

**NEVER STOP PLAYING: MANAGEMENT GAMES AS VALUABLE TRAINING TOOLS**

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**ABSTRACT**

*As key areas in business administration, Management and the related subjects (as, for example, Logistics or Human Resources Management) are permanently evolving due to the new technologies and to the new economic environments so the training methods and techniques for those must evolve as well. The practical issues as case studies and problems to be solved are effective tools and their usage helps a lot, but the touch of reality is best felt by playing Management. Enterprise games and simulations are far more effective in practical training and much better for proper understanding of management techniques and that was proved long ago both in the best business schools around the world and in the Bucharest University of Economic Studies (ASE). The research briefed in this paper focused on identifying efficient ways to create a new generation of management games based on the specifications of different categories of people involved in teaching and learning of Management at graduate and master level, using on one side the experience and knowledge accumulated inside ASE and on the other side the latest achievements of the other Research Institutes and Universities.*

**KEYWORDS:** *management game, management simulation, teamwork, interactive learning.*

**JEL CLASSIFICATION:** *A22, A23, C79, M19.*

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**1. INTRODUCTION**

Using games and simulations has always been the best way to learn how to handle a practical situation after being taught theoretically how to do it. It is a natural approach if we only consider that animal cubs practice hunting or defending techniques by playing after they saw how to do it at their parents. Military training has also been one of the oldest games used to develop practical skills for dealing with real situations by applying tactics and techniques learned in theory. And because management borrowed a lot from the military theory it is expected that the game as an ability developer will have a central position in preparing and training performant managers for their day by day fight for resources and supremacy.

Under these circumstances new problems arise for both management trainees and practitioners: they permanently need to update their abilities concerning effective and efficient methods to run a business or to lead a group. Internet solves part of these problems by providing access to information as soon as it is born, but for management as a practical discipline that is not enough: hands-on training is needed.

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The Bucharest University of Economic Studies has a tradition in using management games for training, at undergraduate and graduate level and also in the postgraduate sessions organized for the management specialists in different branches of the economy. Starting with '70s, when a computer simulation was first implemented and used in ASE, the Faculty of Management kept on developing and using different types and versions of management simulations. But research brings more and more methods, techniques and approaches to be used in leading the organization processes and the value of these instruments consists in their capability to address practical situations.

Thus, a main concern of the ASE Management Department members is to identify an unitary approach for development, using and maintaining a family of up-to-date and updatable management games for all the three levels: undergraduate, graduate and postgraduate, to be used for Management subjects teaching.

In this paper we present the approach, its main distinctive features, the actual results achieved in this approach and also which are going to be the next steps as we see them now.

The theory and practice of managerial simulations tries to find general solutions to cover as many different situations as possible. Starting from extremely complex games to simulation kits able to configure due to some actual parameters, the main trend, as presented below, was and still is to develop "one size fits all" managerial games. In the last years, we witnessed another trend, born from the increasing need to use such simulation products in short sessions of training, spotted on specific problems: to create very simple and general simulations for certain sides of the managerial act.

The research we conduct, addressed in this paper, contains an analysis of both these approaches and one of the results is that the **most efficient approach** seems to be the development of such games in an **iterative, "spiral like" approach** by starting from an **existing simulation** and improving it in its main aspects in an **incremental** way by **interacting with its stakeholders**, especially students, teachers and actors from the business environment.

Another finding of the above mentioned research is the **systematical assessment** after each step (in our case, year of study) done by both **qualitative and empirical research**. This, compared with the way the main actors in the management games market, brings an important paradigm shift in the development, running and maintaining the so called "enterprise games": they are not created in the laboratory, run by teachers and maintained by specialized teams but permanently improved by the team effort of the above stakeholders and others interested in the results achieved.

This approach can lead to a **family of simulations** instead of a complex one or a collection of small, independent "little games" created from scratch whenever a certain subject is to be enforced with a practical support. It means that during the continuous process of development some new management games could be created starting from the actual stage of the existing ones and according with the teaching needs of the educational process.

The basis of our iterative process is **CORAV**, a management game which have been used in the Bucharest University of Economic Studies for several years. We will try to develop the existent game towards a performant management simulation to be played in 6 rounds, in about 6 sessions of practical training as a part of the practice at the Management subject taught in the first year of study at all the Faculties of ASE. As first member of the game family, it will be followed by a complex game, to be developed in the next steps of the research, not described in this paper.

We consider that the features presented above represent the best for the current environment inside the ASE, characterized by the availability of previous achievements, the experience in the field, the urgent need for feasible enterprise games, the feedback of the beneficiaries of the simulations, the changing curricula and the resources the organization is able to assign to this process.

## 2. THEORETICAL BACKGROUND AND LITERATURE REVIEW

### 2.1. Concept definition

A focused definition of a *management game* is “simulation exercise designed for management applications and used for training purposes” (<http://www.allbusiness.com/glossaries/management-game/4944691-1.html>, 2014). The main objectives of such an exercise is, as stated in the above mentioned source, to improve decision making and analytical skills, to develop awareness of the need to make decisions lacking complete information, to enhance the understanding of the interrelationships of various functions of business within the firm and how these interactions affect overall performance and in the end to develop the ability to function cooperatively and effectively in a small group situation.

Greco, Baldissin, & Nonino, (2013) defined management or business game as "*a serious game in a business environment that can lead to one or both of the following results: the training of players in business skills (hard and/or soft) or the evaluation of players' performances (quantitatively and/or qualitatively)*" while (Cambridge Business English Dictionary, 2014) defines the management games as games that include activities meant to help managers to deal with different situations which occur in their activity.

(Latham & Morin (2005) describe management game as “a simulated business training environment ranging from the simple to the complex, computerized to non computerized, interactive to non interactive, and single participant to multiple participants” while Baldissin, De Toni, & Nonino, (2007) think that management games represent all the simulations used to support managerial learning through an experience that features competition and rules in the socio-economic environment.

A *business game* or *management simulation* or *business simulation* (named in some works “*enterprise game*”) means, in the context of this paper, a collective activity based on a scenario to be held in a specified period of time meant to develop and assess the ability of the players to apply theoretical knowledge to real-like situations. That specific scenario will include the roles, both individual and group ones, the relations between roles, the objectives, the rules and the performance assessment indicators or the value system. The schedule of all the activities involved or at least the start and the end are imposed.

Of a great importance is the game administration team which is supposed to initially set up the roles, to explain the basics about playing and give access to the full documentation, to evaluate the capacity of the gamers to play the game and validate their participation, to monitor and assist the players during the game and to make the final assessment and present to the players in an explicit manner using undoubtable arguments the degree they fulfilled their goals and their place in the final hierarchy.

As shown in (Elgood, 2014) “Business simulation games allow for experiential learning: the cycle of experience, observation, conceptualization and experimentation identified by Kolb . Individuals have the opportunity to consider a situation, take action, examine the consequences of their action and consider their next steps”.

### 2.2. History and evolution

The need for more evolved techniques in teaching and learning Management has occurred from two different areas and it had to do with different categories of people involved or only interested in upgrading the knowledge and especially the practical abilities of people working or planning to work in management positions. First one was connected with those who did the training and teaching and who realized that lecture based approach of teaching management is both unattractive and ineffective. The second one was the decreasing interest for economic studies from the students' side. There were less and less candidates and students at the business schools and economic colleges in the North America in 1990's and surveys showed that the causes had to do with the way

the specific disciplines were taught (Simkins, 1999), (Allgood, Bosshardt, van der Klaauw, & Watts, 2004).

Using simulations for training and education in economics was, as shown in (Wells (1990)) originated in 1950's and developed from military simulations used in World War 2. Wells (1990) states that : "They provide an experiential framework for learning and applying concepts learned, add interest and even excitement to the classroom and provide a risk free environment for learning". Pretty soon they were adopted by some American Universities as, for example, University of Washington were they have been used in business policy classes since 1957 (Dickinson & Faria, 1996). Considered to be the first functional and successful business game, *Top Management Decision Simulation*, was developed by the American Management Association in 1956 and was largely used in training sessions (Faria, Business Simulation Games after thirty years: current usage levels in the United States, 1990).

A fast evolution has been recorded since then. It could be mentioned that in less than 4 years the number of management games played in the US grew to over 100, involving more than 30,000 players, mostly business executives (Kibbee, Craft, & Nanus, 1961) and in 1980 there were mentioned more than 220 games (Horn & Cleaves, 1980). A large adoption of management games for training purposes was witnessed later on. For example, AT&T uses the "Strategic Management Game" for the training process of more than 500 management trainees every year at Aurora, Colorado training facilities.

By the number of business schools (colleges) using simulations "business games are in use in approximately 86.1% of all four year degree granting schools in the U.S. Projecting this percentage for all the 2.013 4-year schools results an estimate of 1,733 schools in which business games are currently in use." (Faria, Business Simulation Games after thirty years: current usage levels in the United States, 1990).

The complexity of the management games of the 1970's became impressive. As mentioned in Zuckerman & Horn, (1973) one of the most representative management game of its time, "General Management Business Simulation", made by American Management Association in 1957 required 12 to 15 hours of preparing time per participant and between 3 to 20 hours playing time. "Carnegie Tech Management Game", created in 1964, required between 50 and 100 preparation hours and 12 months of classroom playing time while "The Decision Making Exercise" (1970) needed 15 to 20 hours for preparation and 75 to 150 hours for playing.

The problems with these gigantic games is they are only feasible in very few, special conditions and they do not fit with a large scale usage for both license students and long life learning trainees. Even in the universities it is hard to organize a 12 months game session and the difficulty resides in both the need for experienced organizers who can help students to synthesize conclusions after each round at the end of the game and in the curricula which cannot allow a discipline to last a whole year. This is why a new trend is being witnessed in the last decades: using of smaller games which are either focusing on a function or a group of activities of a virtual company or emphasize few typical situations they deal with. A research conducted by Richard Teach from Georgia Institute of Technology and Elizabeth R T Murff (Eastern Washington University) propose a different approach (Teach & Murff, 2008): "The use of a series of small business simulations is better at conveying knowledge than using a single, large scale business game when teaching any set of concepts, theories or practices when used in a university or college level course". In order to support their hypothesis they even cite Einstein who said "Any intelligent fool can make things bigger, more complex, and more violent. It takes a touch of genius -- and a lot of courage -- to move in the opposite direction."

Using Internet for worldwide simulations of virtual firms bring together in the same game students all over the world who play in mixed teams and smartphone applications make possible the attendance at such a learning activities from various places. The real time characteristic is used in some categories of computer games and what seems to be an obvious trend in the natural evolution

of game oriented teaching techniques is *massive multiplayer online role playing game (MMORPG)* (Baldissin, De Toni, & Nonino, 2007). Characteristic for this new generation management games is that they rather create a virtual world than a virtual firm and the participants are more than company managers, they can assume complex roles as members of the society.

Speaking about European contribution in the evolution of the learning techniques based on games and simulations there are several poles which should be mentioned. First, the British education system which keeps pace with the American universities and which generates demand on the management simulations market. As a consequence, companies as Elgood Effective Learning (founded in 1972) do provide a wide range of such products, many of them built from the beneficiary's specifications (Elgood, 2014). Secondly, Austrian, German and Swiss management simulations market represented by strong companies as, for example, UCS - Ulrich Creative Simulations (Ulrich, 2014) and others, organized in SAGSAGA (Swiss Austrian German Simulation and Gaming Association) founded in 2001 in order to promote the method of Gaming Simulation. There are also several important actors in the European world of business games and simulations as, for example, the Dutch business schools and SAGANET – Simulation and Gaming Association – The Netherlands and Italian Society for Simulation Games (Societa Italiana dei Giochi de Simulazione – SIGIS).

Inside The Bucharest University of Economic Studies there have existed concerns for using management games and simulations for business management training since 1970's when it has been taken up an American complex business simulation used in the final grade of the Management Faculty. After 1990, several versions, customized to the Romanian economic system, have been developed but after restructuring the curricula it was decided that a simulation as a standalone discipline is not suitable for the moment. A team from the Management Faculty developed a short simulation, CORAV, which could be used at the Management seminars and a complex one, PRELEM, mostly dedicated to the graduate and postgraduate students.

### 2.3. Taxonomical approach

In a taxonomical perspective there are several factors which divide the large number of existing management games into a number of types or categories. We will use these categories to frame CORAV, the starting point of our approach of creation and development of a representative small to medium size performant management game.

The **destination** of the simulation is such a feature. A significant category is the one of *commercial*, entertainment or open games. There are customized as stories concerning a specific field (as, for example, playing the mayor of a small city, as in SimCity, or a transport tycoon) and they rely on the abilities (management ones, but not only) of the players to develop an entity in a competitive environment. Many times these games can be both played individually or in groups. On the other hand we have the *professional* games, specially designed for educational purposes.

Another factor is the **area of the organization being simulated**. We have *total simulations* where all the main groups of activity are covered or *partial (focused) simulations* where the scenario only covers a function or group of activities.

Another factor is **the way the data** concerning the initial, the intermediary and the final states of the companies and also the participants' decisions **is collected, processed and presented**. Most of the modern simulations, both total and partial, are IT based, the processes mentioned above being *processed by computer applications*. We even have two subclasses here, the one of stand-alone applications and the network-based (including Internet) games. There are also "classical" games which *do not demand any technical environment* to be play. We will detail the advantages and disadvantages of each type in another chapter.

Speaking about the **randomness** of the games we have games with *random events* chosen and announced automatically or manually by the game's administration or *deterministic* ones- the most

simple- where the state of the game is only determined by the previous state and the decision made by the players.

Taking into account the **interaction between virtual firms** we can play a *fully interactive game* (players interact with any of the other teams by negotiations, deals, setups or even common policies) or partially interactive ones (each team only communicate with the game administration).

A wider perspective on the classification of the modern management games is the one described in Baldissin, De Toni, & Nonino (2007). The authors define 18 dimensions and classify a sample of 110 computer games according to the degree these games fall in the 18 views (Table 1).

**Table 1. Management games- a classification**

No.	Characteristic	Typology	Number	%
1.	Transparency of the simulation model	Black-Box	107	97,2
		White Box	3	2,8
2.	Data processing	Manual	0	0,0
		Computer	110	100,0
3.	Internet based	Yes	25	22,7
		No	85	77,3
4.	Do players interact?	Yes	92	83,6
		No	18	16,4
5.	Generality of the model	Specific	47	42,7
		General	63	57,3
6.	Coverage	Inter-functional	87	79,1
		Function level	23	20,1
7.	Functions covered	Marketing & Sales	87	79,1
		Production	62	56,3
		Procurement	24	21,8
		Logistic	28	25,5
		H&R	34	30,9
		R&D	22	20,0
8.	Sequential decisions	Present	103	93,6
		Absent	7	6,3
9.	Proceeding of time	Batch	100	90,9
		Real-time	10	9,1
10.	Type of the model	Deterministic	59	53,6
		Deterministic/Stochastic	51	46,4
11.	Model's internal relationship	Quantitative	96	87,3
		Quantitative and Qualitative	14	12,7
12.	Number of players	Single player	24	21,8
		Multiple players	86	78,2
13.	Products	One	18	16,4
		More	92	83,6
14.	Markets	One	72	65,5
		More	38	34,5
15.	Configurability	No	102	92,7
		Average	6	5,5
		High	2	1,8
16.	Customization	Yes	2	1,8
		No	108	98,2
17.	Role of the simulation model	Active	23	20,9
		Passive	87	79,1
18.	Decisions' frequency	Batch processing	102	92,7
		Real-time processing	7	6,3
		One time only	1	0,9

Source: (Baldissin, De Toni, & Nonino, 2007)

There are some features of the modern management games coming out from the data presented in the above table even that it only approaches the computer based items. In fact, they represent the majority in the world of such products but there are some situations when the “non computered” ones should be used (for example, the training sessions run “on the spot” where are no technical conditions to play the computer based ones).

First is the *non-transparency of the models*. The overwhelming majority of the “non-transparent model” games is due to the purpose of the games itself: the player should rather focus on discovering the way the things work and how the environment answer to his/hers decision than on simply putting some data in a model or formula and receive the result. The focus must be on identifying the causality between manager’s acts, the answer of the environment and how the participants learn to influence the environment in the most efficient way. Speaking about *the Internet based games* they have, of course, some clear advantages over the “local” ones but at least a great minus: the business reality mostly consists in person-to-person communication, team work and the ability to deal with which is in our opinion crucial to the performance of the managers. This is clearly proved by the 77.3% to 22.7% score presented in Table 1 , even if we speak about computer based only on management games. Human interaction is today and probably long after the core of the management and direct contact with the team members and sometimes with other economic actors defines the most of the common businesses. *Interaction of the players* can be seen from different points of view. Speaking about team games (players simulate management teams running similar companies) interaction between team members is implied.

*Generality of the model* can bring some extra power for a management simulation but only if it is addressing certain levels of players. Otherwise many trainees could prefer a clearly defined environment and rules, if possible very similar to the conditions of their working environment. Students, especially the first graders, have trouble sometimes with the generalization and abstracting capacity and one of the questions of the questionnaire ask about increasing or maintaining the actual generalization level of the scenario which does not delimit a certain economic domain. There are 63 of 110 surveyed games having general scenarios and 47 have specific ones in the table above.

Like most of the simulations studied (103 out of 110, which is 93.6%) the one this study aims is built on the principle of *sequential* decisions that are processed in *batch*, which means that the management teams make a number of decision sets corresponding to some rounds (months) in a successive manner. Once a set is made, the game administrator receives it and, together with the other teams’ sets, processes it before announcing the overall situation generated.

#### **2.4. CORAV- how it is and how it will be**

The game, originally presented in (Nicolescu, 1982) has several characteristics, as simplicity, robustness and the opportunity to be played without computer support, and these should be kept for the future versions.

The model in CORAV is both *deterministic* and *quantitative*. None of these characteristics are subject to changes because the complexity level and the target of this simulation are going to be preserved. As we have already mentioned there is a parallel study we conduct and its purpose is to identify the needs and the specifications for a complex simulation; its results can lead to a new generation of simulations being both deterministic/stochastic and quantitative/qualitative. Unlike CORAV it is supposed that the specifications to be obtained will describe the new generation game as both *configurable* and *customizable* which are going to ensure a high versatility and a wider domain to be used in.

There are three more characteristics where CORAV falls into the majority: *number of players*, *number of products* dealt with and the *number of the markets* the raw materials and products are traded. As we have already shown, as a team game the one we speak about is one with multiple players as 78.2% of the surveyed games are. There is a question in the questionnaire concerning this

aspect, more precisely the number of teams allowed to play the same game. The virtual firms simulated in CORAV produce and sell 3 different products, the same for every company. There are questions about the possibility of increasing the number and the diversity of products. There is only one generic market in CORAV described in the presentation of the game as the "external market". By now, there is no intention to change this.

The *simulation model* is, in our case, passive. CORAV has a totally transparent model and, up to some extent, it serves its scope well. Yet, we have identified situations when some of the players tried to use the weaknesses of the model in order to gain advantages over the other participants instead of using their managerial skills. In the real life the model, in a formal description, is not an input data in the managerial problem and even if it should be, there are so many exceptions so one must firstly find them and afterwards consider the model. So, in our opinion, at least some cases of a management game model must be hidden to the players in order to create that incertitude which normally governs the day by day managerial decision.

In our survey we try to identify the option of the students concerning the extension of CORAV to an Internet-based game and according to the result we are going to take this option.

Concerning interaction between teams it can be treated in different manners. CORAV implements the official communication between the virtual companies simulated by the game administrator. We plan, if the stakeholders want that, to extend this communication in some cases and have a direct negotiation between teams for trading raw materials they have in stock, but under the control of the game administration, in order to avoid distortions of the scenario. Merging is also an option we will probably introduce in one of the following versions if demanded.

The *coverage* of CORAV is an inter-functional one but with little or no implications on human resource and R&D functions. There is a possibility to enhance the coverage on these two functions and there are some questions about that.

### **3. THE APPROACH**

#### **3.1. Methodology**

As shown before the paper briefly presents the approach of an extended research meant to set an efficient method for creating and updating a family of management games. Thus, what we target is not an overall conclusion set for the general state and perspectives of management games and simulations but a very customized survey trying to identify the next step in using a certain type of management simulation (represented by CORAV) in a certain learning environment.

The first step in our research was to identify the necessity of a management game of a specific type perceived by the beneficiaries. For this, a set of four questions were asked, as part of a larger questionnaire and this first survey was completed by a quantitative research. The addressed sample (a random one) was formed by the students of the first grade at the Trade Faculty, ASE, who had the CORAV included in the practical training at the Management subject. Some of them qualified and played the game, some didn't (in order to assure an optimal playing environment and not disturb the functioning of the teams involved, a test on the main aspects of the game and the ways the players can fulfill their missions was administered. Only the students who proved a minimum amount of knowledge concerning the subject were included in the teams who played the game), some had good results and some did not. There were tested those who attended at the seminar during 19-23.05.2014, the week before the last one of the semester and the attendance of the students was in our opinion similar with the rest of the seminars of the second semester at this course.

We targeted three main directions: the opportunity of playing the game at Management seminars, the design and duration of the preparation part and the opportunity for some changes to be made in order to improve the perception and the impact of CORAV simulation.



The second step was the setting of few small changes to be made at the game. Being the first iteration we consider this technique satisfactory and, for the next iterations, we plan to use a qualitative research to identify the main directions of the future changes.

A quantitative research, based on a survey, was then conducted. We have mostly used dichotomous question (17 out of a total of 23 questions) in order to avoid misunderstandings and misinterpretations and to overcome the respondent's inability and unwillingness to answer. The questionnaire also contains six Multiple-Choices questions with one out of three choices and also an unstructured general question (facultative) giving an opportunity for those who wanted to clarify some aspects by free style explanations. The purpose of this design was to reduce the possibility of mistake due to the wrong understanding of the questions or to the subjectivism of descriptive answers. The answers were processed by classical statistical methods and the results were discussed and transformed in specifications for the new version of CORAV.

### **3.2. The research question and the hypothesis for the first empirical research**

The main research question is if CORAV management simulation is necessary for the practical training in Management (seminars for the first year of study, Trade Faculty, ASE Bucharest) and in which way must it be improved in order to assure the desired benefits in terms of enforcing the knowledge taught at Management courses and creating practical abilities for applying this knowledge in real management situations. In order to demonstrate this we have formulated the following hypotheses:

**H1** It is necessary to have a simulation in the first year of study at the Management seminar.

**H2** The simulation does help improving the teamwork abilities.

**H3** The simulation does help at understanding the theory taught at the lectures.

**H4** Using CORAV helps practical abilities to apply theory in practical situations.

We quantified the opportunity of the game as the weight of the students who considered it helpful in the total number of interviewed students. We checked by cross-tabbing if the answer depends or not on the status of the interviewed person (if he completed the game or not). It was the same method used to find out if the simulation is helpful for a better understanding of the knowledge taught at the lectures or for gaining teamwork abilities. Concerning the opportunity of extending the game over the time limits of the seminars (as homework) we will take into account the percentage of those who agree with this and try to correlate it with the status of the respondents (we will count both the students who simulated all the six rounds and separately those who did not).

## **4. RESULTS, CONCLUSIONS AND RECOMMENDATIONS**

### **4.1. Conclusions**

The results of the survey (not presented in the paper) confirm all four hypotheses. There are several conclusions to be drawn concerning the results of the survey. We will present them structured on the three sections of the questionnaire and we shall detail the recommendations resulting from the sections 2 and 3.

#### **4.1.1. Section 1. Opportunity**

Given the frequency of the answers we can say that either the questioned subjects fulfilled the simulation or not, they overwhelmingly consider that using the simulation as a teaching instrument for the Management seminars in the first year of study at the Trade Faculty is necessary. With permanent adaptations of the simulation the advantages of this technique impose it as a must in the syllabus of the Management study subject for Trade Faculty and not only. The generalization is suggested both from the point of view of a teacher who has worked during years with other Faculties as well and from the point of view of the structure of the sample which, in our opinion, is representative for all the first year of study in all the Faculties of the Bucharest University of

Business Studies.

There is a direct connection between the marks obtained at the Management exam and the points (between 0 and 3.2) obtained for seminar activities.

The reasons which make management games desired are the following (using the frequency analysis of the answers at the questions 1.1-1.5):

1. Development of the teamwork abilities (138 out of 150 questioned agreed with it).
2. Gaining practical Management skills (128 out of 149 agreed that).
3. A better understanding of the theoretical framework taught at the courses (117 out of 150 did answer like that).

#### **4.1.2. Section 2. Preparation**

The preparation of the game has some aspects: the time before game start the documentation should be submitted to the students, the comprehensiveness of the Player's Guide, who should found the teams and how big they must be and how many class hours should be used for the game preparation rounds.

The answers showed that there is not a clear trend between the respondents for the number of weeks before the game starting round the documentation must be submitted. There is almost the same number of "Yes" and "No" for a period longer than 4 weeks which leaves this question practically undecided. Extra tests should be made.

Questions 2.2 and 2.3 show a need for a better Player's Guide. It should be more detailed and especially more clear.

There is, due to the answers at 2.4, a limited agreement for extending the simulation working ours out of the seminar classes but, as stated in the syllabus, there are a number of hours (69) to be used for supplementary work. Our experience shows that 12 hours should be enough to cover the game's necessities. There is another impediment which determined many "No" answers: being a team work, it could be difficult to gather all the team because each of the members could have an individual schedule.

Two or even three preparation seminars should be needed for a good understanding of the game conditions. The team size must be of 4 or 5 members.

#### **4.1.3. Section 3. Scenario and models**

There is no clear option for customizing the scenario. The generalization capacity of each player could be a reason for such an approach but taking into account there is a team work it is supposed that the team will surpass this.

85 to 64 was the ratio of those who want a more complex game vs. the ones wanting to preserve the actual complexity level. Expanding the game to a network based one is an option for 59.7% of the questioned. As seen from the survey' results there is a large number of the students who answered at the questionnaire who would rather prefer that the positions inside the teams and the job descriptions to be defined and described at the beginning, by the game administrator then by themselves. This raises a question concerning the organizing ability of the teams and should be carefully addressed by the new version.

Question 3.5 is connected with 3.1 and both are meant to see if there is a demand for customization of the scenario and the naming of the raw materials for a specific economic branch. There is an option for about 52% of the interviewed (55.7% for changing of the raw materials names and 51% for the customization).

As an extra facility of the scenario it was considered the possibility of trading the raw materials owned by the teams between themselves with the approval of the game administrator. A large majority requires that. While there I not a majority will for detailing the 15% General Expenses, there is a requirement for indicating methods from the course to be applied in certain phases of the game.

The COP should be maintained at the same level and must not be detailed.

#### 4.2. Recommendations

Starting from the research question and taking into account the results of the survey in all the three main directions (Opportunity, Preparation, Scenario and Models) in our opinion there are some steps to be taken further on.

Considering the wide spread opinion concerning the opportunity of playing the game (CORAV) as an instrument for better understanding of the theoretical concepts of the Management subject, for developing team work abilities and for achieving practical skills in decision making, coordination and other activities specific to Management we recommend that the usage of this instrument to be maintained at the faculties who have been using it since now and to be reintroduced in the syllabus of Management for those which quitted it or have never used it before. This will have some clear advantages for the whole educational process in ASE and uniformity is up to some extent such an advantage. Management is a subject from the common branch of all the business schools and it should be harmonized both at the level of ASE, Romania but also at the European level because otherwise the ECTL system and the transferability between different schools with the same profile are not going to be achieved soon. Another argument is that generalizing the management games there can be developed projects for improving the current implementations of such simulations and we should also mention that the better their performance is the more popular they are to become.

In the same time a group of specialists must be constituted having the permanent goal of maintaining, developing and customizing a set of games and simulations to be used in the business schools teaching processes. For different faculties and subjects a family of such instruments must be designed and implemented and also updated on permanent basis.

It is recommended that at least at this level (Management subject, first year of studies) to develop a friendly Player's Guide and scenario, adaptable if possible by changing the different choices tested in this work: number of the team members, responsibility for constituting the team and for defining the positions and job descriptions, the amount of general production expenses or other parameters. Depending on the characteristic of the group the simulation must be tuned and adapted.

I consider it is necessary to extend this research with a more complex, qualitative study in order to define the specifications for the games family proposed above, interviewing more categories of stakeholders for such games: business men, professors, other specialists.

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