International Scholars Journals

Global Journal of Business Management ISSN 6731-4538 Vol. 4 (1), pp. 001-012, January, 2010. Available online at www.internationalscholarsjournals.org © International Scholars Journals

Full Length Research Paper

Correlation of experimenting culture and process of knowledge management in the university environment

Jasmina Arsenijevi [1]*, Vilmoš Tot[2], Leposava Grubi Neši [3], Milica Andevski[4] and Dejan Arsenijevi [5]

[1]Faculty of Entrepreneurial Studies, Novi Sad, Serbia.
[2]Faculty of Business in Services, Novi Sad, Serbia.
[3]Faculty of Technical Sciences, Novi Sad, Serbia.
[4]Faculty of Philosophy, Novi Sad, Serbia.
[5]Moonsoft, Novi Sad, Serbia.

Accepted 20 August, 2009

The organization's culture impact on the effectiveness of knowledge management system is widely known within science of management. Besides changing the organization fundamentally, knowledge management changes the whole business philosophy through which an organizational culture is knitted, and therefore is its inseparable part. This study had a goal to investigate the intensity and the nature of the correlation between learning culture and knowledge management processes within educational environment. The ground research of this study comprised a sample of academic institutions that teach management, conveyed during academic year 2007/2008 in Serbia (Vojvodina province). The basic assumption was that this correlation exists and this study has proven it. The correlation has researched several levels and subdimensions – the relation on the level of the institution, educational process; and single knowledge management processes. Scientific information from this article could be interesting to educational institutions and their managements and all the organizations that are introducing knowledge management system.

Key words: Knowledge management, knowledge management process, experimenting culture, education, university, correlation.

INTRODUCTION

The culture of an organization plays a crucial role in the transformation of an organization, in the changing paradigm of overall economic and business system that is, withdrawing in contact to the upcoming knowledge era. It is very important for the management of an organi-zation to understand organizational culture, having in mind its influence on strategic development, productivity and learning at all levels.

The influence of the organizational culture on success-fulness of the knowledge management (KM) system is already known in management and discussed in litera-ture. It is considered that knowledge management has not only informational and technological dimension, but a cultural as well. Not only does the knowledge manage-ment represent essential change for each organization, where its acceptance would mainly depend on the its dominant, existing culture, but it also presents the whole business philosophy in which organizational culture is incorporated and hence is its inseparable part. The notion that is mainly attributed to the organizational culture as an influential factor in the KM sense is its capability to transform the tacit knowledge within the company's employees into an explicit knowledge of the entire organization. In other words, it is organizational capability to split and convert knowledge (the most common expression for this is "knowledge sharing culture").

In a review of KM critical success factors identified in one research, Alazmi and Zairi (2003) found that many factors have been suggested as important for successful knowledge management implementation: culture, train-ing, top-management support, technology infrastructure, knowledge infrastructure, knowledge sharing and know-ledge transfer. Additional studies have emphasized the

*Corresponding author. E-mail: minapane@nadlanu.com. Tel: ++381-63-8264-878

importance of culture, technology, systems and procedures, structure, tasks, and incentives (Grover and Davenport, 2001; Karlsen and Gottschalk, 2004; Davenport and Prusak, 1998).

This study, setting the topic of the culture and KM into educational environment, actually measures the extent of the correlation between the experimenting culture and learning and KM processes. The culture of an educational institution, that is only one of the social components influenced by the changing paradigm, is a firm element that conditions its successfulness and capability for changes and transformations set before it. The cultural experimenting and learning is a part of overall culture of an educational institution and it refers to those instances within it that are encouraging learning, questioning, research, experimenting, innovation and sharing of knowledge – or to put it like this: the culture of an learning organization. Kotter and Heskett described in their work the effects of adaptive versus non-adaptive cultures organizational performance, problem solving, innovation and enthusiasm.

That is why the purpose of this work is to question the extent to which there exists the correlation between the experimenting culture and learning and knowledge management process in an educational institution, that is, to determine if there is a correlation between the dominant culture of the educational institution and its knowledge management processes. The basic assumption of this study is that there exists such a correlation.

The grounding of this study is a research which took place during academic year 2007/8 in Serbia (Vojvodina province), at the academic institutions that study management and it questioned the extent of the presence of knowledge management processes, as well as the relation of certain factors of KM according to the lecturers' and students' opinions.

This study will show whether there exists the correlation between the organizational culture and KM processes on the mentioned sample at the level of an en-tire organization, employees and educational processes. It will also analyze the extent of the correlation between the culture and individual processes of knowledge management, that is, whether the organizational culture on the selected sample has a stronger correlation with the certain processes of knowledge management.

Scientific information offered by this study can be useful not only to educational institutions and their leaders, but also to all the organizations that are introducing or about to introduce KM system.

THE RESEARCH - MATERIALS AND METHODS

The research on presence of knowledge management has been conducted on the bases of Process theory by Donald Clark and in accordance with KM model which comprises an experimenting and learning culture, as well as four processes of knowledge management: knowledge sharing and allocation, knowledge gaining and creation, storage and organization, as well as new knowledge application. The research on knowledge management has been conducted on the level of employees in an educational institution; on the level of educational process (lecturing) and unified: on the level of an educational institution as a whole (faculties).

The research has been conducted during 2008 in Serbia. The sample consists of seven faculties that study management in Serbian province of Vojvodina. It has gathered 90 lecturers and 369 students, which made a whole of 459 respondents and which was enough for statistical evaluation of data by multi-variant analysis.

Within knowledge management research the starting point was the given sample, for faculties as educational institutions stand on the pillars of knowledge and should prepare the forthcoming generations for work in the field of Economics, which is extensively based on knowledge. That is the reason why it is necessary to manage all of the available knowledge. On the other hand, the research started with Faculties of management, for their central topic of research is managing. This is why this research presents the greatest challenge and relevant scientific information.

The faculties' culture consists of the prevailing culture in the organization itself, and it is visible during lectures. It can be very affirmative, affirmative, semi- affirmative and exceptionally non-affirmative.

The research instruments

Instruments were set to investigate attitudes towards knowledge management at the faculties that study management on two levels: the level of knowledge management of the lecturers at the faculty and the level of knowledge management of the students present at lectures. Therefore, there are two questionnaires for two types of respondents:

1. The first questionnaire created for professors and interrogates both levels.
2. And the other one was created for students, which interrogates knowledge management of students at the class.

The instruments of this research (questionnaires) are created on the basis of previously mentioned KM model and they are adopting knowledge management processes form the Educational process theory, by defining the set of questions that practically present knowledge management processes, as well as those that make culture of experimenting and learning.

By statistical evaluation of the results of this research (by calculating Cronbach's Alpha coefficient and factor analysis) it has been determined that the reliability of the questionnaire is very high. Factor analysis has distinguished the prominence of all processes and the culture of experimenting and learning (except for the process of storage and organization, because that process has not been established on the questioned sample, and respondents did not identify it as a distinct factor). Cronbach's Alpha coefficient has shown exceptionally low value of reliability for the measurement scale for lecturers: 0.9339, whilst the reliability of instruments for students has been confirmed by the coefficient value 0.8732. On the basis of this data, it can be concluded that the instruments used for this research are well designed and reliable for the measurement of given issues.

Defining of the knowledge management process and the experimenting and learning culture

It has already been mentioned that the research has been conducted in relation to the knowledge management model that comprises four KM processes and experimenting and learning culture as a grounding on which this processes should be realized. This chapter defines each of the named elements of this model.

Knowledge sharing presents the process of knowledge transfer from one person to another, whilst the final product is often new knowledge gain (knowledge, when shared produces new knowledge). The aim is making all knowledge that exists on the individual level of employees (tacit and explicit) collective by process of sharing it. Applied to academic educational institutions, this process means the exchange of experience, ideas, information and knowledge between employees, through a dialogue, by attending lessons and presentations, exchange of materials and handouts for their education, rotation of lecturers within numerous equivalent faculties, presentation of the best practice and mentor work. Sharing knowledge among students at lectures is conveyed through team work, common projects and organization of quizzes, public lectures, debates and discussions, whose goal is exchange and confrontation of knowledge and attitudes.

Knowledge allocation (in literature and dissemination) is the process of knowledge distribution that should bring all available knowledge at disposal to all employees. This process can be recognized at faculties through a systematic and organized distribution of new knowledge to the whole organization's team. It can also be seen through a practice of informing students about availability of relevant knowledge through information-communicational technologies (E-mail, Intranet).

The process of gaining and creating knowledge in an organization makes knowledge integration. Knowledge gaining is the process where a person gathers new knowledge from another source. Knowledge gaining is the process of completely new knowledge that did not exist previously. Knowledge gaining at faculties is manifested through the organization of seminars and trainings, through studying literature and other sources, interaction with the surroundings, through consultations or mentor work. Knowledge creation process is realized through research and experimenting in work, analysis and discussion and through scientific research projects.

Knowledge storage has a goal to enable its accessibility to everybody within the system. Knowledge stored as mentioned is found in an explicit form and it is organized for its improved transparency and easier utilization. Storage and organization of knowledge in Institutions of higher education (academic institutions) can be organized through a certain informational system (knowledge data base or search and knowledge and information -exchange engine software). Knowledge data base can comprise only one faculty or more, gathering all the relevant knowledge of professors and students as well, from the network of intertwined faculties.

Under the process of new knowledge utilization, is considered usage of shared and organized knowledge with the aim of increasing the effectiveness and efficiency of the work. Knowledge utilization represents the peak of knowledge management cycles in an organization. All the previous processes have served as a preparation – knowledge is selected, shared, integrated, stored and allocated in order to, eventually, be used in an organization, with the aim to enhance troubleshooting, decision-making and increase of newly-created values. This presents the key process, but it cannot be qualified as more important than others. If previous adequate and quality preparation has not been done, knowledge utilization will not happen. Certain knowledge can be even misused if that is the case. That is why all these processes are equally relevant. Employees of a faculty as a whole manifest knowledge utilization process through the appliance of shared knowledge and ideas, on the basis of interaction of professors or systematically, through organizing and storage in previously mentioned knowledge data basis. The basic purpose of utilization of that knowledge is arriving at the quality decision-making and troubleshooting within educational process, but also within the overall work at the faculty. Knowledge utilization process in the classroom is realized through individual work or practical projects.

Experimenting and learning culture encourage and insist on: learning, examining, research, experimenting innovation and sharing. Elements of such a culture – the culture of an academic institution that manages knowledge, must therefore have clear mission and vision, as well as motivation of employees and everlasting work on their proficiency.

Organizational culture shapes the learning orientation of a faculty. That orientation is derived from the atmosphere of learning and experimenting, intensive cooperation and willingness of all lecturers to share knowledge. There are certain obstacles that a faculty should overcome in order to accomplish this level of cooperation. One of them is the question of knowledge as an intellectual property, that is, the attitude of a lecturer that knowledge is power and by that it is considered that sharing knowledge means sharing the power. On the other hand, it is necessary that all the employees at the faculty and above all the lecturers (which is in opposition to their avocation) put themselves into the position of a student, starting with the attitude that their knowledge is not enough and that life-long learning and development, along with the common knowledge sharing and team learning are the only way of doing their jobs efficiently. This culture must create and develop the spirit of creation, open for new possibilities and everlasting changes.

RESULTS

The analysis of latent structure in questionnaire measurement's space for knowledge management process' evaluation

This chapter shows partial results of analysis of latent structure in questionnaire measurement's space for the mentioned research, for factors extracted by this analysis show that the relation between experimenting culture and other factors exists. The factors also show that the experimenting and learning culture is a very significant factor for respondents and that it presents a whole *per se*.

Within the factor analysis, there are two analyses of major factors that have been conducted. The first one was in the questionnaire made for lecturers and the second one on the one made for students.

Analysis of the major components in the questionnaire made for lecturers

Within the field of given answers in the questionnaire made for lecturers, the major components analysis has been conducted. According to Kaiser-Guttmann criterion 13 significant major components have been isolated, whilst Katell Scree criterion suggested that optimal factor solution is 3 - 5 major components. With the oblique Promax rotation, applied with the consideration of the presumption of the existence of correlation between the latent dimensions, the solutions with 3 - 5 major components has been applied. As the most interpretable solution, the one with the four components has been chosen. Together they explain approximately about 46% of the variance in the variable's system. The four components were rotated into promax position.

On the basis of the derived matrix of the factor structure, four promax factors have been defined. Defining the factors took into account only demand greater than 0.4 (Table 1).

Table 1. The sample of matrix structure of the first factor.

Question	r
Q7	0.86
Q6	0.80
Q9	0.78
Q10	0.76
Q12	0.75
Q8	0.71
Q21c	0.75
Q21d	0.70
Q21e	0.69
Q21b	0.63
Q21a	0.59.

☐I - items connected to an experimenting and learning among empolyees

Q7 – question No 7 from the questionnaire: On my faculty, dominant atmosphere is that it is desirable and appreciable to learn and share knowledge and experience.
Q6 – question No 6 from the questionnaire: On my faculty, dominant atmosphere is that it is desirable and appreciable to research and innovate.
Q9 – question No 9 from the questionnaire: My colleagues are directed towards the development of their potentials and dedicated to mission and vision of the faculty.
Q10 – question No 10 from the questionnaire: Faculty I work at is prone to self-evaluation and questioning in accordance with the environmental circumstances.
Q12 – question No 12 from the questionnaire: My colleagues are creative and prone to critical thinking.
Q8 – question No 8 from the questionnaire: The faculty has the defined business philosophy (the mission and the vision of the faculty).
Q21c – question No 21c from the questionnaire: Employees are motivated to share knowledge at the faculty by acknowledgement.
Q21d – question No 21d from the questionnaire: Employees are motivated to share knowledge at the faculty by the team spirit that is present at the faculty.
Q21e – question No 21e from the questionnaire: Employees are motivated to share knowledge at the faculty by other beneficiaries.
Q21b – question No 21b from the questionnaire: Employees are motivated to share knowledge at the faculty by carrier advancement.
Q21a – question No 21a from the questionnaire: Employees are motivated to share knowledge at the faculty by financial stimulus.

The first extracted factor gathers items that are in relation with the employees' culture and especially the part that explains the importance of the atmosphere that prevails on the faculty and that it must be directed towards knowledge and experience sharing, towards research and innovation. Taking into consideration that all the items that highly correlate to this factor, belong mainly to subscale of the experimenting and learning culture, this factor will be named the experimenting and learning culture of faculty's employees.

The fact that lecturers extract the culture of faculty's employees as a separate factor means that it is quite clear that it is prominent and important to them. This factor comprises exclusively the questions concerned with experimenting and learning culture of faculty's employees. The factor, therefore, shows that this dimension is very precisely determined when the questionnaire was created, that is, the reliability of the instrument for questioning the culture of faculty's employees is very high.

Another very important aspect of this factor is the presence of question of knowledge sharing, that is, motivation (cultural instance) of a lecturer for knowledge sharing with his colleagues. This factor attributes to a fact that professors consider knowledge sharing as a part of an organizational culture (Table 2).

Q38 – question No 38 from the questionnaire: During lectures I insist on communication between students, I encourage them to state their opinions, to exchange ideas freely, directly and without any prejudice.
Q37 – question No 37 from the questionnaire: I direct students towards individual bonding of the facts and solution of the problems, encourage them to research individually and make conclusions freely.
Q39 – question No 39 from the questionnaire: I encourage my students to be creative and innovative.
Q36– question No 36 from the questionnaire: I insist that my students ask questions, even when those questions are not directly connected to the matter that is currently discussed.
Q49 – question No 49 from the questionnaire: During lessons I organize students in a team work, and encourage them to exchange and share knowledge and ideas.
Q47 – question No 47 from the questionnaire: I encourage my students to use all the available knowledge when making their decisions.
Q43 – question No 43 from the questionnaire: I encourage my students to find new forms of work, and if they are efficient, I use those in our further work.

The second extracted Promax factor gathers items related to the experimenting culture and learning during the educational process, as well as the processes of sharing, gaining, creation and utilization of knowledge at the class. This factor therefore speaks in behalf of the fact that lecturers consider the experimenting and learning culture as an inseparable part of sharing, gaining and creation, but also of the utilization of knowledge.

All the mentioned processes have something in common.

Table 2. The sample of matrix structure of the second factor.

Question	r
Q38	0.78
Q37	0.74
Q39	0.69
Q36	0.54
Q49	0.59
Q47	0.57
Q43	0.53

- items connected to the experimenting and learning
- items connected to the sharing and knowledge alocation
- items connected to the new knowledge utilization process
- items connected to the creation and gaining knowledge

That is the development of individuality, creativity and innovation of students at the class, that is, the encouragement of students to develop all their potentials. Based on the mentioned data, this factor has been named the development of individuality, creativity and innovation and it is part of the class culture.

Analysis of the major components of the questionnaire for students

Within the field of given answers in the questionnaire made for students, the major components analysis has been conducted. According to Kaiser-Guttmann criterion, 4 significant major components have been isolated, whilst Katell Scree criterion suggested that optimal factor solution is 2 - 4 major components. After several rotations, the solution was to choose the one with three major components, for it was psychologically the most interpretable one. The three extracted factors together explain 47% of the variance and they are rotated by Promax rotation (Table 3).

Q6 – question No 6 from the questionnaire: Professors encourage you to ask questions, even when those questions are not directly connected to the matter that is currently discussed.
Q7 – question No 7 from the questionnaire: Professors direct you towards individual bonding of the facts and solution of the problems; encourage you to research individually and make conclusions freely.
Q8 – question No 8 from the questionnaire: During lectures professors insist on communication among you and your classmates and encourage you to state your opinions, to exchange ideas freely, directly and without any prejudice.
Q9 – question No 9 from the questionnaire: Professors encourage you to be creative and innovative.

The second extracted Promax factor gathers items con-

Table 3. The sample of matrix structure of the second factor.

Question	r
Q6	.705
Q7	.731
Q8	.799
Q9	.824

- items connected to an experimenting and learning among empolyees

nected to the experimenting culture and learning within the educational process. This factor, therefore, speaks in behalf of the fact that students consider the culture at their classes, which is prevailingly made of the freedom of speech and thinking, as a separate, individual factor. This means that they have well-formed capability of noticing, as well as that they consider it as something significant, and also as an inseparable part of the overall learning process. We named this factor the experi-menting and learning culture within educational process.

The factor comprises ALL the questions related to the experimenting and learning culture within educational process and this unity is extracted as a whole, which implies that it has been very well-designed and that the instrument of the research of the culture at class is reliable and sustainable (Table 4).

Q5 – question No 5 from the questionnaire: The most valuable knowledge that your professors have, and that provide them the positions at the faculty and environment, are not shared with anybody, because they do not want to lose all the advantages this knowledge gives them.

Q15 – question No 15 from the questionnaire: Professors demand usage of the Internet and other sources beside your official textbooks.
Q16 – question No 16 from the questionnaire: Professors demand from you to write reports and seminar papers, and you have to gather the information about the matters you are studying from the media and other wider sources of literature.
Q21 – question No 21 from the questionnaire: Professors encourage you to extensively use all the available knowledge from the informational systems (if any available) and libraries, in order to troubleshoot and write papers.
Q22 – question No 22 from the questionnaire: Professors encourage you to extensively use all the available knowledge when making important decisions about your education.
Q23 – question No 23 from the questionnaire: At classes you are attending, professors organize projects in which you have to apply your knowledge practically.

The third Promax factor is in positive correlation with

Table 4. The sample of matrix structure of the third factor.

Question	r
Q5	.538
Q15	.629
Q16	.636
Q21	.551
Q22	.580
Q23	.530

- items connected to the experimenting and learning culture at class

-items connected to the creation and gaining rocess knowledge process.

- items connected to the new knowledge

three subdimensions: employees' culture, knowledge gaining and creation process, as well as new knowledge utilization process at class. This means that students in question sense the strong relationship between the intensity level at which professors insist on gaining, creation and utilization of knowledge at class, and their willingness to share their knowledge with students.

Based on the factor analysis, we can conclude the following:

The analysis of the latent structure in the field of given answers in the questionnaire, for both groups of respondents, has shown that there is a significance of the experimenting and learning culture on the questioned sample. Namely, for the group of lecturers as well for the group of students, it is considered as a very important element, and the experimenting and learning culture has *a priori* been extracted as a separate factor. They also comprehend it as a separate whole.

For both groups of respondents it has also been proven that the culture correlates with KM processes – for students in the third factor the following items correlate: employees' culture, knowledge gaining and creation and new knowledge utilization process. For lecturers in the second factor the following items inter-correlate: the culture and new knowledge utilization, knowledge gaining and creation and knowledge sharing and allocation. This means that carriers of knowledge management processes – lecturers, but also the users of this *service* of knowledge gaining – the students think that there exists the obvious connection between the organizational culture and the knowledge management processes.

The bond between the experimenting and learning culture and the knowledge management system

The results presented point to the fact that the culture is separate, independent, and very significant factor of this research. The results also imply that culture stands in correlation with knowledge management processes. This information presents the grounding for the further detailed analysis of the nature and the structure of these bonds. In sake of further, more detailed analysis of this relations and derivation of deepest cognitions, the analysis has been conducted on different subdimensions – on the level of employees, on the level of lectures and faculty as a whole.

The relationship of the culture and all KM processes

The relation between the culture and all the processes of knowledge management together is shown in the following tables, on the tree measurement subdimensions (Table 5):

Statistic analysis has shown the existence of the correlation between the experimenting and learning culture that is present at lectures, with the level of knowledge management during the lectures. This also shows that educational process, having in mind the culture that is created by the lecturer and students (and by that it can vary from affirmative to non-affirmative), has an impact on the level of accomplished knowledge management (Table 6).

Statistic analysis has shown the existence of the correlation between the experimenting and learning culture that is present among faculty's employees, with the level of knowledge management of faculty's employees. This case also confirms the theoretical assumption – the presence of quite high Pearson's Correlation Coefficient, even higher than in the case of lecturing. This suggests higher relation between the employees' culture and employees' KM, than it is the case with these subdimensions presented at classes. This imposes the conclusion that there exists a great sensibility of employees' cultural instances which directly affect the level of appliance and effects of knowledge management (Table 7).

In general, the results of this analysis imply that on the level of all faculties involved, there is a connection of their experimenting and learning culture with the knowledge management practice. Hereby the basic assumption of this paper is confirmed

The correlation between the culture and individual knowledge management processes

The analysis of the correlation between the culture and knowledge management here comprises all four levels separately, on the all of the three sub-dimensions of measurement.

The forthcoming tables show the correlation between the culture and individual knowledge management processes, on the sub-dimensions of employees and lectures (Table 8).

The table shows the greatest correlation values for the culture and knowledge sharing. Within the table the highest correlation value stands for the experimenting and learning culture of faculty's employees: 0.774 and at the same time the greatest Pearson's correlation coefficient

Table 5. The correlation of subdimensions of experimenting and learning culture at class and learning at class with the knowledge management lectures.

	Pearson©s correlation coefficient	p
Experimenting and learning culture at class and knowledge management at class	.378	.000

Table 6. The correlation of subdimensions of experimenting and learning culture of faculty's employees with the knowledge management of faculty's employees.

	Pearson©s correlation coefficient	p
Experimenting and learning culture of faculty's employees and knowledge management of faculty's employees	.636	.000

Table 7. The correlation of subdimensions of experimenting and learning culture as a whole with knowledge management at the faculty as a whole.

	Pearson©s correlation coefficient	p
Experimenting and learning culture as a whole and KM at the faculty as a whole	.586	000

Table 8. The correlation of the subdimensions: the experimenting and learning culture and knowledge sharing and allocation process.

		Culture at class	Culture of faculty's employees
Knowledge sharing of faculty's employees	Pearson's Correlation Coefficient	-.048	.774
	p	.655	.000
Knowledge sharing at class	Pearson's Correlation Coefficient	.413	.571
	p	.000	.000

for the correlation of all the mentioned processes, on all the sub-dimensions.

This means that the experimenting and learning culture created of faculty's employees at the faculty has a prominent interrelation with the activities that determine knowledge sharing and allocation of faculty's employees. It is interesting that Pearson's correlation coefficient is higher for the correlation between the culture of faculty's employees and knowledge sharing processes at class; quite higher than in the case between the culture at class and knowledge sharing processes at class. In other words, the culture created among lecturers is of a higher importance and has greater impact on sharing and allocation of knowledge at class, than the he culture created at class, among students and lecturers. This data actually show that the lecturers' culture is absolutely dominant factor, the one that determines the intensity of knowledge sharing process on the faculties in question, at all levels (Table 9).

The categories of knowledge gaining and creation and experimenting and learning culture are such categories that are inter-related at all levels, which is their important notion. It is interesting that this connection exists on all four fields, that is, that even crosswise levels of employees and lectures are mutually in correlation. This correlation is, naturally, of weaker intensity than the correlation between the diagonal categories, shown by arrows (Table 10). The process of knowledge storage and organization is to the least extent connected to the experimenting and learning culture (Table 11).

The statistical analysis confirm that there is a correlation with the experimenting and learning culture, but less in correlation with the culture than the processes of sharing, allocation, gaining and creation of knowledge.

DISCUSSION

Results of the relationship of the culture and all KM processes suggest further discussion. The correlation of sub-dimensions of experimenting and learning culture of faculty's employees with the knowledge management of faculty's employees was proved. Most of the knowledge management processes, such as knowledge gaining,

Table 9. The correlation of the subdimensions: the experimenting and learning culture and knowledge gaining and creation process.

		Culture at class	Employees' culture
Knowledge gaining of faculty's employees	Pearson's Correlation Coefficient	.279	.483
	p	.008	.000
Knowledge gaining at class	Pearson's Correlation Coefficient	.394	.283
	p	.000	.030

Table 10. The correlation of the subdimensions: the experimenting and learning culture and knowledge storage and organization process.

		Culture at class	Employees' culture
Knowledge organization of faculty's employees	Pearson's Correlation Coefficient	.047	.283
	p	.660	.030
Knowledge organization at class	Pearson's Correlation Coefficient	-.035	.158
	p	.741	.233

Table 11. The correlation of the subdimensions: the experimenting and learning culture and new knowledge utilization process.

		Culture at class	Employees' culture
Knowledge utilization of faculty's employees	Pearson's Correlation Coefficient	.252(*)	.428(**)
	p	.017	.001
Knowledge utilization at class	Pearson's Correlation Coefficient	.432(**)	.252
	p	.000	.055

sharing and utilization, are natural content of an educational process and that is something students are aware of, and something that they were eventually prepared to, having in mind that they had decided to study at university. This can also be said for lecturers, for they do comprehend the challenges of their avocation. In that sense, the sensibility of these processes are lower in terms of their impact on affirmation of culture at class (this does not mean that they are non-existent, because the correlation has been determined).

The carriers of these processes within the employees are primarily the lecturers, who are used on certain kind of superiority over students which is something that is given to them on the basis of their knowledge, position and experience. They are not used to put themselves into a student's position: in the position of the one that studies, learns, shares and exchanges knowledge, uses it in further work etc. It has already been said that the research shows that the faculties taken into account do not apply collective learning methods, but they insist on gaining, creating and utilization of knowledge on the individual level. The lecturers do not have a practice, neither on their initiative, nor at the faculties' demand to share knowledge and use KM processes on the collective level. They do not even use its benefits. That is why the affirmation of the culture, the motivation level it can accomplish for a lecturer, the normative of behavior and system of values that are in accordance with KM (which can all be sat by the culture itself) are of an utmost significance for the success of knowledge management. This is the reason why the correlation between these instances is greater among lecturers than students.

On the other hand, the culture of every organization is to a greatest extent defined by leadership, that is, the style and the concept of management. Democratic leadership and authority's delegation determine an affirmative culture; whilst repressive and authoritarian leadership determine disintegrated, non- affirmative culture. The employees' culture of each faculty is actually created by its management, in agreement with the lecturers employed there. Based on that model, lecturers create the culture at their lectures, in cooperation with their students, but at the same time they carry the notion of the normative, priorities, and value system of the given culture.

They create the culture at their class in accordance to all these mentioned elements. It can also be mentioned that the extent to which the faculty's climate is created by lecturers, along with its management, is greater than the extent to which students take part in the creation of the class' culture. Why is this so? Because, above all, the lecturers are older than students, more educated and to a greater extent self-actualized, and therefore their set of values' system, normative and convictions that influence

on the culture creation, are more developed and more influential. In that way, the experimenting and learning culture of faculty's employees, in its original sense – evaluation of learning, research and innovation – is inevitably projected, through certain filters, on the culture at class. It is, therefore, clear why is the culture of faculty's employees related to the KM processes more than the culture at class is related to them.

Results of the correlation of subdimensions of experimenting and learning culture as a whole with knowledge management at the faculty as a whole, suggests forthcoming explanation.

Statistical analysis has shown that there is a connection of their experimenting and learning culture with the knowledge management practice. Results have therefore implied that if the culture of supporting and encouraging collective learning, knowledge sharing and experimenting in purpose of innovation within an organization does not exist, than the isolated, single solu-tions that manage to accomplish some of the mentioned KM processes, will not provide the desirable level of knowledge management. In general, if the culture is not well developed and affirmative to initiate, support and accept these changes, most of these processes will not appear in any organizations (such as classroom or a faculty). On the basis of the given data the justification of KM model in education can be confirmed. This model includes the experimenting and learning culture as grounding for KM processes implementation.

Results of the correlation between the culture and individual knowledge management processes, however, suggests further discussion. The proved correlation of the subdimensions the experimenting and learning culture and knowledge gaining and creation have implied that the process of knowledge gaining and creation is very sensitive on the experimenting and learning culture and that the culture here is intertwined at all levels – there even exists the correlation between the way of creating culture at class (where the participants are lecturers and students) and to what extent do the lecturers gain and create new knowledge among their colleagues. This is also the case which shows that the correlation of the culture at class and gaining and creating knowledge among colleagues is higher than the correlation between culture at lectures and gaining and creating knowledge at class.

High level of correlation between the experimenting and learning culture and gaining and creating knowledge does not come as a surprise. Namely, it is quite logical that the development of a certain culture that supports learning, innovation, experimenting and permanent deve-lopment is directly proportional to knowledge gaining and creation. This process is actually its direct consequence and it can be said that it is the indicator of its affirmativeness.

The claim based on statistical analysis, that showed that the process of knowledge storage and organization is to the least extent connected to the experimenting and learning culture, can also be explained by the fact that this process has a technically and organizationally oriented grounding, although each of the knowledge management processes is equally important. There are certain basic preconditions before applying this process in an organization. The first one is the existence of the management initiative to store and organize knowledge (in order to assure them and use them more easily), which is called organizational orientation. Another one is technical orientation – the use of informational technology, as a logistic support. In that sense, the culture that supports experimenting and learning is not crucial for this process.

However, it must be pointed out that the extent to which the presence of this process within an organization exists is also important. More precisely, it is important to see if the basic preconditions for its implementation in the given organization have been fulfilled, that is, in the organization that measures these correlations. In general, when there is an initiative from the organizational management to organize and store knowledge, as well as a certain adequate IT solution, the readiness of the users will also appear. Their readiness comprises the willingness to store their knowledge in an informational organizational system of a company – their willingness to share knowledge, that is, give it as a present to their organization. Only when these processes reach this stage, can there exist the correlation (of the high level) with the organizational culture.

Taking into account that the questioned sample showed that this process is not present and that even basic preconditions (technical and organizational) have not been fulfilled, its correlation with the experimenting and learning culture cannot become visible.

The correlation of the subdimensions: the experimenting and learning culture and new knowledge utilization process was proved, but in less correlation than the other processes.

Knowledge utilization process is of the highest importance for knowledge management in an educational system in two ways. New knowledge utilization is the peak of the KM and it justifies its purposefulness – it provides the intelligent knowledge utilization that is available to an academic institution for problem solving, decision making and creation of new values.

Knowledge utilization, on the other hand, presents the ultimate and final purpose of an educational process – generations of students who gain knowledge through their academic education. They also gain the competence that should be used afterwards, in order to enhance the competitive advantage of the economy of a certain country. In order to spot and accomplish both of the mentioned priorities, an educational institution need to (headed by their management structures) have a critical mass. These people need to have developed awareness of responsibility and high education's mission and task, as well as of advantages and knowledge ma-

agement system's tasks. The latter one is in relation with the culture.

Knowledge utilization process at class means constant turning back to actual, everyday life and practice problems, as well as working on knowledge utilization in order to solve these problems. This is very demanding task and it needs great engagement and devotion of lecturers and also commitment of the whole institution to provide conditions for this type of work. This also leads to an organizational culture.

This is why it should not come as a surprise to have the statistical analysis confirm that there is a correlation with the experimenting and learning culture. Why is this process less in correlation with the culture than the processes of sharing, allocation, gaining and creation of knowledge?

Knowledge management is a multi-dimensional process that is not reflected only on the organizational culture. Knowledge management processes have their organizational, strategic and technical-technological aspects. Organizational is here in sense of gathering needed resources, empowering, team building etc.; strategic in sense of identification of desirable results, processes' direction, missing knowledge' direction, results' monitoring and focusing on a certain KM area. When we mention technical-technological aspects, it stands for provision of adequate KM solutions, their usage etc. For these four processes all of these aspects are present to a certain extent (great or small). The process of new knowledge utilization, besides cultural aspect, demands a strategic approach, but also firm organizational-technological grounding, far more than the sharing and allocation process, that is, more socially oriented demands. It is possible that this is the reason why this process is not to the greatest extent connected to the experimenting and learning culture.

In general, the analysis of the correlation of the culture and individual KM processes has shown that the intensity of the relationship between the culture and processes has the following order:

1. The highest values of the Pearson's correlation coefficient for the process of knowledge sharing and allocation, than
2. For the gaining and creating knowledge process.
3. New knowledge utilization process.
4. Lowest values stand for the storage and organization knowledge process.

Although all of the four KM processes are equally important, the extent of their individual correlation with the culture varies. It seems that the relation is directly proportional to the level of the human factor engagement. Still, the deeper analysis has shown that the storage and organization knowledge process (the one that did not show correlation with the experimenting and learning culture, but in which the human factor influence is lower) can significantly correlate with the experimenting and learning culture. These can correlate if technical and organizational preconditions are fulfilled and human factor prominent. In fact, each individual process has a human factor involvement – it is the question of organization whether it will be of equal proportion.

What is still different and can explain this sequence of relations, is the fact that human factor comprises two, co-existent, but separate components: individual and social component. There is an individual component within the process of knowledge sharing and allocation (an individual must have a self-initiative to learn from others, if there are conditions for it). Although this is obvious, a certain social component must also be prominent in order to fulfill these conditions. Knowledge sharing has a prominent social nature, above all, that is a social activity that is realized through an interaction of individuals.

Gaining and creating knowledge process, still need not have social determination. Knowledge can be gained and created, regardless numerous social instruments of knowledge multiplication, exclusively at individual level (especially in the environments where individuals want to gain knowledge, that is, power, only for themselves) Even the process of knowledge utilization can have only the individual component. It can be initiated on the individual level – induced by an initiative of an individual to use these new organizational knowledge (whether for his/her personal gain of not).

Knowledge sharing within an organization is determined by the knowledge sharing motivators, which is all the part of organizational culture. This claim has been confirmed in the research; by the first extracted factor form the questionnaire for lecturers. It isolated the experimenting and learning culture. It comprises items referring to the motivators for knowledge sharing. It is hard to make a clear distinction between these notions, which is why their relation is so tight.

On the other hand, the results of this research speak on behalf of the acknowledgement that the relation of the processes with the culture depends on the prominence of social, that is, individual human factor's component. Gaining and creation knowledge process and knowledge utilization process are existing processes, but only at the individual grounding. Having a sample like this, it should not come as a surprise that these processes are less related to the experimenting and learning culture, than to the sharing and allocation knowledge processes.

Considering the fact that the literature explains knowledge sharing as a certain key for knowledge management, as well as the only process that cannot exist without social interaction, most of the organizations will have it as the process which is the most related to the organizational culture. The question raised at this point is: to what extent will other processes take their positions? – What will be the ratio of two human factor components: individual and social? It is understandable that this is the case when organizational culture becomes relevant – its

instances that actually create the result of an organization management: encouraging, evaluation of a team work, common problem solving, the best practice presentation, introduction of utility standards of certain organizational knowledge, building motivators for knowledge sharing and trust of faculty's employees in an organization.

Conclusion

The results of the factor analysis shown at the beginning of this study indicate that the experimenting and learning culture is very important, individual and influential factor for both groups of respondents. The results have also shown that it is in correlation with the knowledge management processes.

Statistical analysis has furthermore shown that there is a strong relation between the experimenting and learning culture with the knowledge management practice at all the faculties comprised by this research. The mentioned correlation has a Pearson's Correlation Coefficient 0.586.

The starting presumption while conceptualizing the theoretical part of this study has therefore been justified. That presumption was that only strong and consistent culture of learning and entrepreneurial organization can educate, develop and implement the knowledge management concept to a sufficient extent. If a certain organization does not have already developed culture that supports and stimulates collective learning and experimenting, than individual solutions that accomplish some of the mentioned processes will not provide sufficient level of knowledge management.

From the perspective of correlation on the sub-dimensions: organizational employees –lecturing, interesting information has occurred. It states that the correlation of culture and KM processes is higher on the faculty employee's level, than on the level of lecturing. This leads to a conclusion that there is a presence of great sensibility of employees to a certain cultural instances that directly influence the level of the utility and effects of knowledge management. The culture of employees is to a great extent the result of managing the faculty, whilst, on the other hand, it has a great influence on creation of the culture at class. That is why it is of crucial importance for faculty's leadership to question their work and acknowledge all of its implications on faculty's functioning.

Based on these data, the analysis has been widened, by the questioning of this correlation for all the processes individually. This was done in order to reach even more precise information about the structure and nature of this correlation. The intensity of correlation of culture and processes on the given sample has shown the following sequence:

1. The highest values for the process of knowledge sharing and allocation, than
2. For the gaining and creating knowledge process.
3. New knowledge utilization process.
4. Lowest values stand for the storage and organization knowledge process.

Taking into account the presence of individual processes of knowledge management on the faculties examined, as well as shown results, it can be stated that there is a great influence of this sequence on the intensity of correlations, by social component of each processes. We consider that the extent to which this social component is necessary for processes development and the extent to which it is truly incorporated in organizational processes, represents the correlation between the process itself and the organizational culture.

Considering the fact that knowledge sharing is the process with the prominent social component in each area, this process is actually in the greater correlation to the organizational culture and in literature it is known as critical KM process.

However, there are certain obstacles which faculties in question, as well as many other different organizations, must overcome, in order to accomplish better results. One of them is the question of knowledge as an intellectual property, that is, the attitude of an employee (for example: lecturer) that knowledge means power and consequently, sharing knowledge leads to sharing power. On the other hand, it is essential that all employees in an organization (lecturers above all – although that is in contrast with their avocation) – place themselves into a students' position, starting with the attitude that their knowledge is not final and sufficient and that life long learning and permanent development, as well as common knowledge sharing and team work, are the only way of efficient working.

We comprehend that this is also the case of an organizational culture – this is about all those instances that actually make the result of an organizational management. These instances are: encouraging, evaluation of a team work, common problem solving, the best practice presentation, introduction of utility standards of certain organizational knowledge, building motivators for knowledge sharing and trust among employees in an organization, as a basic precondition for knowledge sharing.

The introduction of knowledge management in any organization, as an essential change for each organization, actually presents the whole new business philosophy and is the question of managing, as well as the creation of an organizational culture. It specially refers to its aspect which insists on experimenting and learning, as a basic motivator and the grounding for conceptualization of KM.

REFERENCES

Alavi M, Leidner DE (2001). Knowledge Management and Knowledge Management Systems: Conceptual Foundations and Research Issues. MIS Q. 25(1): 107-136.

Alazmi M, Zairi M (2003). Knowledge Management Critical Success Factors. Total Quality Manage. 14(2): 199-204.

Clark BR (1998). Creating Entrepreneurial Universities. Organisational Pathways of Transformation. Oxford: Pergamon IAU Press.
Clark DR (2004). Instructional System Design Concept Map. Accessed September 2007: http://nwlink.com/~donclark/hrd/ahold/isd.html
Davenport T, Prusak L (1998). Working Knowledge: How Organizations Manage What they Know**.** Cambridge. MA: Harvard Business School Press.
Edvinsson L, Sullivan P (1996). Developing a Model for Managing Intellectual Capital. Eur. Mange. J. 14: 356-64.
Fullan M (2001). Leading in a culture of change. San Francisco: Jossey-Bass.
Gibb AA (2005). Towards the Entrepreneurial University. Entrepreneurship Education as a Lever for Change. Accessed May 2001: http://www.ncge.org.uk
Grant RM (1996). Prospering in Dynamically-competitive Environments: Organizational Capability as Knowledge Integration. Organ. Sci. 7 (4): 375-387.
Grover V, Davenport TH (2001). General Perspectives on Knowledge Management: Fostering a Research Agenda. J. Mange Info. Sys. 18(1): 5-21.
Hayek F (1949). The Use of Knowledge in Society. Am. Econ. Rev. 35: 519-30.
Karlsen JT, Gottschalk P (2004). Factors Affecting Knowledge Transfer in IT Projects. Eng. Mange. J. 16(1): 3-10.
Kotter J P, Heskett J L (1992). Corporate culture and performance. New York. NY: Free Press.
Lisa A, Petrides, Nodine RT (2003). Knowledge management in Education – Defining the Landscape. The Institute for the Study of Knowledge Management in Education. Half Moon Bay.
Nonaka I (1994). A Dynamic Theory of Organizational Knowledge Creation. Organ. Sci. 5(1): 14-37.
OECD/CERI (2002). Knowledge Management In Education And Learning. Summary Report. The Irish Independent.
Park H, Ribiere V, Schulte W (2004). Critical Attributes of Organizational Culture that Promote Knowledge Management Technology Implementation Success. J. Knowl. Mange. 8(3): 106-117.
Polanyi M (1958). Personal Knowledge: Towards a Post-Critical Philosophy. University of Chicago Press.
Senge PM (1990). The Fifth Discipline: The Art and Practice of the Learning Organization. New York: Doubleday.
Stankosky M (2005). Creating the Discipline of Knowledge Management. Oxford: Elsevier Butterworth-Heinemann.
Sveiby K (1997). The New Organizational Wealth: Managing and Measuring Knowledge – Based Assets. San Francisco: Berrett-Koehler.