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IN PURSUIT OF THE ESSENCE OF LOGISTIC POTENTIAL OF AN ENTERPRISE

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ABSTRACT. The paper, which aims to be a starting point for a scientific exploration, presents considerations on the essence and importance of the "logistic potential of an enterprise". A hypothesis has been adopted proposing that the lack of a precise description of semantic fields of terms used in literature leads to their fuzzy interpretation. When assessing the context of many expressions used in literature on the subject, one has the impression that typically these concepts fail to be understood unambiguously. Therefore, it has been defined as the ability of logistics systems within an enterprise to provide maximum output of logistic service in a given time. It is defined by the client and represents a compromise between the time expected by the client and the time declared as feasible in the system. Also, sources of different interpretations have been indicated, as well as the importance of the "capacity" of the logistic system and the rarely mentioned aspect of system "intelligence". The role of "logistic competences" represented by the enterprise is pointed out.

Key words: logistic potential, logistic system capacity, logistic competences, analysis of logistic potential.

INTRODUCTION

It often happens that discussions on topics related to broadly understood logistics involve terms that are used without much thinking what exactly they represent. One wonders whether the tendency means that they have become axioms, i.e. propositions that are universally regarded as self-evident and fixed and, as such, require no further debate into their meaning. Contrary to its seemingly straightforward nature, the problem merits a fuller discussion. It turns out that the current "scientific stir" has given rise to endeavours, evident in literature dealing with the subject, attempting to expand the logistic area of study and, in the process, striving to underscore the originality of their descriptively explored aspects by using original concepts. In view of the above, one might argue that the proposed return to terminological "roots", exemplified by the discussion below, focused on the sense of the notion of "logistic potential", is a hardly captivating scientific endeavour. Is it not a bit irritating to choose an area of study that appears so utterly self-evident? Let us nevertheless try to tackle the problem at hand, leaving all the doubts and hesitations – justified as they may be – behind. The phrase "logistic potential of an enterprise" used in day-to-day language is undoubtedly easy to interpret by any representative of the logistics community. This is by all means good news. However, it is not so good that different logistics specialists interpret the phrase from various points of view. Consequently, different references arise, followed by a plethora of different definitions. Although the practice can hardly be regarded as a target of general criticism, since notions such as the potential of the system of research and education, the potential of labour, the potential of ERP systems or the potential for a reduction of logistics costs are very commonly used, it is only rarely that one is entirely convinced that two different authors understand the word "potential" in the same way.

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Hence, what exactly is the logistic potential of an enterprise? Can we, without making a serious error of substance, discuss the topic without regard to multiple definitions, not trying to establish the sense of the notion of "potential"? Taking into account various context meanings used by authors of different scientific publications, one concludes that there are good reasons for claiming that the notion should be interpreted unambiguously. Even though in the most general sense "potential" (Potential in Ger., potentiel in Fr.) can be analysed on various levels, e.g. in mathematics ("potential theory"), physics ("electromagnetic potential"), neurology (brain stem potential in assessing survival outcome), market potential (for marketing analyses) and in everyday languages as possibilities or capacity represented by any given object, the article seeks to pinpoint the very core of the meaning of "potential", considering the high frequency of usage of the word in the majority of publications.

AT THE ORIGIN OF UNDERSTANDING THE NOTION OF "POTENTIAL"

Where is the core of the definition, then? What analytical scheme should be used to demonstrate the utility of interpretation? Posing these questions is, for obvious reasons, justified, especially in view of the fact that the definition of logistics itself is often associated with a similar dilemma. Therefore, if – as Ciesielski aptly points out – we cannot "teach how to use appropriately selected theories to build analytical schemes designed for resolving concrete practical problems" [Ciesielski 2005], one should not be particularly surprised at the blurred interpretation area of the concept. However, when it comes to the logistic potential of an enterprise, it usually refers to the potential of the company's logistic system. Hence, in the most general terms, in order to reflect as closely as possible the very essence of the idea, the term should – above all – represent the relationship between the "logistic strength" and "capabilities" of the enterprise's logistic system. At this point, a perfectly justified question arises on the meaning of "logistic strength", since logistic strengths of an enterprise should be analysed in the context of effectiveness of the maximum effort. However, as Ch. H. Pfohl points out, [Pfohl 1994]. In addition, Pfohl divides the success into the potential of costs and potential of the market. An interesting aspect is that analysing the motivation behind the proposed division one should bear in mind that Pfohl regards the potential of costs as cost reduction reserves stemming, among others, from the introduction of new technological solutions in transport, reloading, handling, packaging and storage, as well as suitable information management. The potential of the market, so Pfohl claims, is a consequence of the fact that the importance of services has been steadily growing, while the demand for benefits in kind has been concurrently falling. This means that enterprises have the capacity to implement processes better than their competitors or have the resources and skills that surpass those of their rivals on the market. According to Day and Wensley [1998], there are six different segments that can be origins of success. These are: decision carriers (persons or groups), corporate philosophy and culture, strategies, structures, systems, implementation potential (the ability to implement a strategy). Blaik also claims that "logistics" is a "potential" and a strategic instrument of marketing supporting on a long-term basis undertakings and components of the company's marketing strategy, determining their efficiency" [Blaik 1997]. What he proposes, therefore, is that attention should be paid to activities in the "effects-process-expenditure" system, which are to be understood as a relationship between logistic actions (expenditures) and pursued goals (effects).

Hence, describing a logistic system it is important to indicate its properties, attributes and structural elements. This is largely a consequence of the fact that the notion of "potential" is – by its very nature – superior. This means that it should be analysed first and foremost as a "category", i.e. a basic concept that can only be fully clarified if a number of other auxiliary terms are provided. This feature is probably the main reason why there are such marked differences in interpreting the notion. At this point, however, it should be remembered that properties of a logistic system refer to flows of logistic streams and its features to relations between different constituents. This is why logistic systems can be analysed by exploring two aspects of their characteristics, i.e. equipment and operation [Nowicka-Skowron 2000]. It is also obvious that potential can be variously analysed depending on the scale (on the macro-, mezzo- or micro level), from the objective point of view (i.e. with regard to function) and from the subjective perspective (i.e. with regard to properties that a given object represents). Also, one must not forget the potential of ideas and the social potential.

CAPACITY OF A LOGISTIC SYSTEM OF AN ENTERPRISE

However, designating the human, material and information potential jointly as a "capacity" gives rise to another uncertainty: what does the "capacity" of a logistic system represent? The notion is definitely ambiguous as well. Nevertheless, the logistic system of an enterprise in which logistic processes are realised has a certain general capacity (so-called current capacity). However, due to the fact that the key feature of a system is homomorphism, logistic systems of enterprises differ in how and to what extent logistic processes are performed, in line with the group theory. Having said that, it needs to be stressed that each of them can – in a satisfactory manner – "learn" (even in an imitative way) to conduct simple logistic processes, i.e. acquire the general capacity (so-called potential capacity). This, however, does not determine the success of an enterprise mentioned by Pfohl. What it comes down to is that logistic tasks are performed correctly which, nevertheless, is definitely not enough for being treated as a major strengthening of the competitive advantage of the enterprise's logistic system. Another justified question comes up, then. What, therefore, is this extraordinary "fitness", or the sought-after "logistic virtuosity" of a system? Considering all the aspects discussed above, it appears that it represents a certain specific configuration of general and special capabilities that enable the logistic system to perform logistic work at a high level (competitive differentiation properties) [Popek 2001]. Consequently, it is more about special abilities that ultimately determine the achievement of preset effects in the system. It is precisely these special capabilities existing in systems that have a major impact on results and thus contribute to the attainment of a logistic competitive advantage on the TSL market.

Summing up the aspects brought up above, one should – above all – analyse the logistic potential as a category of the economics of logistics. As already demonstrated, the potential is essentially "*the capacity of the enterprise's logistic system to perform specific work that requires the application of a specific effort within a defined time frame*". Consequently, it represents the ability of the logistic infrastructure existing within an enterprise to provide maximum output of logistic services in the required time [Stankiewicz 1981]. The time frame is usually that required by the client and refers to a compromise between the time expected by the client and the deadline that is declared feasible in the system (assumption of responsibility for keeping preset time frames). The work is the sum total of work performed for the logistic process and for the system's own needs to maintain its ability to carry out work for logistic purposes. The core of the problem is that attempts should be made to reduce, as far as possible, the energy used for satisfying the system's internal needs and increase – within the limits of practicality – the energy needed outside the system to complete a logistic task. The company's own potential can be analysed in two dimensions: endogenous (as the enterprise's system, i.e. material, human, financial and information resources) and exogenous (mainly affected by the region, linear and point infrastructure, local government administration). Material resources include mainly resources and the entire manufacturing infrastructure, while human resources encompass suitably qualified and organised staff possessing technical and scientific knowledge. In turn, the financial potential supports logistic processes (in the operating dimension) and improves the material and human potential (in the strategic dimension). Similar principles apply to the information potential. In order for the task to be completed successfully, there must be a balance between the enterprise's logistic strategy (properly positioned relative to the general strategy) and the possibility of ensuring the fulfilment of needs determined by tasks that are defined in the strategy (representing the degree of incorporation of customer expectations adopted as priorities).

What it ultimately comes down to is the reliability of the logistic system of an enterprise. It represents the capacity to implement tasks in specific conditions and within a defined time frame. A measure of the capacity is undoubtedly the system's utility potential (a prognostic aspect incorporating management of the forecasting process and management of the prognostic process in line with the best international practices) and the system's utility effect (genetic aspect) [Dąbrowski 2001]. This means that the potential and effect are measures of reliability of the system's capacity to carry out their tasks. Thus the overriding goal in creating logistic sensitivity is to stimulate all persons involved in the management of logistic processes within an enterprise (i.e. process owners) and the enterprise as a whole (i.e. resources) to think and act in such a manner as to integrate capabilities of

the system and economies of action [Bowersox, Closs]. It is worthwhile to note that the concept of logistic potential is largely consistent with the military interpretation of the term as a composite of the military's combat capacity to ensure necessary material and energy flows, and the provision of logistic services [Misztalski 2001].

What are the possibilities for measuring the company's potential, then? After all, the measure of potential can be the enterprise's overall base of resources, dynamics of growth, etc. An attempt to investigate the problem was undertaken in 1988 by Bösherz who conducted surveys among German companies using logistic potential analysis criteria (Logistik Potential Analyse – LPA). He selected 20 criteria assessed on a scale from 1 to 5: status within the organisation, logistic focus in company management, logistic qualifications of staff, use of IT tools for logistic chain integration, modern logistic methods (JiT, MoB), procurement marketing and purchasing policy, relationships with suppliers (supplier assessment), ordering policy (purchase, procurement), stock policy and stock management, order processing within the company, warehouse organisation and material management, own transport fleet or the use of forwarding agents and outside carriers, product returns, external effects on the logistic chain, flexibility and ability of responding quickly to market demands, duration of production, supply and distribution cycle, technical support for and impact on material flows, quality assurance in logistics, planning systems oriented on the logistic function, logistic controlling and reporting [Bösherz 1988].

What with "intelligent" logistic systems, then? If one were to follow Stern, who introduced the concept of "intelligence quotient" (IQ), in his claims that intelligence is "a general capacity of an individual consciously to adjust his thinking to new requirements: it is a general mental adaptability to new problems and conditions of life", it turns out that what one actually means is the "capacity" of a company's logistic system to cope with new situations [Nęcka 2003]. This is all the more justified in view of frequent claims pointing to turbulence of the environment and, above all, a certain degree of variation in customer expectations. The feature thus seems of key importance for fully understanding the dimension of the enterprise's logistic potential. The view also stems from the fact that if we accept the division proposed by Cattell, we begin to understand the logistic sense of flexibility and agility. Cattell distinguished between *fluid intelligence*, i.e. the ability determining the efficiency of all activities taking place within a system (including logistic systems), depending on a particular genetic structure of the system, and *crystalised intelligence*, i.e. a set of specific abilities developed in consecutive activities within the system (corresponding to knowledge, experience and predicting power) [Perwin 1999].

The above approach, accepted as true and directly referable to the enterprise's logistic system requires only a suitable extension which can be found in Teplov's works. Teplov proposes that intelligence is essentially a mental capability that manifests itself in a relatively constant (and specific to each individual) efficiency of performing tasks [Teplov 1951]. One should not be confused by the introduction of the term of "psyche" (Greek ψυχή meaning soul) which refers to the total set of processes and non-material dispositions of the human being. The individual realisation of the "psyche" of a logistic system can be called a "personality" of the logistic system.

LOGISTIC COMPETENCES

The problem that presents itself at this point concerns logistic competences which – undoubtedly – affect the scale of the enterprise's measured logistic potential. They are not unambiguously understood, either. Various publications include statements such as "logistic competences representing competitive advantage are a result of joint management and goal achievement of partners within the supply chain. They help companies achieve cost leadership as a competitive advantage pursued mainly by increasing efficiency (cost reduction) and effectiveness of actions (logistic customer service). In brief, logistic competences manifest themselves in the management of demand, information, coordination /…/" [Łupicka 2005]. However, even though statements such as the one quoted above provide information on what aspects are affected by logistic competences and how, they fail to elucidate unequivocally what logistic competences in fact are.

One the one hand, there are competences possessed by individuals managing logistic systems and processes in accordance with guidelines issued by the European Certification Board for Logistics (ECBL), regarding the coordination and supervision of professional certification of logisticians. On the other hand, a number of companies (such as Schenker) declare the will to establish an international organisation with the broadest scope of logistic competences on the Polish TSL market [Ksit, Polkowski 2004]. Other enterprises (e.g. Logifact-System) point to logistic competences resulting from logistic consultancy services [Nowoczesne systemy... 2007]. An area of activity definitely contributing to the definition of the nature of logistic competences of an enterprise is the "Castle" project focused on cooperation in the SME sector oriented towards Logistic Excellence. An industry partner for the project is ILiM. ASLOG (Fr. Association Française pour la Logistique), as a founding member of ELA, implements a project regarding logistic competences which, however, puts the entire issue discussed here in a slightly different light. In 1999, ASLOG set up a benchmarking committee in response to the needs of French companies (ASLOG members who wished to measure their achievements against other companies developing logistic competences. Works carried out by the committee in cooperation with the consulting agency Axeflow were aimed at developing a set of measures that would encompass, in a comprehensive fashion, the sphere of logistic activity of enterprises (8 quantitative performance measurement indicators: sales forecasting accuracy, customer service, customer complaints, production handling, supplier handling, purchasing forecasting accuracy, global logistic costs, stock rotation). Also, a methodology for comparative measurements of enterprises was developed and applied to establish three company categories: Mean In Class, Best In Class and Top In Class. It is ASLOG's vision that the study will one day become a universal tool used in other European countries.

CONCLUSIONS

Summing up the discussion presented above, it should be underscored that, all things considered, there are still good grounds to engage in scientific discussions on notions and concepts that have been used in logistic literature for many years now. The approach is desirable since, by its very assumption, it aims to explain the essence and clarify actual core meanings of commonly used concepts. This, in turn, will make it possible to use words and phrases in their correct sense in the logistic discourse. The problem is an important contribution that the world of science should make for the development of logistics.

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W POSZUKIWANIU ISTOTY POTENCJAŁU LOGISTYCZNEGO PRZEDSIĘBIORSTWA

STRESZCZENIE. W artykule, który ze swojego założenia ma stanowić przyczynek do dyskusji naukowej, zostały przedstawione rozważania na temat istoty i znaczenia "potencjału logistycznego przedsiębiorstwa". Przyjęto bowiem hipotezę, iż brak doprecyzowania pola znaczeniowego stosowanych w literaturze terminów, powoduje ich rozmytą interpretację. Oceniając kontekst wielu sformułowań spotykanych w literaturze przedmiotu, można bowiem odnieść wrażenie, że najczęściej nie są to pojęcia rozumiane jednoznacznie. Dlatego został on zdefiniowany jako zdolność sił logistycznych przedsiębiorstwa do wykonania maksymalnej produkcji usługi logistycznej w wymaganym czasie. Jest on określanym przez klienta i jest kompromisem między czasem oczekiwanym przez niego, a deklarowanym do dotrzymania przez system. Wskazano także na źródła różnej interpretacji, znaczenie "zdolności" systemu logistycznego oraz na rzadko podnoszony aspekt "inteligencji" systemów. Zwrócono także uwagę na rolę "kompetencji logistycznych", które reprezentuje przedsiębiorstwo.

Słowa kluczowe: potencjał logistyczny, zdolność systemu logistycznego, kompetencje logistyczne, analiza potencjału logistycznego.

AUF DER SUCHE NACH DEM KERN VON LOGISTIKPOTENTIALE DES UNTERNEHMENS

ZUSAMMENFASSUNG. Im Artikel, der in der Annahme zu einen Beitrag einer wissenschaftlichen Diskussion sein soll, wurden follgende Überlegungen zum Thema in Betracht gezogen: Wesen und Bedeutung „der Logistikpotentiale des Unternehmens“. Es wurde die Hypothese aufgestellt, dass die fehlendene Präzisierung des Bedeutungsfeldes in der Literatur den Terminen folgt und so zu ihrer verschwommenen Interpretation führt. Es wird der Kontext von mehreren in der Fachliteratur getroffenen Formulierung bewertet und man hat den Eindruck, dass die Begriffe meistens nicht eindeutig verstanden worden sind. Deshalb wird es als die Anpassungsfähigkeit der logistische Stärke des Unternehmens für die Ausführung von einer maximalen Produktion der logistischen Dienstleistungen in erforderlicher Zeit verstanden. Es ist von den Kunden beschreiben und wird als ein Kompromiss zwischen der erwartenden und der bekennenden Zeit für die

Begehung durch das System dargestellt. Es wurde auf die verschiedenen Quellen der Interpretation hingewiesen als auch auf die Bedeutung der „Anpassungsfähigkeiten“ der Logistiksysteme und der sehr selten ansprechende Aspekt der „Intelligenz“ der Systeme. Es wurde auch Wert auf die Aufmerksamkeit von „Logistikkompetenzen“, die die Unternehmen repräsentieren gelegt.

Codewörter: Logistikpotential, Anpassungsfähigkeit des Logistiksystems, Logistikkompetenz, die Analyse des logistischen Potentiales.

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