Interaction of Market Participants: Theoretical And Methodological Aspect

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ABSTRACT

The article represents an author approach to understanding of interaction of the market participants as the basis of its existence. The authors detect the essential characteristics of interaction by way of description of the contents and forms. It is shown that links of the participants have many expressions and their variations allow differentiating different types and processes of interaction of the participants. Also there is an example of model substantiation for choice of the process of market participants provided.

INTRODUCTION

Within the framework of such integral systems as the market certain participants perform rather certain functions, and between them there are links established. These links characterize conditions of quantitative measuring of dynamics and the level of effectiveness of the whole system, which allows confidently stating that the market is not just an accumulation of participants, but rather the plurality of the ordered and chaotic interactions between the participants concerning these or those goods, information, conduct and reaction.

Theoretical provisions:

Interaction is a philosophic category, reflecting processes of interaction of objects with each other, their mutual substantiation and production of one object by the other. In the Russian dictionary and reference the interaction is interpreted in two ways: as the universal form of movement, development, which establishes the existence and the structural arrangement of any material system (Large economic dictionary 1997) – on the one hand, and as participation in the common work, activity, cooperation, joint performance of operations, transactions – on the other hand (Modern explanatory economic dictionary Reisberg, B.A., et al., 2013).

The market, as it is known, is a dynamic social and economic system. Respectively, interaction of the market participant is some process, defined by numerous factors, like: aims for being present at the market, realized by the strategy and mission of the participant, the market situation, the market potential, procurement with resources and potential of the participants, existing and level of resolving contradiction situations and disagreement of the purposes of the participants. Russian scientist G.B.Kleyner distinguishes between six types of relations between the market participants. These are: contacting (sporadic short-term exchange of business and other information); coproduction (joint performance of some certain accumulation of actions, providing achievement of the common set aim); cooperation (long-term joint work, renewable process, stipulating joint actions of non-fixed activity); coordination (long-term informational interaction, directed at agreement of the participants’ actions); coevolution (mutual informing concerning intentions and plans, directed at coordination of the long-term development of the participants); consolidation (complete coordination of actions plans and intentions, proximity of short-term and long-term interests) (Kleyner, G.B., 2011). Besides, in the orthodox economic theory competition is considered as the form of interaction between the market participants. In its essence competition represents a parallel-sequential as regards each other coexistence of the participant at the market. This way, interaction of the market participants is oriented at establishment of partner relations, which differ from other relations with the mutual benefit for the parties. Competition also may be viewed as a single case of partnership, in the same sense in which the participants of sports competition may be called the partners.
As an economic phenomenon interaction bears two principal characteristics – contents and form. Contents of interaction between the market participants, in the essence, represent the system of relations and mechanisms of their regulation. Pursuant to J. Johanson and L. Mattsson, relations represent mutual orientation of the market participants, ready to interact with each other for coordination and development of the mutually dependent resources, controlled by them (Johanson, J., L. Mattsson, 1991), as well as with the purpose of obtaining the access to resources, controlled by the other participant.

**Plurality of links as the contents of interaction of the market participants:**

Interaction between the market participants shall be established by means of various links. In linguistics, on the one hand, the link is considered as the combination of means, which give the opportunity to be linked, connected, and on the other hand – these relations of mutual dependence, reasonability, generality between something. Therewith the connection is the integral part of the system and shall characterize its composition (statics) and functioning (dynamics) which allows speaking about the interaction of the market participants as a system phenomenon.

The spectrum of links between the market participants varies from complete economic and financial and legal independence of the participants in the course of forming and realization of links up to complete loss of independence as the result of using the «rigid» form of integration, from the high extent of their stability to different fluctuations of the environment up to their complete disintegration as the result of influence of the insignificant factor, from the compulsory (absorbing) nature of establishing links up to complete freedom (chaotic nature) of their establishment etc. Such range of classification of the links is connected mainly with the fact that the link itself may be described by the following parameters: formalization of the link, narrowness (latency) of the link (frequency of their use during a certain period of time), circularity of the link (extent of openness for other economic agents), stability of the link (duration of their existence) etc.

Links may also be «formal and informal, transparent and nontransparent for the outer supervisor, based on relations of property or not» (Pappe, Ya., 2000). M. Dalton offered to interpret the «formal» and the «official» as follows – this is «what is planned and as regard which agreement is reached», while the «informal» or «unofficial» stipulates «spontaneous and flexible links between the members, subordinated to feeling and personal interests, – without these links functioning of the formal is impossible, but they are too mobile to enter the formal in its integrity» (Dalton, M., et al., 1959). To the formal links there shall belong the contracting indirect and/or institutionally executed link (in fact, also established based on specific contracts). A contract may get both – the latent form in the course of establishment and maintenance of informal links, and explicit or open form in the course of formal links. Informal links, at the opinion of V. Radaev represent «latent contracts» (Radaev, V.V., 2001). Sometimes the market participants prefer to a greater extent enter into latent contracts than the explicit.

Formal links with the purpose of creating flexibility and creativity, as the result shall be supported informally. H. Mintzberg states mutual dependence of the formal and the informal. He says that the formal makes the informal, while the informal largely influences at what is operating in the sphere of the formal and sometimes even reflects its future forms (Mintzberg, H., 1979).

The link may be two-sided, which is established between the two market participants, or multi-sided in formation of which two or more market participants take part.

There exists one more structural aspect characterizing the interaction – it is the order of links between the market participants. Here we distinguish between the two types of links: direct and indirect. The direct links are established directly between the producers and the consumers of the products. The indirect represent the relations between the market participants, which directly do not relate to each other, but interact by means of the third participant, as the rule, the infrastructure entity, with which they have steady relations. When establishing links with the participation of intermediary organizations the process of promotion is accompanied by several contracts, making the so called contractual chain.

Further classification of the links stipulates their division into homogeneous and heterogeneous. Homogeneous links are the links between the market participants, performing the same production functions or having the identical results of action, playing the same role at the market etc. These are: 1) links between the enterprises of the same industry; 2) links inside the submarkets or the buyers. Links of such type let uniting the two opposite principles – competition and cooperation. The link remains rather flexible in order to permit the parties of the links to freely compete for expanding the their share in the total volume of the market, to attracts in case of necessity the new participants from the outside and at the same time it arranges, coordinates the activity of all market participants taking part in the link so that to increase their general competitive capacity as compared to the «external», not connected market participants. Links between the market participants, related to different industries or performing different role at the market (for example, between the seller and the buyer), are heterogeneous. These are links like «supplier of raw material – processor», «manufacturer of products – intermediary in the course of sale of goods». As the rule these are links mediating the interaction of submarket of the sellers with the submarket of the buyers.
Traditionally in the research to mark the types of links inside a certain industry or between different industries there are the following terms used - «horizontality» and «verticality», which resembles, but is not equal to the notions «homogeneity» and «heterogeneity». This way, the term «verticality» mainly means the link between the participants of sequential stages of industrial and sales process, i.e. having direct mutual dependence. In our opinion heterogeneity is the link between the participants of sequential stages of production and sales process, and market participants having indirect dependence and related to different industries, i.e. does not stipulate compulsory presence of the link «consumer-supplier». A well as the homogeneity as distinguished from the horizontality includes the indirect dependence between the participants of agricultural and food market of the same industry.

In line with classification of the links as to the method of their executing, the composition of participants they are also distinguished at to the extent of steadiness. Therewith we state the strong (steady) and the weak (unsteady) links. The problem of steadiness of the links was touched upon in the works of M. Granovetter (1973) and H. Hakansson (1987), in accordance with the position of which the strong links arise mainly with coordination of external resources with the resources of the market participants, while the weak links, which have the property of transformation into the strong are used in the course of establishment of communicative channels. The strong link is considered the link between the market participants, the resource dependence between which is great and which may not be easily damaged even if the number of transactions between the participants is insignificant, the weak link, on the opposite side, may be damaged by the market participants for the sake of establishment of another link, notwithstanding the closeness of relations.

The steadiness of the links depends on the duration of mutual relations of the participants and shall be established by the following factors. The first one is the value of correlation of the trust extent of the participants to each other and the possible benefits and losses. Based on the results of researches J.S. Coleman, we assume the responsibility to state that if in the course of support and realization of the link the market participants in their activity rely upon the trust more than upon the possibility to apply of various sanctions from the undue realization of the link, it is worth saying about the steady link having the tendency towards development (Coleman James, S., 1990). Speaking the formalized language the link possesses high extent of stability when adherence to the inequality: 
\[
\frac{\rho}{1 - \rho} > \frac{l}{g}, \quad \text{where } \rho \quad \text{– is the probability based on personal experience, that the partner in the link is worth trusting, } l \quad \text{– is a possible loss in case of undue realization of the link, } g \quad \text{– is the possible gain in case of successful realization of the link.}
\]

The second factor is the «force of mutual attraction», exceeding the presuppositions (advantages) of the autonomous functioning of the market participants. The links forming as the result of its activity, which may be both – the basis of the interaction and the catalyst of the interaction between the market participants, provide the domination of the effect of interaction of the market participants over the amount of effects of their autonomous activity. The link between the market participants will be deemed steady in case of adherence to the following inequality: 
\[
\mathcal{E}_1 + \mathcal{E}_2 < \mathcal{E}^S, \quad \text{where } \mathcal{E}_1, \mathcal{E}_2 \quad \text{– are the effects of the independent market participant, without realizing the link, the functioning, } \mathcal{E}^S \quad \text{– is the effect from interaction of the market participants.}
\]

Steady links permit the market participants to exchange the useful information and to carry out the mutual control. As V.Radaev has correctly noticed the long-term knowledge of each other allows forming the social capital in the form of trust and business reputations (Radaev, V.V., 2003). By means of steady links the competitive tension is maintained and at the same time mutual support is provided, aimed at the total stability of the market. As the result the contractual relations are added with the social relations and to some extent are substituted by them.

It is possible to judge about the effectiveness of the links between the market participants by such characteristics as functionality and efficiency. The link is recognized as the functional if the parties of the link maintain it for satisfaction of the own needs or to achieve the own aims. The efficiency of the link is determined by the strategic correlation of the parties. The parties are recognized as strategically close if each of them is interested that the effectiveness of the activity of the partner could grow. Otherwise the parties of the link are just tactic partners. In this case the probability of self-damage of the link is rather high. In the modern conditions of restrictions and incompleteness of different kinds of resources one can speak about the self-damage of the link only in case of non-coincidence of the economic (and only!) interests of its parties.

**Identification of forms and processes of the market participants’ interaction:**

Interaction of the market participants represents some integrity as regards the links existing between the participants: it may be mediated by one type of link or by some system of links, in connection with which the interaction has many forms.
As regards the construction in the philosophic understanding it is possible to differentiate three types of integrity of the interaction concerning the links between the participants and the accumulation of participants, being in the interaction. The first type is unorganized interaction. Here the properties of the interaction (the integral) to a large extent coincide with the properties of the market participants and the links between them (the parts). Exclusion of some number of links and participants does not change the essence of the interaction, to a certain extent of course, with violation of which, the interaction disappears. The second type is organized interaction, in which the links between the participants establish its character, and the properties may be different and even opposite properties between the participants. In the organized interaction exclusion of participants or their links does not mean damage yet, they may exist independently. Though interaction as the whole may therewith qualitatively change. This way, termination of any relations between the market participants may lead to termination of the interaction, but certain market participants will independently exist, performing the interaction with the other participants, termination of the agreement between the market participants.

The third type is the organic interaction, in which the internal links between the participants are already so strong and essential for the interaction and the participants themselves, that division may lead to a loss of interaction and termination of activity of the market participants themselves. In the course of knowledge, transfer from the essence of the first order to the more deep essence it is often necessary to pay attention the nature of internal links between the market participants.

The marked types of interaction of the market participants shall be determined with processes of interaction corresponding with them. In the paper by K. Moller and D. Wilson (1988) there are the following processes distinguished: exchange, adaptation and coordination. Enumeration of the processes is not ranged; this order does not characterize any evolutional or rational transfer of one type to the other. At the market it is assumed simultaneous presence of the named processes of interaction between the participants.

<table>
<thead>
<tr>
<th>Types of interaction of the market participants</th>
<th>Unorganized</th>
<th>Organized</th>
<th>Organic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of execution</strong></td>
<td>Informal</td>
<td>Formal</td>
<td>Formal, informal</td>
</tr>
<tr>
<td><strong>Order</strong></td>
<td>Direct</td>
<td>Direct</td>
<td>Direct, indirect</td>
</tr>
<tr>
<td><strong>Number of participants</strong></td>
<td>Dual, multi-sided</td>
<td>Dual, multi-sided</td>
<td>Dual, multi-sided</td>
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<tr>
<td><strong>Composition of participants</strong></td>
<td>Homogeneous, heterogeneous</td>
<td>Heterogeneous</td>
<td>Homogeneous, heterogeneous</td>
</tr>
<tr>
<td><strong>Extent of stability</strong></td>
<td>Unstable</td>
<td>Stable</td>
<td>Stable, unstable</td>
</tr>
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<tr>
<th>Processes of interaction of the market participants</th>
<th>Adaptation</th>
<th>Exchange</th>
<th>Coordination</th>
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**Fig. 1:** Processes and types corresponding with them for interaction of the market participants

**Example of model for substantiation of the choice of process of interaction of the market participants:**

With the help of what the market participants are governing in the course of choosing the processes of interaction? To answer this question it is necessary to state that the market participants differ by two features: 1) the one are considered as primarily free. This means that no one forces them to enter these of those relations, they are engaged into these relations voluntary; 2) they observe their own interests and to realize these interests they shall come to an agreement between themselves. Therefore the forming relations include the characteristics of this agreement and the process of interaction of the market participants – the process of its achievement.

The key followed interests in the course of formation of relations of the market participants, unconditionally, are provision of the own «resource safety» with the purpose of the most complete loading of production capacities and maximization of revenues from the sold products with the purpose of obtaining the profit.

Using the basis of the model analysis, we shall perform comparison of mechanisms of influencing the processes of interaction of the participants, being at the sequential stages of product chain, such as exchange and coordination, on the key indices of their activity. Let the vertically coordinated form of interaction include

\[ \sum_{k=1}^{m} \sum_{l=1}^{n} V_{ik} \]  

market participants, where \( k \) – are the links of the product chain from production of raw material
to sales of the end product (links of vertical coordination), \( i \) – is the number of the market participants, representing \( k \) link of the product chain.

In the course of coordination of the participants it is observed the principle of «ongoing» production process, starting from the moment of production of raw material and ending with the ready product and its sales. Each \( j \) goods of the participant \( Y_{ik} \) directly, escaping the market \( P_{jk} \) of this product, comes to the participant\( Y_{i(k+1)} \). «Leakage» \( U_{jk} \) of the goods \( j \) from this system does not take place or is close to zero.

In case of interaction, based on exchange, each goods \( j \) has its market \( P_j \), connected with the activity of participants \( Y_{ik} \) and \( Y_{i(k+1)} \).

\[
\begin{align*}
Y_{i1} & \to P_{j1} \to Y_{i2} \to P_{jk} \to Y_{i(k+1)} \to \ldots \to Y_{i(m-1)} \to P_{j(m-1)} \to Y_{im} \\
V_{j1} & \to V_{j(1,2)} \to V_{jk} \to V_{j(k,k+1)} \to V_{j(m-1)} \to V_{j(m-1,m)} \\
A_{j(1,2)} & \to A_{j(k,k+1)} \to A_{j(m-1,m)}
\end{align*}
\]

Each coming goods \( j \) to market \( P_{jk} \) is the result of activity of the participants \( Y_{ik} \) and \( Y_{i(k+1)} \). However from the market \( P_{jk} \) one part of the product \( V_{ik} \) with the consumption index \( A_{j(k,k+1)} \) goes further to production or consumption to the participant \( Y_{i(k+1)} \), and the other part \( U_{jk} \in (0, P_{jk}) \) shall be redistributed to other market participants based on free exchange, i.e. «leaks» from the product flow between the participants \( Y_{ik} \) and \( Y_{i(k+1)} \).

In conditions of insufficiency of product \( V_{i(k-1)} \) the amount of \( U_{j(k-1)} \) as the result of absence of the related contracts or coordination interactions by participant \( Y_{ik} \) there will be reduction of the activity volumes, connected with goods \( j \), from \( V_{ik} \) to \( V_{1ik} \) proportionally to reduction of its production capacities \( M_{jk} \) to the level of \( M_{1jk} \left( M_{1jk} < M_{jk}^{*} \right) \), where \( M_{jk}^{*} \) – is the maximum possibilities of the activity of the participant \( Y_{ik} \): 

\[
V_{jk} = M_{1jk}^{*} \times \left( \frac{V_{j1}}{A_{j1}} - \frac{k-1}{k} \frac{U_{jk}}{A_{j(k,k+1)}} \right), \quad A_{jk} = \prod_{s=1}^{k-1} A_{s,s+1}, \quad \text{where} \quad s \quad \text{is the coefficient of allocation of indirect expenses to the total amount of results of the participant’s activity in redistribution of goods \( j \) between other market participants.}
\]

Providing \( M_{jk}^{*} \) for \( Y_{ik} \) participant in case of unrelated contracts (free exchange processes) and absence of any coordination makes the participant enter into a number of additional contracts with the total amount of \( U_{j(k-1)} \) which is connected with the availability of additional transaction costs.

Coordination of activity of participants of the market permits resolving the problem of preserving the volumes of the activity of participant \( Y_{ik} \) at the level of \( V_{ik} \) with the production capacities \( M_{jk} \to M_{jk}^{*} \) at the cost of reduction of the «leakage» of product \( U_{j(k-1)} \to 0 \).

This way, choice of process of interaction between the market participants on condition that no «violence» measures of coordinating his activity were applied to the participant from the side of other market participant, shall be reasoned namely by the accumulation of ideas, corrected by the existing resources and possibilities which are followed when performing activity at this or that market.
Results:
The problem of choice of the optimal process of interaction of the market participants is resolved neither in theory, nor in practice. This article represents the author’s contribution into understanding of its essence and possible way of resolution, as it contains the approach to identification of processes of interaction by way of correlation of the types of links by different features. We do not leave out that the aspects of its consideration will be shifted towards evaluation of the quality and effectiveness of interaction, which will be the most important variables in the function of preference of this or that process.

REFERENCE