be a key mediator with partial influence relationship between SCPI and company performance.

Every transportation company seeks a competitive advantage over other companies by searching for that innovation that will make customers choose its products over others. But innovation is not limited to products. One factor, speed, has consistently proven to have a positive impact on a company's top-line growth and consumer engagement. Transportation companies need to rethink the speed of delivery, and take advantage of this new perspective to stay ahead of the competition. This is where supply chain marketing technology integration pays off. Even in challenging circumstances, the right integration strategy can help business continue to grow.

In his qualitative research, the author of this article determined that marketing technological integrations in the supply chain of transport companies should be arranged in the following order: customer relationship management in the supply chain, quick information in the supply chain, electronic auctions in the supply chain, product innovation in the supply chain, and electronic catalogs in the supply chain.

Conclusions

The supply chain combines all activities related to the supply of raw materials, product production, and the supply of finished products. The marketing technologies used in the supply chain in the transport company must be especially highly developed, because the company's performance depends on them. In order to reduce costs, optimize the movement of raw materials and finished products, the proper presentation of services and related information, it is necessary to develop the transport company's supply chain and marketing technologies. An important part of the supply chain that accelerates the movement of goods, services or raw materials is the development of marketing technologies.

Based on experts' evaluations and calculations, the list of the importance of the main criteria of the impact of marketing technological integrations in the supply chain of a transport company should be arranged in the following order, and 5 main ones are presented: customer relationship management in the supply chain, quick information transmission in the supply chain, electronic auctions in the supply chain, product innovation in the supply chain, electronic catalogs in the supply chain.

According to experts' assessments and calculations, the main list of the importance of technology integration in the supply chain of the transport company should be arranged in the following order and the main ones should be presented; electronic data exchange in the supply chain; production planning and scheduling, enabling companies to manage and control supply chain activities; delivery status in the supply chain; transport management systems; forecasting / demand management software.

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