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PIOTR DZIKOWSKI

Developing the innovation potential of a medium sized family business functioning in a global supply chain

Piotr Dzikowski, Ph.D.
University of Zielona Góra
Faculty of Economics
and Management

1. Introduction

Conducting an effective innovation at the enterprise level requires effective cooperation with its stakeholders, i.e. individuals or organizations that participate in the creation of a project or take an active part in its implementation, or are directly concerned by the results of its implementation. Stakeholders have a huge impact on the organization (Stoner, Freeman, Gilbert 1997, p. 80-89). Few Polish family businesses can lead its innovative activities in isolation, since its effectiveness depends on the number and type of interactions with institutions functioning in its environment. Most domestic companies from the SME sector cannot afford to bear the risk of unsuitable technological, market and financial decisions related to innovation activities. The risk of failure can be significantly reduced by entering into a cooperation with customers standing at a much higher level of innovative development. Establishing this kind of cooperation not only reduces the risk of failure associated with innovative investments, but also increases the innovative potential of the company standing on a lower level. Advancing gradually from

the position of low-cost supplier to a solutions provider of high quality and competitive prices, up to the market leader, the company absorbs the knowledge and technologies, while increasing its innovation potential. In this way the company uses long-term benefits of investment in people, machinery and new technologies.

The main goal of this article is to describe the process of gradually increasing the innovative capacity of the Polish family business that has been achieved through the cooperation within the global industrial chain operating in the field of public service vehicles. In addition, the work provides an overview of selected theoretical issues related to the potential and innovative activity of enterprises and an analysis with an assessment of the efficiency and effectiveness of the innovative activity of the analyzed company.

2. Innovative activity of enterprises

The innovative potential of enterprises is a resource or company's ability to effectively and efficiently create, implement, and manage innovation (Szymczak 1979, p. 854). It is based on the resources inside the company and its capabilities (skills, competencies) to use them (Rokita 2005, p. 139). The innovative potential perspective is directly associated with the resource-based view (RBV) that sees the firm as a bundle of resources that are defined as all the assets, capabilities, processes and knowledge that reside in the firm (Amit, Shoemaker 1993, p. 33-46). Resources are divided into tangible and intangible. The tangible resources include all the visible and real assets and equipment, financial resources, human resources and organizational resources. While intangible resources encompass company reputation, relationships with customers and suppliers, intangible assets, intellectual property, skills and competencies (Grant 1991, p. 114-135). Capabilities refer to a firm's capacity to deploy and coordinate different resources, using organizational processes, to effect a desired end (Prahalad, Hamel 1990, p. 79-87).

From a strategic perspective, it is considered as the most important resources and capabilities that are: (1) valuable – enable the production of unique products, yielding a unique value for the customer, (2) rare, which means difficult to obtain by competing companies, and even the lack of substitutes, (3) durable – having the capacity to create competitive advantage by the company, and (4) difficult to imitate (Barney 1991, p. 99-120). OECD methodology introduces the concept of innovative capacities among which the most important one is considered the ability to gather knowledge. This knowledge is contained mainly

in human resources, procedures, routine operations, and other components of the company. Innovative capabilities allow to create innovative strategies (OECD 2008, s. 148). An enterprise is considered to be an innovative company, when its structure and organization favors the generation of innovation. It has the following features: the ability to generate innovation permanently, creativity, ability to use its potential to maintain a high competitive position based on core competencies, ability to anticipate the future, constant communication with clients to effectively learn about their needs, having a team of innovators which guarantee a high level of innovation in business , flexibility of action in adapting to changing conditions (Sosnowska, Łobejko, Kłopotek 2000, p. 11). Furthermore efficient innovative company: (1) conducts its own research and development, or acquires them, (2) allocates a relatively high financial expenditure on R & D, (3) systematically implements new ideas in science and technology, (4) has a large share of new products and technologies in production value in the sales prices, (5) constantly introduces innovations to market. In addition, the firm creates, absorbs, sales constantly new products and adapts to changes in the environment (Świadek 2011, p.47). The potential of innovative enterprises is used to achieve the objectives of an innovative company. While innovation determines the willingness and ability for companies to develop and absorb new and improved products, services or technologies (Janasz, Kozioł 2007, p. 57).

The term innovation means work connected with the preparation and launching production of new or improved materials, products, equipment, services, processes or methods for placing on the market or to other uses in practice (Dz. U. 91, poz. 1008). Innovative activity involves a set of activities which are scientific, technical, organizational, financial and commercial aimed at the development and diffusion of new or significantly improved products or processes (GUS 2010, p.6)**.** It is the activity aimed at achieving a defined objective, and not only undertaken as a result of the existence of certain phenomena (Okoń-Horodynska, Zachorowska-Mazurkiewicz 2007, s. 105). Undertaking innovative activity depends on the diversity and structure of its relationship with sources of information, knowledge, technology, work practices and human and financial resources. Each link connects an innovative company with various actors in the innovation system. There are three main groups of external linkages of enterprises in the area of innovation: (1) open source innovation, (2) the acquisition of knowledge and technology – passive transfer of technology (no interaction), the acquisition of tactical knowledge in general, without modifying its rights (to improve), (3) cooperation in field of innovation tactical knowledge, active technology transfer (overlap interactions). An important place in shaping

the innovation activity of enterprises play ties in vertical and horizontal supply chains, in short called the network. An example of such cooperation is the vertical industrial cooperation with suppliers and customers. This type of network dependencies are: interactive and more durable than typical market relations. They are stable, based on trust and enable mutual learning which is essential to successful innovation. In addition, when such structures become part of the global industrial systems, the flow of knowledge allows them to maintain business continuity and timeliness of knowledge transfer (Świadek 2011, p. 25-26).

Achieving and maintaining a leading position in the global market by a group of medium-sized German companies called hidden champions requires continuous, outstanding performance in innovation (H.Simon 1999, p. 17). This type of companies benefit from the environment, if it promotes innovation. Many of them occupy the top place in terms of number of patents or in terms of revenue from new products. The source of their innovation is a deep understanding of customer's business and its problems. Innovations are a continuous process of improvements to the benefit of customers. Innovative activity is a daily process by which new versions of the product or service is better than the previous variant. Much innovation is designed to help customers reduce costs, accelerate their processes and improve quality. Hidden champions often direct their efforts to meet the highly sophisticated needs of their clients and as the result of it they can build their new markets. (H.Simon, p. 112-115). Innovation activity has been recognized as a condition of survival and development of SMEs. In innovation SMEs have such features as: (1) the ability to adapt quickly to changing market requirements, (2) a short time of making decisions related to market opportunities, (3) a good flow of information within the company. Weaknesses of SMEs in innovation are: (1) problems in obtaining capital, (2) a disproportionately large financial risk, (3) significant limitations to development of SMEs in the context of economies of scale, (4) small capacity to offer complementary products, (5) problems with management of increasingly complex organizational structures, (6) difficulties associated with patent protection of their innovations, and (5) high complexity and cost for adaptation to the new administrative requirements (K.Safin 2008, p. 50).

Family plays an important role in creating an environment conducive to finding a business innovation. The positive support of family members plays a crucial role in shaping the propensity of its members to take risks. This type of risk associated with innovation and change (ie creative destruction) occurs most frequently in the initial phase of economic activity (K. Safin 2007, s. 107).

The assessment of the effects of innovative activity in a given year can be made by examining a ratio of sales of new and significantly improved products marketed in the last three years to the value of total revenues. This indicator also informs on the impact of product innovations on the overall structure of income and level of innovation in the enterprise. Another indicator is based on the data on the value of exports of new and upgraded products. Furthermore, qualitative indicators are defined. Common examples of this type of measurement are: a range of stock, new markets, quality improvements, manufacturing flexibility, capacity increase, unit labor costs, material, energy and production consumption, environmental impact or standards and regulations compatibility (Świadek, p. 51-53).

3. Research methodology

The study was performed within a set of interviews with the leader of the company between December 2007 and April 2011. It also includes many articles from professional magazines about the company, financial data supported by the company, both internal and external papers, interviews with selected customers, customers stories and interviews with line managers.

4. Astromal's innovative activity from 1976 to 2011

The company was established in 1976. At the beginning of its activity included transport and trade of spare parts for cars. In 1986, the company has concluded a first contract with an institutional client which was the national leader of the truck industry (Jelcz Laskowice). The subject of the contract was the production of interior components for tourist buses. The contract included both the design and manufacture of polyester-glass laminates. The success of the contract depended on the quality of designed elements and the accuracy of their implementation. Meeting these requirements means that the company becomes an attractive partner and supplier of components for manufacturers of trucks and buses, which significantly increases the level of performance gains, their regularity and increases the attractiveness of the company in the market. The next step was to launch production of a tractor roofs for the leading national manufacturer of tractors (Ursus company).

An important moment in the history of the company is the breakthrough from 1989 to 1990. The rapidly increasing number of cars imported from Western Europe makes the demand for cheap spare parts. Their production

requires the use of new technologies. The company begins production of resins, polyester and glass of various spare parts – bumpers, wheel arches and body parts (Cieślik, 1998).

Increase the size of the company, which operates in several physically distributed locations, higher revenues and profits and more than 50 employees requires an investment in the new company headquarters. The present seat of the company together with two production halls with a total area of 1500 m^2 was built in 1994. At that time working conditions improved considerably, expanding product range, increasing the number of employees. The company begins to specialize in the design and manufacture of polyester and epoxy laminates.

The introduction of modern methods of construction of buses so-called "short series of vehicles" used for years by the Belgians, the Dutch or the Germans forced the company to its rapid implementation. Otherwise, its competitive advantage would be threatened. As a result of adaptive changes in the enterprise management system and technology, the company strengthened a cooperation, in the supply of parts, with the global leaders of the bus industry (Volvo, MAN, Scania), which have been present on the Polish market since the early nineties. The introduction of changes was not the only requirement to establish partnerships with these companies. The first strategic corporate customer is Volvo but it takes nearly three years before they can order serious projects. During this period every element of company in the field of manufacturing capacity, technology and logistics services is checked carefully. High quality products, adherence to deadlines, low and competitive prices and steadily rising competence of the crew make the company receives orders from other industry leaders such as Scania and Kapena (Ochmańska 2004, s. 24). As the result of it the company annual revenue amounts to 3.5 million Euro in 1997 and the number of employees exceeded 100 people. Retail trade represents only 20% of the total turnover whereas the company starts investing about 10% of its profits every year. One year later the number of customers increases and includes such brands as Case-Steyr Landmaschienentechnik (Austria), Berkhof Jonckheere Group & (Netherlands, Belgium), MAN (Germany), Iveco - Poland, Volvo Bus Poland or Scan-Car.

In 1999 the company acquires a license from the Swedish company TUMA SET to manufacture passenger seats for the public transportation vehicles, including so called "vandal-proof" version. The company increases the production of goods with non-flammable certificates, which can be used in the mining industry such as parts of mining machinery and vehicles carrying miners underground. It is the only such company in Poland. Next novelty is the hard-top for pickups,

especially for Toyota, Mitsubishi and Nissan. Furthermore, to make a better use of the purchased license a design-engineering department and a production planning department were set up. The company establishes two representative offices in Belgium and France, thanks to the emergence of orders from these countries. Number of foreign affiliates of the company is steadily growing year by year. Moreover, the company opens its offices in Germany, France and Italy.

A new line for production of polyurethane foam is launched in 2000. In subsequent years, a modern unit for the mechanical application of polyester-glass laminates is purchased and a new industrial pneumatic press is implemented. The use of new manufacturing technologies improve the quality and repeatability of manufactured products. Together with the increase of work efficiency the working conditions are improved a lot. The improvements result in an increase number of orders and higher business profitability. Most Astromal's customers are well-known brands in the automotive industry. However, the truck industry is very competitive, while the tram industry offers tremendous opportunities. The company receives orders from leading European train companies such as German and Austrian Bombardier, Siemens – Vienna and Albert Ziegler of Germany due to their technology and experience gained earlier.

The existing legal form of company is replaced by a limited liability company form on the 1st of January 2002. The share capital is 200000 Euro. The members of the board are: the former owner, his wife and two children. The company has new customers such as: APTS Netherlands, The Netherlands, and Cirrus Kusters Oy – Finland in 2002. New production halls with an area of 1000 m2 are built. Thus, the total production area is 4400 m^2. The new production plant allows the increase of the production's dimensions. Modern technologies, together with qualified and experienced crew attract new clients from western Europe: Denmark Nissens, Caroserie Hess from Switzerland. About 45% of production goes to markets in Western Europe – mainly to the Benelux countries. The revenue of the company exceeds 4,6 mln Euro in 2002 (Neczyński 2002, s. 13).

The company also supports customers from many other companies, including Neoman, Bombardier, Siemens, DAF Trucks. To facilitate contacts with European customers, the company sets up its representative office in Lithuania. About 20% of the company's offer includes independently designed and manufactured high quality passenger seats. All raw materials used to produce them, meet the fire and safety requirements and are fireproof.

The company develops a set of services. It not only designs, produces and transports its products to its customers, but also becomes an integral part of their supply chains. By investing in a modern paint shop and such technologies

as RIM, it improves the quality of products, increases its productivity and profits per one employee. The company consistently increases its ability to produce both long and short series of products. It designs according to individual customer needs, produce the actual model, and it can adapt the entire production processes. Its employees are capable and competent people. However, the maintenance of its competitive advantage requires continuous affords in the area of finding new solutions. It involves a process of continuous learning and skills development. In parallel the company implements a comprehensive customer service program supporting production and installation stages. Gained experience and establishing its own modern design department result in tightening of cooperation with European polytechnics. As the result of this cooperation many new innovative solutions appear. Most of them are recognized by customers who order their implementations. One of the most promising projects is the idea of 'passenger friendly' buses, that is a safety, comfort , esthetic and ecological vehicle (Makowski 2007, p. 22).

The company not only meets its present customers' needs, but also can identify them well. In this way it could create the project of a bus on rails and an innovative renewal of the old tram system. Models of large parts can be prepared on request at a 1:1 scale (Kuik 2003, p. 5). Customers can see the future projects in virtual reality and next touch their prototypes in reality. By using various technologies, the company can adapt even to short projects. The main source of its new revenues is its design department that is directly connected to customers. All drawings are designed in 2D or 3D models which can be sent directly to CNC machines. Most of these services are used by such companies as Scania, Man, Volvo, Bombardier and manufacturers of buses belonging to the group VDL. The company cooperates with the Dresden Institute for Lightweight Engineering (Bednarski, 2006).

About 15% of the offer are the parts for trucks and tractors, such as bumpers, spoilers, fenders, guards against inertia, fairings and containers for water or fire extinguishers and tool boxes. All these details are sold as kits for assembly. Thanks to affordable prices, their high quality and attractive, aesthetic appearance they are very attractive among customers. The stabilization of the company largely determines its export. The company is known in Western Europe and Scandinavia. Its regular customers origins from automotive companies in Lithuania, Belarus, Estonia, Ukraine, Russia and Iran. Attempts are made to enter the U.S. city buses market as well. More than 50% of production goes to the global automotive industry leaders from all over Europe and western Asia (mostly Iran) (Ochmańska 2004, p. 24).

At the beginning of the XXI century leading automotive corporations start its expansion in Eastern Europe (Ukraine, Russia). Astromal has to reduce its labor costs as well. Basing on its previous relations a decision to build a new facility in Ukraine is made. The new facility is opened in Stryj in the Ukraine on the 21st of July 2004. The legal form of business is a limited liability company, whose shareholders include two people: a former president of the parent company and a local politician & businessman. Within the partnership, the Polish side transfers its technology and experience gained in Western Europe. While the Ukrainian partner, provides legal assistance, accounting, knowledge of local business relationships. The company is situated in an industrial zone, near the airport and major cities. The structure of the mother's company and its working culture is also transferred to Ukraine. The strategic aim is: to train staff and implement new technologies which allow to obtain production quality similar to that offered in Poland. President goes to Ukraine to personally ensure the correct functioning of the new company, while his daughter takes over the duties in Poland (Baldys 2004). From 2002 to 2006 the production shows a continuous upward trend. Number of employees is doubled to nearly 200 people. Its turnover also increases clearly. The total area of production halls increases to about 7500 m^2. The company's clients are well known domestic and foreign companies. In 2007, total revenues are more than twice the turnover for the entire 2005 years and amount to 10 mln Euro, but the employment increases only by 10%. 55% of production goes for export. The new prototype hall (1000 m2) is launched at the end of 2007 (Grygiel 2007, p. 67-68). Most of the company's profits are invested in new technologies. The cost of the investment, mainly financed from its own funds in 2006-2007, amounted to about 2 million euro. MAN and Scania certificate Astromal as a qualified supplier.

Environmental issues has always occupied a key position in the business strategy of Astromal due to the nature of the used technology. Its headquarters reflects these aspirations. Its environmentally friendly nature was awarded in many competitions organized by institutions dealing with environmental protection in Europe. The company implements three quality management systems such as ISO 9001:2000, ISO 9002 and ISO 14001.

By the end of 2008 the branch in Ukraine is sold. The reason for the decision is a low market demand in Ukraine and lower profitability than expected. Another important problem is the cultural gap between Polish and Ukrainian workers, resulting in a poor supply punctuality of orders and poor quality of products. At the same time a new daughter company is opened in Leszno (Poland). Astromet specializes in machining of metals.

Global economic crisis that affected the world in September 2008 was no surprise to the company. Due to its very good relations with global partners the company diversified its activity on time. As the result of it the bonds with some global companies are much more stronger than ever before. The number of employees doubled so nearly half of them joined a new daughter company. The new recipe for success are investments in new ventures. Some of them are related to the dynamic development of domestic railway and tramway industry. The company also participated in the design and manufacture of environmentally friendly buses "Solaris". The share of export revenues remained at 50%. But the real novelty is the home wind turbine project in the shape of the sail. This is a small, silent and very effective (produces electricity when the wind has a speed of 2 m/min.) device which does not threaten nature. The available devices have a power of 20 KW, 50 KW and 500 KW. In this way the company begins to aspire to be a leader in the East European wind power market.

5. Conclusion

The case shows the process of gradually increasing the innovative capacity of the Polish family business that has been achieved through the cooperation within the global supply chain operating in the field of automotive vehicles. The important role in this process plays the President and customers. However, Polish R+D centers do not take particularly important role. The President is a real leader who is very flexible, always ready for challenges and eager to learn. The foundation of his economic success are very good relations with his customers. As the result of it his company acquires knowledge about their present and future demands and it results in very good investment decisions. The rapid market changes are another valuable source of inspiration for development. The process of consistent investments brings a unique set of technologies and resources. All investments were financed from profits and own capital. The company reinvests regularly about 10% of its profits every year. The main source of revenues is export of new products (50% of total revenues). The customers are mainly global automotive corporations from West Europe.

In the mid 90's the difference between Polish companies and investors from West Europe is huge in terms of capital, technologies, quality and management systems, but the founder treats it as the challenge for his company. All products, services and processes have to be adapted to the corporate customers. The founder builds the unique qualified team of people who are willing to learn very quickly. The company grows and acquires new very demanding global

corporate customers. Their very high demands change and develop Astromal very much. It implements a set of quality management systems and constantly reorganizes them to meet higher requirements. The company grows and starts its international expansion as is able to offer its services and products globally. Advancing gradually from the position of low-cost supplier to a solutions provider of high quality and competitive prices, up to the market leader, the company absorbs the knowledge and technologies, while increasing its innovation potential. In this way the company uses long-term benefits of investment in people, machinery and new technologies. Due to the increasing labor domestic costs it opens its branch in Stryj in Ukraine in 2004. It builds an international network of its sales representatives. It not only meets the needs of its customers, but also identifies them. The shift from the local family business into the international innovative company is not easy, but thanks to the growth of the whole industry possible. Each new project is treated as a unique challenge which can offer new opportunities for the company. The company builds its own modern design studio where all conceptual works are made. Customers can not only see the product design (graphic visualization & 3D design), but also can touch and evaluate the designed model (tooling department, CNC machine, preparing the mould). The company buys and implements a variety of modern technology and production methods which gives it high flexibility. It also grows vertically by offering shipping services and services at the customer's site. The deep global financial crisis is the next opportunity to use its unique creative destruction capability. A project of the home wind turbine in the shape of the sail is introduced and the company prepares to the role of the leader on the European home wind power market. The implementation of the customer oriented innovation based on the creative destruction capability is the mission of the company. The main driving force of the company is its founder, but it is a question whether the company is able to develop so dynamically when its founder will retire?

Summary

Developing the innovation potential of SMEs on the example of a medium sized family business functioning in a global supply chain

Most domestic companies from the SME sector cannot afford to bear the risk of unsuitable technological, market and financial decisions related to innovation activities. The risk of failure can be significantly reduced by entering into a cooperation with customers

standing at a much higher level of innovative development. The main goal of this article is to describe the process of gradually increasing the innovative capacity of the Polish family business that has been achieved through the cooperation within the global industrial chain operating in the field of public service vehicle industry.

Streszczenie

Rozwój potencjału innowacyjnego MŚP na przykładzie przedsiębiorstwa rodzinnego funkcjonującego w globalnym łańcuchu dostaw

Wiekszość przedsiębiorstw rodzimych z sektora MSP nie stać na ponoszenie ryzyka technologicznego, rynkowego i finansowego nietrafionych decyzji związanych z działalnością innowacyjną. Ryzyko niepowodzenia można znacznie obniżyć nawiązując współpracę z odbiorcami stojącymi na znacznie wyższym poziomie rozwoju innowacyjnego. Głównym celem artykułu jest opis procesu stopniowego zwiększania potencjału innowacyjnego polskiego przedsiębiorstwa rodzinnego osiągniętego w wyniku współpracy w ramach globalnych łańcuchów przemysłowych funkcjonujących w branży pojazdów komunikacji publicznej.

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