

**FACILITATING THE TRANSITION OF STUDENTS FROM SCHOOL TO WORK THROUGH INTERACTIVE METHODS SUCH AS SIMULATED ENTERPRISE IN THE CONSTRUCTION AND PRODUCTION OF CONSTRUCTION MATERIALS. CASE STUDY – CONSIMAT PROJECT***Cezar SIMION-MELINTE<sup>1</sup>**Adriana GIURGIU<sup>2</sup>**Maria Madela ABRUDAN<sup>3</sup>*

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**ABSTRACT**

*The paper presents the use of simulated enterprises in the construction and production of construction materials as a means to facilitate the transition of young graduates of higher education in economic and technical student status to the employee. The enterprise main purpose is to develop skills of the students by simulating processes and activities that occur in a real firm and its relations with other companies and institutions. In the project worked so far 11 simulated enterprises involving 231 students from technical and economic faculties. The work undertaken by students in the 11 simulated enterprises in the construction and construction materials revealed a number of advantages of using the most important being that of familiarizing students with the real activities of an organization before hiring. In the construction and construction materials field the method can be used but with restrictions because of the impossibility to simulate certain production processes and types of work.*

**KEYWORDS :** *simulated , enterprises, students, construction*

**JEL CLASSIFICATION :** *M20*

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**1. INTRODUCTION**

The construction sector and the production of construction materials are some of the most important sectors in Romania in terms of contribution to GDP and economic growth. Thus in 2015 the value of construction materials market is estimated at 3.5 billion euros and in 2015 construction segment will bring real growth of 0.4% to the GDP, projected to be over the next three years. The share of construction in GDP fell from 7.9% in 2013 to 7.3% in 2014. However, the trend could reverse in 2015, with a slight increase in the share of construction sector to 7, 5% of GDP.

Therefore the two economic sectors will continue to be in the future one of the main actors of the labor supply in 2020, including the demand for technical personnel with higher education. However, as in the past, companies in the field requires some deficiencies in preparing young graduates who wish to engage in field. These include: lack of knowledge involving work in the field, difficulties in applying the concepts learned in years of study, lack of entrepreneurial skills needed to work in this field. Companies in the industry claim the absence of knowledge in the field of higher education graduates in Romania and especially the lack of an organized framework to

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provide them with practical knowledge application and to give them confidence about practical validation of acquired knowledge.

Therefore for both graduates from the economic and technical faculties simulated enterprises in the construction and production of construction materials are a means of facilitating the transition from study to employment period.

## **2. SIMULATED ENTERPRISES – INTERACTIVE METHOD OF ORGANIZATIONAL LEARNING**

The simulation of economic processes and other processes in the organization can be seen as an organizational learning technique. According to Luban and Hincu (2009) “a simulation model could be a useful and versatile tool to gain insight into the operation of systems. Next to, e.g., natural systems, human systems also urban systems can be subject to simulation”.

Others think that că “simulated enterprise is a modern interactive learning method which allows deepening practice, by experience, specialized knowledge, thereby contributing to the improvement of professional skills as well as entrepreneurial skills training. Within the created virtual simulated enterprise combines theoretical knowledge from various disciplines: economics, management, marketing, accounting, computer science, foreign languages, computer science, law, etc., giving students an overview of the entire system generically called "enterprise" (Moise, Coculescu and Căruțașu, 2014). There are also specialists who believe that “today, knowledge management has become both a science, a branch of management with its own body of concepts, theories, models and best practices and a business” (Ceptureanu S.I, Ceptureanu E.G., Zgubea and Tudorache, 2012) The enterprise simulated before a equipped laboratory is a state of mind, a living organism that changes the traditional concept of learning .We are very clear that no endowment, moreover, necessary, is the defining element of the enterprise simulated, but the design of the laboratory activities.

The enterprise is a simulated interactive learning methods aimed at developing entrepreneurship by integrating and applying interdisciplinary knowledge to ensure conditions for deepening the practical skills acquired by students in training. The purpose of this method is teaching business skills development of students by simulating the processes and activities that occur in a real company and its relations with other companies and institutions. As some researchers consider “the firms should build special strategies for each market” (Popescu, 2013).

The simulated enterprise relationship teacher - student changes both ways. Make a near effective of the two participants in the same process of putting the requests of customers, suppliers, bank etc. This process builds a relationship other than the relationship student - teacher. It is about relationships: manager - employee; managers - teams; collaborators with varying degrees of knowledge of a problem, but both interested in solving them as accurate as possible.

The teacher comes down from the chair in the middle of its students, coordinating effectively process with a degree of complexity higher than in the classical system of transmitting knowledge that even if it is interactive, has limits on reciprocity. The student knows the teacher not only as a theorist but especially as a normal person, with strengths and weaknesses, and that he is concerned for his mastery of all aspects of enterprise creates a different attitude towards student activities.

The concrete activities undertaken by students, responsibility for solving tasks similar to those of the undertakings actual trade directly with their colleagues simulated enterprises in other countries motivates heavily on them, they create job satisfaction concrete, walked to the end, it provides certainty theoretical concepts learned from courses that are necessary in their future profession.

The practice under simulated companies cannot completely replace the traditional practice in business units. But we should note that often the practice in economic units suffer greatly in terms of content and quality, due to several factors: lack of interest in the unit is not grounded; lack of interest from students who are not properly coordinated and are not motivated; lack of motivation of

the teacher coordinator. Finally, often practice in enterprise turns into a longer visits, an information fleeting and limited about production processes and less about the practical aspects of business, visitors who want to be cut on both sides: both visitor and host.

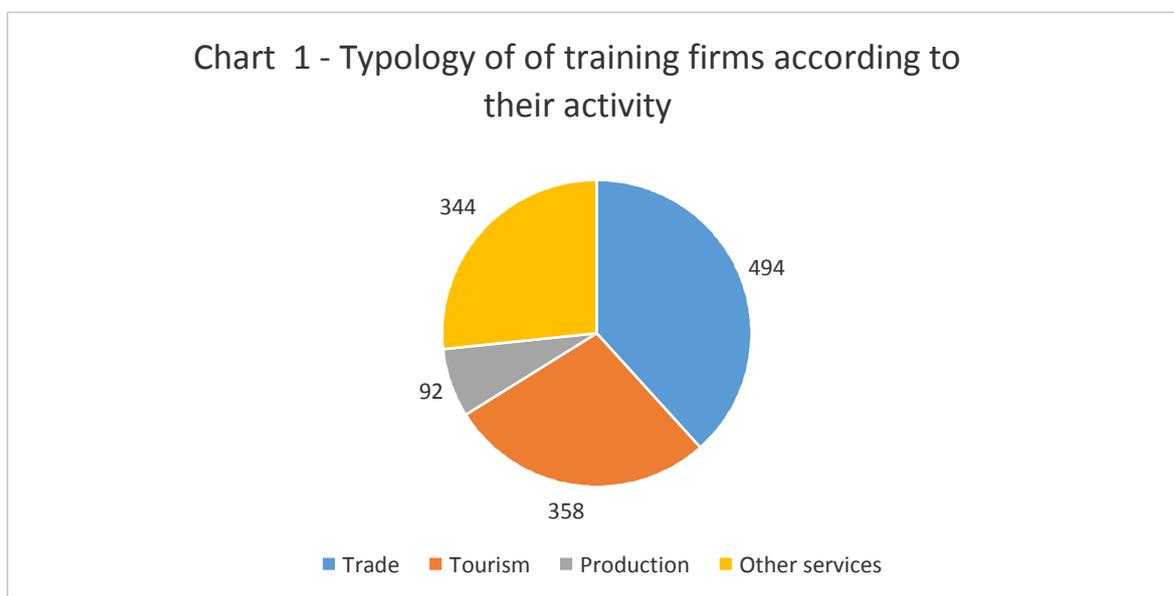
In contrast, the company simulated practice student creates his sense of being at home, making the task is real and that his involvement depends on the outcome of the whole team.

Coordination, as a manager or trainer by the teachers, the practice of simulated company, it raises a number of problems for us, with no face under the classical system of teaching.

Thus, the teacher must know perfectly content going activities in the simulated company, leading to the need for training in areas adjacent disciplines that currently teaches. In essence, you must know its business, personnel, finance - accounting, bank, transport, marketing etc. Also down among students becomes manager, he was forced to apply theoretical knowledge, but at the same time manifesting qualities and shortcomings manager authentic. Notes so live that trade issues they are trying to convey to students. Activity trainer alter the approach and conducted classes in the classical system, because all it does is filtered through practical necessity, felt more deeply now, after that experience.

### 3. SIMULATED ENTERPRISES IN ROMANIA

The activity of the simulated enterprises in Romania is performed via the platform ROCT-Romanian Coordination Centre of Training Firms. ROCT operates as a department of the National Centre for Development of Vocational and Technical Education. ROCT ensure all simulated interactions between firm and its external environment of business registration in the Trade Register to contact other companies in the system, conducting negotiations and concluding transactions to banking operations of receipts and payments. It can simulate including tax obligations at the end of each month.



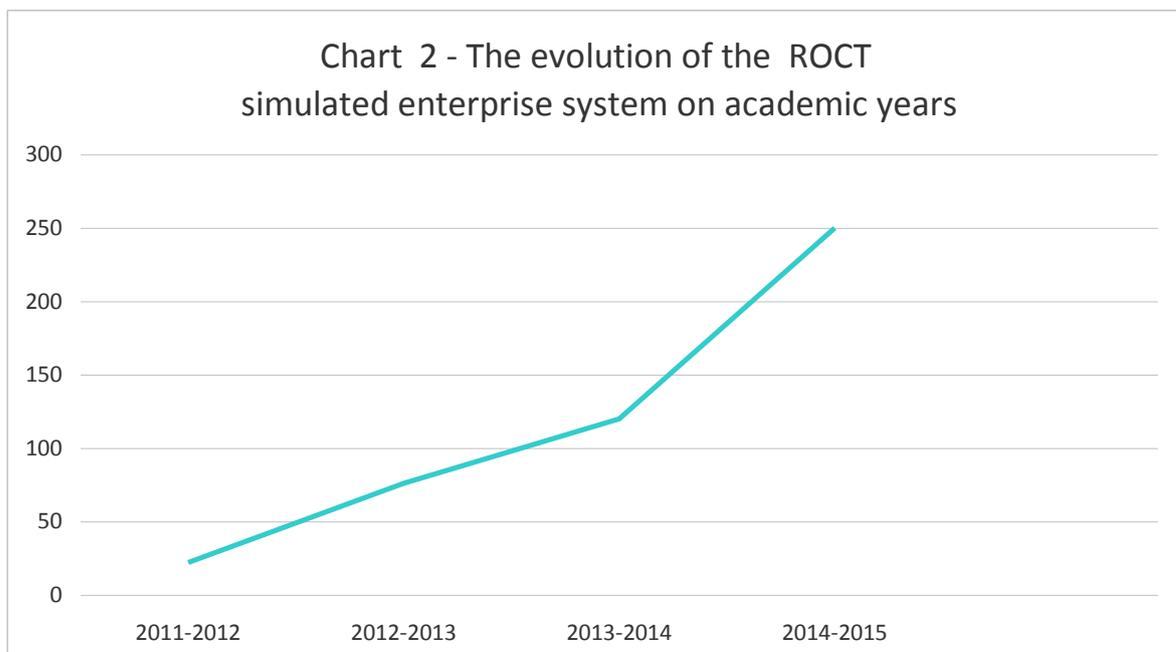
The ROCT by [www.roct.ro](http://www.roct.ro) web platform is structured on two levels:

- training firms for high school students;
- simulated enterprises for students from diverse economic and technical specialties education.

The activity in Romania started ROCT platform for training firms in the 2001-2002 school year by setting up a number of 34 companies, mostly in trade. This trend was maintained in the condition in

which the end of 2014 were registered in the ROCT system a number of 1305 companies, most with activities in trade and tourism. This is reflected in the chart below.

In ROCT system are recorded, until 2015, a total of 250 enterprises of which only 120 are active. The rest, more than half are still inactive. Most companies have simulated the object of trade and services, industry and less agriculture. Until the advent of simulated enterprises from the CONSIMAT project businesses in the construction sector were very poorly represented. The evolution of the enterprise simulated the academic years is shown in the following chart.



It can be seen an increase in interest in the practice of universities in this system due to the performance of students and the interest shown by them for such activities.

#### **4. CASE STUDY – SIMULATED ENTERPRISES IN THE PROEJECT “CONSIMAT”**

The overall objective of the project POSDRU/161/2.1/G/141733 is to develop the skills of the work of students in technical and economic education through participation in innovative activities that facilitate the transition from school to active life by implementing interactive learning methods type simulated enterprise in construction and building materials with a view to raising the labor market insertion and their employability.

The project POSDRU/161/2.1/G/141733 "Facilitate the transition of students from school to active life through interactive methods type simulated enterprise in construction and production of construction materials - CONSIMAT" it is done in a partnership comprising Producers Association Building Materials in Romania; Bucharest University of Economic Studies ; Technical University of Civil Engineering Bucharest; a building a research institute.

The process of simulated enterprises consented to the project started in november 2014 by registering and activating in the ROCT system of the first three simulated enterprises: IS BETONSTAHL Konstrukt Ltd.; INTER ASTC Ltd.; IS Macons Ltd.. Students involved in the first three simulated enterprise came from the Technical University of Civil Engineering and the Academy of Economic Studies in Bucharest. The three simulated businesses have the object of activity in the construction and materials and construction products and others according to the chosen strategy and student options:

- IS BETONSTAHL KONSTRUKT. has as main activity in construction of residential and non-residential buildings and other finishing works;
- IS INTER ASTC has chosen to diversify aiming to carry out activities such as consulting in management and business, wholesale of wood and construction materials and equipment, construction of roads and motorways - construction bridges and tunnels, manufacture of concrete construction, concrete production;
- IS MACONS Ltd. opted for wholesale of wood and construction materials and sanitary equipment.

Subsequently were recorded by students involved in the project CONSIMAT eight simulated enterprise in ROCT system:

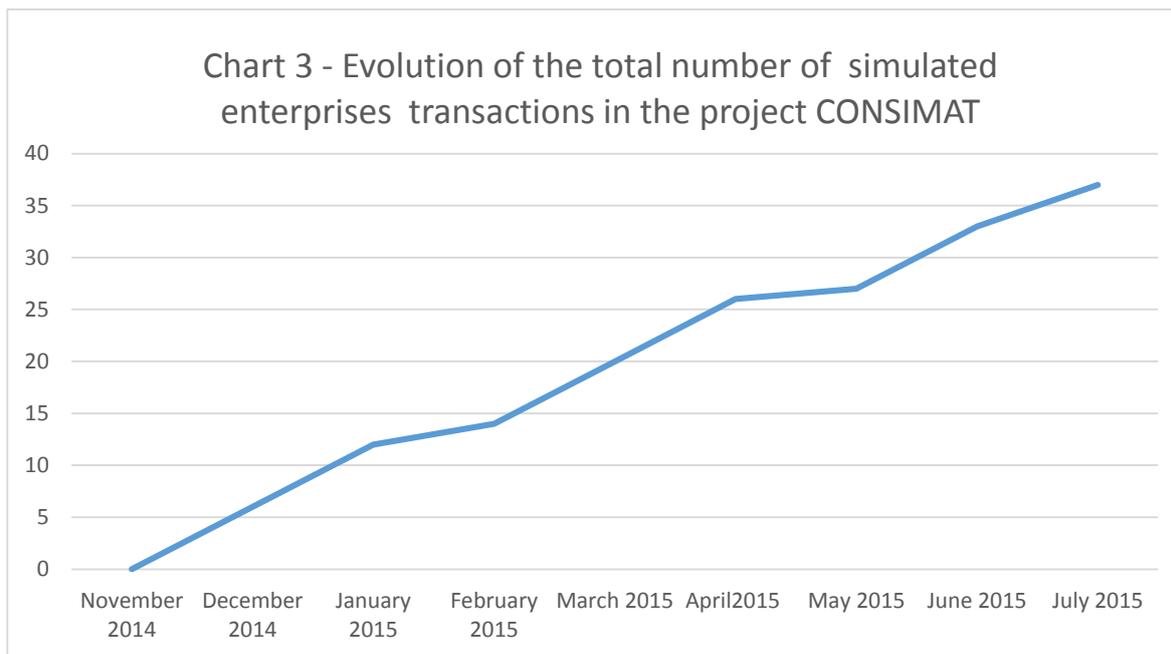
- in the month of February 2015 were activated simulated enterprises IS DEMO PREFAB , IS DENSAGA ; IS TOTAL CONSTRUCT 15 and IS UNIVERSAL DESIGN;
- in the month of May 2015 were activated simulated enterprises IS ARMORUM; IS CONSMAT; IS IDEAL CONSTRUCT ş i IS MASTERBUILD .

The most important activities undertaken by students in simulated enterprises from project CONSIMAT were:

- collection of information by the authorized institutions participating students about starting a business;
- debates in the group of students involved in each based on information collected;
- coordination of the reservation request the name simulated enterprise; paperwork to form;
- sending the scanned documents to ROCT;
- delivery of the documents issued by ROCT;
- creating a new account on the website www.roct.ro for simulated enterprise;
- establishing company logo;
- establishing business (products, services, etc.);
- developing the product catalog;
- developing organizational structure;
- developing human resources department specific documentation and commercial;
- organization office processes to scroll the standard activities;
- purchase of office equipment and other materials;
- carrying out transactions with other businesses (contact, negotiation, delivery, collection, after-sales service);
- developing forms of transactions;
- creating simulated enterprise web page;
- simulated enterprise account management in ROCT system.

In the 11 simulated enterprises from the project have been involved in during November 2014 -July 2015 a total of 231 students, mostly from the Technical University of Civil Engineering of Bucharest. The 11 simulated businesses were conducted during November 2014 -July 2015 a total of 37 transactions whose development is shown in the chart number 3.

It may be noted that during November 2014, February 2015 and May 2015 when there were three series of simulated enterprise there were fewer transactions because the waiting time between the date of dispatch of documents in the system ROCT and activation date each company (which is the official date of the transaction in the system can ROCT).



Businesses simulated consented project operates in a room equipped with furniture, appliances, equipment and informational support (forms) similar to the functional compartments of actual units. The company is led by a manager (director).

The staff of the company must meet a number of conditions, including: expertise, professional experience, knowledge of foreign languages and informatics, quality teaching and manager. The company operates on the basis of rules of organization and operation containing organizational structure, information systems, training and evaluation process for students, staff job descriptions within the company.

Managing Director simulated maintain continuous contact with managers of other companies and ROCT central. It also cooperates with regional bodies, with the managers of real companies, professional associations. Simulated enterprise can enter into business relations with all other simulated companies in the country, and through the plant with any company simulated the EU.

Simulated enterprises in the project CONSIMAT have been organized in terms of procedural organization on such functions: research – development function; commercial function, production function, human resources function, financial – accounting function.

The typical simulated company in the project CONSIMAT has a functional and hierarchical organizational structure comprises of 15 work posts in five departments generic grouped as follows:

- Human resources department includes 3 positions: 1 position of human resources director, 1 post - administration and personnel management; 1 post - payroll;
- Commercial Department has 5 positions: 1 sales manager, 1 post tender; 1 job order management; 1 post acquisition; 1 post marketing research and promotional activities;
- Finance Accounting Department includes 2 positions: 1 CFO - Accounting; 1 post maturity, income, house, bank and other payments.
- Production Department comprises two posts: one post production manager and one job preparation, launch and production.
- Department research - development includes the following items: 1 research director, assimilating new technologies, licenses and trademarks.
- General manager of the company:
- Secretariat.

In a first step, the management of departments is made by trainers and instructors and is provided by the manager, but as the students gain experience, especially towards the end of practice, these functions will be taken over by students.

However not all companies have complied consented in the project initially envisaged five functions or hierarchical organizational form. Some construction companies have chosen, even temporarily, to organize projects according to the specific business pure and scale construction projects undertaken. Other simulated enterprise neglected function of research - students in claiming that no real activity Romanian companies do not attach importance to this function.

Expected results from the application of this method are:

- increase graduates entering the labor market;
- reduction of the intake procedure at work;
- better adaptability to change jobs;
- knowledge of the specific processes of a company;
- flexibility.

The main problems encountered by students and trainers consented project were:

- reluctance of the students from Technical University of Civil Engineering of Bucharest towards some economic and managerial issues posed simulated activity within enterprises which required further explanation effort from experts involved;
- lack of rule of ROCT system which in the case of simulated enterprises in the construction industry created a potential decline in demand for construction works;
- the feedback from the system regarding ROCT name reservation request for the companies involved;
- specifics of the construction activity as a component of investment activity in simulated enterprises which do not fit the needs of first necessity thereof.

## 5. CONCLUSIONS

The construction industry and the building materials were in the past and will be in the future some of the most dynamic sectors in terms of its contribution to GDP and growth. The two areas were in the past and in 2020 will be an important component of labor demand in the Romanian economy, including higher education staff.

As in the construction and construction materials acquired knowledge of future graduates are poorly adapted to the organizational framework in which they operate simulated enterprise organizations in the field can be a tool to facilitate the transition of students from school to work. Simulated enterprise as a means of organizational learning has many advantages over internships: focus attention trainers exclusive group of students they had no other tasks during the time allotted preparation, the opportunity for students to engage freely and without consequences in the work of departments within businesses, the opportunity to learn from established practice in the construction materials industry and the construction sector.

Involving students in simulated enterprises in the project consented revealed a number of limitations of the method: some of the production processes in the construction and building materials cannot be simulated completely because it would require an initial investment of huge capital of each undertaking; ROCT simulated enterprise system deprives some potential demand in the construction of the absence of the state as an actor of the system; reluctance of the students from technical faculties towards economic and managerial concepts, processes and problems from the operation of such companies.

Simulated enterprises as an organizational learning method and as a means to ease the transition from being a student to the employee proved sustainability in the project CONSIMAT through 11

simulated enterprises in the construction and construction materials. Therefore we consider that the introduction of the method in the study programs of economic and technical faculties in Romania.

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