ENTERPRISE SIZE AND CHANGES INTRODUCED TO BUSINESS MODELS OF POLISH ENTERPRISES APPLYING OUTSOURCING – RESULTS OF RESEARCH[1]

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Summary

The aim of this article is to obtain answers to two questions regarding: the degree of correlations between the changes made to individual elements of the business model used in the Polish enterprises applying outsourcing and the existence of differences, if any, between the level of such correlations in companies of various sizes.

This article, apart from an introduction and conclusions, is composed of two main sections. One includes information regarding the characteristics of the research sample and research methodology. The results of the empirical research conducted on the sample of 281 entities and the most essential findings are presented afterwards. The results of the research provided in the paper seem to empirically confirm the concept of the business model as proposed by A. Osterwalder. The correlations between the changes made to individual elements of the business model were usually at a high level. The results of the research indicate also a different method of managing the business model in companies of various sizes, which can be an effect of i.a. the specificity of management, including strategic management, processes in small and large economic entities.

Key words: business model, change management, enterprise size, results of research, outsourcing.

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1. Introduction

Currently, a business model can be considered an effective strategic management tool, which plays a range of functions in contemporary enterprises; it is used, among others, for pursuing the strategic planning process, it serves the purpose of describing and analyzing the organization, enables identification of the enterprise's competitive advantage, fulfills the role of a strategy "test", supports the preparation of a business plan, makes it possible to specify the idea for business in its early phase of development (Drzewiecki, 2013), (Drzewiecki and Niemczyk, 2006), (Falencikowski, 2013, pp. 48–50), (Banaszyk, 2004), (Bossidy and Charan, 2010), (Jabłoński, 2016). Therefore, it is not surprising that business models have been an object of interest not only to managers but also to representatives of management sciences for a dozen or so years, which is evidenced by the increasing number of publications dedicated to these issues. However, most studies on business models focus on their static aspects; studies (and research) on variability of business models over time have still be relatively scarce.

The realities of the global markets of the 21st century make companies compete mainly by means of innovative business models. Therefore, the unquestionable significance of the changes introduced to them and the related problems (consistency of the business model, ability to adapt it to the environment, the issue of stakeholder relationship management, phenomena occurring where the organization and its environment meet) require a more careful observation of the process of changing business models, also in Polish enterprises. This is because the systemic nature of the business model imposes a range of requirements regarding its change management on managers, at the same time enabling achievement of long-term effects that are crucial for enterprise growth and development.

Therefore, **the aim of this paper is to obtain answers to two questions regarding: the degree of correlations between the changes made to individual elements of the business model used in Polish enterprises applying outsourcing and the existence of differences, if any, between the level of such correlations in companies of various sizes**. Obtaining answers to the above questions should be the first stage of the process of identifying differences, if any, in the methods of managing the business model in such companies. The conceptual basis adopted in the study was the concept of the business model as approached by A. Osterwalder. The paper contains the results of the empirical research conducted on a sample of 281 Polish enterprises using outsourcing (section 2 of the study). Statistical analysis methods, in particular correlation analysis, were used for analyzing data.

2. Methodology of the research and characterization of research sample

The research tool used during the research described in this elaboration was a survey questionnaire. Four channels of communication were used in order to initiate contact with the respondents: traditional mail, electronic mail, direct contact and via telephone[3]. The research sample included 281 cases, and the data regarding the model of contact with the respondents (including the size of the investigated enterprises) as shown in the table 1:

Table 1. The model of contact with the respondents divided by the size of the enterprise

Model of contact	Size of enterprise[4]			Sum (%)
	small	medium	big	
Electronic mail	3	2	2	7 (2,5%)
Traditional model	7	2	1	10 (3,6%)
Direct contact	18	4	5	27 (9,6%)
Telephone	75	101	61	237 (84,3%)
Sum (%)	103 (36,6%)	109 (38,8%)	69 (24,6%)	281 (100%)

Source: original research

The research sample was purposive. Alongside the criterion of using outsourcing[5] two additional criteria were used (arising from the specifics of the project, by which the research was financed):
— the source of capital: the research included Polish enterprises[6],

[3] The telephone contact was conducted with the use of CATI, which stand for *Computer-Assisted Telephone Interview.* The questionnaire was recorded in the electronic form, using specialist software that simplifies conducting interviews, while arrangement and content of questions has not been changed in relation to the questionnaire distributed via other channels.

[4] The size of the enterprise determined according to criteria stipulated in the Act from 2nd July 2004 on Freedom of Economic Activity, Journal of Laws 2004 No. 173, item 1807 (the classification includes two criteria: employment and turnover).

[5] The criterion of using outsourcing was fulfilled in the situation when an enterprise used outsourcing at least in two functional areas (out of fifteen areas identified in research; more in: (Drzewiecki, 2015, pp. 11–18)).

[6] The definition of „Polish enterprise" encompasses the business entities whose majority owners are, in case of natural persons, citizens of Poland, and in case of legal entities – enterprises with the dominant Polish capital, the Treasury, or local government units in Poland.

— the size of employment: only enterprises employing at least ten[7] employees (Drzewiecki, 2015, p. 12).

Almost one third of the research sample were comprised of civil law partnerships, around one fourth – limited liability companies and businesses run by a natural person. Roughly every tenth subject being a part of the sample was organized in the form of a joint stock company; in total, share-holding companies equaled to one third of cases. Most of the subjects comprising the research sample (nearly 60%) operated the business only on a domestic market while more than one third was active mainly on the domestic market (Drzewiecki, 2015, pp. 11–12), (Drzewiecki, 2016a, pp. 102–103).

As it was mentioned in the introduction, the factors of variability of a business model were determined based on the definition and construction of business model created by A. Osterwalder[8]. In this conceptualization, the business model is comprised of nine elements presented and described briefly in Table 2:

Table 2. Elements of business model according to A. Osterwalder

Main areas of the model	Elements constituting the business model	Description of the elements
Product	Value proposition	Gives general overview on the benefits offered to customers
Customer	Customer segmentation (target group)	Describes the segment(s) of customers to whom a company wants to offer its values
	Distribution channels	Describes the channels of distributing offers, communication and contact points with customers
	Communication with customers (relations with customers)	Explains the way in which a company builds and maintains relations with customers

[7] The application of the last criterion was a result of assumption that decisive problems concerning the use of outsourcing and choice of its form gain in significance along with the growth of an enterprise; simultaneously the spectrum of possible forms of outsourcing as well as its more advanced forms is growing (division of costs, joint investments, etc.); (Drzewiecki, 2015, p. 13).

[8] The definition of a business model proposed by A. Osterwalder says: "a business model describes the rationale of how an organization creates, delivers, and makes profit out of value" (Osterwalder and Pigneur, 2013, p. 18).

continued table 2

Infrastructure management	Key activities (configuration of activities)	Describes the system of activity which a company undertakes in order to deliver the values
	Key competences (resources)	Identifies key skills essential to use a certain business model
	Partners network	Presents the network of cooperation links essential to create and deliver values to the market
Financial aspects	Structure of costs	Determines the financial consequences of running the business model based on a specific model
	Streams of income	Determines the sources of income tanks to which a company earns money

Source: original research based on: (Osterwalder, Pigneur, 2013, p. 18)

Based on the empirical research, and with the consideration of A. Osterwalder's business model concept, an identification of factors of the variability of business model was carried out (Drzewiecki, 2016b, pp. 11–16).

Table 3 presents the aggregated variables with which the scope of the changes made in each of the nine elements of the examined companies' business models was determined, including the factors influencing each of the variables. The changes in two elements – cost structure (C) and streams of income (I) – were quantitative in nature[9], whereas the factors of qualitative[10] changes were used for determining the

[9] In the case of the variables determining the changes of quantitative factors, the respondents' task was to specify the degree (scope) of the changes of such factors. An 11-point Likert scale (including the zero score) was adopted, with the variables assuming values from –5 ("considerable decrease in, limitation of the quantity of, reduction of a given component"), to 0 (meaning "no changes of a component"), to +5 ("considerable increase in a component").

[10] In the case of the variables determining the changes of qualitative factors, the respondents' task was to specify the nature of the changes of such factors. A 6-point ordinal Likert scale was adopted, with the variables assuming values from 0 to 5 (0 meant "changes with no significant impact on the form of the business model and company's activities", 5 – "fundamental changes that are revolutionary for the company"). Afterwards, the values of the aggregated variables were calculated for each case as arithmetic means of the indications of individual variables determining the scope of the changes of qualitative factors. For instance, the „CH" aggregated variable, which was responsible for changes in the area of channels,

remaining seven variables (the factors are described in the column "Factors (variables) influencing the aggregated variable" in Table 3):

Table 3. Characteristics of the variables used in the research

Name of aggregated variables	Aggregated variable code	Factors (variables) influencing the aggregated variable	Nature of the factors
Cost Structure	C	The quantity of forms of costs	quantitative
Streams of income	I	The quantity of streams of income	quantitative
Value proposition	VP	– Improvement of the existing products – Improvement of after-sales services offered by enterprise – Improvement of problem solving skills offered to a customer	qualitative
Customer segmentation	CS	– Changes aiming at reaching more customers in the context of currently supported segment (or segments) of Customers – Change in the way of defining the key customer – Activities tending towards limitation of the number of the least profitable customers	qualitative
Relations with customers	R	– Improvement of customer service – Optimization, or improvement of marketing tools – Change of ways of building and maintaining good relations with customers	qualitative
Channels	CH	– Improvement of ways of supplying products / services to a customer (channels of distribution) – Improvement of ways and channels of after-sales services	qualitative

was a mean of two variables: one being responsible for improving the ways of supplying products to the customer and the other determining the changes in the area of after-sales services.

continued table 3

Key activities	KA	– Introduction of activities crucial for the process of creating value, which have not been realized in an enterprise – Improvement of the form of realization of the processes / functions	qualitative
Key resources	KR	– Acquisition of employees with new and unique competences – Acquisition of employees competences rare on the job market – Acquisition of new technology	qualitative
Key partners	KP	– Change of criteria to assess a key partner – Change of the type of resources acquired from the key partner – Modification of the forms of cooperation with partners (including: decisions *make or buy*)	qualitative

Source: own work based on: (Drzewiecki, 2016b, pp. 13–14)

3. Results of the research

Spearman's rho (rank correlation) coefficients[11] were used to calculate the levels of correlation between the aggregated variables identified in the study (Tab. 3). Table 4 presents the values of Spearman's rho coefficients in the sample:

Table 4. Values of Spearman's rho (rank correlation) coefficients for variables (in the sample)[12]

Variable Code	**Research sample (*n* = 281)**								
	C	I	VP	CS	R	CH	KA	KR	KP
C	1,00	0,52	0,32	0,26	0,24	0,28	0,32	0,34	0,35
I	0,52	1,00	**0,53**	0,38	0,37	0,36	0,36	0,46	0,48

[11] The application of Spearman's rho for ascertaining correlations between variables should be justified i.a. with the type of the measurement scales used, see e.g. (Stanisz, 2006, pp. 295–296).

[12] In Tables 4–6, statistically significant correlations are marked in red ($p<0.05$), values higher than 0.7 (high correlation level) are provided against blue background – see e.g. (Aczel, 2000, pp. 492–495).

continued table 3

VP	0,32	0,53	1,00	0,75	0,69	0,67	0,64	0,61	0,65
CS	0,26	0,38	0,75	1,00	0,74	**0,76**	0,72	0,66	0,74
R	0,24	0,37	0,69	0,74	1,00	**0,78**	0,71	0,64	0,68
CH	0,28	0,36	0,67	0,76	0,78	1,00	0,74	0,71	**0,75**
KA	0,32	0,36	0,64	0,72	0,71	0,74	1,00	0,67	0,72
KR	0,34	0,46	0,61	0,66	0,64	0,71	0,67	1,00	0,78
KP	0,35	0,48	0,65	0,74	0,68	0,75	0,72	0,78	1,00

Source: own work

The level of a vast majority of the coefficients of correlation between the variables measuring the scope of the changes made in individual elements of the examined companies' business models needs to be considered at least high (Stanisz, 2006, p. 293). A weaker correlation between variables C, I – regarding the level of costs and income (quantitative changes) and other variables (responsible for qualitative changes) is clearly noticeable. An exception in this context is the correlation between variables I (streams of income) and VP (value proposition), which is an empirical confirmation of the significance of the value proposition as the element of the business model that is critical to the enterprise's financial standing, in particular – its income level. The correlations between variable I and variables KR and KP also deserve attention, which could result i.a. from the fact that outsourcing is used by the examined enterprises.

From among qualitative variables, the highest rho values were observed for the following pairs: CS-VP, CH-CS, CH-R and, what is particularly interesting, CS-KP. The latter correlation can also arise from the fact of applying outsourcing by the enterprises from the sample and points to the necessity to adapt the area of key partners to the area of key accounts in the business model.

A more thorough analysis of the data presented in Table 5 permits the ascertainment regarding the empirical verification of the business model idea as proposed by A. Osterwalder. The division into the left side (responsible for infrastructure, efficiency, improvement) and the right side (responsible mainly for innovation, creation, generation of added value) (Osterwalder and Pigneur, 2013, pp. 244–245, 230–233), which is evidenced by high coefficients of correlation between two groups of variables: CS, R and CH, as well as KA, KR and KP. Hence, the results of the research presented in this paper confirm the logic of the business model as approached by A. Osterwalder.

In order to compare the correlations in the group of small and large enterprises, Spearman's rho coefficients were calculated in the group of small (n = 103) and large entities (n = 69); the results are presented in Tables 5 and 6:

Table 5. The values of Spearman's rank correlation coefficients for variables (in the group of small companies)

Variable Code	Small enterprises (*n* = 103)								
	C	I	VP	CS	R	CH	KA	KR	KP
C	1,00	0,33	0,09	0,00	0,05	0,07	0,12	0,11	0,15
I	0,33	1,00	0,40	0,20	0,14	0,15	0,20	0,20	0,28
VP	0,09	0,40	1,00	0,70	0,58	0,52	0,60	0,39	0,48
CS	0,00	0,20	0,70	1,00	**0,79**	0,73	0,74	0,56	0,69
R	0,05	0,14	0,58	0,79	1,00	**0,78**	0,71	0,50	0,59
CH	0,07	0,15	0,52	0,73	0,78	1,00	0,77	0,62	0,64
KA	0,12	0,20	0,60	0,74	0,71	0,77	1,00	0,70	**0,76**
KR	0,11	0,20	0,39	0,56	0,50	0,62	0,70	1,00	0,73
KP	0,15	0,28	0,48	0,69	0,59	0,64	0,76	0,73	1,00

Source: own work

Table 6. The values of Spearman's rank correlation coefficients for variables (in the group of large entities)

Variable Code	Big enterprises (*n* = 69)								
	C	I	VP	CS	R	CH	KA	KR	KP
C	1,00	0,60	0,47	0,44	0,29	0,28	0,49	0,49	0,44
I	0,60	1,00	0,71	0,60	0,50	0,53	0,55	0,68	0,67
VP	0,47	0,71	1,00	0,87	0,78	0,82	0,72	0,85	0,79
CS	0,44	0,60	0,87	1,00	0,75	0,83	0,70	0,79	0,80
R	0,29	0,50	0,78	0,75	1,00	0,85	0,68	0,75	0,76
CH	0,28	0,53	0,82	0,83	0,85	1,00	0,73	0,77	0,78
KA	0,49	0,55	0,72	0,70	0,68	0,73	1,00	0,69	0,60
KR	0,49	0,68	0,85	0,79	0,75	0,77	0,69	1,00	0,87
KP	0,44	0,67	0,79	0,80	0,76	0,78	0,60	0,87	1,00

Source: own work

In the group of small companies, the correlations between variables I, C (the financial aspect of the business model) and other variables were clearly lower (and some of the correlations were not statistically significant, mainly for variable C). This can prove lower awareness of the influence of the changes made in individual elements of the business model on the enterprise's financial standing. The level of correlations between other variables was also lower in small companies. However, it needs to be emphasized that the results of the research justify the above logic of the business model proposed by A. Osterwalder both in the group of small and large companies, which could be evidence of the universal nature of the concept. The correlation of variable VP (which means changes in the area of value proposition) with other variables also deserves attention – the correlation was significantly stronger in large enterprises than in small ones. This can indicate a more effective business model management in large enterprises and a higher level of their internal consistency (cf. (Falencikowski, 2013, pp. 114–118)) than it is the case in small economic entities.

4. Conclusion

The results of the research presented in this paper seem to empirically confirm the concept of the business model as proposed by A. Osterwalder. The correlations between the changes made in individual elements of the business model were at a high level in a majority of cases. The dual nature of the concept of business model (a division into the left side and right side) was also noticeable.

The results of the research also point to a variety of business model management methods in companies of various sizes, which can arise i.a. from a different course of management, including strategic management, processes (see e.g.: (Kaleta, 2014, pp. 129–143)). Changes regarding the form of the business model probably occur in a more orderly and well-thought-out manner in large entities than in small companies. What seems particularly interesting in this context is the results concerning the correlations between the "upper" (responsible mainly for value proposition and mechanisms of its creation) and the "lower" (responsible for the financial aspect of the organization) part of the business model; large entities seem to be more aware of these correlations.

It needs to be mentioned here that the research described in this study is limited by purposive sampling (Polish enterprises using outsourcing). Drawing stronger conclusions requires further research in a representative sample of economic entities. The influence of outsourcing on the form of the business model was best visible in large entities, where the changes made in the area of infrastructure (triad: key partners – key resources – key actions) were strongly correlated with the changes in the area of value proposition or customer segments.

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WIELKOŚĆ PRZEDSIĘBIORSTWA A ZMIANY DOKONYWANE W MODELACH BIZNESU POLSKICH PRZEDSIĘBIORSTW STOSUJĄCYCH OUTSOURCING – WYNIKI BADAŃ

Streszczenie

Celem artykułu jest uzyskanie odpowiedzi na dwa pytania dotyczące: stopnia zależności między zmianami dokonywanymi w poszczególnych elementach modeli biznesu polskich przedsiębiorstw stosujących outsourcing oraz istnienia ewentualnych różnic między poziomem tych zależności w firmach różnej wielkości.

Artykuł, obok wprowadzenia i podsumowania, zawiera dwie główne części. W pierwszej z nich podano informacje dotyczące charakterystyki próby badawczej oraz metodyki badań. Następnie zaprezentowano wyniki badań empirycznych przeprowadzonych na próbie 281 podmiotów wraz z najważniejszymi wnioskami. Przedstawione w artykule wyniki badań

zdają się potwierdzać empirycznie koncepcję modelu biznesu w jego kształcie zaproponowanym przez A. Osterwaldera. Korelacje między zmianami dokonywanymi w poszczególnych elementach modelu biznesu kształtowały się w większości przypadków na wysokim poziomie. Wyniki badań wskazują również na odmienny sposób zarządzania modelem biznesu w firmach o różnej wielkości, co wynikać może m.in. ze specyfiki przebiegu procesów zarządzania, w tym strategicznego, w małych i dużych podmiotach gospodarczych.

Słowa kluczowe: model biznesu, zarządzanie zmianą, wielkość przedsiębiorstwa, wyniki badań, outsourcing.