Abstract:

Knowledge about a logistic process in SMEs can be the way to growth of competitiveness of a company by improving those processes. One of the ways can be the use of diffusion of knowledge in multicultural enterprises as a support of management. Identification of multicultural advantages in management process should be based on knowledge resources, especially the process of knowledge flow between people in multicultural enterprise. Achieving knowledge and accumulation as a resource allow increasing logistic standards such as supply process, production, storage and distribution. It can contribute to the recognition of possibilities of competitor’s opportunities. This paper examined the use of observation of knowledge diffusion in multinational space in SMEs with foreign direct investment in confectionery branch in Poland.

Key words:

Knowledge diffusion, Knowledge Management, SMEs, Foreign Direct Investments.
Introduction

As a result of dynamic changes in the business environment the use of traditional management methods does not ensure success in the market, and a new approach to marketing makes managers recognize the need to develop more dynamic models of running a business (Gattoma, 2013, p. 16). Global trends of management methods go beyond the classical framework, but they are not widely known in the practice of companies. An example of new methods can be change management through sensemaking and sensegiving (Sułkowski, 2013, p. 85) especially in need for Knowledge Management (KM). Knowledge diffusion can be defined as the adaptations and applications of knowledge documented in scientific publications and patents (Chen, Hicks, 2004, p. 199). Tracing the transfer of knowledge from science to technology, from technology to technology, from one company to others. Using the diffusion of knowledge can improve a lot of processes in an enterprise, for example marketing and logistic processes and it can increase competitiveness of SMEs. The aim of this article is the presentation of the significance and place of diffusion of knowledge in multicultural enterprises in SMEs sector. The special kind of diffusion of knowledge is observed in enterprises with foreign capital – i.e. FDI1 (Foreign Direct Investments). Theory about FDI is very rich and in the literature of the subject wide definitions and processes are presented (Białoń, Janczewska, 2004). There are presented models of diffusion knowledge based on literature and compared with results of research in SME sector companies. In the article the observations of SMEs from confectionery branch in Poland belonging to international group with participants from many countries are presented.

1. FDI is defined as cross-border investment by a resident entity in one economy with the objective of obtaining a lasting interest in an enterprise resident in another economy. The lasting interest implies the existence of a long-term relationship between the direct investor and the enterprise and a significant degree of influence by the direct investor on the management of the enterprise. Ownership of at least 10% of the voting power, representing the influence by the investor, is the basic criterion used (http://www.oecd-ilibrary.org/sites/factbook-2013-en/04/02/01/index.html?itemId=/content/chapter/factbook-2013-34-en).
Significant role of knowledge management (KM)

Raport Strategia Rozwoju Nauki w Polsce do roku 2015 [English: Strategy for Development of Sciences in Poland until 2015 Report] prepared by the Ministry of Science and Higher Education defines and sets directions for science development based on analyses of the condition of science as a source of knowledge and innovation. In the report, raising the level of knowledge and of its diffusion among SMEs is considered one of the main indices and main goals of science development. An analysis of knowledge diffusion performed by analysing the funding of cooperation between the business sector and scientific research centres has demonstrated that among OECD countries Poland is the leader as regards the participation of non-State Budget funds in the financing of extra-academic research institutions (15.6%; the average value for the EU-27 – 8.4%, the average value for OECD – 3.5%). A comparably high level in Poland is recorded with regards to State Budget participation in funding of the business sector (12.3%; average value for the EU – 7.2%, OECD – 6.8%). Taking into consideration other significant disparities in the innovation indices between Poland and other EU countries, it may be argued that the dynamics of redressing the distance is high. Essential elements of competitiveness are competencies which – as interpreted based on theory of management – are understood as the sum of skills and experience of the managers and the employees. Competences combine:

- knowledge,
- experience,
- skills.

These components are relevant in the SMEs sector and help an organization in achieving its market goals. In Gierszewska’s opinion, organization-

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al competencies are the result of experiences accumulation in the process of organizational learning (Gierszewska, 2005, p. 29).

Process of management of knowledge (KM) in transnational corporation

Crane (Crane, 1972) identified the crucial role of scientific communities in understanding the growth of knowledge. The growth of scientific knowledge is largely due to a diffusion process in which new ideas are transmitted from person to person. The exponential increase in the number of publications is a good indicator of the existence of such diffusion processes. In contrast, the absence of a diffusion process is more likely to demonstrate a linear growth pattern. There are often multiple factors that may influence the predominant route and direction of knowledge transfer between particular scientific disciplines and technological sectors. In fields such as health and semiconductor research there tends to be a strong positive connection between basic research and technological innovations, whereas in fields such as information technology it is the technology that overtakes science by more than a year according to the publication dates of cited patents and scientific publications. The effective management of knowledge in multicultural aspects and differences has become imperative to ensure success. It is increasingly evident there is a need to develop a clear understanding of multicultural competencies in order to fully develop a strategic approach to all processes in a company. The adoption of a strategic approach is necessary to ensure a focus on the issues critical to success and competitive advantage including multicultural management, professional skills and knowledge management. Foreign Direct Investments are growing in importance as a channel of ITT (see Glass, Saggi). Multinational activity occurs primarily in industries that are characterized by a high ratio of R&D to sales and by large shares of professional, scientific, and technical work-
ers. Chen and Hicks (Chen, Hicks, 2004, p. 202) examined five ways of the knowledge transfer:

- between science and technology,
- from science to science,
- from technology to science,
- from technology to technology,
- absence of a strong connection.

Knowledge transfer understanding is a process which can be statistically analyzed and studied by citation analysis and patent citation analysis. Tracing the transfer of knowledge requires presented citation analysis within a consistent and meaningful framework. Therefore, in addition to the two types of citation research, one must consider citation analysis of interrelationships of heterogeneous structures (see Table 1).

### Table 1. Citation analysis of knowledge transfer between science and technology

<table>
<thead>
<tr>
<th>Knowledge transfer</th>
<th>Citation analysis</th>
<th>Patent citation analysis</th>
<th>Research focus of Chen and Hicks study</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 from science to science,</td>
<td>Most often</td>
<td>Rare</td>
<td>Secondary</td>
</tr>
<tr>
<td>2 from technology to science,</td>
<td>Rare</td>
<td>Rare</td>
<td>Primary</td>
</tr>
<tr>
<td>3 from technology to science,</td>
<td>Rare</td>
<td>Often</td>
<td>Primary</td>
</tr>
<tr>
<td>4 from technology to technology,</td>
<td>Rare</td>
<td>Most often</td>
<td>Secondary</td>
</tr>
<tr>
<td>5 absence of a strong connection.</td>
<td>rare</td>
<td>Rare</td>
<td>Primary</td>
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</table>

In enterprise with foreign capital diffusion of knowledge can be described with another knowledge transfer. Additional diffusion channel arises between the parent company and the subsidiary company, but direction of knowledge transfer can be two-way (Janczewska, 2009, pp. 42–43). Monge-Naranjo presented a model to examine the impact of foreign firms in a developing country own accumulation of entrepreneurial knowledge (Monge-Naranjo, 2012, p. 2). In the model, entrepreneurial skills are built up on the basis of productive ideas that diffuse internally (inside the businesses) and externally (spillovers). Openness to foreign firms enhances the aggregate exposure to ideas but also reduces the returns to investing in entrepreneurial skills. Also UNCTAD informed that some developing countries have made significant technological progress during the past two decades but the technology gap between rich and poor countries remains wide in general. Being major creators of new and advanced technologies, transnational corporations (TNCs) have the potential to play an important role in narrowing this gap. Although TNCs are not the only source of technology, they are very important in high-technology activities and in providing an entire package of knowledge and their research and development (R&D) activities are expanding to the developing world. Interdisciplinarity and multicultural characteristics of the company management means that it is necessary to possess many domains of knowledge including multicultural marketing and multicultural approach of human resources which plays an important role (Rozkwitalska, 2014, p. 177). Harrison and Schein give some list of classification of organisational culture (see table 2).
Table 2. Classification of different types of organisational culture

<table>
<thead>
<tr>
<th>Harrison</th>
<th>Power-orientated – responsive to personality not expertise; People orientated – consensual, management control ejected; Task-orientated – focus on competency, dynamic; Role-orientated – focus on legality and bureaucracy</th>
</tr>
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<tbody>
<tr>
<td>Schein</td>
<td>The power culture is one in which leadership resides upon the individual The role culture is one where power is balanced The achievement culture is one in which personal motivation and commitment is valued The support culture is one where people contribute out of a sense of commitment and solidarity</td>
</tr>
</tbody>
</table>


In many articles there are a number of major problems in knowledge management and they conclude that whilst there were many useful ideas in the field (see Kawalek & Hart, 2003), there seemed to be an increasing need to take advantage of the opportunities afforded by new ICT technology. For example there is not a holistic approach for developing a methodology for designing and implementing knowledge management initiatives yet. Kawalek and Hart presented the linear model of knowledge transfer (see fig. 1).
In each activity we separate three blocks: potential, process and effect. In multicultural space problems of multicultural management, professional skills and knowledge management can be observed. Those views are included in the linear model of knowledge transfer (see fig.1). Knowledge of relation between a new state of affairs and present conditions of activities will allow more effective suitability to the elements of potential in the future. That achievement goals depend on quality of existing resources and way of realization of fixed correction, and on the way of realization of fixed goals (compare with Białoń, 2010, chapter 2). The gap between producers and users of knowledge can be partially explained by the divergent ways in which the two groups consider knowledge (Roy, Patent, Desmarais, 2003). Most of literature on knowledge transfer has its roots in field of psychology and is concerned with the process of moving useful information from one individual to another. Another problem is to research the multicultural problems of interaction in production sphere, technological and technical area and human resources in factory.

Management of knowledge in SMEs discussed on the level of processes allows comprehensive presentation and definition of the business. The specificity of management of SMEs concerns a number of areas, such as organizational structure, human resource management system, the implementation of management functions, defining of strategic goals. Knowledge inside SMEs includes objectives of the company, processes, clients, market, environment and many others. In the SME sector information flow...
Processes use the Internet, GPS and satellite communications. Quick access to information makes it possible to achieve market advantage and allows one to interact with customers and suppliers. Interesting development of Cloud Computing business process management is the use in process of management of knowledge and can be based on IT modern technologies.

Results of own research of diffusion of knowledge as a process in SMEs in confectionery branch – case study of SME in multinational space

In this chapter a company from SME sector is presented: the producer of chocolate bars and chocolate for industry application. Process of diffusion of knowledge presents the characteristics for multicultural enterprise in international space. Multicultural space based on FDI in confectionery branch in Poland defined problems of interactions, benefits and barriers in cooperation with foreigners. The aim of the research was the description of diffusion of knowledge in Polish enterprise in multinational space. The paper focused on practical significance of process of knowledge diffusion in researched in one enterprises. Presented company (X) belongs to international group of confectionery producers where multicultural environment exists.

Confectionery branch in Poland had 585 economic operators, out of which 281 specialized in manufacturing chocolate and other confectionery products whereas 304 operated in the segment of rusks and dry biscuits (Report KPMG, 2014, p. 32). Only 10 companies belong to the foreign group, while the others can be classified as micro, small and medium-enterprises. The current worth of confectionery market in Poland is about 12.7 billion PLN.
In the article the description of diffusion of knowledge by example of one company, producer of chocolate bars and chocolate liquid for production of confectionery in other factories in Poland and abroad is presented4.

Two hypotheses were formulated:

I. In multicultural SMEs the knowledge diffusion is used to support reaching the better position in the market in close co-operation with foreign parent company.

II. Diffusion of knowledge in FDI enterprise was observed in all representative processes and it is necessary to define the individual effectiveness factors of knowledge diffusion.

Presented company (X)5 in years 1995-2002 belonged to international group OstCom Holding (Germany) and cooperated with several foreign companies belonging to OstCom too: from Germany, Austria, Hungary, Mexico, Hong Kong, Australia and Turkey. The main activity concentrated in confectionery branch, and in Poland there were 3 producing companies and 3 trade firms. Company X was one of the leading manufacturers of chocolate, chocolate mass and coatings intended for further processing, both in large confectionery industry factories, small confectionists, and for use on the HoReCa market. For over 15 years chocolates of the highest quality have been produced by the company and enjoyed by connoisseurs, both in Poland and abroad. The company supplies chocolate semi-products to confectionery industry factories, whose products are well known to those who appreciate such treats. Export of products on the highly demanding confectionery markets of Japan, Australia and USA and EU countries. As effect of FDI company has a fully equipped and modern laboratory department. The research conducted by qualified staff covers a wide range of areas, from raw materials, packaging and semi-products, to finished products.

4. The own researches of knowledge management were conducted in the years 2000–2014 in 100 enterprises from the Polish confectionery industry, big, medium-sized and micro-companies located in Poland. Several from them belong to foreign owners as join-venture from 90-ty years.

in accordance with currently effective standards, specifications, contracts or customer expectations. The company has implemented and maintains an ISO 9001:2000 Quality Assurance System certified by Lloyd’s Register and ISO 22000:2005 certified food safety management system. They are one of only a few which meet the requirements of kosher food. Knowledge was mainly absorbed from OstCom from Germany – the parent company and from participants of international group - subsidiaries. Table 3 below shows the main aspects of KM and diffusion channels in the company X in Poland.

Table 3. Characteristics of knowledge management of the company X connected with multinational OstCom Holding

<table>
<thead>
<tr>
<th>Selected areas of knowledge management</th>
<th>Features of a given knowledge management area in an SME</th>
<th>Area of necessary knowledge transferred from Polish company X to OstCom Holding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organisational structure</td>
<td>Simplified structure or lack of such a structure, horizontal, flattened structure, the owner manages employees directly. Combining ownership and management.</td>
<td>Rules of management and organization, controlling, financial management</td>
</tr>
<tr>
<td>Human resources system</td>
<td>Self-employment, family business, a limited number of employees performing different tasks, often without necessary skills and competence.</td>
<td>management of human resources,</td>
</tr>
<tr>
<td>Management functions</td>
<td>Centralized control method, a limited number of middle managers.</td>
<td>Controlling, quality management, standards of quality, technological knowledge, technical, IT knowledge</td>
</tr>
<tr>
<td>Setting strategic goals</td>
<td>The owner sets strategic goals of the company intuitively, rarely uses the help of specialists. The decisive factor is the proximity to the market. Choosing a niche strategy or lack of strategy - focus on survival.</td>
<td>Knowledge about market and competitors, analytic methods, prognosis and demand management</td>
</tr>
<tr>
<td>Knowledge resources</td>
<td>Practical knowledge based on the experience of the owner. Education of managers is not renewed in the system of continuous education.</td>
<td>Wide knowledge about possibilities of enterprise, prognosis of a new trends in the market and customers</td>
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</tr>
<tr>
<td>Planning system</td>
<td>Lack of planning on the part of the owner, or short-term planning, temporary planning related to current activities of the company.</td>
<td>Knowledge about application of IT technology to planning and management by scenario and other modern methods</td>
</tr>
<tr>
<td>Organisation of working time</td>
<td>Low degree of task formalization. No bureaucracy. Organizing the work of the owner applies to single products or services, individual or simple products.</td>
<td>Knowledge about fast flow of information, building of channel of diffusion of knowledge</td>
</tr>
<tr>
<td>Decision-making</td>
<td>Quick decision-making by the owner, risk aversion, fear of losing market.</td>
<td>Knowledge about decision process, and results of decisions, risk and barriers of success</td>
</tr>
<tr>
<td>Control systems</td>
<td>Owner’s personal supervision of his business, simplified control systems.</td>
<td>Knowledge about a new methods of control and monitoring of process</td>
</tr>
<tr>
<td>Change management</td>
<td>Responding to customers’ needs, specific direct relationships with customers.</td>
<td>Knowledge about elastics approach to customers and expectation of market</td>
</tr>
<tr>
<td>Logistics and marketing</td>
<td>Lack of explicit marketing orientation Occasional use of marketing instruments, logistics processes focused on internal resources, based on customer relations.</td>
<td>Knowledge about management of each process- and logistics is now a most important process in enterprise</td>
</tr>
<tr>
<td>Innovations</td>
<td>Narrow specialization an area of little interest for large companies. Mainly organizational and process innovations.</td>
<td>Knowledge about innovation process and improvement innovative management</td>
</tr>
</tbody>
</table>

Source: own research.

There was a direction of knowledge diffusion channels described in figure 1.
The flow of knowledge was two-direction: and OstCom expected some kind of knowledge from all companies. The main channels of knowledge diffusion were: papers, the Internet, meetings, conferences, lectures and participation in international fairs abroad and in Poland, contact with managers from foreign companies from group.

The knowledge diffusion between the company X from Poland and OstCom included the following problems, mainly need explanation in multicultural space:

Diffusion of knowledge in direction from X the company to OstCom:
- organizational knowledge about structure of X, activities, markets,
- technological and technical needs,
- production and logistics abilities and skills,
- financial needs and plans,
- developments planning.

Diffusion of knowledge in direction from OstCom to the company X:
- activities and terms of realization,
• plans of development – technical, technological,
• development of internal and foreign markets

Advantages from diffusion of knowledge in presented the company X in multicultural space can be presented as follows:

I. Gathering the necessary marketing knowledge to determine the market position of the company and its resources as well as the knowledge about the environment.

II. Accumulation of knowledge including definition of market processes in the company X and creating a new system of communication with buyers.

III. Formulating marketing offer and logistics offer – by matching the X company’s resources to customers’ expectations.

IV. Developing marketing and production strategy through the choice of methods and means of achieving an integrated intercultural strategy – based on the analysis as well as the definition of supplementary activities in the area of multicultural cooperation.

V. Knowledge of monitoring the implementation of management through the selection and periodic assessment of the performance indicators of the effects in the company X and Holding.

Especially in a new knowledge from OstCom the area of promotion (i.e. marketing information) in the company X introduced wider marketing at fairs, online advertising and other forms of promotion. With respect to forms of product innovation, the innovations have occurred as a complete redesign of the product in terms of its structure, construction, and use. Surveys in the company X pointed the introduction of new types of packaging, more convenient for the buyers, or consistent with the requirements of quality and environmental standards. Innovations in promotion were related with the introduction of new methods and forms of promotion of new products or promotion of the company as a whole.
Conclusion of author’s research

In the article problems of diffusion of knowledge in multicultural space are presented on the example of chocolate factory as FDI in Poland. Advantages from KM can be described in an enterprise as a matrix of elements, which depend on individual resources (material and immaterial). The significant barriers are multicultural environment, it must be identified and described. In multicultural space those elements can be explained as different factors and are understood differently by participants of spaces. In the example of the presented company the expectation of results was quite different – as presented in Table 2. The research confirmed both hypotheses. The marketing support is important to reach the better competitiveness position in the sector. It is important that people involved in the implementation of marketing and logistics concept of the business development referring to SMEs have the knowledge necessary to implement this concept. This knowledge includes: knowledge necessary to develop a marketing and logistics orientation of the company, know-how of the industry in which the company operates, information about specificity of the company operation and skills of its employees, ability to study marketing environment, knowledge about possibilities of cooperation with customers and the understanding of their specific needs, ability to conduct marketing research and collect information necessary to make assumptions for the purpose of managerial decisions regarding logistics processes. Further research studies are planned on the model of diffusion of knowledge in SMEs in the aspect of logistic management.
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