

BUSINESS MODEL OF TRANSPORTATION AND SPEDITION COMPANY

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Abstract

Proceeding globalization, increase of competition influence, increasing crisis symptoms, but also new cooperation possibilities are challenging for the companies. They are often related to changes in the strategic and operational management. New business models oriented at creation of value are the manifestation of implemented changes. They allow a company to get a competitive edge and generate income. Purpose of the paper was to present concept of business model of transportation and forwarding company. Business model of this company was treated as a unique architecture of tangible and intangible resources able to generate value. Object of the studies concerned theoretically and practically important scientific problem in the field of logistics, in particular this applies to business modelling of logistic companies. Within the last decade, the issue of constructing business models was very interesting as regards both science and research among foreign and domestic researchers and practical users. Subject of the studies was transportation and forwarding company belonging to a capital group of fuel and power sector. The paper presents business model structure of such company and together with assessment of generated value. Balanced Scorecard was used for the measurement purposes.

Keywords: Business model, transportation and spedition company, customer value

1. INTRODUCTION

Increasing global competition and threats resulting from the phenomena of recession, cause modern management to be affected by the value paradigm. It is an indicator and condition of understanding the operations of companies' in the market and opportunity for their development. The ability of an organization to create value is perceived as one of many important conditions required to attain and maintain a competitive advantage. Thus, companies search for such methods and instruments that provide for the creation of value. One of them is designing and applying new business models, a component and attribute of which is the concept of creating value, which at the moment is strongly related to and based on innovative processes and resources. Business architecture represents the structure of such a model and should allow for the creation of value for a client and affect the growth of the company's value allowing for its sustainability in the longer term. Achieved values decide whether such a business model is effective to achieve assumed goals and economic, market and social effects. It underlines its ability to implement innovations, which currently are perceived as the basis for creating a company's value. Purpose of the paper was to present concept of business model of transportation and forwarding company. Business model of this company was treated as a unique architecture of tangible and intangible resources able to generate value. The paper presents and analyses the structure of business model of such a company in the aspect of changes caused by the necessity of restructuring the capital group to which the investigated company belongs. Value generated before the business model architecture change and after implementation of the changes was assessed and compared. Balanced Scorecard was used as a measurement tool. Application of this method allowed for multi-dimensional capture of value represented by results attained by the investigated company in the following perspectives: financial, process and mineral resources as well as human resources development.

2. BUSINESS MODELS- FOCUS ON VALUE CREATION

Interest in business modelling results from the search for effective methods of competing and using widely understood cooperation. Modern business models enable the creation of value based on innovations and cooperation effects believe Chesbrough [1] and Teece [2]. In particular, development of the theory and the application of work-related business models results from the following reasons:

- applying business models as a clear concept of creating value, both for the client and for the owners of the company,
- in case of the logistic company, the value is related to the type of logistic service and used resources.
- In the logistic companies, improving transportation, forwarding and warehousing processes is especially important
- treating the business model as a system of interrelated operations, strongly focused on creating value,
- the search for the instruments and methods of achieving a competitive edge by implementing innovations,
- treating the business model as an architecture of business operations, which is able to provide the organization with effectiveness by generating profit,
- treating the business model as a carrier of various innovations,
- the business model represents a valuable tool for strategic management, which is also useful in the company's operational activities,
- using the business model as a vision of an idea for a business, representing a proposal for potential investors.

Business models can be applied both as an instrument for the management of existing companies and represent the grounds for planning the operations of new organization. Development of research into business models bore fruit in the form of many definitions and concepts . References concerning business modelling (2001-2015) enable the identification of more than 150 different definitions and concepts of business models. A lot of them emphasize the relationship between business models and creating, delivering and capturing value. In the context of the performed studies, some of the business model definitions are worth a mention. The approach to a business model presented by Afuah [3], Amit and Zott [4] is fundamental. The first of the mentioned researchers defined a business model as a set of activities which a company implements, how it implements them and when it implements them and it uses the resources to perform the activities to create superior client value (low - cost or differentiated products) and puts itself in a position to appropriate the value. In turn, Amit and Zott [4] identify it as a “content, structure and governance of transactions designed to create value through the exploitation of business opportunities”. It is worth quoting Shafer, Smith, and Linder [5] who examined 12 definitions by assigning 42 different and unique attributes. These researchers concluded that definitions fit into 4 general categories: strategic choices, value creation, value capture value network. An extended definition of a business model presented by Teece [2] is often quoted. In his opinion “the essence of a business model is in defining the manner by which the business delivers value to the customer, entices them to pay that value and converts the payment to profit It thus reflects management’s hypothesis about what customers want, how they want it and how businesses can organize themselves to best meet those needs, get paid for doing so and make a profit.” Focus on creating value is also manifested by a very compact definition of a business model, presented by B. Demil, X. Lecocq, which says that this is a “notation of dependence between elements of company, cooperation of which allows creating and delivering value for client” [6]. The importance of scientific potential for innovation transfer point Koszembar - Wiklik and Krannich [7] and Szmalski [8]. However, Brzówska [9], [10], Hamel [11], Szmalski [12], Knop and Olko [13] describe the role of innovations in creating value in business. In particular, this might also comprise eco-innovations [14] and network value configurations [15]. Frequently, business consultancy uses the business model concept developed by Osterwalder and Pigneur [16]. They say that a business model describes the rationale of how an organization creates, delivers, and captures value. Proposal of F. Newth [17] can also be included in the mainstream of business model concept based on value, and categorizes it into six elements: value proposal, dynamic abilities

and processes, strategic resources, streams of income, formula of profit, structure of costs. Business models themselves can also provide organizational innovativeness, important for competitive strategy. Overcoming these threats necessitates continuous improvement of business models. To sum up, one may say that value is the focal point of business model.

3. METHODOLOGY OF RESEARCH

Three perspectives predominate in theoretical considerations and methodical approach:

- perspective of selection (a set concerning selection, e.g. market service policy, selection of assets, method of value creation). These studies are of strategic character.
- perspective of activity (focusing on operation and processes creating value and deciding about competitive edge). Studies at the organization level.
- normative perspective (characterizing business models using descriptive and graphic method, building and systematics of business model ontology, verbal characteristics of value). Operative nature of studies.

The presented studies have been performed at the level of organization which is a forwarding and transporting company, thus related to the second perspective. Research methodology based on three basic components (stages), as given in the **Figure 1**, was used to assess the business model change of the forwarding and transporting company and the value created by it.

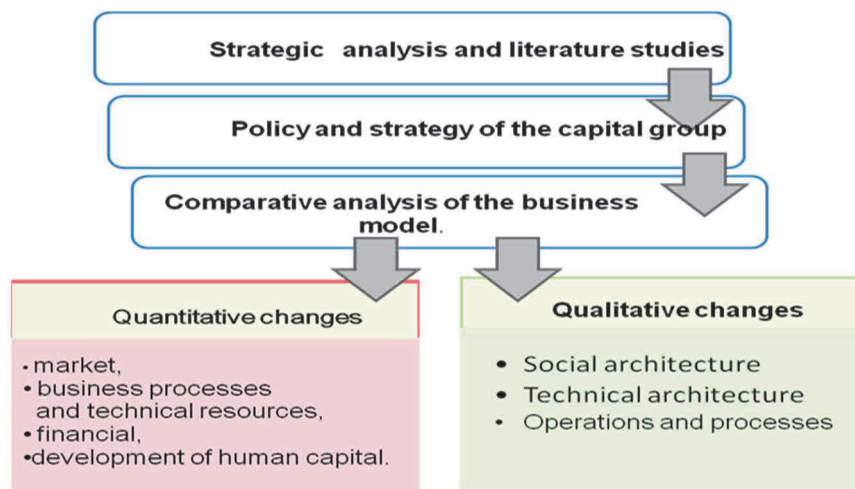


Figure 1 Scheme research methods. Source:own study

The first of them strategic analysis and literature studies. In particular, they include: elements of modelling theory, innovation ecosystems, business surrounding (including competitive forces analysis), relationships with partners and macro-economy situation evaluated in the aspect of logistics as well as fuel and power sector development. The strategic analysis results in a special area of significant meaning for the investigated company. This means policy and strategy of the capital group (corporation) to which the company belongs. The important thing is evaluation of development directions of the corporation, its logistic services portfolio, changes induced by innovations and relationships with daughter companies. The third element and a stage of studies is structural and comparative analysis of the business model. It consists of two areas of research. The first one focuses on evaluation of qualitative changes of the business model. In particular, changes of its structure were analysed, related to implementation of innovation and resulting from the policy and strategy of the capital group to which the investigated company belongs. Business model concepts were used, so called new era of innovation (3) and resource approach. The following business model elements must be

emphasized: social architecture (intangible resources), technical architecture (tangible resources) and business processes. Sources of creating value and type of competitive edges are included in the structural characteristics of business model. The second area of the comparative analysis is this part which allows for quantitative measurement of value. Elements of Balanced Scorecard (BSC) were used for quantitative measurement of value obtained through the application of a given business model type. Value created by business models was represented by the results obtained in four perspectives:

- financial,
- market,
- business processes and technical resources,
- development of human capital.

Such methodical approach allows for multi-aspect evaluation of value created by business models as well as changes within the models.

4. EMPIRICAL RESEARCH - CASE STUDY

The investigated forwarding and transporting company (called hereinafter the Company) is one of 16 companies owned by a strategic Company managing fuel and power capital group (Concern) operating in Poland. Concern (Capital Group) is a manufacturer of solid fuels, electrical energy and thermal energy. The forwarding and transporting company operates within the group since 1997. At the moment, its business operations cover three areas: complex manoeuvring maintenance of railway sidings, transport services within the scope of railway transport and repair of railway vehicles. In 2015, the Company employed 282 employees and generated income on sales at the level of 18 million EUR and Earnings before Deducting Interests and Taxes (EBIT) amounted 1.2 million EUR. The business model of this company was affected by two important factors. The first one is dynamic development of logistic services market in Poland, which can be characterized by increase of potential, innovativeness and amount of logistic companies leading to competitiveness growth (report). The other important consideration affecting the Company's business model is ownership relationships within the Capital Group as is well reflected by the company's mission, i.e. *performing services related to railway transportation of goods and forwarding services, maintenance of sidings and rolling stock technical condition, applying high level, guaranteed service through employment of qualified personnel and maintenance of railway traffic safety. The Company's operations are oriented at implementation of mission and strategy of the Capital Group which determine the interest of the leading entity.* Within the investigated period 2008 - 2015 one can say about two business models. The first one functioned within 2008 - 2012. The other one was implemented at the beginning of 2013 and is the current business model of the Company. Business model and strategy of the Company applied within the first period were based on transport operations (railway transport of goods), meaning a set of operations related to moving tangible goods (solid fuels) using suitable logistic means. Forwarding services were provided to a limited scope. Clients of the Company mostly belong to the Capital Group (solid fuels producers). The model consisted of a relatively simple combination of assets providing value for the Capital Group, expressed by reliable and relatively inexpensive transport service of solid fuels. Technical architecture of the model was represented by own and leased means of transportation (mostly locomotives, train sets) as well as loading and unloading devices. Social architecture is mostly transport qualifications of employees and transport licenses. The basic process is railway transport of solid fuels. Managing processes were within that time at basic level (planning, financial analysis, human capital management, ICT). Within 2008 - 2012, level of capital engagement was relatively low and oscillated at the level ca. 6 million EUR. Within 2013 - 2015, the Company received significant financial support (to the level of 35 million EUR), there was an increase in technical assets and employment, railway sidings were transferred in the form of a lease. This allowed for significant extension of Company's operations. Beside current operations, it performs full-range forwarding services (organization of cargo transport, activities related to handling transport documentation, cargo insurance, preparation for transport by acquiring and combining

cargo in order to optimize cargo space, selection and management of transportation means based of cargo features, cost, distance and time, etc.). The Company is an operator of leased railway sidings, and performs:

- technical and maintenance activities (technical and traction audit of transportation means, maintenance of technical condition of railway rolling stock, shunting operations, optimization of sets, logistic combination of the sets).
- organization and legal operations, keeping the railway vehicles records, activities related to obtaining type certificates for railway vehicles, keeping records related to operation and maintenance of railway vehicles, development and supervision over Railway Vehicles Maintenance Systems, periodical trainings as well as qualification and verification exams, advisory related to railway transport.

The investigated company performs also servicing of railway transportation means and specializes in shunting locomotives. New, currently applied business model necessitated significant changes both in technical and social architecture. Changes in technical architecture were related to taking over railway sidings, acquiring innovative means of transportation and modern service workshop equipment. Significant changes took place in the social architecture. New products (forwarding, railway siding operations, transportation means servicing) required new strategic competences in the management of railway sidings, optimization of transport services, mastering railway vehicles maintenance. Competences and skills in servicing railway transport means and operation of modern locomotives were also important. The map of business processes also changed. Next to transportation processes, the Company implements such basic processes as: forwarding, management and operation of railway sidings, servicing of railway transport means as well as marketing and CRM (implementation phase). The two latter ones, are related to the change of clients portfolio. Within new business model, except the entities from the Capital Group, other Polish and foreign production companies are clients also. Management processes were also changed. The Company introduced controlling, new development and employees motivation systems, it supports employees innovativeness, applies developed ICT systems, allowing for optimization of business processes. Current business model represents complex configuration of tangible assets and knowledge resources creating multi-aspect value for a client and affects company value for its owners. Differences between the structure of previous and current business model are given in **Table 1**.

Table 1 Changes in the structure of business model (synthesis)

Periods of investigation	2008-2012	2013-2015
Social architecture - elements of the model		
Employment	Stable employment at the level ca. 100 employees.	Systematic increase of employment to 282 (2015) employees
Strategic competences	Competences within the scope of railway transport. Knowledge of transport needs within the Capital Group.	New competences: transport (forwarding) management, knowledge of domestic transport market, cooperation competences with clients, financial competences and risk management
Technical elements of the model		
Material resources	Transport infrastructure, modern rolling stock. Low level of equity	Purchase of modern railway rolling stock, equipment of the repair workshop, railway sidings lease. Increase in equity.
ICT resources	Basic IT of accountancy and sales.	Controlling IT system, transport planning and control system.

Operations and processes - elements of the model		
Business processes	Transport services implementation process.	New processes: transport services management (including forwarding), rolling stock servicing, complex management of sidings, controlling process
Creating and features of value	Simple chain of value. Source of creating value is reliable and effective performance of transport services related to solid fuels for the Capital Group companies and availability for the Management Company	Developed chain of value. Beside the existing sources, these are: efficient forwarding, effective management of railway sidings and flexibility in rolling stock repairs.
Attained competitive advantage and its sources.	Competitive edge resulting from affiliation to the Capital Group. Almost monopolistic position within the scope of solid fuels transport services within the Capital Group.	Competitive edge resulting from quality of services and relatively low costs. Reputation within the scope of solid fuels transport and forwarding services

Source: own study

When analysing information given in the table, one can find significant changes in the social architecture of the model. They were related to the increase of employees number and improvement of employment structure. Number of employees with university education increased significantly (**Table 2**). There were more trainings and the Company implemented motivation system related to effects of work. Significant widening of competences occurred, which was related to new type of products (services). The Company used formalized knowledge resources to even bigger extent. The most important changes in the technical infrastructure is modern transport means and equipment of repair workshops as well as new ICT systems used in controlling and customer service. This is related to the additional funds the Company received. The map of processes changed significantly. The Company implemented three new basic processes: forwarding, railway sidings and rolling stock repair. New resources and processes significantly changed the nature of value and competitive edge. Quantitative capture of the generated value is presented in **Table 2**.

Analysis of financial perspective results shows that new business model allowed for significant increase of EBIT and profitability. Major increase in capital affected the limitation of growth of economic value added and return on capital. However, it was necessary to start new business activities. Market results of the Company must be positively assessed. Change of the business model allowed for dynamic increase of income, winning new clients and reaching beyond the transport services of the Capital Group. Clients satisfaction from the Company's services is growing, though slowly. Within the logistics and processes perspective, growth of transport assets and equipment is noticeable, in particular of active railway rolling stock (locomotives). New business processes were implemented, however promptness of services could not have been improved significantly. Within the human capital development perspective, one must positively assess the growth of employees efficiency as well as very favourable changes in the employment structure. The level of employees satisfaction is stable and can be considered as satisfactory. Structure of employment improved, number of engineers and economists - lawyers increased, whose competences are necessary in implementing new processes and services.

Significant increase of productivity is a major achievement for the company. So far, changes of the business model did not affect innovativeness of employees which means that the Company uses open innovation and their main carrier is investments.

Table 2 Quantitative capture of the generated value in four perspectives

Result	Measure	2008	2012	2013	2015
Financial perspective					
Economic value added (EVA)	Thousand EURO	260	320	230	310
Return on sales	Net profit / sales (%)	7.3	8.7	10.1	11.2
Return on assets	Net profit / assets (%)	4.7	4.9	5.9	6.2
EBIT dynamics	Previous period = 100	100	123	243	131
Market's perspective					
Sales dynamics	Previous period = 100	100	112	207	137
Share of clients outside the capital group	Percentage	4.1	6.4	18.3	23.4
Level of customer satisfaction	Percentage	No data	82.3	80.5	84.0
Number of new customers	quantity	0	2	5	4
Perspective of processes and technical resources					
Value of active transport means.	Million EURO	6.3	5.2	21.4	24.2
Increase in quality of services	Claims number / number of transport services(%)	2.3	3.1	4.2	2.9
Number of new processes	quantity	1	0	4	2
Value of logistic means and equipment	Million EURO	9.2	8.8	28.1	30.3
Perspective of human capital development					
Innovativeness of employees	Number of registered innovative solutions	3	5	4	3
Increase in employees' productivity	Value of sales per 1 employee (thousand EURO)	32.7	37.3	50.3	55.9
Personnel qualifications	Number of engineers and economists	17	19	37	44
Employee satisfaction	Percentage	No data	74.6	75.8	74.9

Source: own study

5. CONCLUSION

Changes of business models are mostly affected by the dynamic or even turbulent surrounding. Directions of changes and improvement of business model are related to ability to create value by such model. This is the ground for competing, especially when based on innovations. The performed studies have shown that change of the Company's business model leads to the increase of generated value. In the investigated Company, significant changes took place within business model structure, and they covered human capital and innovations within tangible logistic resources. In the applied model, one designed and implemented new business processes that allow for rendering new services, representing carrier of value for a client. Balanced Scorecard used to measure and quantitatively assess value points to multi-dimensionality of value which is a category so important for management processes. Results obtained by application of new business model show the necessity of its improvement within the area of improvement of services quality, better utilization of capital and activation of employees innovativeness.

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