Cluster approach in marketing

Irina Krasyuk* and Alexey Bragina

1 Peter the Great St. Petersburg Polytechnic University, 195251 St. Petersburg, Politechnicheskaya str. 29, Russia
2 Saint Petersburg State Marine Technical University, 190121 St. Petersburg, Lotsmanskaya str., 3, Russia

Abstract. The article discusses the cluster approach in industry. The authors' position on the evolutionary transformation of the cluster concept into an ecosystem one is substantiated. The author's view on the content of the "diamond of competitiveness" for assessing the high-tech industry sector is proposed. On the basis of marketing design, the relationship between the cluster economy and the ecosystem concept is revealed, which will determine the methodological tools of cluster marketing and will allow evaluating its industrial corporations. It is proved that the ecosystem approach is the basis of marketing design. Building the activities of industrial companies on the basis of ecosystem ensures the solution of strategic tasks on a marketing basis.

1 Introduction

Modern conditions of industrial business actualize issues related to the competitive environment. An industrial company implementing a competitive strategy focuses its efforts on the formation of competitive advantages. The use of cluster analysis was introduced into economic theory by Porter: a cluster is "a geographically close group of related companies and interacting institutions in a specific area, connected by commonalities and complementarities" [1]. The cluster approach creates conditions for the implementation of a specific project and actualizes issues related to marketing design. The cluster approach determines the consistency and sequence of actions of the participants of the industrial ecosystem. Industrial clusters are indicators of the growth of the country's economy, the importance of which increases in the conditions of anti-Russian sanctions. The conditions for cluster development are determined by cluster policy, the implementation of which involves cluster analysis and the definition of the main directions for its improvement. Cluster economy is an organization of economic development, a way of building a state policy aimed at improving the competitiveness of production systems. Marketing design of cluster policy is aimed at development of professional competencies, including marketing, stimulation of innovation activity, application of new methods of solved problems. The cluster organization of industrial production contributes to the rapid spread of technologies, forms corporate professional competencies that ensure the competitiveness of industrial companies. Updating the technological base, digitalization solve the tasks of achieving technological sovereignty

* Corresponding author: krasyuk_ia@spbstu.ru

© The Authors, published by EDP Sciences. This is an open access article distributed under the terms of the Creative Commons Attribution License 4.0 (https://creativecommons.org/licenses/by/4.0/).
The market economy has created import substitution policy to the creation of industrial clusters (new types of production, technological renewal). The industrial type of clusters has a great potential for creating competitive import substituting products, which determines the demand for marketing planning and management. The use of cluster marketing helps to strengthen competitive positions and image, forms the brand of industrial companies, creates conditions for stable contractual relations. Cluster relations within the framework of cross- and symbiotic promotion ensure high profitability, investment attractiveness, innovative activity and strategic invulnerability.

2 Materials and methods

The article systematized the theories of regional and spatial economics, ecosystem economics and innovative development. A literary review of the problem field of the study is performed. The methodological basis of the study was made up of general scientific methods. The paper investigates the evolutionary transformation of concepts from cluster to ecosystem. The application of marketing methods to improve the efficiency of industrial companies is justified.

3 Results

The cluster agenda is still relevant today. I would like to note the following that ecosystems are currently becoming the object of scientific research. There is a point of view that ecosystems are a form of cluster development. Ecosystems are an actual direction of cluster concept development. According to Kleiner G.B., a cluster is an organizational component of an ecosystem. A. Marshall considered the features of the development of industrial areas (internal economies of scale of large firms). The German classical school had a significant impact on the formation of cluster science, it is also worth noting the works that formed this concept. Cluster concept was made by the works of R. Estall and R. Buchanan, who examined the partnership and the relationship between closely located enterprises and J. Becattini, who analyzed the sources of trust formation within industrial areas. The cluster concept received its logical formalization in the works of M. Porter. Until the mid-1990s, researchers identified two areas of cluster science development: the European school (based on the ideas of A. Marshall) and the American (M. Porter), now these scientific directions have been integrated into cluster science. M. Porter assessed the global competitiveness of countries, found that it depends on the quality of the business environment ("diamond of competitiveness"). The model of M. Porter, adapted to modern conditions of industrial business, is shown in Figure 1.
We believe that the conditions of competition and business rules are influenced by marketing (marketing factors) and strategy (strategic vision), supporting industries. Strategy and innovation form the parameters of domestic demand, the central element is competencies that affect the competitiveness of a company, industry, country.

For the high-tech sector of the economy, the following elements have a great influence: planning, marketing, strategy, innovation, which is classically reflected in the evolutionary reflection of the cluster concept, which later transformed into an ecosystem. Marketing applied within a cluster is called cluster marketing. The cluster marketing tools used increase the efficiency of the functioning of industrial clusters, industrial companies and ecosystems, and strengthen their competitive positions.

Marketing activities of industrial clusters are aimed at ensuring mutually beneficial conditions and concentration of resources and capital, strengthening competitive positions and reducing costs.

4 Discussion

The cluster concept has changed the substantive part of the competition category, the theoretical foundations of which were formed in the middle of the XVIII century by A. Smith. The theory of competition was reflected in the works of A. Marshall, J. Keynes, M. Porter, V. Leontiev, etc. It is worth noting the works of the authors [17-19] in this subject area, who understand competition as competition in a particular market aimed at achieving the same goals through the implementation of instrumental marketing strategies. The result of this rivalry is the choice of the most effective options for the organization of production and sale, marketing and promotion of industrial products. Competitiveness has content of the order of...
portfolio, the range of products, capacity utilization, the formation of the production landscape, consumer characteristics and quality. The cluster approach in marketing integrates external capabilities and internal resources of an industrial company's activities, determining the conditions and factors that influence consumer choice. The indices of production by types of high technological level activities are presented in Table 1, in general, the situation is stable.

Table 1.

<table>
<thead>
<tr>
<th>Period</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>112,3</td>
<td>118,2</td>
<td>112,4</td>
</tr>
<tr>
<td>February</td>
<td>122,6</td>
<td>113,1</td>
<td>116,7</td>
</tr>
<tr>
<td>March</td>
<td>102,9</td>
<td>145,3</td>
<td>114,6</td>
</tr>
<tr>
<td>April</td>
<td>96,8</td>
<td>143,6</td>
<td>113,4</td>
</tr>
<tr>
<td>May</td>
<td>99,4</td>
<td>116,2</td>
<td>125,5</td>
</tr>
<tr>
<td>June</td>
<td>118,7</td>
<td>117,2</td>
<td>105,4</td>
</tr>
<tr>
<td>July</td>
<td>120,2</td>
<td>99,5</td>
<td>109,2</td>
</tr>
<tr>
<td>August</td>
<td>123,2</td>
<td>98,4</td>
<td>99,9</td>
</tr>
<tr>
<td>September</td>
<td>111,2</td>
<td>115,3</td>
<td>100,2</td>
</tr>
<tr>
<td>October</td>
<td>119,0</td>
<td>117,0</td>
<td>100,2</td>
</tr>
<tr>
<td>November</td>
<td>119,2</td>
<td>118,8</td>
<td>96,0</td>
</tr>
<tr>
<td>December</td>
<td>143,6</td>
<td>115,0</td>
<td>88,0</td>
</tr>
<tr>
<td>Year</td>
<td>110,7</td>
<td>115,2</td>
<td>103,4</td>
</tr>
</tbody>
</table>

Source: [20]

The assessment of the level of competitiveness of clusters involves comparing the indicators of analogous companies (competitors), which determines the direction of development and forms competitive advantages [21]. According to I. Ansoff, "synergy when creating a cluster can manifest itself in 4 forms: sales synergy, operational, investment synergy and management synergy" [22]. A multi-criteria analysis of marketing activity defines the boundaries of marketing decision-making to justify the further development of industrial companies and a holistic objective view of the directions of improving the competitiveness of the cluster. Assessment of cluster competitiveness is carried out on the basis of constructing a competitiveness polygon (building competitiveness profiles based on profiles, the visualization of which can be represented as a polygon). Comparison of the basic and reporting levels of competitiveness will allow you to assess the effectiveness of measures to support and develop the cluster, determine the direction of changes in mechanisms and technologies aimed at achieving the strategic goal. The planning of the activities of industrial companies is carried out on the basis of internal resources and external capabilities, forming the content of strategic marketing tasks taking into account the factors of competitiveness and business conditions. The strategic vision of the business determines innovative changes and parameters of the internal demand of the cluster. This determines the marketing system of relationships, forming the communication space of the ecosystem. The cluster approach in marketing allows assessing the level of competitiveness and determine the most promising areas of development.

The implementation of cluster policy is aimed at innovation and achieving a synergistic effect. Cluster marketing increases the efficiency and attractiveness of the cluster. The implementation of cluster marketing includes the following stages, the implementation of which will ensure an improvement in the quality of the organization of marketing activities. [Fig.2.].
Fig. 2. Stages of cluster marketing

| 1. Definition of strategic and tactical goals, justification of the need for changes |
| 2. Conducting marketing research |
| 3. Formation of a list of needs |
| 4. Defining cluster parameters |
| 5. Formation of a cluster profile |
| 6. Development of marketing strategies |
| 7. Selection and implementation of a marketing strategy |
| 8. Evaluation of the effectiveness of the corrective action plan |

5 Conclusion

Industrial clusters are indicators of the country's economic growth. The cluster approach creates conditions for the implementation of a specific project and actualizes issues related to marketing design, determines the consistency and sequence of actions of participants in the industrial ecosystem.

The high-tech industry sector combines its activities in the following areas: planning, strategy, innovation, which is reflected in the content of the "diamond of competitiveness". The use of cluster marketing contributes to improving the efficiency of the functioning of industrial companies in the ecosystem.

The transformation of the cluster concept into an ecosystem one requires new economic mechanisms and management technologies that meet the requirements of the external environment (real-time management) and provide solutions to strategic and operational tasks.

The implementation of the ecosystem approach in the activities of industrial companies forms strategic cooperative ties, forms competitive advantages. A multi-criteria analysis of the marketing activities of industrial companies in the high-tech sector of the ecosystem environment determines new opportunities and prospects for development.
References


6. Tyunen I.G. The Isolated State / translated from German by E.A. Torneus; ed. and with a preface by prof. A.A. Rybnikov. Moscow: Economic Life, 1926


