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PERFORMANCE IMPLICATIONS OF BUSINESS MODEL CHANGE: A CASE STUDY

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Abstract

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The paper deals with changes in performance level introduced by the change of business model. The selected case is a small family business undergoing through substantial changes in reflection of structural changes of its markets. The authors used the concept of business model to describe value creation processes within the selected family business and by contrasting the differences between value creation processes before and after the change introduced they prove the role of business model as the performance differentiator. This is illustrated with the use of business model canvas constructed on the basis interviews, observations and document analysis. The two business model canvases allow for explanation of cause-and-effect relationships within the business leading to change in performance. The change in the performance is assessed by financial analysis of the business conducted over the period of 2006–2012 demonstrates changes in performance (comparing development of ROA, ROE and ROS having their lowest levels before the change of business model was introduced, growing after the introduction of the change, as well as the activity indicators with similar developments) of the family business. The described case study contributes to the concept of business modeling with the arguments supporting its value as strategic tool facilitating decisions related to value creation within the business.

Keywords: business model, value creation, performance indicators, structural market changes, small agricultural enterprise

INTRODUCTION

This paper analyses a small agricultural family business which reacted on the structural market changes by changing its business model. The effectiveness of this change is measured by financial indicators that show the value catching process based on business model theory.

According FAO's study (2008) market modernization offers increased economic opportunities for producers, small and medium-sized enterprises (SMEs), and other actors in the value chain. There is a growing body of experience showing that "win-win" outcomes are possible through commercially viable business models – ways of creating value within a market network of producers, suppliers and consumers – which involve small farmers and SMEs. These business models for small farmers and SMEs must deliver essential services to producers and ensure reliable supply to buyers, while also addressing the high transaction costs and risks that buyers face when purchasing from large numbers of fragmented, cash-strapped small farmers and SMEs. This brief gives an overview of lessons learned about business models for small farmers and SMEs in modernizing markets and agro-industries (Vorley, Lundy, MacGregor, 2008). Bečvářová (2007) says the environmental and economic conditions in agriculture are changing. Agribusiness shaping processes are typical of the inclusion of companies in many sectors that more or less participate in the production, processing and distribution of foodstuffs into a self-contained system. These changes are of such importance that they give a new shape to agrarian markets in entire foodstuff chains, change criteria in the selection of economic tools accepting new conditions of development, and

require the acceleration of reform processes and a new concept of agrarian policies in this context. Csáki (2008) in her research formulates statement – as demand becomes the crucial relationship influencing conditions in a range of connected agrarian markets, the influence of the market structure of agribusiness rises. To respond to these changes in agriculture means to adapt to the new environment, seek connections with these segments of commodity/foodstuff verticals and coordinate production specialization especially with respect to permanent sales of most commodities, which often exceeds the existing boundaries of the particular region. One of suitable tools to assess the level of business adaptation to change is the concept of business modeling. A business model is a conceptual tool containing a set of objects, concepts and their relationships with the objective to express the business logic of a specific firm (Osterwalder, 2005). It describes the rationale of how an organization creates, delivers, and captures value. Business models play a central role in explaining firm performance. Afuah and Tucci (2001) propose the business model as a unifying construct for explaining competitive advantage and firm performance and define it as „the method by which a firm builds and uses its resources to offer its customer better value and to make money in doing so". According to Amit, Zott (2001), a business model defines "how the enterprise creates and delivers value to customers, and then converts payments received to profits". Afuah (2004) focuses on firms 'profitability and introduces a strategic framework in which the business model is conceptualized by means of a set of components that corresponds to the determinants of firm profitability. Zott and Amit (2008) have analyzed the performance implications of business model design entrepreneurial firms and confirmed the business model as the performance differentiator. The business model is like a blueprint for a strategy to be implemented through organizational structures, processes, and systems. As Ulvenblad *et al*. (2014) confirms, there are not many studies on business model innovation concerning the agricultural sector, thus there is a need to develop a new business model specifically for the agricultural sector. Their quest for new ways of operations can be facilitated by business modelling as it analyzes firm processes, and shows the opportunity for innovation pointing out whether the firm is able to implement a new idea brought in from external environment, rather than seeking for the innovation potential internally (Hron *et al*., 2012).

MATERIALS AND METHODS

This paper aims to analyze the change of business model in a small enterprise. The selected family business was undergoing substantial changes in reflection of structural changes of its markets. Particular aims are to analyze the farm before the change and after the change by using the business model canvas and to measure and explain the farm's effectiveness through the financial performance indicators. The Business Model Canvas according Osterwalder (2009) is a strategic management and entrepreneurial tool. It allows to describe, design, challenge, invent, and pivot a business model. Nine basic building blocks show the logic of how a company intends to make money. They cover the four main areas of a business: customers, offer, infrastructure, and financial viability.

The majority of data for business model analysis of the farm was collected through interviews with owners complemented by data from the business internal information systems and financial statements. Financial analysis was based on several financial indicators including Return on equity, Return on assets and return on sales; it also includes activity indicators: Commitment of total assets, Turnover of total assets, Inventory turnover ratio, and Inventory turnover (days). All indicators were calculated for the period 2006–2012 covering both an old business model and the transformation of the business to the new one.

The main aim of financial analysis was an explanation of value catching process in the initial and new business model as well as the clear demonstration of change in performance level in the analyzed period of time. While the financial analysis provides for illustration of development of the business results measured by above listed efficiency ratios as well as activity indicators, it does not explain the reason behind. In order to get an insight and deeper understanding about the causes and effects relationships, the business model methods was adopted, in particular the business model canvas. The business model canvas depicts value creation processes within a business in a structured way and thus allows for comparison of changes in concise and consistent way. The data used for business models (old and new) description were collected through interviews with the owners, internal business documents, and business operations observation.

RESULTS AND DISCUSSION

Farm Description

The selected farm is operated as an individually run company by a private farmer. Since 1990 the business had been a typical farm involved in crop and livestock production. The company was growing from initial 27 ha to 850 ha today on which the farm has been operating since 2009. The company's orientation responds to the rather intensive grain production of the area of Central Bohemia, therefore the main production is focused on farming wheat, malting barley, oil-seed rape, legumes and beetroot. The farm is equipped with modern technology, which provides complete

self-sufficiency during all sorts of common agro-technical operations throughout the year. External services are only used for the harvest period because of time efficiency measures necessary for its accomplishment; the farm provides harvest services to other subjects during the harvest time. In 1994 a new farm was built on a so-called "green field" and the diary became a part of it. The objective of this step was not only to solve problems connected to the sale and merchandising of its own milk, which used to be a big problem, but also diversification of the production and achievement of a more stable economic position. Therefore the capacity of the dairy has been designed not only for its own milk (about 500 liters a day) but also for the milk bought from other farmers from the area. The dairy has only been processing purchased milk since 2002 when stockbreeding came to its end. The amount of processed milk is about 3 million liters a year, which means about 8.000 liters a day (Němec, 2013).

Initial Business Model

a) Organizing and Production Orientation

During the initial period the company established itself in the market with Balkan cheese (Feta type cheese), and was fully specialized in Balkan cheese from 1995 to 2009. The annual production of Balkan cheese reached 492 tons in 2007, which represented roughly a 25% share in the Czech market. The products were acquired through a wholesaler in an independent retail network, hotels and restaurants and most of all in retail chains. It was possible to apply a simple management system due to the narrow specialization of one product. The running of the dairy was permanently ensured by about 12 workers, mainly divided into two shifts, with the management being represented by the owners of the company. Daily operations were managed by a supervisor; each shift had its own supervisor, who also worked manually.

b) Sales and Marketing

The management of sales and marketing were very easy as there were no serious problems in the whole production which was sold via a few wholesale companies to chain stores, restaurants, hotels and catering facilities. The company Madeta, a. s., was a strategic customer which, based on a long-term contract, drew about 70% of Balkan cheese production. The production was not supplied to the target customers; it was a business to business arrangement. Most of the customers took the goods directly from the company, so there was no need to solve any transport issues. The marketing was de facto limited to dealing with wholesalers; from the perspective of the product those wholesalers implemented it. It meant mainly to represent the product in their catalogues and a few discount events in particular retail chains throughout the year.

Reasons of Business Model Change

The main reasons of the business model change were structural changes on a market and new needs of customers. Orientation to one product and one type of customer – wholesalers was the major weakness of the initial business model. The entry of the new Balkan cheese producer into the industry together with the economic crisis meant a dramatic drop in sales and it was not possible to hold the initial business model anymore.

Based on the dairy market changes, the main objective of the business model change was to improve the whole economic situation of the farm, mainly transforming the product specialization, production management, marketing and demand of products. The change created system that gave the company better potential to address demand and to reach higher sales, but also enabled the farm to free itself from the chain stores and their dominant influence on the market. The solution was found in a transfer within a sector. The farm couldn't operate on B2B market with one product anymore. The solution was to go directly to the end customers and serve them with a wider product portfolio.

The business Model Transformation

The process of the transformation of the production orientation and the sales methods of the farm was established at the beginning of 2011. It became fully functional in the middle of 2011 and has continuously been made precise and modified as it goes through other stages of its development in the actual process.

During the year 2011 a new production facility was purchased, renovation of the dairy was accomplished, more people were employed and the organization of the work of the company was changed. Therefore the dairy is currently producing fifteen types of fresh dairy products such as full-fat farm milk, curd, yogurt, yogurt drinks, flavoured curd creams, fresh cheese in several varieties of packaging and flavours, kephir, cheese spread and a whey drink. The whole project was called "Milk from the farm".

Change in Production and Sale Organization

The change and expansion of the range of products, as well as the different method of sale, brought along a necessity to change the organization of work in its own production, and also a necessity to create an effective and flexible team of salesmen, thus a sales department.

a) Organization of Production

Milk, being a natural raw material, is necessary to process as soon as possible after milking the cow; therefore the production in the dairy must run 24 hours a day, seven days a week. Products are traditional products based on traditional technology and procedures, which brings high demands on manual work. To ensure smooth operation of

production, it is necessary to have 24 FTE staff (168 hours a month) divided into two shifts. Each shift is managed by a shift supervisor with a university education, whereas one of the shift supervisors is also an overall production supervisor. Transportation of raw milk and some other input materials (mainly milk bottles) are ensured by another employee, who is also responsible for maintenance of the machinery. The supply of packaging material, flavourings and disinfecting agents are provided by different suppliers directly to the company. It is operated only with the most needed supply, in the case of most of these materials, e. g. the milk bottles – "just in time" system is applied, which reduces the amount of funds committed. All the manufacturing and logistics processes in the dairy are checked by HACCP, which is certified according to international standards.

b) Method of Sale

To implement production a brand new sale concept was created and established; "Milk from a farm" where the production is sold directly to its customer. Currently the dairy sells 90% of its production in this way. The service works with 63 regular delivery routes, while each having approximately 20–25 regular stops. Eleven delivery supplies arrive at an appointed time and serve the waiting or arriving customers. The routes are divided into six days a week, from Monday to Saturday, so the delivery vans arrive at every stop once a week. The van sells for approximately 10–20 minutes at each stop, which means that it serves about 10 customers, that makes approximately 15 thousand customers altogether.

c) Sales Department

The sales department consists of 11 permanent salesmen, each one of them has a refrigerated van at his disposal and its own specified delivery route with defined sales stops. There is also a group of approximately 4 occasional salesmen at our disposal to step in and work instead of the permanent ones in case of sick-leave or holidays. Owners, who take strategic and tactical decisions, manage the marketing and common operative management which goes through the shift supervisor and the head of the sales department. The economical department also partly consists of the company owners.

c) Marketing

Marketing and its well-considered systematic application is the fundamental aspect of the successful management of the service "Milk from the farm". Therefore the farm must pay permanent attention to it and take advantage of all means of the established marketing system to keep current customers and win new ones. In 2011, thus at the initial stage of the project, 2.200 thousand CZK was used for advertising and marketing, for years of regular operation about 1 million CZK a year is allocated.

This project addressing the growing demand for fresh farm products was designed according market characterization, needs and desires of individual groups of customers. The market sectors were mainly created based on an evaluation of approximately 950 emails from customers, which the company received at the beginning of the project. Individual salesmen played also an important role in segmentation when obtaining data about their customers, which was especially at the beginning, based on the communication with the customers, they recorded necessary information on prepared forms (customers' age and gender, whether they shop with children, what is their motivation, how they found out about this service etc.). About 500 forms were processed. After evaluation of the two above mentioned sources, the following market sectors were defined. The segmentation was done and six market sectors were defined.

Product

The portfolio of the service "Milk from the farm" currently consists of 15 dairy products out of which each was designed to have clearly identifiable and defined specific characteristics in terms of use, taste and packaging. Therefore the customer has a possibility to satisfy and meet the needs for various purposes or for different household members in one go. Another product, where an important identification parameter which increases sales is packaging, is fresh "Full-fat farm milk". Milk has in general certain natural taste and visual properties; therefore it is difficult to distinguish milk from different producers, which also goes for the so-called "Full-fat farm milk". This product makes approximately 45% of sales from the whole portfolio, so its position is vitally important. It is also a product which can be for some customers obtained from other producers (competition), e. g. via so-called milk vending machines. Therefore, in addition to the high quality of milk as well as for the identification of this product, a unique packaging was chosen – ECO-PET bottles.

Price

Even though it would be economically possible, the prices are kept slightly above the price level in retail because it sends an important signal to the customers, that they get above standard goods. The method of sale and the character of the product means, that all customers pay in cash while shopping, there is no discount program or bonus as part of the marketing mix. While considering this variation an opinion arose that this system would operate counterproductively on established "image" of the entire system as an above standard service with above standard products. Everyday contact with customers confirms that this idea was correct, because there has been almost no complaint about

high prices from the customers' side; there were only a few exceptions.

Placement/Distribution

As mentioned above, the distribution system is based on a direct sale of products to customers via delivery vans to a precisely defined sales route and stop. From the marketing point of view it is necessary that the delivery on routes work smoothly and the delivery vans arrive at the stops at the arranged time. The stops are not only a place where the products are sold, therefore a place where sales are generated, but also a place of direct contact with the customers.

Promotion

The farm put a lot of attention of setting promotional tools consisting PR, delivery vans identification, websites and electronic communication, radio advertising and leaflets. Therefore various kinds of communication were used to make sure that "useful information" was being provided rather than mere advertising. It was not possible to avoid it completely but it was conceived so it differed from a common advertisement as well as the service and the products do. The main advertising message was that they are good quality fresh products without preservatives, clear origin straight from the primary producers. It was emphasized that the services and products are not anonymous and the owners take personal responsibility for the dairy and farm.

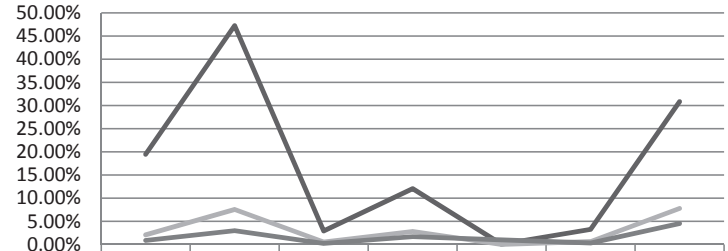
The Value Catching Process

To demonstrate the positive effect of the business model transformation are presented the results of financial analysis of initial business model and new business model. The most focus was given to the value catching process that is demonstrated through chosen financial indicators of financial analysis.

Financial Analysis 2006–2012

The financial data for the period 2006–2010 (the initial business model) are showed in a Fig. 1. It is obvious that the company was doing very well in 2006 and mainly in 2007, when the return expressed as ROE reached 19.48% or 47.26%. Due to the drop in sales in 2008, the ROE fell to a figure approaching zero. The situation improved in 2009 by the change of products which were commercialized better. Nevertheless as the second wave of economic crisis came in 2010, all the monitored indicators practically fell down to zero again. As it is apparent from the data bellow, after the implementation of the new business model there was a rapid increase of returns in all monitored variables. In the year 2011 the increase was smaller, because the project was in its initial stage in that year, which meant rather high prime operating costs (introductory advertising, packaging), as well as investment costs (purchasing delivery vans, technological equipment).

The results of activity are showed in the Tab. I. It is obvious from the figures that there has been significantly slower activity. Most all of the inventory turnover rapidly increased which shows a situation when the dairy kept the goods in the store for a long time followed by all the negative consequences;



	2006	2007	2008	2009	2010	2011	2012
ROE	19.48%	47.26%	2.94%	12.05%	0.06%	3.28%	30.85%
ROA	2.09%	7.57%	0.55%	2.82%	0.01%	0.64%	7.80%
ROS	0.89%	2.98%	0.24%	1.70%	1.00%	0.32%	4.53%

1: *Profitability 2006–2012*
Source: Author's research based on company's data

I: *Activity 2006–2012*

	2006	2007	2008	2009	2010	2011	2012
Commitment of total assets	0.42	0.39	0.43	0.60	0.50	0.49	0.58
Turnover of total assets	2.4	2.5	2.3	1.7	2.00	2.00	1.70
Inventory turnover ratio	62	211.5	16.5	10.8	7.80	11.10	8.30
Inventory turnover (days)	5.9	1.7	22.1	33.7	46.70	32.90	43.80

Source: Author's research based on company's data

from the committed money in the inventories to the problems with the guaranteed storage period. Considering the activity of the transition to a range of fresh products and a company with direct sale to customers in the year 2011, an increase of inventory turnover was achieved and shortened its inventory turnover, which also indicates improved solidity of the company.

Nevertheless the results of both the models indicate, that the implemented project improved economic situation of the company. It is obvious the positive change in all financial indicators that demonstrate the change in the value creation. The financial analyses itself doesn't give any explanation for those changes that means another tool has to be used.

Business Model Application

Business Model Canvas was applied to both models – initial and new one to demonstrate the changes of value creation process in the company. The Fig. 2 and Fig. 3 bellow analyze the change of business model through graphic canvas. The main advantage of this tool is well-arranged analyses of the main processes in the farm with the aim to find an explanation of financial analysis results.

Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer Segments
External services during the harvest period Wholesalers	Organisation - 12 workers into 2 shifts - Shift supervisor - Management – the owner of the company Diary - Milk production - Milk processing **Key Resources** Land – 850 ha Technology – self-sufficienty during all agro-technical operation	Crop production Livestock Production Provision of postharvest and storage services Milk Diary - Production from own milk (500l/day) and from external farmers (8 000 l/day) - Product – fully specialized on Balkan cheese (25% share of Czech Market)	B2B market- dealing with customers Wholesalers – representing product in their catalogues, few discount events in particular retail chains **Channels** Sales through wholesalers - Independent retail network - Hotels and restaurants - Retail chains	Producers from surroundings Madeta – 70% of Balkan cheese production Wholesale companies - Most of the customers straight from a company - The whole production sold via few wholesale companies to chain stores, restaurants, catering facilitators
Cost Structure Agricultural production Milk processing Staff costs Technologies and machines No transport issue			**Revenue Streams** No direct sale Revenue stream disturbed by new Balkan cheese producer and orientation on one market – lower prices, hight competition on the market The end of 2010 – the return was lower then in the previous years, the profit was almost at zero	

http://www.businessmodelgeneration.com

2: *Business Model Canvas – The Initial Model*
Source: Author's research based on company's data

Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer Segments
External service station - To maintence and repair of the fleet	Organisation - 24 FTE staff (2 shifts) - Shift supervisor - Production supervisor - Management Just in time system **Key Resources** New production facility Renovation of the diary More employees New IS – to prevent a data from a rather large area with a relatively small purchases of a large number of customers - To identify activities of independent salesmen	Diary products - 15 types of fresh dairy products (curd, yogurt, yogurt drinks, flavoured curd creams, fresh cheese in several varieties of packaging and flavours, kephir, cheese spread and a whey drink) „Milk from the farm" project - All diary products offered straight to customers homes Full-fat farm milk - ECO-PET bottle - Milk vending machines	„Milk from the farm" project - Products are delivered to the customers house - Presented not as „sale" but as „service" („We save your time") **Channels** Flexible team of salesmen – permanent and occasional salesmen Direct Sale 63 regular delivery routs (each 20-25 regular stops) - Delivery supplies - 6 days/week – MO-SAT	Positioning - „we fulfil a need of customers to have a good quality fresh dairy products" Segments - Parents of small children - Supporters of healthy lifestyle - Middle-age customers and seniors - Fans („Patriots") - Environmentalists - The others („Random Passersby")
Cost Structure Milk from the farm cost – salesman, vans, new technologies Marketing costs – branding, advertising, maintaining the customer relationship			**Revenue Streams** Price system – prices are kept slightly above the price level - Customer pay in cash while shopping - No discount program - Everyday´s contact and better quality = higher price explanation	

http://www.businessmodelgeneration.com

3: *Business Model Canvas – The New Model*
Source: Author's research based on company's data

CONCLUSION

This paper analyses a small agricultural enterprise which reacted on the structural market changes by changing of its business model. The effectiveness of this change is measured by financial indicators based on business model theory. It demonstrates that Business Model Canvas allows to display the change of value creating process. The classic financial indicators shows, that there was a significant change. Business model description using the canvas allows to depict the shift in value creation processes and reveal the whole story. The case study described clearly demonstrates, that business model canvas is a tool appropriate for analysis and explanation of the changes in all parts of company. The project of transformation of production orientation and the methods of sale through the service "Milk from the farm" was implemented in the small farm in the years 2011–2012, and has brought verifiable economic results and has improved its whole economic situation. After the initial developing stage, the system is currently fully-functioning and stable.

The main task of the management for the future is maintaining customers' loyalty as well as ensuring technical operation of the project from the production and logistic perspective. Marketing will still play a crucial role in this process, so priority attention will be paid to it. It is also necessary to develop information systems and take advantage of the outputs, for instance to optimize the sales routes. The current information system should be extended and functionalities added which are used for goods registration, the issue of goods from the storage and the direct sale to the customers (e. g. bar code system). The essential aspect of the success of the whole concept is naturally the maintenance of the high quality of the products.

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