

# NEW BUSINESS MODEL OF EDUCATIONAL INSTITUTIONS

Matilda Drozdová

## 1. Introduction

The need for education for knowledge economy or for information society brings to educational institutions a problem denoted as new education. This need for changes is evoked by the intense development of information-communication technologies, which, on one side, bring enormous amount of new information, and on the other hand they enable such functions as collection, processing, saving, transfer and presentation of information in an electronic form.

The big amount of new information needs to be changed into knowledge and skills of students, not only during the formalized study which prepares them for their future professions but also in their life-long learning. This means it is necessary to change the contents of study, as well as to select carefully what is to be taught.

To achieve the required knowledge and skills it is possible to use the above stated functions of information-communication technologies, application of which by means of information systems is denoted as e-education, e-learning or technology enhanced learning.

It is impossible to limit the implementation of e-learning at educational institutions to the implementation of a technical information system. The technical system creates the infrastructural part which supports the changes in education. The information-communication support may help make essential changes in education in two areas:

- forms of teaching;
- way of study materials processing.

Changing the form of teaching means transfer from the face to face form to the 'blended learning' form, or even to the distance on-line learning. Changing the way of study materials processing represents not only electronic processing of a text but also of other information types into multi-media study materials.

To create the above changes, we need to solve several problematic areas. Today, at educational institutions these are being solved separately, without a complex systematic approach. Therefore the education process at educational institutions has not changed essentially so far.

## 2. Changes at Educational Institutions

A number of conferences, contributions and articles enable us to claim that nowadays, each educational institution is solving the electronic support, and most of their employees are aware of it. There are a lot of partial solutions of the e-learning systems, often without any particular implementation impact on the existing organisational structure and management of educational institutions. The reason of this is the fact that partial solutions dominate a complex systematic solution. Such a situation is typical of the periods of beginning of the information-communication technologies implementation. We have already been into a further development stage now, which emphasises essential changes, implemented by means of information-communication technologies. That is why there is a need for a complex solution to new education, often called also e-education service, where the letter 'e' puts emphasis on the possibilities of information-communication technologies, which might help create new education.

Here, the term 'service' needs to be emphasised, and one has to realize that the educational institutions, first of all universities, in the current global society have become enterprises providing educational service. If they want to provide it at a desired level, and stand up to the competition, they have to build the institution respecting the current principles of service enterprises creation. This means to create, in liberalized conditions, organisation and management principles similar to

those in other industry and service sectors. That is why it is possible to introduce the notion 'business' to educational institutions; this expresses the need for market behaviour.

The information-communication infrastructure for providing the e-educational service requires building an information system which would support education. By the information systems implementation principles, see e. g. [13], the information systems are not supposed to be implemented into existing organisational structures of enterprises. As stated in [2], particularly the information systems implemented in such a way did not bring expected effects in the past, and many of the proposed systems were not put into real operation. Very often there is a tendency to ignore the fact that the implementation of e-educational information system is not the only change compared to the past. Far more important for e-education, using the technical system, is the fact that the way how the educational activities and processes used to be done, is changing. The new educational processes and activities require creation of a new business model with all of its consequences. Generally speaking, the information systems implementation is supposed to be part of the essential changes in companies and institutions, regardless whether the company produces products or provides services.

An educational institution does not purchase materials, nor does it make products which would be further distributed. The institution is an enterprise providing educational services to customers, who are students and employers. Just like for other enterprises and institutions, it should also be natural for educational institutions to change their current processes and activities, and create a new business model of an institution providing educational services in new social conditions. The changes should be carried out by principles nowadays accepted and published as general principles of services enterprises transformation. It is possible to use the general principles of providing the information-communication service, specified in [4], or a specific proposal of the e-learning implementation by [5]. They suggest the information systems proposals for e-education should not be implemented into the business models already existing at educational institutions. On the contrary, before a proposal and implementation it is necessary to create

a new business model of an educational institution. It is possible to be created on the basis of the specification of new educational processes and new educational technology. The new business model will also be the ground for a new value hierarchy of the educational institution. On the basis of the business model the changes of the educational process will be specified up to the level of the activities carried out. The changes and their implementation require the changes in management knowledge, especially with managements of educational institutions. The paradigms of the current educations will have to be changed with all of the employees of educational institutions. The new business model should be the grounds for understanding these changes.

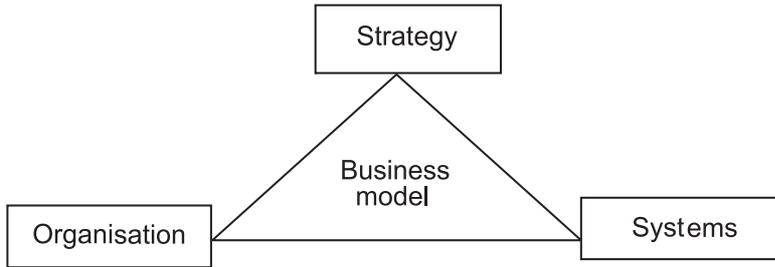
### 3. Business Model

The term 'business model' describes a wide range of formal and informal models which are used to present various aspects of business. In literature we find a number of definitions of the terms. Some of them are based on economic and organisation theories, others emphasise the same operational and transactional aspects. The concepts, as well as the term of business model are relatively new, the issue very often becomes a subject of debates and discussions, many times they do not get the attention they deserve.

According to [14] „A business model is a conceptual tool containing set objects, concepts and their relationships with the objective to express the business logic of specific firms. Therefore we must consider which concepts and relationships allow a simplified description and representation of what value is provided to customers, how this is done and with which financial consequences“. Further on [14] states that the business model ought to be a „blueprint“ about how the company should be making their business. It is a transcript of strategic goals into a conceptual model which describes individual business functions and activities. At the same time the business model serves as a work plan which enables proposing and implementing a business structure and systems for running an enterprise. One of the most important current systems are information systems, therefore the business model is also the basis of their proposal.

The business model may be classified at three different hierarchical levels. The first level defines

**Fig. 1: The Place of the Business Model at an Enterprise**



Source: [14]

the meta-model and its concept. At this level the abstract model is defined; it describes what kind of business the enterprise makes. At a lower level, general characteristics of the abstract model are described, and the last level consists of the real model, its illustration and description.

When creating the business model, we start from the relations between strategy, enterprise organisation and systems which create the business triangle. The enterprise strategy is the basis for creating the business model. It represents the basic concept of the model: the abstraction, describing the elements and relations providing the first draft of how the enterprise should create and provide the value of its product. The enterprise creates the value of a product by means of the processes which create the organisation of the enterprise. The business model is thus joined with the processes, although the processes in it are expressed only at a conceptual level, not as process maps. The last part of the business triangle is the systems which create the enterprise infrastructure. The given relations are expressed in Fig. 1.

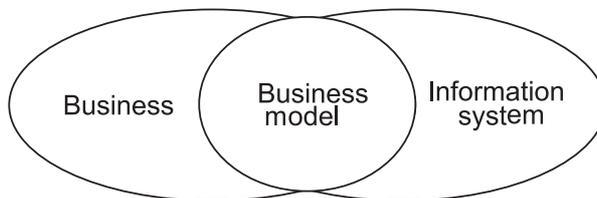
The main reason for creating the business model is the fact that under the influence of information-communication technologies it is possible

to implement essential innovation changes at enterprises. The goals to be achieved by means of the changes are at most enterprises expressed by strategic goals. The enterprises have their own organisation, processes and systems by means of which they have been achieving the goals by now. If a change of goals occurs, the other parts of the business triangle have to be changed, too. The new business model expresses these changes. The business model is the basis for specifying, understanding and ensuring the solutions and determination of the influencing factors, which essentially contribute to the results and creation of the enterprise product value, especially with innovations. It illustrates the basic architecture of the enterprise and partner networks for the creation, marketing and supply of the product value, as well as adequate capital to create profit and a permanent income flow.

The main role of the new business model now is to improve the mutual understanding between the business and ICT areas. It is becoming their common platform for their mutual understanding, as it is shown in Fig. 2.

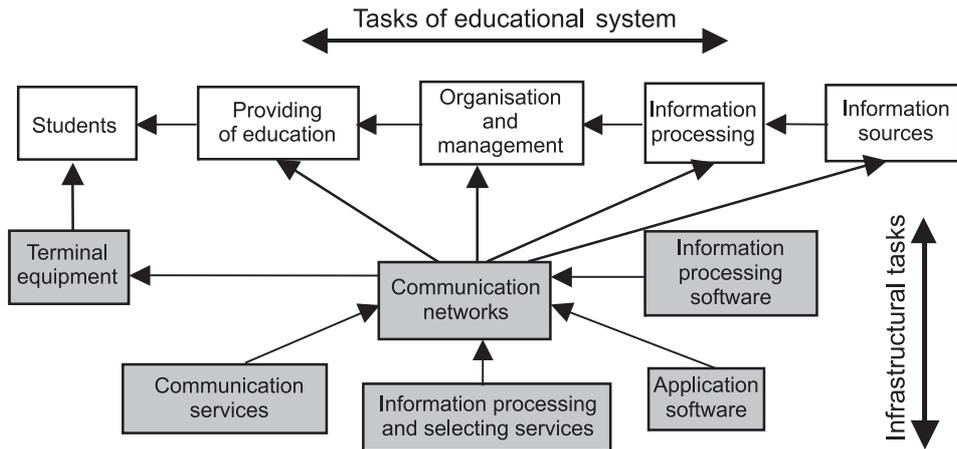
There is no general business model by which it would be possible to create it at particular enterprises and organisations. Nowadays, the busi-

**Fig. 2: Interconnection between Business Activities and Information System**



Source: [14]

Fig. 3: Business Model of Educational Institution Providing E-Education



Source: [15]

ness model has been illustrated in different ways, and there are many various definitions of the term, as well as opinions on its necessity. However, recently the number of articles and publications on the topic has been increasing. The need for the business model at enterprises has been perceived as a tool of changes carried out by improving the information-communication infrastructure and necessary software applications.

#### 4. The Business Model of Educational Institution

On the grounds of the above stated points, it is possible to consider the business model also at educational institutions. According the strategies and goals of education mentioned e. g. in [7], [8], [9], [10], also educational institutions declare higher added value, in the same way like it is declared in other areas. The added value reflected in outputs of education means providing education to the students in such a way that the acquired knowledge and skills are as much as possible usable in business practice, and that their acquisition is as effective, comfortable and of such a good quality as possible.

Nowadays, there is no doubt about the fact that the 'class model', the most frequently used in education, needs to be changed into a different one, with using the information-communication

technologies. Although the vision of a complete on-line education is too brave, the electronic support of education called e-learning or e-education occurs in the strategies of all educational institutions.

The term 'e-education' is used not only in solving changes in education but it is also used in classifications of services, provided on electronic communication networks. Nevertheless, it is a different approach from each viewpoint of the solution. Under this term, educational institutions mean the changes which may occur at providing education by means of implementing information-communication technologies. The information-communication services providers intend to use the technologies in the area of education. The implementations of the both different approaches need to be joined in one common solution, so that the implementation of information-communication technologies contributes to the development and quality of new education.

As the basis for creating the business model of educational institution we can use the general business model recommended by [11] for the GII - Global Information Infrastructure services, and by [6] for the EII - European Information Infrastructure services. One of the EII and GII services is the e-educational service too. The new business model of educational institution providing e-education will contain at the meta-level basic elements

of the educational system, and elements of the information-communication system. Fig. 3 shows the new meta-level business model of educational institution and was created according to the general business model for Global Information Infrastructure services in [15].

The proposed business model expresses the connections between the structural tasks of educational system, and the elements of information-communication system which create the infrastructure. This business model represents a new type of educational institution. There, by means of the implementation of information-communication system, the form of education will be changed first of all, but we must not forget the change of contents, or further organisational changes. The resulting value for the student - education will still be provided but it will be created by means of a value hierarchy different from the current one.

## 4.1 Structural Tasks of Business Model

### Information Sources

Currently, information sources are much more various than they were before. Except the printed form, there is not just their electronic form but there are also possibilities to gain information, as well as process, save, select, transfer, search and present them electronically. Thus it is possible to gain a large number of electronic sources for education. However, unselected and unauthorised sources, as well as too many of them may bring a problem for the student in options and number of selections. That is why it is necessary to process the information sources for educational purposes into study materials.

### Information Processing

Information processing is closely related to information sources. Because the available information sources cannot be used directly for education, it is necessary to adapt them to the students' needs and demands. Educational institutions provide education by given and approved branches and programmes, for which study materials are being prepared. In the past the creation of study materials used to be limited to printed form - books and textbooks. These days, there are electronic versions of text, sound, animation and

video; so called multimedia. By [12], processing information into electronic study materials is influenced by several factors. They are: granularity, interoperability, design, rights and metadata. Each of the factors represents an independent solution area, and currently a lot of research solutions are being carried out in this field.

### Organisation and Management

Educational organisation varies in dependence on the types of educational institutions. There are remarkable differences between elementary and secondary schools, universities and commercial institutions, providing life-long learning. Educational organisation means creating institutions, legislation conditions and all tasks associated with the educational institution operation. Solving this part of the business model is creating a new value hierarchy. It will be necessary to create new working positions, and change many activities with the existing positions. An important role plays the development of human resources necessary for the new educational process [3]. While in current education the teacher is mainly also the information processor for study materials used in education, in future further categories of electronic study materials creators will be required for the task.

The management of education using electronic support has two levels. One of them is the current formalised procedures in education, and the second one is their electronic support. The formalised procedures of educational organisation are the tasks of the institution management; the electronic support of management is the task for specialists in the field of information-communication technologies. Particularly for this task, the mutual coordination of implementing technical equipments and using them in education are needed very much.

### Realisation of Education

The electronic support of education is often intended in advance only for the external form of study, as a replacement for formerly used correspondence form of study materials distributing. This approach is incorrect and the electronic support for creating new education is equally possible to be used in both educational forms, presence as well as distance ones. We suppose that in the future this difference will be changed

remarkably. If the electronically processed study materials are created in such a way so that the personal presence of a teacher is not necessary, there will be no reason to maintain the presence form. Today we can partly imagine this form only at universities and with life-long learning. As an argument, the discipline side of learning can be presented; it is assumed to have only the presence form. However, if the electronic study materials are prepared to teach without a teacher and the management and communication functions are used in the Learning Management Systems, for many students this electronic form might become more acceptable than the presence form. By being able to control the movement of study, and to have help available, students can avoid a lot of negatives of the presence learning too.

It has been a great challenge for teachers to prepare conditions for the new education. In it, the student does not approach to the contents of education as to general information sources but as to a system which leads them through their studies. The teacher selects, recommends and makes public the processed information sources as electronic study materials for the acquisition of necessary knowledge, skills and abilities. This task cannot be only a side-activity of teachers. It has to be part of solving tasks arising from the business model.

### **Students**

The student is the most important part in structural tasks. The whole business model is created for students.

If all of the mentioned parts of the model have needed the essential change of their current paradigms, the student has not been an exception either. The students' access to education at the schools is not suitable. Students respect school because they often have no other choice. But in many cases they do not appreciate it, and schools do not solve the relation in a correct way. Here, implementing the quality systems and respecting the student as the educational service customer might contribute expressively. From the viewpoint of the service the student may be considered a direct customer, for whom the educational service is implemented and provided. In correlation with the general business model it is necessary to point out the specification of customer's requirements on education. The students and also the

employers have to be considered as indirect customers. They participate mainly in the contents demands for education.

## **4.2 Infrastructural Roles of the Business Model**

### **Creation of Communication Network and Its Services**

Currently the information sources as well as the systems of electronic support of education are available through electronic communication networks over the searching web applications of the Internet. Moreover, e-mail, chat, discussion platforms and others are used.

In some cases low-speed accesses, which limit mainly the video transmissions, are a problem. The development of communication networks nowadays leads to Next Generation Networks - NGN. The NGN will provide, except the existing communication services, also broadband accesses to information sources and application functions, which will help put together new needed e-services, which also include the e-education service.

### **Processing, Saving and Selecting Information Services**

In this area, the activities for the standardization of repositories and processing of information sources for e-education needs are being created. The best-known standards for the e-education area are SCORM and IMS. Both of them recommend to create re-usable educational objects, which enable to create electronic study materials according to the needs of a given educational moduls. This task requires a very tight connection to the structural tasks information sources, and information processing.

### **Application Software**

There are a lot of application software solutions for the electronic support of education. The application software called LMS - Learning Management System - is now also available as a shareware. By many statistics, one of the most frequently used worldwide is LMS Moodle. Selecting application software is up to the educational institution. The cooperation of LMS with the repositories of e-learning contents is required, and also solving the unified access to various LMS is very topical. For example [1] is solving this issue.

Except the offered LMS application software, it is also possible to create integrated systems for e-learning, which apart from LMS contain other subsystems for the complex support of the entire educational process. An example of such a solution is the e-education system created within [15], which is used at the University of Žilina. It integrates, except LMS, also the System of Topics Information, System for Exam Booking, System of Students Grades Recording, and Courses Evaluation System.

### Information Processing Software

Software products for information processing depend on the information type to be processed. To process texts and presentations, the MS Office is used most frequently; multimedia animations are processed e. g. in Macromedia Flash. The software for information processing, saving and selecting, as well as the application software have to be solved in mutual coordination. Here, it is also necessary to respect the standards because of the compatibility and possibility of sharing the processed information sources.

### Terminal Equipment

Terminal equipments are mostly PCs with the specification for using multimedia applications. Nowadays, the compatibility of network connection is not a problem any more. The connection possibilities for all students of an educational institution, regardless their material or financial resources remain still a problem. This task is connected with organisation and management and the state police in education can help to solve it.

## 5. Conclusion

Today, educational institutions do not appreciate the problem of structural and infrastructural tasks of the business model in a complex manner, and neither have they solved them according to the suggested model. At the same time there are many projects of information-communication technologies implementation in progress; which, after they are finished, either do not get included into educational process, or they support only the education in the individual subjects of the project participants. The results of mainly technical solutions therefore do not serve their purpose, and the educational process remains basically the same as it was before.

Creating and understanding the business model leads to parallel solving of structural and infrastructural tasks and their mutual relation. The infrastructure created by information-communication technologies thus may copy the demands and needs of structural tasks. By means of working out the basic business model described in the article a new value hierarchy of educational institutions will be gained.

Thus creating the new business model at educational institutions is becoming a matter concerning the entire institution, not just individuals.

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- doc. Ing. Matilda Drozdová, PhD.**  
Žilinská univerzita v Žiline,  
Fakulta riadenia a informatiky  
Katedra informačných sietí  
Univerzitná 1  
010 26 Žilina  
Matilda.Drozdova@fri.uniza.sk

Doručeno redakci: 12. 9. 2007

Recenzováno: 3. 10. 2007

Schváleno k publikovaniu: 14. 1. 2008

**ABSTRACT****NEW BUSINESS MODEL OF EDUCATIONAL INSTITUTIONS****Matilda Drozdová**

*Changes in technologies have always caused changes in the whole society. It happened in the times of steep industrial development, and it is happening nowadays, along with the development of information-communication technologies. The area of education has also been part of the whole-society changes. The basic change to be implemented in education is truthfully expressed by the tip of the week of a www page as follows: 'The uneducated of the 21st century will not be those who cannot read and write but those who cannot learn, unlearn and re-learn.'*

*To fulfil the idea above, we need a new approach to the implementation of education, as well as a new model of educational institutions. The educational process, the way it has existed up to now cannot bring a different result of education. In general, the basis for the implementation of changes is creating a new business model. Although the notion 'business model' has not been used by educational institutions and the meaning of the term 'business' is not possible to connect with its meaning in production enterprises, this kind of approach is necessary from the viewpoint of the changes in education and the implementation of information-communication technologies that are referred to as e-education .*

*The business model of educational institution was solved in the frame of the Research Target of the Government Issue Program called „Using of ICT and new generation networks platform in the education“ [15]. As the basic for creating the business model of educational institution was use the general business model, recommended for information infrastructure services, where e-education is as a service specifies. At this meta-level business model contains from two parts: educational system and infrastructure that support it. Each part of the business model is provided by means of the different professions, teachers and ICT specialists. Cooperation and collaboration between them is needed by the successful implementation of e-education and the business model describes it.*

**Key Words:** *business model, e-education, e-learning, innovation in education*

**JEL Classification:** *I20, I21, I23*