

# METHODOLOGY OF CREATING BUSINESS MODELS IN THE EDUCATIONAL EFFECTS WITHIN THE SCOPE OF KNOWLEDGE AT THE MANAGEMENT MAJOR: THE CASE OF THE BACHELOR'S DEGREE AT THE UNIVERSITY OF ECONOMICS IN KATOWICE

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## **Abstract:**

Within the last decade the concept of business models in the management science has once again gained in importance. It was possible due to a forged and promoted concept of methodology of creating business models which is based on the ontological approach. The concept is being, in turn, successfully developed towards preparing and testing tools for managing these models. Therefore, the popularity of studies concerning this subject, indicated by, for example, GoogleScholar, should not be surprising, either: at a time of the paper being written (July 2014) the information about 1026 quotations of A. Osterwalder's publication (2004) regarding the discussed subject matter was to be seen, as well as 466 quotations of a relatively recently released publication entitled "The business model: recent developments and future research" (Zott and others 2011).

The objective taken on in this article is, therefore, to determine whether the subject matter that is so popular within the framework of the management sciences has its reflection in the declared educational effects at the management major at the "enterprise management" specialty at the University of Economics in Katowice. For the purposes of realisation of this objective the educational effects, assumed in syllabuses of the given subjects, within the scope of knowledge were used and compared with the objectives and content of the subjects in terms of the occurrence of the methodology of creating business models.

The obtained results of the conducted analysis point out that the subject matter being discussed is present, above all, in specialised subjects, both in theoretical and practical sphere (of the used tools). However, it is of fragmentary and dispersed nature in the content of many subjects.

**Keywords:** Business, Model, Management, Knowledge.

## **The notion of business models in the management science**

Unfortunately, definitions of business models which may be encountered in the literature are manifold and based on different perspectives of the problem analysis. It certainly translates into a multi-layered nature of the discourse within the framework of the addressed research problems. Explaining the notion of business models often requires making references to such notion categories as, for example, logic, resources, competences and actions. Some other time, particular attempts to define these models refer to them as profit-oriented undertakings of purely commercial nature or as a combination of commercial activity and pro-social approach which indeed is based on charity or, which, at least, refers to sustainability. Under the circumstances the objectives of a business model are also interpreted differently: they are presented as a purely financial objective in the form of generated profit, by means of providing particular products/services, i.e. satisfying the needs of particular customers, up to generating value in a broad sense for a group of stakeholders in a broad sense as well [Brzóska 2009, 5-23]. In these definitions, the determinants of establishing business models are also defined differently: external factors (e.g. sector factors) and/or internal factors, such as company resources, competences, profitability, innovations, competitiveness potential and many others are presented and discussed [Jabłoński 2013, 40]. Exchange of ideas within the

scope of the above problem present in the management sciences becomes therefore ambiguous and difficult, whereas using this phrasing (i.e. a business model) during a discussion repeatedly takes the form of a cliché [Magretta 2002, 87-92].

It is worth having in mind the fact that the notion of business models appeared in the 1950s at a time of the planned strategies. Thus, nowadays the contemporary perspective of strategic management based on emerging strategies seems to postulate the necessity of a different description of this problem [Machnik-Słomka and Kordel 2012, 238]. Therefore, in the literature related to its description contemporary interpretative approaches to business models may be found. Firstly, these theoretic perspectives are based on conceptual modelling of the elements distinguished within the framework of the so called business model ontology, which are also connected to such notions as metamodels and reference models [Osterwalder and others 2005, 11]. Secondly, somewhat as a consequence of testing these ontologies, managing the business model itself and establishing the tools for its purposes are also being discussed [Gordijn and others 2005, 2].

## **The issue of creating business models: ontology as methodology**

The inconvenience mentioned before which is often encountered in the scientific discourse and which consists in a diverse understanding of the notion of business models results in a very multi-layered discourse regarding this subject. In the literature of the subject, the notion may indicate, for example, a part of a larger model (e.g. an online auction model); an actually existing model of a particular company or a conceptual description of relations between the distinguished elements of a given model [Linder and Cantrell 2000-2001, 2]. Therefore, not only the already mentioned issue of presenting the business model as an element of the theory of management, but also, in accordance with the latest trends in this field, presenting it as a management subject requires resolving.

A. Osterwalder, Y. Pigneur and C.L. Tucci referring to the above issue point out that the issue of business models may be presented with the use of one of three possible categories of defining business models, which also define the way in which they are shown. According to the authors, the categories that show the forms of business models may be hierarchically related to one another. These are as follows [Osterwalder and other 2005, 8-10):

1. defining business models as concepts, the description of which shall incorporate all the business models that exist in the economic reality;
2. defining business models by means of describing various kinds of abstract features of business models (according to a particular classification scheme) – each definition describes business models of particular features;
3. presenting within the definitions real aspects or conceptualisation of actually existing business models (of particular enterprises).

The referred authors point out that each of these approaches has its justification, each of them may turn out to be fruitful and useful in the description of business models. According to them, they may also be formulated out of simple definitions or a more complex series of elements and establishing relations between them. However, the authors point out that the emphasis placed on hierarchical relations between these approaches (categories) taking the form of, among other things, the reference models enables to get the insight not only into the form of the model itself, but also the structure of the theory of business models.

A phenomenon that is characteristic for the perspective of the issue of business models with respect to the metamodels (reference models) is using the notion of the business model ontology [Osterwalder and Pigneur 2005]. In this approach, the ontology is based on a specific understanding of the following notions: conceptualisation connected to presenting "the model" as business logic; conceptualisation divisibility/universality which is created on the basis of ontological liability (common interpretation of the business model by the interested parties, built on the basis of the assumed terminology); technicality, that is presenting a business model as a "machine scheme"; openness understood not only as a way in which people understand this model, but also documentation by which it is described [Gordijn and others 2005, 6].

While making the attempt to regard ontology as the methodology of creating business models (which is an approach based on the conceptual framework which expresses the essence of business, that is the so called model of the business model), reference to the specific criteria describing and differentiating the ontologies themselves should be made. They seem to establish a given ontology as a particular method [Alberts 2011, 157]. The most essential criterion of such differentiation is the purpose, which a given ontology is used for. The purposes may vary with respect to the need of an enterprise, however, nowadays (i.e. from the point of view of the contemporary business model definitions) they are aimed at the issue of creating value. A peculiar attempt at conceptual visualisation with the use of ontology of a chosen key business model problem points out also a close relation between these two notions (i.e. ontology and business model definition). Simultaneous, but strict, as it has already been mentioned, formulating of these ontologies enables to devise and implement tools which are essential for their description and assessment. At this point it should be emphasized that the nature of these tools is similar to information technology solutions.

## Specificity of management as a teaching subject at the academic level in Poland

In order to refer to management as an academic subject one should first decide what it concerns. Unfortunately, while analysing the contemporary reports regarding the use of this notion one may come to a conclusion that management is a notion which incorporates everything, in a sense that one can manage everything in every situation. The problem may be illustrated by the word cloud below which was created as a result of the analysis of the first thirty scientific articles shown by GoogleScholar.pl after the headword "management" had been entered. It may be noticed that information obtained in this way, despite its only very superficial analysis, enables to notice the fact of the use of the notion "management" not only in economic sciences, but also the humanities or natural sciences (to be precise, in this case in medicine or environmental sciences).



Figure. The cloud for the selected titles of scientific articles which include the word "management" (created on 23 July 2014 with the use of the programme tagcrowd.com)

In relation to what has been noticed with reference to the universality of the use of the notion "management", S. Sudoł postulates for the use of the word management only if the three conditions listed below are met [Sudoł 2012, 414]:

1. management is connected to the activity of human teams;

2. management is a process which takes place within an organisation (entity) in a broad sense;

3. the managing entity has influence on this process.

These arrangements have their significant implications for teaching management at the academic level. In accordance with the law applicable in Poland, management sciences constitute a separate discipline within the scope of two fields of knowledge: economic sciences and humanities. This distinction results in a dissimilar attitude towards defining the curriculum as well as the so called educational effects. W. Walczak, making use of the arrangements of the Central Commission for Scientific Degrees and Titles, emphasizes that contemporary management in economic sciences concerns areas of scientific interest distinguished with regard to [Walczak 2013, 13]:

- types of organisations;
- functions of management;
- types of processes;
- types of resources;
- levels of management;
- management systems and methods.

With regard to what has been said hitherto as well as the necessity to work out the educational effects for the majors following the implementation of new provisions of the higher education act in Poland, it was called for, among other things, the effects for the management major in the discipline of economics to concern, among other things [Konarzewska-Gubała and others 2011]:

1. general knowledge from the field of economic sciences, detailed knowledge within the scope of management and related sciences concerning the functioning and development of economic organisations as well as their economic, social and legal environment,
2. capacity of understanding of critical knowledge and its practical application into the description and analysis of typical problems and areas of business activity of an enterprise (organisation) and its environment,
3. preparation for active participation in decision-making process and making and realising complex undertakings,
4. capacity of clear and unambiguous presentation and consultation of inferences as well as theoretical and practical premises which constitute their basis,
5. ability to learn, which enables to continue studies, and ability to formulate and resolve a typical research task with the aid of modern methods and tools for obtaining and processing information,
6. understanding of professional and social liabilities of a graduate majoring in the subject from the field of social sciences.

These postulates have been created on the assumption of a high practical application of management sciences. Therefore, it shall be remembered that management as a major should draw the attention to teaching students self-reliance, that is an attitude based on the principles of self-education, which also finds its reflection in the educational effects presented above. The subject of a major requires understanding of the concept and ability to solve problems, whereas studying means researching, tracking and analysing something for the cognitive purposes. With regard to the assumed criteria of the higher education reform, it has also become vital to develop group work habits among students [Striker and Wojtaszczyk 2014, 55].

## **Analysis methodology and obtained results**

The objective of the conducted analysis was to establish the prevalence of the subject matter of methodology of creating business models in the educational effects within the scope of knowledge at the bachelor's degree, the management major, at the University of Economics in Katowice. Narrowing down the area of analysis to one university was a deliberate choice, though partly it was also necessary. The requirements for conducting studies which shall be met by Polish universities result in the fact that the canon of subjects read at a given major is comprised of two groups. Firstly, these are the subjects of a general nature for a given major

(which are established by top-down regulations), secondly, it is comprised of specialised subjects regarding a particular specialty at a given major (defined by the university itself) - this is the state for the selected curriculum. It shall be also remembered that the way particular assumed educational effects within the scope of knowledge for a given subject reads is also established at the university level (top-down regulations concern the canon of effects for a graduate of the major).

Realisation of the presented objective required identification of general and specialised subjects at the management major (corporate management specialty) which could include contents connected to methodology of creating business models. Among the general subjects the following subjects have been identified: General Management, Information Technology, Science about the Organization, Computer Science in Management, Financial and Capital Management in Business. Whereas, among the specialised subjects the following subjects have been distinguished: The Economic and Financial Analysis, Enterprises Restructuring Processes, Organizational Change Management, Controlling, Strategic Cooperation of Firms. While making use of the forms of the syllabuses the attention was paid to the educational effects within the scope of knowledge for these subjects, which made it possible to start the analysis itself, for the purposes of which the programme Open Code (version 4.01) was used.

Table 1. List of educational effects within the scope of knowledge for the selected general subjects at the management major

**Document: general**

**Line Text**

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- 1 „General Management“
- 2 knows the key concepts
- 3 knows the relationships within the organization and between
- 4 the structures and institutions in the environment
- 5 knows the kinds of social ties
- 6 knows the man's role as a creator and participant in the
- 7 economic and social sphere
- 8 knows the methods and tools for data acquiring and its
- 9 collection and processing
- 10 has a basic knowledge of the change variables of
- 11 organizational processes and their consequences
- 12 has knowledge of the evolution of organization and
- 13 management theory and paradigms belonging to them
- 14 knows the patterns to make optimal decisions
- 15 has knowledge of the practice and theory of research
- 16 methods and projects
- 17 has knowledge of the characteristics of the mutual
- 18 influence of internal and external environment for the
- 19 organization
- 20 knows how to identify and exploit the potential of the
- 21 organization
- 22 „Information Technology“
- 23 has a basic knowledge of information technology allowing
- 24 to build the relationship between economic organizations
- 25 knows the tools to enable the acquisition, collection,
- 26 analysis and sharing of economic data
- 27 knows and understand the basic principles of copyright law
- 28 for marketed software
- 29 „Computer Science in Management“
- 30 knows the most commonly used management methods and tools
- 31 for data acquisition and data collection and analysis
- 32 „Science about the Organization“
- 33 knows and understands the differences in social ties
- 34 has knowledge about the role of man in different types of
- 35 organizations and in the way of achieving its objectives
- 36 has a basic knowledge about the organization environment
- 37 and its impact on the results of the organization
- 38 „Financial and Capital Management in Business“
- 39 is able to describe the scope of financial and capital
- 40 management in the company
- 41 is able to analyze the financial and capital management as

Table 2. List of educational effects within the scope of knowledge for the selected specialised subjects at the management major

**Document: specialization**

Line	Text
1	„The Economic and Financial Analysis“
2	has knowledge of the role of economic and financial
3	analysis in the management of the company
4	has knowledge of economic and financial analysis procedure
5	and organizational models
6	„Enterprises Restructuring Processes“
7	has knowledge of the structure of the management of
8	restructuring process
9	has the ability to use the acquired knowledge to the
10	planning and control processes of restructuring
11	can think and act in an entrepreneurial manner
12	„Organizational Change Management“
13	knows methods and tools for the innovation and change
14	management in the theory and practice
15	knows how to identify and release the organizational
16	potential
17	„Controlling“
18	has knowledge of the basic variables reflecting the nature
19	and scale of social- economic processes of change
20	has knowledge of controlling methods commonly used in
21	practice and theory
22	„Strategic Cooperation of Firms“
23	has knowledge of the key concepts of economics
24	has knowledge of the relationships between organizations
25	has knowledge about the impact of internal and external
26	factors of the operator

In order to establish whether the subject matter of the methodology of business models is present among particular educational effects within the scope for the given subjects, the objectives of subjects included in the syllabuses as well as their contents were also analysed. This enabled to assign the following codes to the particular educational effects:

- t1 and t2 (which refer to theoretical aspects of the methodology of creating business models; index figure 1 stands for those which are present in the educational effects, index figure 2 – the absent ones, however, it is possible to modify the subject content so that they can appear);
- p1 and p2 (which refer to practical aspects of the methodology of creating business models; index figure 1 stands for those which are present in the educational effects, index figure 2 – the absent ones, however, it is possible to modify the subject content so that they can appear).

The codes defined in such way enabled also to formulate two major categories (syntheses): present in the educational effects (which codes t1 and p1 have been assigned to) and absent in the educational effects, though allowing modification (which codes t2 and p2 have been assigned to).

With regard to the the specificity of objectives and content of particular subjects as well as formulation of the effects, it became indispensable to introduce the code "na" (not applicable to the methodology of creating business models). This code, simultaneously, created the third group of educational effects (not applicable). The tables below present the assignment of particular codes to the given effects.

Table 3. Category "present" in the educational effects

**Synthesis 1: Present**

LineNo	Text	Codes	Synthesis 1
	Document: general		
20	knows how to identify and exploit the potential of the	p2, t1	Absent, Present
23	has a basic knowledge of information technology allowing	p1	Present
25	knows the tools to enable the acquisition, collection,	p2, t1	Absent, Present
30	knows the most commonly used management methods and tools	p1	Present
39	is able to describe the scope of financial and capital	t1	Present
41	is able to analyze the financial and capital management as	p1	Present
	Document: specialization		
2	has knowledge of the role of economic and financial	t1	Present
4	has knowledge of economic and financial analysis procedure	p1	Present
7	has knowledge of the structure of the management of	t1	Present
9	has the ability to use the acquired knowledge to the	p1	Present
11	can think and act in an entrepreneurial manner	p1	Present
13	knows methods and tools for the innovation and change	t1	Present
15	knows how to identify and release the organizational	p1, t1	Present
18	has knowledge of the basic variables reflecting the nature	t1	Present
20	has knowledge of controlling methods commonly used in	p1, t1	Present
24	has knowledge of the relationships between organizations	t1	Present
25	has knowledge about the impact of internal and external	t1	Present

Table 4. Category "absent" in the educational effects

**Synthesis 1: Absent**

LineNo	Text	Codes	Synthesis 1
	Document: general		
2	knows the key concepts	t2	Absent
3	knows the relationships within the organization and between	t2	Absent
6	knows the man's role as a creator and participant in the	t2	Absent
8	knows the methods and tools for data acquiring and its	p2	Absent
10	has a basic knowledge of the change variables of	p2, t2	Absent
12	has knowledge of the evolution of organization and	t2	Absent
14	knows the patterns to make optimal decisions	p2, t2	Absent
17	has knowledge of the characteristics of the mutual	t2	Absent
20	knows how to identify and exploit the potential of the	p2, t1	Absent, Present
25	knows the tools to enable the acquisition, collection,	p2, t1	Absent, Present
34	has knowledge about the role of man in different types of	t2	Absent
36	has a basic knowledge about the organization environment	t2	Absent
	Document: specialization		
23	has knowledge of the key concepts of economics	t2	Absent

Table 5. Category "not applicable" in the educational effects

**Synthesis 1: Not applicable**

LineNo	Text	Codes	Synthesis 1
	Document: general		
5	knows the kinds of social ties	na	Not applicable
15	has knowledge of the practice and theory of research	na	Not applicable
27	knows and understand the basic principles of copyright law	na	Not applicable
33	knows and understands the differences in social ties	na	Not applicable

The conducted analysis enabled to establish that the subject matter of the methodology of creating business models is present mostly in the educational effects within the scope of knowledge for general subjects at the management major in three cases. These are: General Management, Information Technology, Science about the Organization, Computer Science in Management, Financial and Capital Management in Business. In case of information subjects they are of practical nature (they concern knowledge within the scope of application of tools for data transmission and analysis), whereas in case of the subject of financial nature it may be stated that education is supposed to come to an end with a student possessing theoretical knowledge within the scope of the financial side of realised business processes, which, from the practical perspective, is manifested by being acquainted with the financial analysis tools (mainly in view of the financial liquidity management). There is also a wide group of effects in which, following confrontation of the content and objectives of the subject, the subject matter of the methodology of creating business models could not be found. They are, to a large extent, connected to the subject of General Management. With an appropriate modification of the content of the subject, the interesting subject matter, from the perspective of this paper, could find its own place, however, there is a question whether it is necessary in case of the subject which is to give students fundamental knowledge about the management sciences. In the group of general subjects there are also all the effects qualified to the category which is not directly connected to the methodology of creating business models. They are altogether present in several subjects and concern mostly the theory of sociology, theory of methodology of social sciences and jurisprudence.

In case of specialised subjects it may be stated that the subject matter of the methodology of creating business models is present in the assumed educational effects within the scope of knowledge of all the subjects, both in their theoretical and practical aspect. The subject of Enterprises Restructuring Processes in particular is to enrich students' knowledge within the scope of formulating business models.

## Conclusions

The conducted analysis enabled to establish that the subject of the methodology of creating business models is present in the assumed educational effects within the scope of knowledge at the management major at the University of Economics in Katowice (the corporate management specialty selected for the purposes of the analysis) mostly in specialised subjects. In case of general subjects, in two/three cases, the expected effects may be distinguished from the perspective of the purposes of the analysis.

As it has already been stated, the reason for conducting the presented analysis was the indicated popularity of the subject matter among both practitioners and theoreticians of management. It should not be left aside that in case of the curriculum it is about passing on the reinforced knowledge in a given field to students. This very fact may be noticed, among other things, in the educational effects in case of subjects that are general for the majors, in which the subject matter of the methodology of business models is present in the assumed educational effects to a limited extent. Specialised subjects, which are supposed to pass contemporary knowledge in a narrower scope, indeed, include the discussed issue in their content. However, it shall be pointed out that, with regard to the fact that business models themselves do not constitute the issue of the subject read, passing knowledge about them and about the methodology of the way they are created is fragmentary. It seems that in order to make an attempt to configure the content of subjects so that, on the one hand, their assumed effects will concern the methodology of creating business models, and, on the other hand, the content will not be subject to defragmentation and dissipation, it would be necessary to establish a new specialty.

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