EFFECTIVENESS OF MARKETING ACTIVITIES IN ENGINEERING IN CZECH REPUBLIC

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Received 10 February 2014; accepted 10 March 2015

Abstract. Purpose of the article is to present the selected data obtained from primary research, which concerns the marketing activities use in the Czech companies in view of their industry. Nowadays, high competitive environment influence permanent pressure on companies which are in turn force to monitor and adapt them in order to retain their expected market position. In article there were gained data by primary research, using a structure questionnaire survey and processing by statistical software IBM SPSS Statistics 22. The research sample consists 147 companies in 2013. All companies were operating in the Czech environment and they were chosen in random way from chosen CZ-NACE groups. The main scientific aim is to analyse the condition for realisation of marketing activities and determine whether there is a relationship between measurement of marketing effectiveness and industry field in the Czech business environment. Findings of the article point to differences in the use of individual marketing activities in view of engineering field. It was found that companies have to respect corporate goals to fill stakeholders’ requirements, with a small improving because of the engineering industry field. Through realisation marketing activities there are many ways how to impact target audience. The result of the article is describing relevant approach to prove efficiency of realisation of marketing activities in relation with engineering companies. The companies know the importance of relationship with their customers. Marketing management and realisation of marketing activities has become realm where is possible to find opportunities to increase own competitiveness in view of the growing competitive environment.

Keywords: performance, marketing effectiveness, marketing indicators, marketing activities, engineering.

JEL Classification: L21, L25, M31.

Introduction

On the present, companies operate in highly competitive environment than ever. They have to improve own ways of management which must correspond with the world's changes. The emergence of whole marketplace for all products change in customer behaviour, market globalization, environmental awareness and social benefit contribute to high competition on global market between all companies. The long-time business cannot use traditional techniques to corporate progress. It is necessary to come up with new ideas or innovations to be different from competitors in order to survive in global market (Pitra 2006; Klímková, Hornungová 2012).

World crisis was evoked due the globalization of all important worlds markets. Individual companies have to reorganize own portfolio and look for new opportunities – new innovative products or new markets. With this innovation optimal marketing strategy is closely connected and helps to increase corporate performance (Petersen et al. 2009).

Unfortunately, corporate measurement of performance is usually focused only on financial results. There exists lack of customers’ perspective and their needs, which bring problems in own measurement process (Halachmi 2005).

Engineering companies have become one of the most important parts in Czech industry environment. These engineering companies measure effectiveness mainly in production process. These companies haven't measured...
effectiveness of other corporate parts like stakeholders, marketing activities, human resources (Zahay, Griffin 2010).

Industrial area is quite specific. All definitions are focused on customers and good relationships with them. Industrial marketing should be similar to consuming marketing in odd ways. The fundamental divergences between them are in individual motives for purchasing. This means that the goods and services, located at this area, is not for final consumer (Alvarez, Galera 2001).

From point of view of performance measurement, there is specific area of corporate performance in SMEs, because they conduct to large amount of their interest in economic field to sustainable development. That is important aim on which not only Czech companies focus on. They try to connect different performance systems like social, economic and environmental. These three dimensions impact whole business system of measurement of performance and effectiveness (Kocmanová et al. 2011; Coombes, Nicholson 2013; Pollard, Šimberová 2012; Hornungová 2014). That is due to different both of corporate environment and relationship with stakeholders. For every company, there exist various conditions and stakeholder’s requirements are not identical as well (Kaňovská, Tomášková 2012).

If any company declare that is efficient and effective, than it should be able to demonstrate which indicators were used, and other procedures or standards. Companies would not miss a comparison with direct competitors in their industry field, as shown by current knowledge, which can be suitably selected according to using tools, whether financial or non-financial (Kotler, Keller 2012).

Main aim of the article is to identify impacts of engineering industry on realisation of marketing activities in Czech Republic. Main hypothesis is that there is dependence between realisation of marketing activities and engineering industry on realisation of marketing activities in Czech Republic. Main hypothesis is that there is dependence between realisation of marketing activities and engineering industry on realisation of marketing activities in Czech Republic. (2007) four parts, namely:

1. Specification of marketing activities
Marketing activities are the sub-elements in the marketing process. The marketing process includes, according to Kotler et al. (2007) four parts, namely:

- analysis of marketing opportunities,
- selection of target markets,
- creation of the marketing mix,
- management of marketing efforts.

These four sections contain the necessary marketing role and activities that affect the final marketing strategy.

Own definition of marketing activities could be conceptualized from different perspectives. Main perspectives are:

- time perspective,
- market perspective,
- product life-cycle perspective,
- marketing mix perspective.

Siu (2002) and McNamara (1972) describe marketing activities as a set of areas in which is necessary to focus on the enterprise. This designing adapt Mohamad, Ramayah and Puspowersito (2011). In the consumer market (B2C), this file can be divided into nineteen individual marketing activities:

1. market research,
2. quality control,
3. pricing,
4. credit expansion,
5. relationships with dealers,
6. relationships with customers,
7. public relations,
8. advertising,
9. the business of recruiting,
10. business training,
11. storage,
12. distribution or sale,
13. control of sales,
14. packaging,
15. estimate sales
16. product plan,
17. production plan,
18. inventory management,
19. services associated with the products.

The summary of the marketing activity is defined as the major activities that must be implemented by the marketing department or its alternative. Despite the development of information technology are mentioned marketing activities are still very relevant, as it helps the company to manage the necessary knowledge and support business processes (Webb et al. 2011).

Compared specified list of marketing activities are marketing activities under the concept of Total Quality Management included in all corporate activities. Their goal is a management approach that is shaped and partly driven by the customer to achieve full customer satisfaction (Nenadál 2002). The business activities are covered by the TQM approach to the quality of the loop, which includes the various phases of the above marketing activities (Nenadál et al. 2008; Bagad 2008).

Whole process of defining final marketing strategy has been liable to three parts (1) planning and definition, (2) implementation an execution, and (3) control and evaluation. By application these three steps on defined marketing activities there is possible to observe accurate effectiveness (Dudzevičiūtė, Peleckienė 2010).

Marketing activities, which enter into total corporate activities, have direct influence on business outcomes, especially on financial results. That is mainly due the efficiency of activities and customer satisfaction, which have impact on sales (Ambler 2000).
1.1. Corporate performance

Corporate performance has been under lied to continuous measurement and it is depended on requirements of corporate stakeholders (Currie et al. 2009). They usually want maximization of own profit (Shao 2009; Hornungová, Mílčhowský 2013). This maximization is turned on with actual situation in company to reach suggested goals and total market conditions, company operated in.

Indicators which are dedicated for measuring own performance and of course effectiveness should be divided in many ways. From one point of view on indicators we can find six groups of indicators. These groups in own essence include all of corporate marketing activities. They are (Llonch et al. 2002; Ambler, Xiucun 2003):

1. Financial measures (profits, turnover),
2. Measures of competitive market (market share, promotional share),
3. Measures of consumer behaviour (customer loyalty),
4. Measures of customer intermediate (satisfaction, brand recognition),
5. Measures of direct customer (quality of service, profitability of intermediaries),

In general, indicators could be divided into two groups – financial indicators and non-financial indicators. Sampaio et al. (2011) described different marketing variables which are generated from marketing efforts. Kerzner (2011) describes indicator as direct way of measuring to get exact figures, which is represented by parts of business in connection with several dimensions. Consequently, there is necessary to monitor not only the economic indicators, but also the situation and environment in which they achieve their results. These variables are controllable and uncontrollable. Controllable variables (established as marketing mix), uncontrollable variables have influence on marketing outcomes and decisions.

1.2. Measurement effectiveness of marketing activities

Marketing effectiveness is focused on these fields, where is possible to support corporate aims, increase shareholders’ values, net cash-flow or increasing net profit (Ambler, 2008; Li, 2011). This effectiveness is created by several levels, which includes five attributes of marketing orientation approach (Kotler, Keller 2012):

- customer philosophy,
- integrated purchase organization,
- accurate marketing information,
- strategic orientation,
- operational efficiency.

It is essential that marketing indicators are usually used to evaluate the performance achieved in the past to improve future marketing strategies. There is fundamental, that marketing indicators are usually used to evaluate the performance achieved in the past to improve future marketing strategies. This is reason why companies have to decide about right combination of appropriate indicators, if they use financial or non-financial (Barwise, Farley 2004; Ambler et al. 2004). Almost all managers accept more financial indicators than non-financial, but there are possible to find various kinds of indicators. Therefore, there could be problem in defining the ideal set of indicators (Llonch et al. 2002; Mílčhowský 2013; Chenhall, Langfield-Smith 2007).

Marketing indicators are designed to finding and evaluating efficiency of marketing activities in corporate environment. From different point of view it is possible to divide marketing indicators into several basic groups: internal market indicators, external market indicators and processes. External indicators are focused on measuring of complex brand changes in short-time period. Internal indicators criticize innovation levels and responsibilities of employees in company. Processes verify how the individual indicators are obtained and proved (Ambler 2000; Učeň et al. 2008; Gaiardelli et al. 2007).

Measurement performance of marketing activities becomes corporate process, which gives performance feedback on marketing results. Corporate performance is becoming important part of budgeting in company and performance compensation and marketing communication (Clark et al. 2006; Ginevičius et al. 2013).

The general approach of the management in industrial companies is based on the determination of marketing budget as a percentage of turnovers. However, this approach was supported by the results of the previous period. This approach was supported by the results of the previous period. A more appropriate approach for defining the amount of the marketing budget is the way that management must decide on the distribution of mentioned budget into individual marketing section. That also encourages the increasing requirements for efficient measurements of activities (Christian 1964).

Effectiveness of marketing activities becomes depended and impacted by group of factors, which create requirements on marketer about implementation of marketing plans. These factor groups are (Tuan 2012; Nwokah, Ahiauzu 2008):

1. marketing strategy,
2. marketing creativity,
3. realisation of marketing activities,
4. marketing infrastructure,
5. external factors.

2. Methodology

The main aim of this paper is to identify impacts of the engineering (as one of the most important industry field in Czech economy) on realized marketing activities in Czech
companies and determine whether relationship are there between the realization of marketing activities and engineering field in the Czech business environment. Main hypothesis is that there is dependence in realization of marketing activities and their performance in connection with engineering. Engineering becomes very important part of industry production during last decade.

To process the results of the questionnaire survey were used basic types of descriptive statistics on the selected data set (Tables 1 and 2). The data were processed by using the statistical program IBM SPSS Statistics 22, which was subsequently analyzed the dependency between the two nominal variables by means of contingency tables and Pearson’s chi-squared test.

From marketing performance area were used only data focused on engineering companies in Czech Republic in 2013. The conditions for choice of companies, we used, were:
1. geographical location (Czech Republic),
2. classification of economic activities according to CZ-NACE, reduced to information and communication area.
   - 28 – Manufacture of machinery and equipment
   - 29 – Manufacture of motor vehicles, trailers and semi-trailers
   - 30 – Manufacture of other transport equipment.
According the chosen NACE groups, there was defined basic population which consist 7239 engineering companies in Czech Republic. Sample was created by 366 companies that were chosen in random way from company data set. There were returned questionnaires from 147 respondents. Own research survey has been executed during 2013.

### 3. Results

Basic representative sample was made by 366 companies to which were the questionnaire sent. From this amount of 366 companies were received answers from 147 companies (effectiveness was over 40%).

The first part of the paper presents main secondary information, which was processed by many scientific articles and literature. The main part of the paper holds research data that was obtained from the primary research, which was focused on the marketing performance in Czech engineering companies.

Table 1 shows trend of the increasing engineering production in Czech Republic between 2005 and 2010. This trend represents importance of the engineering in Czech industry. Industrial companies focus interest on internal processes especially in production, operating, process and financial fields. Marketing field is situated next the main corporate interest (Table 2). Descriptive statistics of corporate performance fields (Table 2) show that companies mainly focus on financial and production fields (according mean – best value should be 3.0). Main problems of these results are varying the most with respect to traditional measurement approaches, focused mainly on financial results.

<table>
<thead>
<tr>
<th>Financial field</th>
<th>Operating field</th>
<th>Production field</th>
<th>Process field</th>
<th>Marketing field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.14</td>
<td>1.74</td>
<td>2.21</td>
<td>1.55</td>
</tr>
<tr>
<td>Median</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Std. deviation</td>
<td>0.675</td>
<td>0.814</td>
<td>0.742</td>
<td>0.863</td>
</tr>
<tr>
<td>Variance</td>
<td>0.455</td>
<td>0.663</td>
<td>0.551</td>
<td>0.745</td>
</tr>
</tbody>
</table>

From point of view of corporate performance there exist several areas which entice corporate attention. In general, industry has low interest in marketing field because of the typical way of production (in particular job-order manufacture).

Due the aim of the paper, an analysis of dependency of variables was carried out only between performance in marketing field and engineering. In order to establish the dependency test, statistical testing using Pearson chi-square test was used.

The individual responses on dependency of engineering and marketing performance are recorded in contingency table (see Table 3). Pivot table (Table 3) includes how many companies (according CZ NACE classification) apply measurement of effectiveness in marketing field.

The table shows that the almost 54% companies (53.74%) of the sample prove measurement marketing effectiveness
1–2 times per year. It is obvious that 31.29% of companies haven’t measured marketing performance. These results were used as base for Pearson’s chi-square test.

The results of the dependency test are provided in Table 4 which examines the dependency between engineering and impact of marketing activities. The results of the dependency examination in individual variable categories are depicted in the following results of Pearson’s chi-square test.

Maintaining the % reliability of the test, there was compared the established value with 0.05 which represents a 5% reliability level. The established values of \( \alpha = 0.002 \) (for the variable influence of promotion), i.e. less than 0.05, which brings the conclusion that an alternative hypothesis applies – there is a dependency marketing performance and engineering.

Previous results showed that there is a relationship between marketing activities and engineering. Subsequently, the degree of such dependency was examined. To that end, the intensity of dependency determined by means of contingency coefficient as per formula (1) was used.

\[
C_p = \frac{\chi_p^2}{\sqrt{\chi_p^2 + n}},
\]

where: \( C_p \) – contingency coefficient; \( n \) – number of cases; \( \chi_p^2 \) – Pearson’s chi-square.

The intensity of dependency ranges between \(<0; 1>\). That means that the higher the absolute value, the greater the intensity of dependency. The value 0.352 means that the intensity inclines to be medium rather low.

### 4. Discussion

Methodological approach consisted in the specification, collection, analysis and interpretation of data, which should serve as a basis for decision making about the use and intensity of marketing activities in relation to engineering.

Marketing activities connect consumers, customers and wide audience with the corporate marketing department through information which are used to detect and identify opportunities and threats for the development, improvement and evaluation of marketing events, monitoring of their efforts which would lead to improve the understanding and application of the marketing management process.

However, this area needs further survey in-depth investigation from many other reasons. The most important reasons should be increasing competitive environment and higher pressure on companies to seek and apply new approaches that would enhance their competitiveness, as well as the related changes and developments in approaches to marketing management and increasing the need for proper and effective selection and intensity in the use of marketing activities in industry.

Realisation of marketing activities becomes key corporate area how to improve and sustain market position,
supported by effective individual activities. From point of view of engineering companies there is a created distinguished creation of competitiveness in connection with improving qualitative, cost and quantitative factors of inputs (Bokstette, Stamp 2009).

Conclusions

Marketing activities become more important to reach corporate goals. Own marketing management is one of the most important parts, on which each company has to focus on. Objectives of each company would be including all stakeholder groups, who are created high value products. That is possible through effective marketing activities which include impact on industry field because of their mutual dependence (Value 0.002).

The defined hypothesis, according the result of Pearson’s chi-square test, brings the conclusion that an alternative hypothesis applies – there is a dependency between engineering industry and marketing performance.

It is obvious that marketing activities and their measurement approaches are strong connected with engineering field in the Czech Republic. Chosen groups of engineering, according CZ-NACE, become important industrial groups in the Czech Republic. Engineering fields create significant contributions into Czech industrial environment. The most significant engineering field in the Czech Republic is automotive as the most requested in foreign markets (Šimberová 2008).

Effectiveness of realisation of marketing activities create opportunities to companies how they could communicate own production to wide audience (according their size, or in crisis time). Main condition for all companies is amount of budget they can use. The choice of accurate marketing activities is part of the process of marketing management. The definition of these activities makes complex issue, which is influenced by many approaches in the area of marketing management.

Requirements on the choice of marketing activities, which are subject to neither many other factors nor the size of the company, open more possibilities for continued survey in the field of exploration of marketing management in the Czech Republic.

However, it is necessary to undertake further research, which will use the knowledge and the limits not only in domestic, but also in the international environment. After crossing international borders, there is necessary to support verification of the significance in engineering industry on the performance of marketing activities.

Main limitations of the research should be time-consuming research, focusing only on engineering industry with location in the Czech Republic.

For further research, in the area of measuring effectiveness of marketing activities, there would be interesting to compare the relevance of solutions and verification of the results achieved in an international environment. Except that international comparisons could be further research to other industrial area such chemical industry, electrical industry or food industry.

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