

Logistics in Manufacturing and Trading Companies in Bulgaria - State and Development in the Period 2000-2013

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Summary:

The article presents the results of a survey on the state of logistics and its development in manufacturing and trading companies in Bulgaria. Some theoretical and methodological issues of logistics and supply chain management are clarified with the aim of constructing the survey's conceptual framework which reflects the contemporary development of logistics. The framework encompasses the examination of the extent of knowledge and the awareness of the role of logistics in company management as well as the practical application of logistic methods and management tools within and between companies in the supply chain. The methodology used basically combines and adjusts the methodologies of previously conducted surveys in Bulgaria on the internal logistics integration and supply chain management. It allows tracing the application of logistics approaches, methods and tools in company management during the years. The methodology includes 19 indicators estimated on the basis of the data collected through personal interviews using a questionnaire. Logistics in Bulgarian manufacturing and trading companies for a

period of 13 years has been analyzed. The analysis reveals that the development of logistics in Bulgaria follows the pattern of its development worldwide though the Bulgarian companies are lagging behind because of the challenges concerning knowledge, skills and own resources. This determines the considerable opportunities and potential for improving logistics in Bulgarian companies.

Key words: logistics, supply chain, integration, manufacturing companies, trading companies.

JEL Classification: M110; M190

1. Introduction

During the last two decades logistics has strengthened its positions as a field of research and a management practice. A number of companies not only in the developed countries but also in the emerging markets, including the Eastern European countries, have realized the need to integrate the management of various activities contributing to the flow of products and information from the point of origin through all movement phases to final consumers with the aim of providing the required customer service at the lowest costs. The application of the logistics concept in manufacturing and trading companies (Demand Side Logistics) is considered as

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the most essential sign of the development of logistics in a country. The other feature of this development is the increased supply of logistics services (Supply Side Logistics), logistics technologies, software, know-how and educational services (Dimitrov, 1999).

A lot of studies prove the role and importance of logistics for the competitiveness of firms, national economies and entire regions. They show that the application of logistics in the practice of manufacturing and trading companies tremendously increased during the years of intense globalization and world competition. The considerable interest in logistics is evidenced by the increasing number of logistics departments in organizational structures and companies' initiatives to raise the effectiveness and efficiency of logistics activities and to speed up material and information flows in logistics systems.

Scientific research in the field of logistics in Bulgaria has been conducted for more than 23 years and the leading center in this area is the Department of Business Logistics at the University of National and World Economy. The most notable in scale is the survey which was carried out in 1999-2000. It encompasses predominantly the methods and instruments for internal company integration of material and information flows (Dimitrov, 2000). This survey was repeated in 2006, the year when the first survey of supply chain management was carried out (Rakovska, 2007). Another survey reveals the insufficient application of contemporary management concepts and related information technologies on the part of Bulgarian companies (Chankova, 2003). A range of problems are revealed in the supply chains of definite products (meat

and compressed natural gas) in two other studies (Vodenicharova, 2010; Dragomirov, 2011).

These surveys lay the foundation for a systematic and repetitious research on the state of logistics in Bulgaria. However, development shifts in company logistics have not been examined yet, especially in relation to both internal but the external integration. This requires the combination and adjustment of the methodologies of the previous studies while keeping data comparability.

The aim of this article is to present the state of logistics and its development in manufacturing and trading companies in Bulgaria on the basis of a survey conducted in 2013¹. This aim is achieved through clarifying some theoretical and methodological issues of logistics and supply chain management, identifying the research methods, and evaluating the state of the researched companies' logistics, including comparison with previous periods (2000 and 2006).

The following thesis is adopted for this research: The active factors and development shifts in logistics in the world are also valid in Bulgaria, i.e. the development of logistics in Bulgarian enterprises follows the model of its development in the world despite the existence of some difficulties.

2. Literature review

As a scientific and research area and a business practice, logistics has gone through significant evolution from its origin as a concept at the beginning of the 1960s until nowadays. For the purpose of this research we will focus on the nature and basic characteristics of business logistics basing

¹ The survey is financed by the fund "Scientific Research Activity of UNWE" under contract №SRASR 1-1/2012.

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on some generally accepted and popular definitions of logistics found in literature. The shortest one which gives notion of the basic managed object in business logistics is the following: "Management of materials in motion and at rest". (Russell, 2000, cited in Coyle et al., 2013, p. 36). Another definition of logistics, which reflects the customer point of view, is: "Getting the right product, to the right customer, in the right quantity, in the right condition, at the right place, at the right time, and at the right cost (called the "seven Rs of logistics")"(Russell, 2000, cited in Coyle et al., 2013, p. 36). The most widely accepted is the definition of the Council of Supply Chain Management Professionals, which has a substantial contribution to the development of logistics as a theory and practice: "That part of the supply chain process that plans, implements, and controls the efficient, effective flow and storage of goods, services, and related information from point of origin to point of consumption in order to meet customer requirements" (Council of Supply Chain Management Professionals, 2012). Although this definition reveals the focus on material flows, it has evolved from an orientation towards the products flow (until 1976 z.) to the inclusion of the information flow since 1985 and the services flow since 1992 (Dimitrov, 1996, p. 11).

The Bulgarian research community has also contributed to the enrichment of the understanding of logistics: "Business logistics is the fulfillment and integrated management of materials and related flows from point of origin through all phases and stages of movement to end customers with the aim of providing the necessary customer service levels at lowest costs" (Dimitrov et al., 2010, p.14). The contribution of Dimitrov et al. is expressed in the emphasis on the

integrative character of logistics, as well as in the expansion of its managed object with the inclusion of all flows related to the material one – those of services, people, information, cash, knowledge and others, since between material and all the other flows exist links and relationships, some of which are of a particular interest for logistics and under some conditions they are included in its managed object.

On the basis of all the aforementioned definitions, the following major characteristics of logistics are arrived at:

- The managed object of logistics consists of the flows of materials, services, related information, and in some cases of other flows.
- Logistics is a management concept which focuses on the integrated management of material flows. The integrative essence of logistics is manifested on two levels of company management:

- *Internal integration* expressed *firstly* in integration of the three phases of movement of material flows – procurement, production and distribution. The reason for that is the unanimity of the material flows and the repetitiveness and similarity of management activities and problems in the different phases – inventory management, transportation management, warehousing, order fulfillment and etc. (Dimitrov et al., 2010, p.18); *secondly*, in the integration of logistics with other functional areas of company management (marketing, sales, finance, human resources). Through its integrative nature, logistics overcomes the conflict of interests of the functional areas and stresses on their interdependence for taking optimal company decisions.

- *External integration*. Due to the increased specialization of companies

the present stage in the development of logistics is connected with the integration of a company's efforts with those of its suppliers, customers and intermediaries for coordinated management of materials and related flows. As a result of the evolution of logistics the concept of supply chain management comes forward. Thus logistics is seen as a wide-ranging and pervading philosophy that can maintain the entire delivery cycle, as well as support the product throughout its existence, including the time of its usage by the customer (Blanchard, 1992).

- The aim of logistics is to provide the required customer service at the lowest total logistics costs. The core of the logistics customer service is the provision of high time and place product utility.

The rapid progress of contemporary information and communication technologies and systems and the increased management capabilities of companies have brought to the present logistics development which has started since the beginning of 2000s. It is associated with the integration of all supply chain members' efforts for effective and efficient management of materials and related flows. Thus the concept of supply chain management emerges, as well as the idea of the competitiveness of the entire supply chain.

Most of the leading authors in the field are unanimous in their opinion that a supply chain consists of all organizations involved in the process of providing a product or a service to the end customer - from those that extract raw materials to the ones engaged in wholesaling and retailing. Some of the definitions broaden the idea of a supply chain, including in its scope companies for transportation, warehousing,

information processing, handling and other intermediaries that facilitate not only the material flow, but also the information, financial and knowledge flows (Cooper et al., 1997a, p. 68).

Other authors consider the supply chain as a sequence of activities or operations. For example, Beamon and Ware (1998, p. 705) define it as an integrated set of business functions which encompass all activities from raw materials acquisition to delivery to end user. Schary and Larsen (2001, p. 23) also describe the supply chain as a linear sequence of operations, organized around the flow of material to produce and deliver the product to final customers. A third group of scholars view the supply chain as a combination of organizations and activities (Handfield and Nichols, 2002, p. 8.) or as a set of organizations and processes interrelated in the creation of products and services and their delivery to final customers (Dimitrov et al., 2010, c. 26).

The analysis of the reviewed literature leads to the conclusion that a supply chain consists of two main components: activities and organizations that perform them. The processes of product manufacturing and delivery include a set of activities which lead to changes in the material flow. Organizations and their structural units plan and perform these activities.

Literature presents as managed objects of supply chain management material flows (Jones and Riley, 1985, cited in Croom et al., 2000, p. 69., Dornier et al., 1998, p. 512, Spekman et al., 1998, p. 632), information and services (Cooper et al., 1997a, p. 69, Lambert and Stock, 2000), human resources, financial and technological resources (Fawcett and Magnan, 2001). The American organization National Initiative

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for Supply Chain Integration specifies the usage of all of the supply chain members' knowledge when taking decisions as one of the axioms for achieving an optimized supply chain (Doyle and Parker, 1999, p. 4).

Lambert and Stock (2000, p. 57) also emphasize the need of integration beyond the logistics function i.e. supply chain management should be viewed not only as integrating logistics in the chain, but also as integrating and managing the key business processes in it, and those include activities that create different customer values. Generally, since the beginning of the present century, most of the definitions broaden the scope of the concept beyond the material flow and identify it with the integrative management of activities and processes, which create value in the chain. What is more, Christopher (2005, p. 5) pays special attention to relationship management and puts stress on the value concept, defining supply chain management as "the management of upstream and downstream relationships with suppliers and customers to deliver superior customer value at less cost to the supply chain as a whole".

The review of literature and leading practice allows the following summary of the characteristics of supply chain management:

- Effective and efficient management of *materials, information, financials and knowledge flows*;
- *Internal coordination* between function in company management;
- *Inter-firm coordination* of supply chain processes, i.e. the processes of product manufacturing and delivery are considered from the point of view of the whole chain;

- Orientation towards *end customer satisfaction* due to the fact that his/her decision to buy a product drives the fulfillment of all activities in the chain.
- Establishment of *long-term, trust-based relationships* between supply chain members.

Supply chain management leads to cost, quality and service improvement which cannot be achieved by the individual supply chain members (Cooper et al., 1997b). This idea is actually the basis of supply chain management's goal which implies the adoption of a systems approach. The factors that influence supply chain costs are not only structural (scale, scope, experience, technology), but also result from the execution of activities such as quality control, workforce involvement, product configuration, and links between suppliers and customers as well (Schary et al., 2001, p. 61). Due to the connectedness of activities executed by supply chain members, management attention should be focused not only on cost minimization for the individual company, but also on cost minimization for all production and delivery stages, and on the links between them (material, labour, inventory, set-up costs and etc.). This may open up possibilities for re-allocation of activities in the chain or operations modification with the aim of decreasing supply chain costs and generating innovations.

Supply chain management application leads to decreased inventory of raw materials, semi-finished and finished products in the chain. Since inventory can represent up to 50% of assets (Lambert and Stock, 2000, p. 31), the decrease of its levels offers considerable potential for increasing return on assets. Improved

planning and forecasting as a result of sharing information for demand, inventory, production schedules and planned promotions lessens the need for large investments in assets such as warehouses, handling equipment, production capacity and equipment.

Finding the optimal management decisions to decrease total supply chain costs should not dominate over the increase of end customer satisfaction through quality, delivery, service and flexibility. Supply chain management principles lead to the achievement of a balance between the two aspects of supply chain management's goal because they direct management attention towards the elimination of activities which add unnecessary costs such as carrying high levels of inventory, duplicating handling procedures, fulfilling nonconsolidated deliveries, uncoordinated promotions and discounts. Elimination of these activities, integration of processes and information systems, as well as increased availability of information allow companies to offer higher value to customers with smaller amount of resources.

3. Methodology

This research uses adapted methodology which combines in broad terms the methodologies of two studies of logistics (2000 and 2006) and one of supply chain management (2006) in Bulgaria. It includes operationalized indicators for logistics practices, calculated on the basis of data from Bulgarian business practice.

For data collection the survey method is used and two questionnaires are developed – one for manufacturing and one for trading companies. They have similar structures and contain nearly the same number of

questions. There are differences mostly in the content of some of the questions and they are conditioned by the different character of manufacturing and trading activities. The questionnaires provide compatibility of data with those of similar surveys in Bulgaria and abroad. They contain four types of questions, which require: a) an evaluation on a 5-point scale through expressing a degree of agreement, usage, understanding and etc.; b) quantitative or qualitative data; c) a choice of an option from two alternatives, for example "yes/no" (dichotomous scales); and d) marking the true statement from several optional ones (nominal scales).

The sample is not randomly drawn because it does not include randomly selected companies from the population but consists mainly of companies which are more easily accessible to the interviewers concerning their location, and also express goodwill to contribute to the study.

As a result of the review of the theoretical statements in the field of logistics and of the methodologies used in different empirical studies a conceptual framework is drawn to evaluate logistics in the surveyed companies. The adopted approach aims to reveal firstly *the extent of knowledge and awareness of logistics role in company management*, and secondly, *the practical application of logistics methods and management tools*. The last is considered in two aspects:

- *Internal integration*, reflecting the extent of integration of logistics activities and processes such as transportation, warehousing, inventory management, order fulfillment, and etc., and the cross-functional coordination in the firm;

- *External integration*, viewed as coordination between organizations in the management of material, information, knowledge flows and relationships.

As a limitation of the research financials management is excluded from its subject because Bulgarian companies, for confidential reasons, are extremely sensitive in relation to supplying data connected with financial issues.

Logistics is assessed through the usage of 19 indicators – 3 of them measure the extent of knowledge and awareness of logistics role in company management, 5 consider the internal integration, and the final 11 measure the characteristics of supply chain management². The indicators are constructed of items corresponding to the responses given to questions in the questionnaires. The methodology also includes the usage of statistical methods (descriptive statistics, t-test), the methods of comparative analysis and analogy, which help in revealing the state and development of logistics.

Totally 159 firms are included in the study, of which 78 are manufacturing and 81 are trading (including 7 large retailers). Concerning the number of the surveyed companies this survey is commensurable with the previous ones (147). Nearly half of the companies (47%) are established in the period 1990-1999. Finished products are the most widely represented products for the firms (67%). As for the size of the enterprises, 14% are large, 25% - medium, and the rest are small and micro enterprises.

4. Results and discussion

The survey on the state and development of logistics in Bulgarian manufacturing and trading companies leads to the outline of the following results and conclusions:

First: Extent of knowledge and awareness of logistics role in company management

The extent of knowledge of logistics and related concepts and practices has increased in comparison to previous years, but mainly in medium and large enterprises with longer experience, and is not sufficiently high. The fundamental term "logistics" and its extension – "supply chain management", are best known, but by barely a little bit more than half of the firms (58%). The fact that even so smaller part of the firms knows the latest logistics innovations reveals the comparatively low quality of the knowledge of logistics. Still unfamiliar are a lot of terms related to logistics processes optimization (for example "Economic order quantity" and "ABC analysis") or directed towards the achievement of higher integration between supply chain members ("Distribution Resource Planning", "Vendor Managed Inventory" and "Collaborative Planning, Forecasting and Replenishment"). The mean scores for all these terms and concepts are between 2.5 and 3 on a 5-point scale.

One of the leading motives for companies' customers to buy their products are closely related to logistics (Fig. 1). 87% of the interviewed point out as a leading customers' motive delivery reliability (2nd place among totally 13 motives), 81% - short order fulfillment times (4th place), and 71% - service flexibility (6th place). These motives make companies determine distribution as the second management area of highest priority which needs urgent improvement just after marketing and sales out of totally 10 areas including also finance and accounting, human resources, procurement, operations, products design and etc. These leading motives stabilize their ratings from previous years, which underlines the essential role of

²For more details concerning the indicators, please refer to: Rakovska, M., 2013. The Impact of Strategy and Logistics on Performance: A Methodological Framework, Research in Logistics&Production, No 3, pp. 213-223.

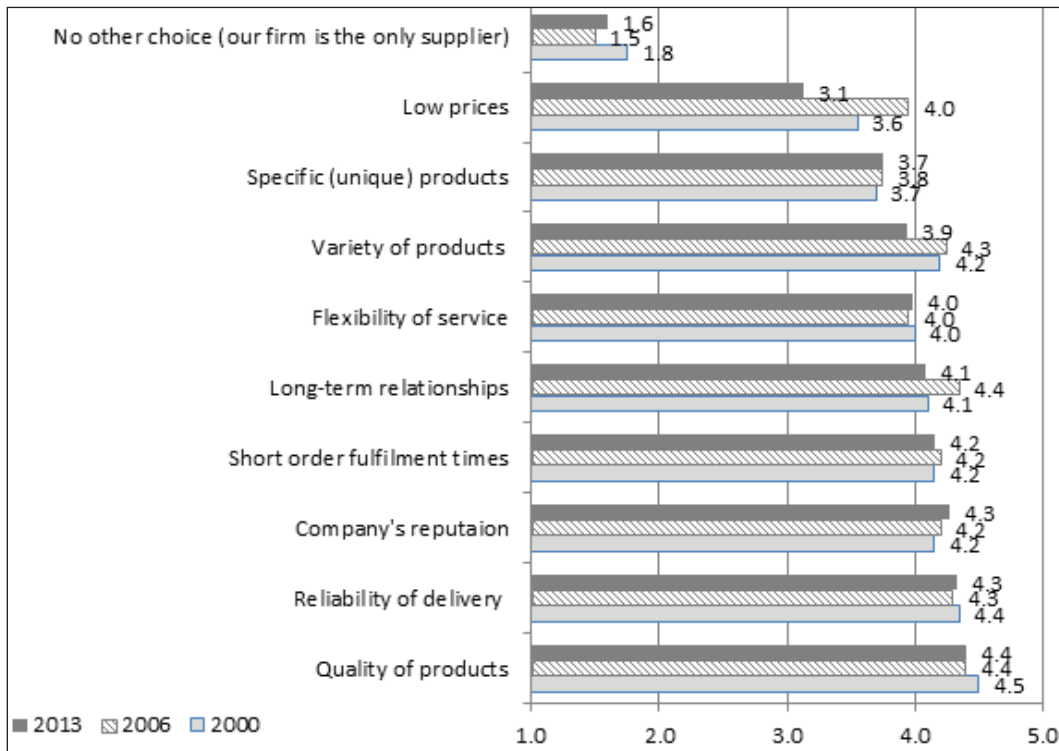


Fig. 1. Customers' motives to buy company's products (mean scores; 1- not a motive; 5 – a strong motive)

logistics in company management regardless of the lack of understanding of the logistics practices and concepts.

Second: Internal integration

For a period of 13 years the organizational development of logistics management has definitely undergone considerable changes. Many companies already have the organization prerequisites for internal integration. The share of companies with logistics departments in their organizational structures increases and the share of those with fragmented management of logistics activities decreases respectively (Fig. 2). However the extent of integration is comparatively low concerning the number of functions performed in logistics departments (on the average of between 3 and 5, and most often these are: management of deliveries to customers, warehousing, transportation

management, inventory management, order fulfillment, choice of distribution channels). These logistics departments also rarely participate in strategic activities such as determining customer service standards, choosing suppliers, warehouse location and others.

In companies with organizational structures that lack a logistics department the highest participation in logistics management have the departments that correspond to the three movement phases –marketing (43% of trading and 26% of manufacturing firms), production (31% of manufacturing firms), warehousing (19% of trading firms) and procurement (8% of trading and 14% of manufacturing firms). Some of these departments achieve a high degree of logistics activities integration. It can be generalized that regardless of

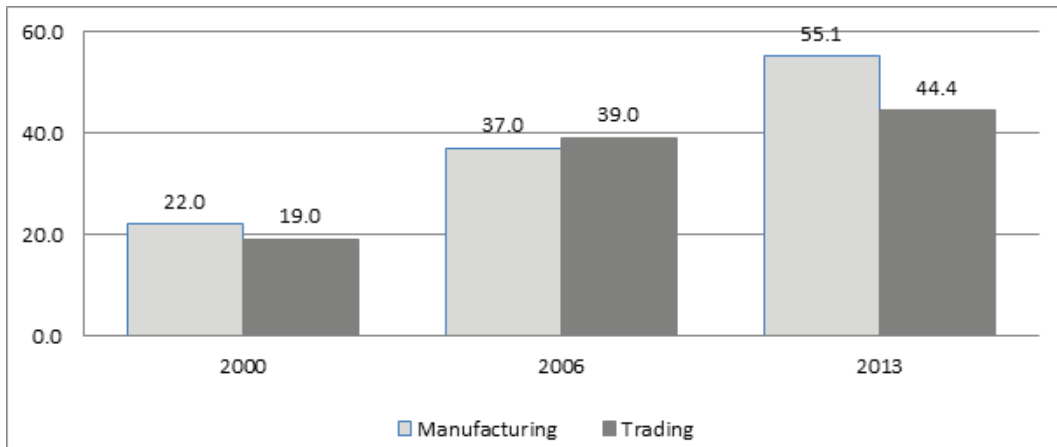


Fig. 2. Share of companies with logistics departments (in % of the total number)tive)

the existence of a logistics department in companies, hardly in nearly 1/5th of the firms there is a high degree of logistics integration, reflected in the allocation of responsibilities between departments.

Even though the usage of software products increases in activities such as forecasting and quality control, as a whole the application of such products in logistics management remains on the same level as it was 13 years ago – the mean scores for different logistics software products continue to be around and a little bit over 3. This fact also points to the insufficient application of logistics management methods. The usage of software products is highest for order processing (3.5) and inventory management (3.4). However, resources invested in contemporary information technologies and systems that facilitate internal integration are too small - systems like enterprise resource planning (ERP), distribution resource planning (DRP) and material requirements planning (MRP) have mean scores around 2.5. The reasons for that are not only the lack of resources for implementing such business software products, but also the necessity for follow-up personnel training and unawareness of

the related advantages. All of the above is evidence for some underestimation of the role and importance of information systems for company management. This conclusion is confirmed also by another study's results, received through the DEA method (Data Envelopment Analysis). They show that only just 25% of Bulgarian companies effectively use information systems and this has positive influence on completeness of orders, on time delivery and flexibility (Dragomirov, 2014, p. 120).

Cooperation between functional areas continues to be not so good and some of the reasons for that are: unawareness of company goals by the employees in not a small part of the companies (30%), lack of quantitative (47%) and formally written goals (56%), as well as low compatibility of used performance indicators (48%). This leads to internal conflicts and problems in activity coordination between functional areas concerning mostly the order fulfillment process.

Third: external integration

The content of shared information between supply chain members has a comparatively limited scope and relates to traditional areas such as deliveries, prices and sales

(Fig. 3). This fact speaks of a low level of coordination efforts to improve the material flow management in the chain. On the other hand, for a period of 7 years a substantial increase in information sharing with suppliers was noted and it concerns costs, plans for future growth, and mutual business planning. Though too weak, this is a positive change of increasing the richness of the content of shared information.

There are relatively few efforts for the alignment and understanding of the goals of supply chain members. This means that individual companies do not view the supply chain as a single entity, for which they have a specific role and responsibility, but consider the sales processes only from their point of view. Nevertheless, in comparison with previous years, this survey's results show a higher degree of alignment of competitive tools (3 and 2.6 for 2013 and 2006 respectively) and strategic goals with suppliers (3.1 and 2.8 for 2013 and 2006 respectively) – a definitely important though small progress that brings about optimism for the possible stable harmonization of the goals in supply chains. There is also a positive change towards improvement of the relationships with suppliers concerning performance indicators compatibility and sharing, and also the application of common methods to measure performance in the supply chain, but scores for these practices remain low (3 and below). Feedback in the supply chain is evaluated as nearly good (4) and it undergoes no change.

The usage of contemporary information technologies to improve the efficiency and effectiveness of material flow management in the supply chain is rather low. These tools can help in finding the appropriate partners and carrying out transactions (for example e-catalogues, satellite systems for delivery

tracing, and etc.), and also in collaborating with them (supply chain management software, integration of information systems with those of customers and suppliers, customer relationship management and supplier relationship management systems, and etc.). Although 60% of firms disclose investing resources in establishing partnerships with customers and suppliers, undoubtedly these resources do not refer to building up and down the chain reliable information linkages that have proven their contribution to the increase of the speed, promptness and reliability of material flows along the chain - "Integration of information systems with those of customers and suppliers" has received a score of 2.3, and the remaining practices are also characterized with significantly low mean scores – below 2.7. A weak positive change is noticed in relation to using WEB-based catalogues and satellite systems for delivery tracing.

The most widely used communication methods with supply chain partners are the phone and the e-mail (Fig. 4). The comparative analysis during the years shows an increase of the frequency of contacts by e-mail at the expense of using telephones. Still team meetings and joint teams show a decline by 20% and 16% respectively, which is at first sight a negative shift. Taking into consideration the topics of communication in such personal contacts, in 2006 these topics concerned the coordination of programs for customer service improvement and sharing of promotional plans, while this survey finds an increase of mutual business planning and sharing plans for future growth especially with suppliers, i.e. inter-firm meetings and teamwork include cooperation mechanisms that do not have only a coordinating character but a more integrative one.

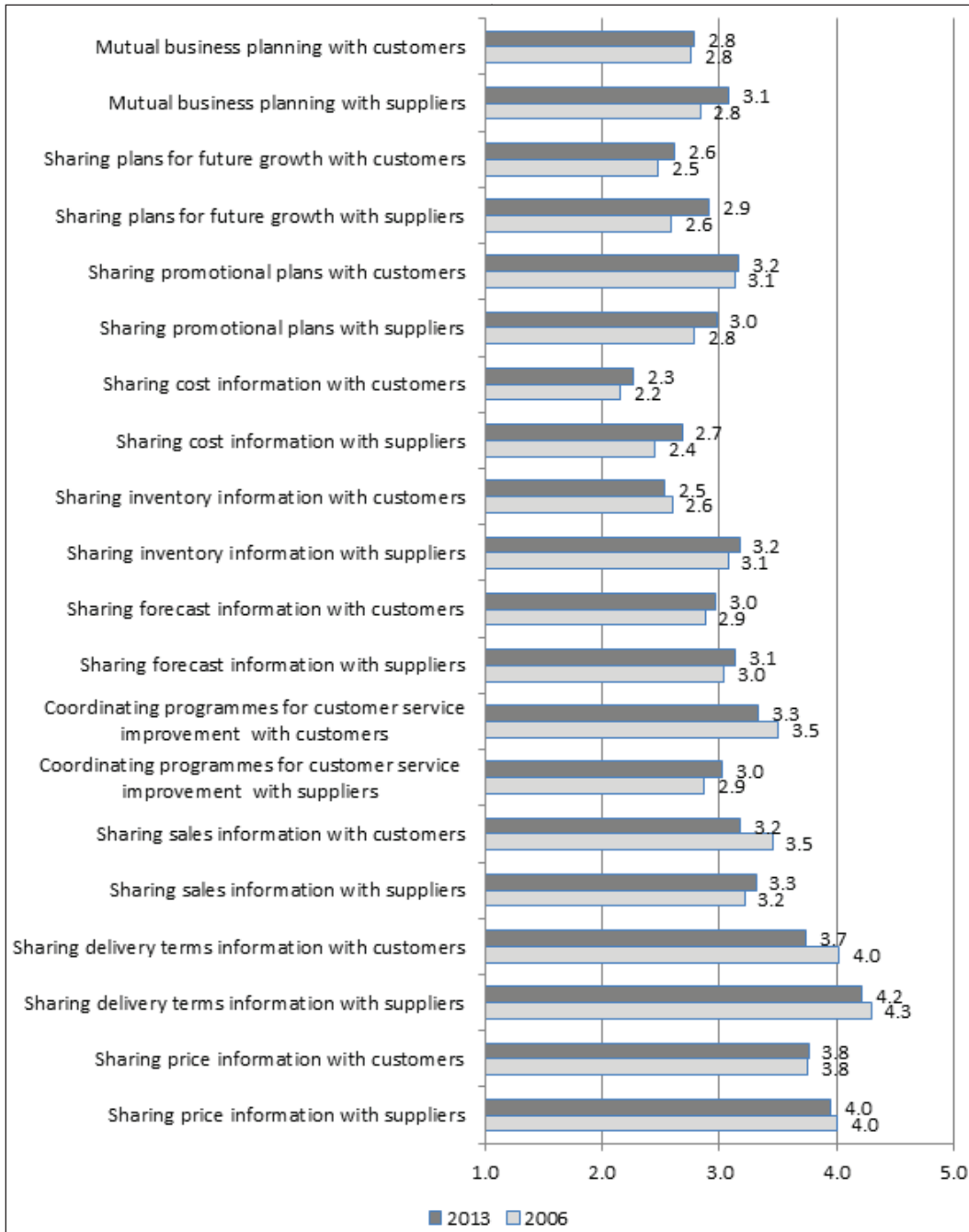


Fig. 3. Content of shared information (mean scores; 1- not at all; 5 - in great extent)ive)

The analysis reveals a positive change of increasing knowledge sharing in various areas. This sharing is more intensive with suppliers than with customers – every second

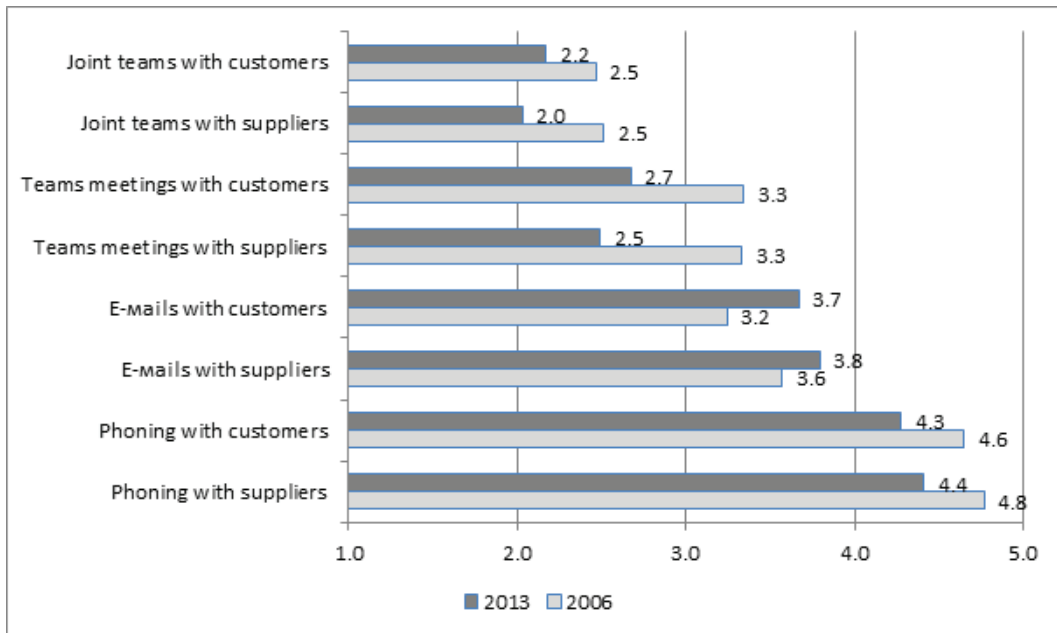


Fig. 4. Communication methods (mean scores; 1- never used; 5 – used very often)

firm shares knowledge and experience in relation to quality, logistics, new products development, as well as technical information. Nevertheless as a whole mean scores remain low (under 3), and this is why it cannot be concluded that mutual aid in different areas is a widespread phenomenon.

The evaluation of relationship management in the supply chain shows a decrease of the share of companies that maintain long-term relations with their partners and an increase of the share of those that cooperate mostly with suppliers for performance improvement. Perhaps this is a consequence of the unstable economic situation as a result of which companies design more flexible but short-term supply chain structures reacting quickly to changes on the basis mutual aid between its members. As it has already been pointed out, this process is expressed in more intensive knowledge and experience sharing with suppliers. The fact that half of

the firms do not establish long-term relations also explains the low scores with regard to a number of previously discussed areas of interaction such as mutual business planning, performance indicators sharing, goals alignment, investment in compatible information technologies and systems, all of which result in higher integration.

Expanding the relationship management scope beyond first-tier suppliers and customers involves challenges and is more customer-oriented - 82% of companies struggle to understand the requirements of second-tier customers. Much smaller is the share of companies (35%) that help their indirect suppliers improve performance. These findings come to show that companies rely mostly on their direct suppliers and customers to solve problems emerging in the linkages with second-tier suppliers and customers. In other words, more than two-thirds them do not make efforts to cooperate with indirect

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suppliers and customers for performance improvement. It should nevertheless be pointed out that in comparison with 2006, the number of firms that regard their indirect suppliers and customers as important factors for the improvement of quality and delivery reliability has increased, albeit at a slower rate.

Specifics concerning manufacturing companies

Manufacturing companies are increasing their knowledge and awareness of traditional techniques for logistics cost optimization. This is a positive trend, considering the recent trend of increased efforts to export to new foreign markets compared to previous years.

The growth of the number of manufacturing companies with logistics departments is considerably higher and it is expressed predominantly in medium and big enterprises with longer experience – the share of manufacturing companies with logistics departments increases from 22% to 55%, and that of trading companies – from 19% to 44%. However, most often manufacturing companies' logistics departments are focused on the outbound material flow, while logistic activities related to inbound flows are performed by the purchasing departments. Meanwhile the interaction between purchasing and production, on the one hand, and production and marketing/sales, on the other, has worsened, which exposes the problems in incorporating the real demand and promotion-related activities into production plans and subsequently into plans for materials supply. Both of these results expose the existing internal barriers that hinder the achievement of integrated material flow management in the three phases of movement – procurement, purchasing and distribution. At the same time there is a positive, albeit scarcely perceptible, change towards the improvement of the cooperation between research and development, production and purchasing. It is expected that this improved cooperation should facilitate and speed up the introduction

of new products into the production processes.

The relationships between manufacturing companies and their customers are characterized by more intensive integration processes than those between manufacturing companies and their suppliers. Generally, manufacturing companies do not share with their suppliers' information about upcoming promotions, programs for customer service improvement, sales, and plans for future growth, not to mention mutual business planning. Thus the lack of supply chain visibility for real demand and for following supply chain members' future plans reduces the possibility to decrease inventory and stock-out through better planning and process synchronization in the chain.

Specifics concerning trading companies

Trading companies, a big part of which are distributors of foreign companies, declare a higher degree of knowledge of the latest innovations in logistics compared to manufacturing companies. Though the number of logistics departments within trading companies is growing at a slower pace, the involvement of these logistics departments in the management of both inbound and outbound material flows is higher, which facilitates the integrated management of the logistic processes in procurement and distribution.

As for the inter-firm integration, trading companies, unlike manufacturing ones, are known for their significantly higher extent of application of integrative practices and collaboration with suppliers. They share with suppliers not only sales information (which increases the visibility of real demand along the chain), but also plans for future goals, and steps are taken towards mutual business planning. The interaction in these three areas has increased within the period of seven years. Trading companies are also more harmonized with their suppliers with regard to the alignment of goals, sharing performance indicators, providing feedback

and sharing knowledge for the development of new products. Obviously these practices have been imposed by suppliers and their adoption by trading companies is a positive sign, which can possibly result in their further dissemination in Bulgarian business.

Conclusion

The application of the unified updated methodology provides consistency in the research of logistics in Bulgaria because it allows for the evaluation of the extent to which firms have tackled previously defined challenges and have followed identified perspectives. The application of the methodology revealed some problems and shifts that need to be more profoundly investigated. *The first* one is the existence of stagnation in internal integration, which is mostly due to the worsened cross-functional coordination, the comparatively low level of knowledge and application of contemporary methods and tools for logistics management and the lagging behind of Bulgarian companies in the use of innovative information technologies and systems. Future research should examine what other factors (internal and external for companies) cause this stagnation. *Second*, progress is made with regard to a number of aspects of inter-firm integration, although some challenges have been identified. As a result the conclusion can be drawn that the faster development of inter-firm integration processes compared to the internal integration of logistic activities (a trend identified in previous surveys) continues nowadays in contrast to companies in developed countries where internal integration usually precedes the external one. This trend can be explained with the fact that not a small part of the surveyed companies are suppliers or customers of more powerful foreign companies that impose on them different collaboration practices before the achievement of internal integration.

The survey's results confirm the assumption that the development of logistics in Bulgarian manufacturing and trading enterprises

generally follows the pattern of its development worldwide. Nevertheless, comparison with foreign best practices and global trends shows that the logistics developments in Bulgaria are lagging behind because of the challenges concerning knowledge, skills and own resources. This reveals the considerable potential for improving logistics in Bulgarian companies. They should become aware of the need to integrate material flows management in the chain, define priorities and adopt a purposeful approach for making change in the desired direction including the alignment of goals, interests, indicators, information systems and technologies within companies and with suppliers and customers as well.

It can be summarized that logistics as a practice in Bulgaria continues to develop following the development of logistics in countries with rich experience. Expectations are that this process would speed with the gradual recovery from the economic crisis, the growing integration within EU countries and the expansion of the dissemination of best practices by foreign investors, suppliers and customers among Bulgarian members in their supply chains.

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