Interfunctional Coordination at Hi-Tech Firms

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The paper is focused on the determination of new knowledge about interfunctional coordination. Interfunctional coordination was defined at the beginning of 90s. It is the coordination of all company activities leading to the increase of business performance. Interfunctional coordination is connected with market orientation. It is one of necessary principle of market orientation. It is not possible to use market orientation without interfunctional coordination. Market orientation is based on marketing conception. The first detailed studies were offered by Kohli and Jaworski (1990) and Narver and Slater (1990). Market orientation is described as a method helping to contribute better managing of a company by many researchers. A lot of papers on this topic were publicized during the last two decades. The earliest papers involved the first definitions of market orientation; offered methods for its measuring; and investigated the impact of market orientation on business performance. The last attitudes towards market orientation agree that market orientation enables managers to focus on external and internal elements and activities, which influence the activity of a company leading to its performance increase (Tomaskova, 2009). At present, we have a lot of methods used for the measuring of market orientation. Using a proper method depends on the branch or economic system. The perception of the implementation of market orientation is changing during the period, as well. However, the main principle is still the same – market orientation has a positive impact on business performance. Nowadays, a lot of authors deal with the implementation of market orientation. Because of this reason, we have prepared research “Research on implementation on market orientation in Hi-Tech Firms” (GA 402/07/1493). The goal of the research was to detect barriers of the implementation of market orientation. We divided the barriers of the implementation into three parts according to managers’ influence in an internal, branch and external environment. State, economy and technologies are named as the main elements of external environment. The main barriers connected with the elements of branch environment are quality and quantity of branch stakeholders. Barriers of internal environment involve the barriers connected with the top management and its personality, skills, knowledge and experiences, all employees of a company and interfunctional coordination. The paper deals with the interfunctional coordination at hi-tech firms. The objective of the paper is to define barriers connected with interfunctional coordination and to detect the perception and importance of interfunctional coordination at hi-tech firms. The theoretical knowledge is noticed in some research studies. The data was acquired by means of a questionnaire. New Method measured market orientation in a company. The questionnaire New Method with 7-point Likert scale constituted by Tomaskova (2005) was used for the research. The complete database was analysed by using standard statistical methods (correlation analysis, Spearman correlation coefficient, chi-square) as well as other sophisticated techniques (Cronbach alpha). The main results of the research show that the level of market orientation at the hi-tech firms in the Czech Republic is high and confirm how important is gaining information and using this information inside the company for market orientation. The main results of the research confirm that interfunctional coordination is the base of market orientation. Hi-tech firms in the Czech Republic perceive interfunctional coordination as very necessary presumption for their future development and prosperity. The highest rate for this part received the following statements confirming positive company attitude for innovation, preference for teamwork and mutual cooperation in firms and also effort to be flexible. On the other hand, the lowest average rate had the statement describing relations between superiors and subordinates and their strictness and formality.

Keywords: market orientation, interfunctional coordination, barriers of market orientation, research, Hi-Tech firms, the Czech Republic.

Introduction

A lot of scientific papers try to find new ways how to gain and maintain competitive advantage. Competitive advantage according to Zostautiene and Daraskevicute (2009), is the factors through which companies provide better capacities to obtain production resources, increase sales markets and establish their position in the market. It is important to have never-ending effort to be always in front of competitors. Not only prices and technical criteria play a key role in a decision-making process during the purchasing of a new product. The more positive points
have customers about potential products, the more probable should be their effort to buy them. (Kanovska, 2010) A lot of ways and recommendations are offered directly to firms. The first part of the suggestions offers new attitude, promotion or customer services to customers. The second one shows some possible new opportunities on the market, which can be used by a company. The third group tries to demonstrate a new style of company management. The fourth one comes with a new type of financing, insurance etc. However, it is difficult to offer some general recommendations for all types of today’s firms. Each company has its own specific product and also some specific conditions of business and particular relationships with their stakeholders. The connections of various stakeholders with a company are not the same. Their abilities of influence and importance for the company’s decisions are not identical as well. (Juscius & Snieska, 2008) However, interfunctional coordination is one of the common recommendations. The main principle of interfunctional coordination can be applied for all firms doing business.

The objective of this paper is to summarize and analyze interfunctional coordination. Therefore the main research problem is focused on interfunctional coordination and market orientation at Hi-tech firms, as well. Interfunctional coordination is one of necessary factors of market orientation. The novelty of the paper is in a measurement of interfunctional coordination by Hi-tech firms. Hi-tech firms surveyed in our questionnaire provide their services in the Czech Republic. Hi-tech firms were chosen for their important role in the economy. Hi-tech firms produce research and development of new technologies in every industry, increase industry efficiency and competitiveness in the domestic and foreign markets. It affects structural changes in industry (Saboniene, 2010).

The data are noticed in some research studies and are based on the results of “Research on implementation on market orientation in Hi-Tech Firms” (GACR 402/07/1493). Description, analysis, comparison and synthesis are the methods used to prepare this paper. In the research part of the mentioned GACR project we used a questionnaire constituted by Tomaskova (2005) with 7 point Likert scale for a measurement of market orientation. The questionnaire was used at Hi-tech firms in the Czech Republic. The main findings by High-tech firms show that firms in the Czech Republic perceive interfunctional coordination as a very necessary presumption for their future development and prosperity. The highest rate for this part received the following statements confirming positive company attitude towards innovation, preference of teamwork and mutual cooperation in firms and also effort to be flexible.

Market orientation

Market orientation is based on marketing conception. Market orientation introduced a different point of view on marketing and management at the beginning of 20s. Market orientation shows the results of management attitude especially towards customers and competitors. Moreover, it is focused on management decision into a company on business performance. Kohli & Jaworski (1990) and Narver & Slater (1990) presented the definitions of market orientation, described factors, which have positive and negative influence on market orientation, showed the methods how to measure market orientation and its impact on business performance. The above-mentioned authors published the results in the Journal of Marketing and they created a new trend for hundreds of researchers, which examined market orientation in detail. Many studies dealing with the market orientation have appeared until the present, changing the view on the definition of market orientation. The first definitions of market orientation were similar to customer orientation (e.g. Deshpande et al., 1993). Other definitions referred to a method how to get necessary information (e.g. Deng & Dart, 1994). Development of definition was turbulent during the first 10 years. One of the last attitude (Tomaskova, 2005; Simberova, 2008) towards market orientation agrees that market orientation enables managers to focus on external and internal elements and activities. Thus, it influences processes in an organization leading to its performance increase. The sense of the mentioned attitude is very similar to the attitude of Kurtinaitiene & Gaizutis (2008). They noticed that market orientation is an organization-wide process of customer and competitor intelligence generation, dissemination and coordinated response actions of all organizational units towards obtained information.

The methods used for the measurement of market orientation changed as well as the attitude towards the definition. The first methods included only question for one or several factors. During the last twenty years, more than 34 methods were published.

The model of New Method was constructed according to the analysis of 25 methods in 2005 by Tomaskova. We obtained methods for measuring market orientation according to the following scholars: Kohli & Jaworski (1990); Narver & Slater (1990); Hooley et at. (2003); Liu (1995); Deshpande & Webster (1993); Gima (1995); Fritz (1996); Lado, Mayderu-Olivares & Rivera (1998); Gray et al. (1998); Cadogan et al. (1999); Dawes (1999); Harrison-Walker (2001); Farrell (2002); Haijat (2002); Helfert et al. (2002); Vazquez et al. (2002); Farrelly & Quester (2003); Varela & Rio (2003); Bigne et al. (2004). Some of these methods are similar to other methods, e. g. methods constructed by Vazquez et al. (2002) and Farrelly & Quester (2003). Other methods are oriented only on one element of market orientation, e.g. the method from Haijat (2002) was oriented only on customers. Some of the mentioned methods were limited for their construction methodology, e. g. MARKOR by Kohli & Jaworski and MKTOR by Narver & Slater absent the Churchill methodology.

We have prepared the New Method for measuring market orientation by the analysis of the currently used instruments with regard to the fact of some shortcomings. Creating the method we have considered the aspects which are determined in the executed analysis of all before mentioned problematic areas of market orientation. Moreover, we have tried to eliminate shortcomings, which were criticized in other methods. We have prepared the New Method according to Churchill methodology. The New Method involves all factors of market orientation, not only customer orientation or interfunctional coordination.
For creating the items of measuring we used the following methods: method by Hooley et al. (1990), FMCGS Market Orientation by Gima (1995), MOS by Lado, Olivares and Rivera (1998), New Measuring of Market Orientation Method by Farrell (2002), Measures by Helfert et al. (2002) and Market orientation, dependence and satisfaction by Bigne et al. (2004). The method involves a part of the statement related to external environment, final customer’s orientation, distributors’ orientation, competitors’ orientation, suppliers’ orientation, reflecting the knowledge on the decision-making process and interfunctional coordination. The method of the market orientation measuring contains some statements to which respondents expressed their standpoint by means of Likert seven-degree scale. The questionnaire contains the measurement of market orientation and is meant for top managers. The New method was verified with Cronbach alpha coefficient in 2005. (Tomaskova, 2005)

The last dilemma is a model of market orientation. Scientists try to find all factors, which have a positive or negative influence on market orientation. Moreover, these factors can be marked as potential barriers of the implementation of market orientation. The model of market orientation is completed with the results of its relationship with business performance. The most important barriers of market orientation come from the internal environment. The corporate culture is one of typical barriers of market orientation (Simberova, Tomaskova, Kanovska, 2010). The corporate culture is a part of interfunctional coordination.

**Interfunctional coordination**

Interfunctional coordination is one of necessary principles of market orientation. Interfunctional coordination can be seen as the harmonization of all internal functions and processes in a company. It consists of two parts, namely corporate culture and information coordination. Interfunctional coordination refers to the degree of cooperation between the different functions/departments within the organization (Tay & Tay, 2007). Many authors, e.g. Slater & Narver (1995), Harris (1996), Lafferty & Hult (2001), identified interfunctional coordination as a barrier of the implementation of market orientation. This barrier could be divided into several groups (Figure 1).

![Figure 1. Interfunctional coordination connected barriers (Tomaskova, 2009)](image)

The barriers connected with corporate culture are systematic, structural, procedural and communication ones. It is important not to have any weaknesses in a system, a structure, a procedure or a communication in a company. Thus other barriers as too high centralization, formalization or departmentalization can also appear. The second barrier of interfunctional coordination is connected with information coordination. It is important to gain information, analyze it and then use the results in the decision process in a company (Tomaskova, 2009).

Three ways to achieve effective interfunctional coordination, described by Tay & Tay (2007), were named by the authors:

- Almost each company targets its activities on its customers. Customer orientation is one of the most important orientations of a company. Each company (department) tries to offer its customer a superior customer value. Interfunctional cooperation means motivation of all departments and all systems to create this superior value.
- The formation of interfunctional dependency helps to each area to find advantages for closer cooperation with others. It increases the degree of coordination, too.
- Interfunctional cooperation is a spirit of a company. It involves the right responsiveness to the perceptions, wishes and needs of every department of a company.

Interfunctional coordination is aimed at internal environment, however, the effects of interfunctional coordination are connected with internal, external and branch environment as well. According to Tomaskova & Kopfova (2011) management has high impact on interfunctional coordination and employees. Improving of management style leads to improving interfunctional coordination. Improvements in internal processes are visible during a short period. Employees can perceive changes very soon. Improvements in branch and external environment need more time.

**Research design and methodology**

The research project was titled as “Research on implementation on market orientation in Hi-Tech Firms”. We used a questionnaire, with 7 point Likert scale, for a measurement of market orientation. The New Method includes external environment elements, branch environment elements and internal environment elements of a company. The whole questionnaire was measured for internal consistency with Cronbach alpha and was used for measuring market orientation at power industry in the Czech Republic in 2005 (Tomaskova, 2005).

The questionnaire was used for measuring market orientation at Hi-tech firms in the Czech Republic in 2009 again. Data collecting was realized in the first half of 2009. The sample consisted of firms classified as Hi-Tech firms according to the CZ NACE codes utilized by, e.g. the Czech Ministry of Industry and Trade. Only manufacturing firms operating mainly in mechanical and electric engineering sectors (NACE codes 3x xxx) were selected for the research project. Using the database of the Kompass Czech Republic Company made the selection.

A total of 450 firms were included into the main research. The firms were contacted over the phone and
asked to fill in a web-based questionnaire. The complete database was analysed by using standard statistical methods as well as other sophisticated techniques. Incomplete questionnaires were discarded. The data from 88 firms were used for further processing.

Results

Table 1 reports means and standard deviations for elements of measurement of market orientation.

<table>
<thead>
<tr>
<th>Elements of measurement market orientation</th>
<th>Mean</th>
<th>SD</th>
</tr>
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<tbody>
<tr>
<td>I. External environment</td>
<td>4.76</td>
<td>1.6</td>
</tr>
<tr>
<td>II. A Final customers</td>
<td>5.42</td>
<td>1.28</td>
</tr>
<tr>
<td>II. B Competitors</td>
<td>4.82</td>
<td>1.46</td>
</tr>
<tr>
<td>II. C Distributors</td>
<td>5.06</td>
<td>2.12</td>
</tr>
<tr>
<td>II. D Suppliers</td>
<td>4.74</td>
<td>1.51</td>
</tr>
<tr>
<td>III. A Reflecting the knowledge on the decision-making process</td>
<td>5.26</td>
<td>1.25</td>
</tr>
<tr>
<td>III. B Interfunctional coordination</td>
<td>5.62</td>
<td>1.19</td>
</tr>
</tbody>
</table>

The item interfunctional coordination (5.62) reached the highest value in our research. The above-mentioned results confirm that interfunctional coordination is very important for high-tech companies. In the second position final customers were placed. The key factor of success in today’s dynamic and fast changing environment, which ensures companies to survive on saturated markets, is the focus on long-lasting mutual relationships with stakeholder, mainly with customers. (Simberova, 2008).

Table 2 deeply analyzed interfunctional coordination.

The second lowest average rate had the statement “We prefer achieving long-term company targets in comparison to short-term ones and also achieving definite market share in comparison to financial target.” (5.34; statement 9). If company is interested in surviving on market as long as possible and increasing its market share, then it prefers long-term targets. On the contrary, a company, which focuses only on profit maximization, is usually not too much interested in long-term targets. Businessmen have to decide which visions and company targets they want to fulfill. If Hi-Tech firms want to make business for a longer time, then it is essential for them to get over the loss of the budget from time to time. Well-invested money can be profitable for a company in the future.

Table 2

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<tr>
<th>Average values of statements related to interfunctional coordination (0 – highly disagree, 7 – highly agree)</th>
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<tbody>
<tr>
<td>Interfunctional Coordination Statement in questionnaire</td>
</tr>
<tr>
<td>1. Every worker knows his competences and responsibilities.</td>
</tr>
<tr>
<td>2. Every worker knows the main company targets and know how to contribute to them.</td>
</tr>
<tr>
<td>3. We regularly analyse the comments from our employees.</td>
</tr>
<tr>
<td>4. We pay attention to further employee trainings.</td>
</tr>
<tr>
<td>5. We prefer teamwork and mutual cooperation.</td>
</tr>
<tr>
<td>6. We pay attention to the exchange of information among individual departments of the organization.</td>
</tr>
<tr>
<td>7. We regularly hold meetings, where we discuss about our successes, inform on new opportunities and threats, set new tasks and discuss with all lower-level managers.</td>
</tr>
<tr>
<td>8. We try to be flexible.</td>
</tr>
<tr>
<td>9. We prefer achieving long-term company targets in comparison to short-term ones and also achieving definite market share in comparison to financial target.</td>
</tr>
<tr>
<td>10. All partial targets come out, develop and support the main company target.</td>
</tr>
<tr>
<td>11. Managers of all departments comment the company plan.</td>
</tr>
<tr>
<td>12. Relationships between superiors and subordinates cannot be defined as very strict and formal.</td>
</tr>
<tr>
<td>13. We have positive attitude to innovations.</td>
</tr>
<tr>
<td>14. We try to make a business with respect to ethics and make ethical decisions.</td>
</tr>
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</table>

The highest average rate (Table 2) showed the statement confirming a positive attitude to innovations in firms (6.05; statement 13). The result was quite expectable. Hi-Tech firms can be described as a company with high-quality innovations.

Furthermore, firms also prefer teamwork and mutual cooperation (5.58; statement 6) and try to be flexible (5.97; statement 8). The findings show that the more employees are flexible and easy to cooperate, the more they are able to work on product innovations easily.
Generally, all statements in hi-tech firms mentioned above obtained high average rate. Interfunctional coordination measured in our sample of hi-tech firms is very good. Moreover, the statements with the highest average rate correspond to the attributes of hi-tech firms. The results presented above can be also influenced by the sample of firms participating in our survey. The firms were mainly small and medium sized. The small and medium firms are usually characterized as subjects with higher rate of interfunctional coordination and flexibility.

Conclusions

The paper is focused on short overview of interfunctional coordination. Interfunctional coordination simply shows a level of relations in a company and in its departments. It is a very important part of market orientation. Without interfunctional coordination there is no market orientation. We have named a lot of barriers, which can decrease the level of interfunctional coordination. Corporate culture, gaps in communication, high value of formalization and centralization, weaknesses in system, structure, and procedures can be mentioned. All of these barriers have negative influence on decision process. We focused on High-Tech firms and their perception of the interfunctional coordination importance. The main result of the research confirms that interfunctional coordination is the base of market orientation. The High-Tech firms show high average rate of interest in innovation and effort to work in cooperation and teams. According to Sedziuviene & Vveinhardt (2010), innovation and innovativeness as ability and continuous readiness to re-organize and to initiate changes, create value-added of an organization in markets. Performance of an organization depends on the input into innovations, technologies and ideas that provide advantages against competitors, financial and managerial investments into knowledge processes as well as knowledge employees. That is the great advantage of hi-tech firms.

On the other hand, they gained the lowest average rate in the statement asking about achieving long-term company targets in comparison to short-term ones and also achieving definite market share in comparison to financial targets. The firms should aim to eliminate barriers connected with these areas. However, all average rate gained in interfunctional coordination are high in our research.

It is possible to focus on the problems of interfunctional coordination in both SME and large Hi-Tech firms in our future research. In general, SME are known for their higher rate of interfunctional coordination and flexibility. Micro companies and small companies, probably because of their size and sources, evaluate the research and development (R&D) as weak and insufficient. On the contrary, medium and large companies evaluate R&D as developed and very developed. (Kita, 2009)

Other interesting points can be found in a detailed analysis of developed barriers and in weaknesses at hi-tech firms.

References


Tarpfunkcinis koordinavimas aukštų technologijų firmose

Santrauka

Straipsnyje pagrindinis dėmesys skirtas naudų požūtūriui aptarė tarpfunkcinių koordinavimą pateikti. Tarpfunkcinis koordinavimas buvo apibrėžtas 1990 m. Jis susijęs su visų kompanijos veiklos rūšių derinimu, kuris padeda plėsti ir aktyvinti verslą. Tarpfunkcinis koordinavimas glaudžiai susijęs su rinkos kryptimais. Tai pagrindinis rinkos kryptių principas, be kurio rinkos veikla išvis neįmanoma.

Rinkos kryptis remiasi rinkodaros koncepcija. Pirmieji rinkodaros koncepcijų teoriniai principai, naudojant mokslinių šaltinių, rodė, kad pasiūlymus dėl rinkos orientavimo taikymo teištu rinkos veiklą įtakos verslui. Ši problema, atskleisti tarpfunkcinio koordinavimo svarbą unijantių rinkodaros veiklą įvertinimu. Tarpfunkcinių koordinavimų rezultatai buvo naudojami įvairių spektrų rinkos orientavimo veiklai koreliuoti. Naujas metodas buvo sukurtas remiantis Churchillio metodologija, kurioje suvokimas ir atliekami tyrimai buvo panaudoti įvairiausios rinkos (vestuvių) srityse. Ši metodologijos priežastis buvo susijusi su informacijos kryptimi veiklai įvairių srityse. Šiuo metu suvokiažuojama verslo procesų, be kurio rinkodaros koncepcija negali veikti. Tao metu rimtai atsižvelgiant į ūkio efektyvumą, atskleisti rinkos kryptį įtaką veiklai įvairiausiuose srityse.

• Tarpfunkcinių koordinavimų rezultatai buvo naudojami įvairiuose srityse. Ši metodologijos priežastis buvo susijusi su informacijos kryptimi veiklai įvairių srityse. Šiuo metu suvokiažuojama verslo procesų, be kurio rinkodaros koncepcija negali veikti. Tao metu rimtai atsižvelgiant į ūkio efektyvumą, atskleisti rinkos kryptį įtaką veiklai įvairiausiuose srityse.

Raktiniai žodžiai: rinkos kryptys, tarpfunkcinių koordinavimų, rinkos kryptingumo klasifikacijos, tarpfunkcinio koordinavimo, įvairių srityse.