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SARAJEVO



FACULTY OF
TECHNOLOGY
ZVORNIK

PROCEEDINGS
KNJIGA RADOVA

2ND INTERNATIONAL CONGRESS

ENGINEERING, ECOLOGY AND MATERIALS
IN THE PROCESSING
INDUSTRY

II MEĐUNARODNI KONGRES

INŽENJERSTVO, EKOLOGIJA I MATERIJALI
U PROCESNOJ INDUSTRIJI

JAHORINA, 09.03.- 11.03.2011.
BOSNIA AND HERZEGOVINA

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TEHNOLOŠKI FAKULTET ZVORNIK

2ND INTERNATIONAL CONGRESS
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FACULTY OF TECHNOLOGY ZVORNIK**



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TEHNOLOŠKI FAKULTET ZVORNIK**

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UNDER AUSPICES OF:

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- *THE ACADEMY OF SCIENCE AND ART OF REPUBLIC OF SRPSKA*

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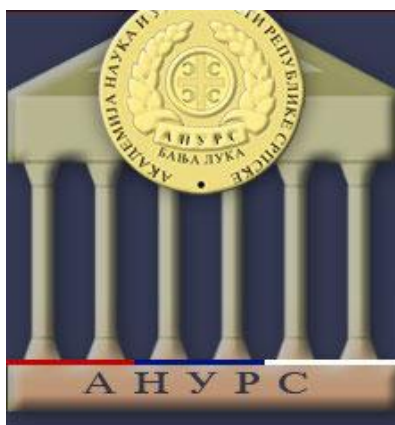
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MANAGEMENT CAPABILITY - A CONDITION FOR BUILDING A SOLID QUALITY SYSTEM

СПОСОБНОСТ НА МЕНАЏМЕНТОТ – УСЛОВ ЗА ГРАДЕЊЕ ДОБАР СИСТЕМ НА КВАЛИТЕТ

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Abstract

In order to build a solid system that provides quality, the very first thing that is surely necessary is the involvement of each employee, further on, time and knowledge, cooperation among the staff and a sense of teamwork. The introduction of the quality system is teamwork therefore in the environments where the rights and regulation for teamwork are not obeyed this system could be evaluated as unacceptable. One of the hugest changes that are demanded starting the implementation of the TQM (total quality management) strategy within Macedonian companies is to adjust the mentality, release the old habits and the transitional syndrome.

In this paper the following inputs are being given: the findings from the researches in terms of capacity leadership in the Macedonian companies, capability of the managers for a fast decision-making and the readiness for a teamwork according the criteria for wining a European award for quality as well as the directions which each Macedonian company needs to take in order to promote the management system through new TQM strategy, development of staff and teamwork, as well as promoting the processes far earlier before purchasing new technology, especially IT.

Key words: TQM strategy, quality providing system, leadership, management teams.

Анстракт

За да се изгради добар систем за обезбедување квалитет е потребно ангажирање на сите вработени, е потребно време и знаење, соработка меѓу вработените и смисла за тимска работа. Воведувањето систем за квалитет е тимска работа и во средините каде не се почитуваат правилата за тимска работа може уште од почеток да се оцени како неприфатлив. Една од најголемите промени кои ги бара новата TQM стратегија (Total Quality Management) кога се работи за македонските компании е промена на менталитетот и ослободување од старите навики и транзициониот синдром.

Во овој труд се дадени наодите од истражувањата во поглед на капацитетот на лидерството во македонските компании, способноста на менаџерите во донесување одлуки и спремност за тимска работа спрема критериумите за добивање Европска награда за квалитет, како и насоките низ кои треба да поминат македонските компании за унапредување на деловните процеси, производител/услугите. Решението е најдено во унапредување на менаџмент системот преку нова TQM стратегија, развој на кадрите и тимско работење, како и унапредување на процесите и тоа далеку порано, пред купување на нова технологија, посебно IT.

Клучни зборови: TQM стратегија, систем за квалитет, лидерство, менаџмент тимови.

INTRODUCTION

The management in certain companies that are tending towards implementing of TQM, but also bearing in mind the necessity to improve their business processes, stimulates generating of new ideas, undertaking codification actions or transfer of ideas coming from the staff in any explicit form of their implementation. The generating of new ideas is a result of innovativeness and creativity of the employees and it could be further stimulated with other given activities straight from the management. The road to success^{1,2} leads towards implementation of improvements of innovations of the business processes, creating an innovation climate from the management side, which stimulates one to a creative thinking and original solutions. Main designer of the innovation climate is the top management, that needs to be enthusiastic for innovations, and being innovative himself/herself – thinking outside the rough schemes of business and being open to new ideas, ready to accept the risk, and to be able to provide the necessary resources for realization, being able to listen, able to encourage and support the employees, to be able to trust and able to be tolerant to any failures and errors. The number of leaders and managers ready for teamwork is very small, in terms of Macedonian conditions.

Managers are expected to ease up the work and to teach, helping to create an environment where the individuals of the teams will achieve their optimum, and not playing experts themselves.

FINDINGS AND ANALYSES OF THE RESEARCH FINDINGS

The analyses were implemented over Macedonian companies in terms of capacity of the leadership and capability of the managers for decision- making and capability for teamwork. The researches were done through questionnaire and a detailed analysis of the condition³. Regarding the grade of success in a company, one of the parameters that represent criteria for winning a European award for quality is the leadership capacity.

The structure of the examined companies (151) – the participants in the research according the economical activity that it belongs to (National qualification of activities –NKD Rev. 2 –“Official Gazette of R. of Macedonia” no. 147, 26th of November 2008) is given in a fig. 1.

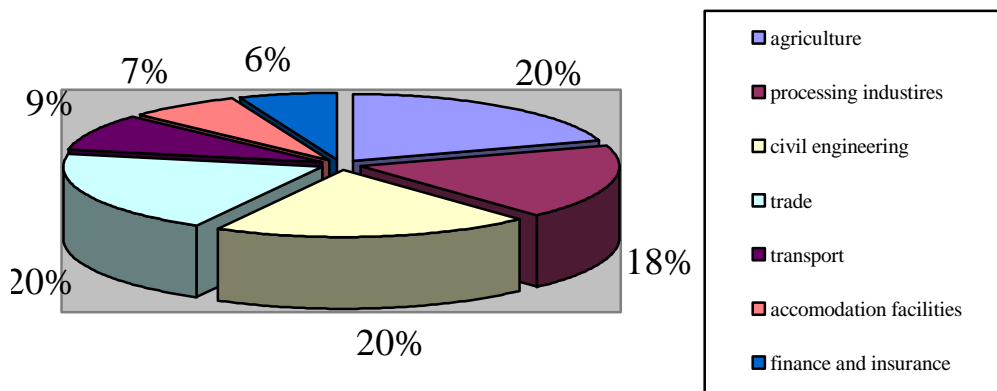


Fig.1: Companies' participation divided according their economic activities

The behavior and the measures that are undertaken by the top management and the other managers need to be inspiring, supporting and to be able to promote TQM, and to create a working atmosphere with trust and respect.

¹ EFQM, Common Interest Day Workshops - Management of Innovation, *Quality Link* Vol.9, No 51, December, 7-11 (1997).

² EFQM, Successful approach to the Management of Innovation, 1998, pp.5.

³ E. Mitreva, Integral Methodology For Designing And Implementing Of TQM System Within Companies, Doctoral Dissertation, Skopje, 2010.

In order to receive proper information on the behavior of the leadership in Macedonian companies, and how the top management is creating a working atmosphere within their company, here is the data:

- 80 of the examnants, or 53% have presented that the working atmosphere is built with a stern working discipline;
- 28 of them, or 19% are using the factor motivation in order to create a solid working environment;
- 24 of the examnants or 16% have declared that the presence of increased trust and respects as well as the absence of fear through explication of everyone's opinion is a possibility for creating quality relations;
- 19 of them or 12% have declared that the working atmosphere is built by monitoring the employees.

The balance between the company's interests and the human rights of the employees is a subtle load on the side of the company. But, even though that the company would protect its interests and would establish an order and discipline, still, if there is no implementation of various motivating activities, there will sure be a shortage of business results. Private companies led by the desire to release the socialistic syndrome have implemented a authoritative management style of the owner- the manager, where any teamwork is considered as a waste of time and the involvement of the employees within the decision-making is taken as a self-ruling and violating the owner's integrity.

The quality providing of the companies is requesting an involvement of the top management, proper election of the teams for solving problems, as well as an improvements of the business processes. For that purpose, the researches that were implemented within Macedonian companies were done in order to receive a proper picture of the manner of solving problems, existing of the managerial teams, building of teams' trust, as well as how much do the managerial teams influence over the improvement of the business process itself.

Regarding the question of the frequency and the efficiency of the teamwork on a managerial level, here is the data, (fig.2):

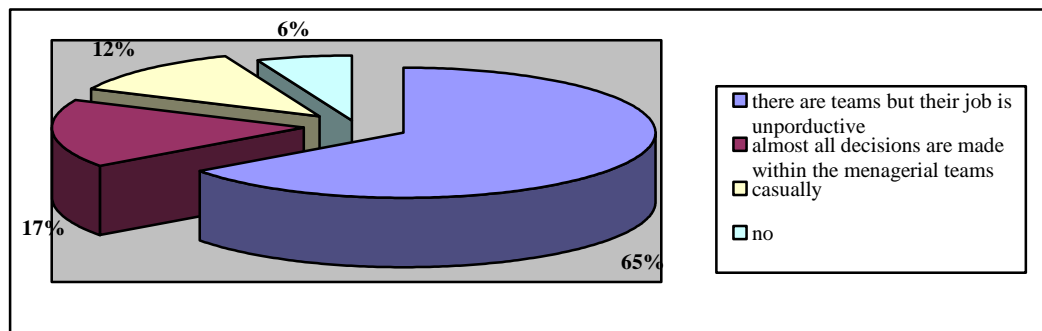


Fig.2: Managerial teams existing within the companies

- 65% of the examnants have declared that there are permanent managerial teams, but their work is not productive. Those teams are led by managers with an old style that are not changing the team, following the hierarchy chain in order to achieve the aims of quantity, asking for a constant loyalty towards the executive, hiding and modifying the information;
- 17% of them have declared that almost every decision is made by the managerial team. Those teams are sharing and complementing the knowledge and the information with everyone that is needed and those teams are led by managers that are developing the TQM strategy. Those managers are team leaders, reaching over the functional lines, working with everyone in order to achieve quality results. Those team leaders are becoming professionals and are assigned with important tasks to a many different functions. The election of the team members is the base of the results from their work and

the professional abilities. Those teams are dealing with clearly established standards for awarding and sanctioning, they give a clear orders and precise instructions of the employees and as a result of that there are no conflicts, there is a solid working atmosphere and sufficient business results.

- *the nonexistence of constant managerial teams within the companies (about 6%) is referring to the fact that the managers are dealing with activities that are not ones of an interest of the company, which results as a mistrust to the employees as well as a mistrust within the managerial teams.*

The basic problem of the Macedonian companies is that the managers consider the improvements programs as unnecessary and that thanks to the knowledge and the skills that they own, they are placed on the current position. Participation to those programs is considered as one coming with a political background or the credibility of the program is doubted as well.

Japanese experiences⁴, refer to a constant rotation of the working positions and managers tasks (specifically for Toyota and Honda). In our case it should be emphasized that there is no rotation of authorities but it is a case of switching position. In this way the horizons would be widen up and new skills and experiences will be learnt and therefore the capability of accomplishing previous tasks that the managers are always coming back to will never be vanished.

The research on the question how those managerial teams work and what is the quality of the teamwork on the managerial level has indicated as bad functioning of the managerial teams because as of that here is the data:

- 120 of the examinants or 79,6% consider that *the managerial teams function with huge problems;*
- 17 of them or 9,4% consider that *there are problems that are appearing but they are solving them successfully;*
- 14 of them or 11% declared that *the teams are successful.*

The results is indicating to a bad function of the teams within the questioned companies, because almost 91% *of the cases have shown that the problems in the companies are not recognized and are not solved in accordance with the possibilities.*

The problem in the Macedonian companies regarding the involvement of the employees and the teamwork is mutual:

- *there is a mentality issues that is actually an emphasized individualism;*
- *there is a problem with the demarcating of the old habits and the participation in the problem-solving, improvements and innovations.*

The barriers in the work performance of the managerial teams differ from one team to another, and this is most often as a result of: unrealized needs, bad decision-making, unclear defined roles, human conflicts, bad leadership, lack of feedback/ or information, inadequate awarding system, lack of trust within the team and unwillingness to make changes. The basic barriers is in the psychological moment that might be connected with the failure in the cooperation, motivation, conceit, inadequate financial support, inferiority toward a continuous learning and improvement or inadequate training program.

According to many authors^{5,6,7,8}, the key for a successful teamwork is to be prepared for cooperation inside the team. When the members of the team are sharing the same vision and are motivated to accomplish, they are very cooperative and all of that is actually bringing a success. The necessary thing in order to perform a successful teamwork is:

⁴ J. Helling, *Svetski šampioni*, Prometej»-«Subotica newspaper, Novi Sad, Subotica, 1993, pg.177.

⁵ W. G. Craig, S. C. Lineberry, And Management Mirror: helping senior management teams see their own reality, *Industrial and Commercial Training*, Vol.33, No.7, 242-248 (2001).

⁶ G. Cepujnoski, B. Cepujnoska, *Managing Quality in Practice*, Faculty of Economics, Skopje, 1993, pp.125-150.

⁷ V.Cepujnoska, *Quality Management* –theory, science and practice, Faculty of Technology and Metallurgy, Skopje, 2009, 45-90.

⁸ Dž. Grinberg, R. A. Baron, *Behavior within the Organization*, Želnid, Beograd, 1998, pg. 125-463.

- *support to every employee;*
- *preparedness to cooperate with other teams.*

In order to accomplish cooperation with a serious businesswise team the interaction among the team's members in essential.

The research that was done in order to examine if the teamwork is influencing positively over the improvement of the quality products/services, has given the following data, (fig.3):

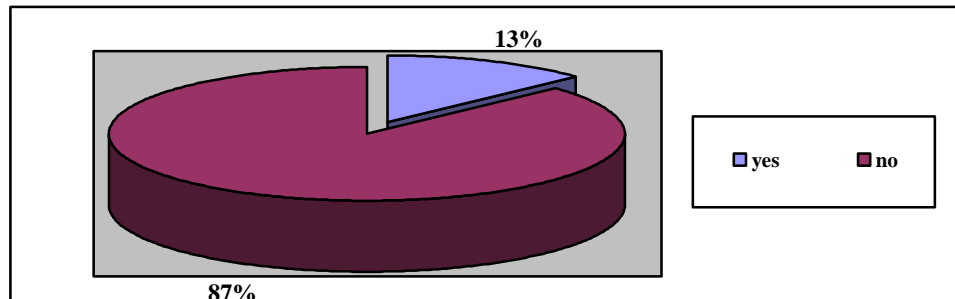


Fig.3: *Influence of the teamwork over the product/ service quality improvement*

According to the received data it could be concluded that there is a lack of successful managerial teams, that are a truly business potential of the companies, that **would positively influence over the improvement of the product/ service quality**. As of the research it is shown that bad communication among managerial team members and the employees, nonexistence of high level of trust and respect in the teams themselves and their relationship towards the employees is giving a bad business results.

The research on the question if the managerial team members trust and respect each other, here is the data:

In 87% of the examined companies there is not trust and respect and it can be seen by failing to undertake activities for process improvement. Those teams are following the hierarchy chain in order to achieve the quantitative aims.

There are certain differences between the service companies and the manufacturing companies. *The first ones have a better cooperation among member of the teams and the latter have a bad cooperation in terms of the company.*

There are certain differences between the private and the public sector. It is evident that most of the private companies, in 58% deal with better communication, more efficient problem-solving and overwhelming of conflicts. The managers are tending to build better business relations with the employees and there are not conflicts among them. On the other hand, in the public sector the communication is insufficiently developed, the employees are not cooperating and the conflicts are difficult to be overwhelmed. Managers do not tend to build good relations with the employees because they consider that they have a monopolistic position.

As of the question regarding how much the managers enjoy the trust of their employees, here is the data, (fig.4):

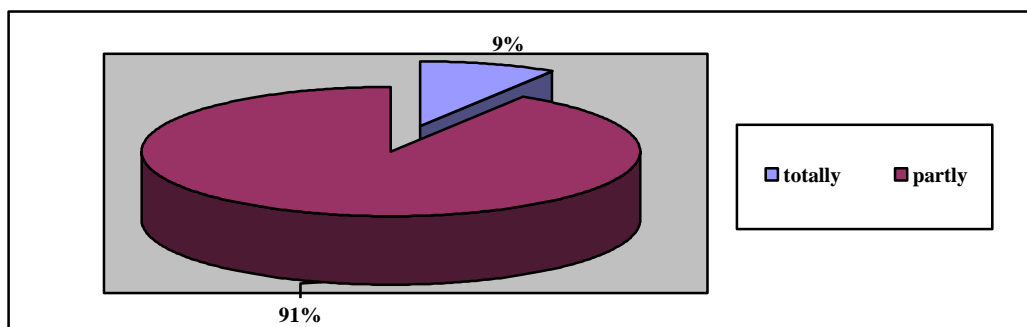


Fig.4: *Employees loyalty towards the managers*

The lack of trust in 91% of the companies refers to a distant attitude of the managerial teams by the employees which leads to a constant conflicts and bad management functioning.

There are only 9% of the companies *where positive reflexive feedback is present among managers and employees*, because the successfulness of the managerial teams is depending on trust and employees' engagements therefore it is necessary for the managers to make an additional effort and build solid business relation with the employees.

9% of the examinants have declared that the managers enjoy the trust of the employees which is a result of their clear, sequential and honest relations towards the employees.

The leaders acknowledge and reward the efforts and the results of the employees

The norms for accomplishing tasks are one of the most important matters that each company management is dealing with. Determining the volume of the realized job within a timeframe should not refer to the amount only but quality and productivity as well. When the norm is being determined it must be taken into consideration the accomplishment of the defined quality.

As of the research, regarding the defining of the norm within the working obligations here is the data:

- 52 of the examinants, or 34,4% define norms *in an activity volume and a timeline for their accomplishment;*
- 36 of them or 23,8% have defined the norms *through the working time;*
- 32 of them or 21,2% have determined the norms only by *the activity volume;*
- 27 of them or 17,9% besides the volume and the timelines *have defined the quality of the assigned activities;*
- 4 of them or 2, 7% have declared as other.

As of other, as a responding option above it is given that the defining of the norms of the working obligations can be done my: *quality of the accomplished tasks*. The working norms and standards of the products/ services are acceptable only where the quality needs to be provided and through the realization of certain operations. In cases where those norms stand as an obstacle on the road to the continuous improvements of quality, they need to be reduced.

The management must function the qualify each individual in the organization in order to find an answer to the unknown changes and to establish a process of continuous improvement – innovations in accordance with the operative managing of the company.

151 of the examinants or 100% have responded that there is a quality norm but the practice 17, 9% shows that this is actually a quantity norm.

As of the research about whether within the company the innovations are being rewarded and how much of the total income is invested into innovations, research and development, here is the data:

- 43%; *of the companies do not invest into innovations, research and development;*
- 22% of the examinants *are sorting out more than 1,0% of the total incomes;*
- 20% of them *are sorting out between 0,5%- 1,0% of the total income;*
- 15% of them *are sorting out less than 0,5% of the total income*

The companies that are investing into innovations, research and development, only 7% of them *are rewarding the innovations, which actually indicated that the top management is influencing non-motivating among the employees within their desires and intentions* to include additional efforts into the innovative activities. *Investing into innovations, researches and developing are minor, in terms of the number of organizations and in term of the amount.*

The most important role within the investment of innovations lays into the customer services and the agriculture. Innovativeness is a part of the corporative culture. As of the innovations, management in the highly developed countries had become as one of the most important matters in the quality managing of the company, and even more than that. It is known that the marketing, positioning on the market and building an own brand are not only methods for sales improvement and increase of the profit but a special condition within the employees' awareness.

Therefore, the innovativeness has stopped to be taken only as a work within the missions and company's visions, but it is a necessary condition within the awareness of each individual. The experiences of the TQM strategy worldwide compared with the condition of our companies are giving the following:

TQM strategy up until today has given the best results in Japan^{9,10}. It has been built upon the values of the Japanese culture and mentality, adjusted to accept the values of the western civilization.

In order to find the key to success in our companies it is important to analyze some of the features of the Japanese and our mentality in order to get the lesson out of it.

The Japanese¹¹ being aware of their defects have developed their lacking abilities on the bases of the existing values. As of the general beliefs, they are reproductive and less creative but own an emphasized collectivity spirit. They have developed the teamwork up to a point of flawlessness, without suffocating and developing the individualism and creativity at the same time. On the other hand, *Macedonians during the years behind were building the collectivism, suffocating the creativity and individualism.*

Thanks to that, Japan today besides USA owns the largest number of innovations in the world as a result of the stimulating of the cooperativeness *instead of confrontations, which are specific feature of our mentality.*

Besides that, the Japanese are focused on the everyday minor improvements opposite of the Macedonians that are oriented towards creating something big and spectacular.

One of the most important features of the Japanese mentality is¹²: persistence and orientation of the systematic and long-term solutions and results. *In Macedonia, most of the time the giddiness, improvisation-oriented and short-term solutions are present. Therefore the results are present only when there are high aims that need to be reached, rare ones because they demand a big amount of energy. All of this is possible only under the leadership of a strong leadership.*

Our attitude towards life is to be lived in a single-day installment, which indicates to the lack of vision for the future, because we own huge vital energy. That is actually the strength of Macedonia civilization, its quality etc but still lacking in the refined attitude towards life and planning of the future. When this vital energy runs out it will be undertaken from the intellect. In order to understand how the Western countries have accepted the Japanese experiences with great efforts,¹³ and have adjusted with their mentality, it is advisable that *Macedonian characteristics should be compared with the English ones.*

Macedonians didn't manage to learn the self-overcoming. They own a vivid temperament, fast action on any influences, no power to control their feelings and hence come the grumpiness, passion desires and lots of anger – when the wishes are not coming true. It doesn't mean that they are mean people but not being able to control own feeling, they are ready to present issues much worse than it really is, and all that even after the first impression. Macedonians actually do not lack of clear thoughts and wisdom, but practice instead fast decisions without a previous quite thinking.

The difference between Macedonian and English well-behavior is that Macedonians are ready to do anything if it is about people they really care about, which is rather more than the English.

But Englishman are ready to do the same thing even for the people they don't really care about if they see them in trouble. *Macedonians make good things out of love and the Englishmen do it with a sense of duty.*

⁹ K. Ishikawa, President Touka Henkau Sozo Gakkai, "Thoughts on risk management "Creativity and risk management", JUSE, *Societas Qualitatis*, Vol.9 No.3 July/Aug, 5 (1995).

¹⁰ H. Sasaoka, The QC circle evolution from TQC to TQM, a management perspective, JUSE, *Societas Qualitatis*, Vol.9, No.4 Sept/Okt, 5 (1995).

¹¹ H. Kratsu, Tokai University, "Concept engineering points in developing hit products", JUSE, *Societas Qualitatis*, Vol.9, No.2 May/June, 3 (1995).

¹² W. Latzko, D. Saunders, Four Days with Dr. Deming, Addison-Wesley Publishing Company, USA, Canada, (1995).

¹³ N. Kano, *Business Strategies for the 21 st Century and Attractive Quality Creation*, ICQ, Yokohama, 1996, pp.105.

The ability to use the self-control makes the Englishmen master of their own feelings. They have calculated exactly what about, where and how much should they care. Thanks to that constrain they keep their feelings together regardless if they confront each other. They are able to separate their public personality from their private one. Dealing with the duty, they are faceless and callous. They don't recognize goodwill, mischief, etc which are actually Macedonian traits.

Analyzing this, we are reaching to the features of Macedonian mentality, which give the opportunity to penetrate, most often naively and imprudently for certain purposes only when getting attention and a friendly gesture and not confrontation.

This indicates about the approach that has to be implemented, for the motivating involvement of the employees' potential within the teambuilding in the Macedonian companies. Referring to the fact that the great nations are adjusting to the changes. Therefore, it should be emphasized that both nations are strong traditionalists and do not give up the values of their tradition; as an addition they involve external mental models in the building of their new experience.

The experience with the Japanese have shown that in order to activate the human behavior it is essential to: be persistent, patient and stimulation in the top management, practice trainings and motivation of the employees etc. The concept of managing the human resources in Japan is based on the following fact: knowing their place and role in the organization, the employees can comprehend the organization philosophy of itself the best and its tendency towards the realization of the organization purposes.

INSTEAD OF CONCLUSION

The problem with the Macedonian mentality lays in the fact that they persistently and irrationally go against the external mental models, instead to being wise and analyze them and implement them. When they accept new mental model without a detailed analyzes, easily, they unwisely give up from the traditional model. The very basic problem is how to join own traditional values that rule the work successfully.

Macedonians have a history in living in a place that is bordered with the global cultures, religions and civilizations. Many conquerors have brought their own mental model (through the religion, culture, standards...) as well as their conquering methods. Therefore there is a defensive mechanism that has been built towards the foreign and new values, fearing not to lose their own identity. All of these cause isolation and creating an illusion of self-adequacy. In this way there is a resistance towards continuous learning and changes and therefore towards success as well which could be ultimately reached through new competences and adjustments.

TQM strategy has given the possibility to the Japanese to join their tradition mental model with the new mental model of their traditional eastern culture that within itself is carrying certain values from the western civilization. The results that are coming from the people of Macedonian origin living abroad are showing that they have successfully joined their huge talent and the individual mental potential with the world known methods and techniques which indicated to the fact that Macedonia own huge unused potential.

Many of Macedonian companies are based on the traditional approach and therefore there is a need of reorganization necessity or reengineering of the whole business. Nevertheless, the most important aspect that is being developing into new theory is based on the third approach i.e. to an organization that is capable to be exposed on learning novelties. Hence the conclusion is that the successful functioning of the company is possible only with a solid function of the managerial teams, good cooperation with the employees, existence of new standards of rewarding and penal, clear orders and precise instructions of the employees instead of agreeing with them and all of these would be done only if there are managers that are developing the TQM strategy.

BIBLIOGRAPHY

1. Beardwell, I., Holden, L., Claydon, T. *Human Resource Management; A Contemporary Approach*, Prentice Hall, Fourth Edition, 2004, pp.124-387.
2. Craig, W. G. & Lineberry, S. C. And Management Mirror: helping senior management teams see their own reality, *Industrial and Commercial Training*, **Vol.33**, No.7, 242-248 (2001).
3. Cepujnoski, G. & Cepujnoska, V. *Managing Quality in Practice*, Faculty of Economics, Skopje, 1993, pp.125-150.
4. Cepujnoska, V. *Quality Management – theory, science and practice*, Faculty of Technology and Metallurgy, Skopje, 2009, 45-90.
5. Ciampa, D. Almost Ready: How Leaders Move Up, *Harvard Business Review* **83**, No.1, (2005).
6. EFQM, Common Interest Day Workshops - Management of Innovation, *Quality Link* **Vol.9**, No 51, December, 7-11 (1997).
7. EFQM, *Successful approach to the Management of Innovation*, 1998, pp.5.
8. Grinberg, Dž. & Baron, R. A. *Ponašanje u organizacijama*, Želnid, Beograd, 1998, str. 125-463.
9. Helling, J. *Svetski šampioni*, Prometej»-«Subotičke novine, Novi Sad, Subotica, 1993, str.177.
10. Ishikawa, K. President Touka Henkau Sozo Gakkai, "Thoughts on risk management "Creativity and risk management", JUSE, *Societas Qualitatis*, **Vol.9** No.3 July/Aug, 5 (1995).
11. Kratsu, H. Tokai University, "Concept engineering points in developing hit products", *JUSE, Societas Qualitatis*, **Vol. 9**, No.2 May/June, 3 (1995).
12. Kano, N. *Business Strategies for the 21 sr Century and Attractive Quality Creation*, ICQ, Yokohama, 1996, pp.105.
13. Latzko, W. & Saunders, D. *Four Days with Dr. Deming*, Addison-Wesley Publishing Company, USA, Canada, (1995).
14. Mitreva, E. *Integral Methodology For Designing And Implementing Of TQM System Within Companies*, Doctoral Dissertation, Skopje, 2010.
15. Robbins, H. & Finley, M. Why Teams Don't Work. What Went Wrong and How To Make It Wright, *Orion Publishing Group*, (1996).
16. Sasaoka, H. The QC circle evolution from TQC to TQM, a management perspective, JUSE, *Societas Qualitatis*, **Vol.9**, No.4 Sept/Okt, 5 (1995).
17. Woodall, J. & Winstanley, D. *Management development: Purposes, processes and prerequisites*. In *Management development: Strategy and practice*, Oxford: Blackwell, 1998, pp. 3-17.

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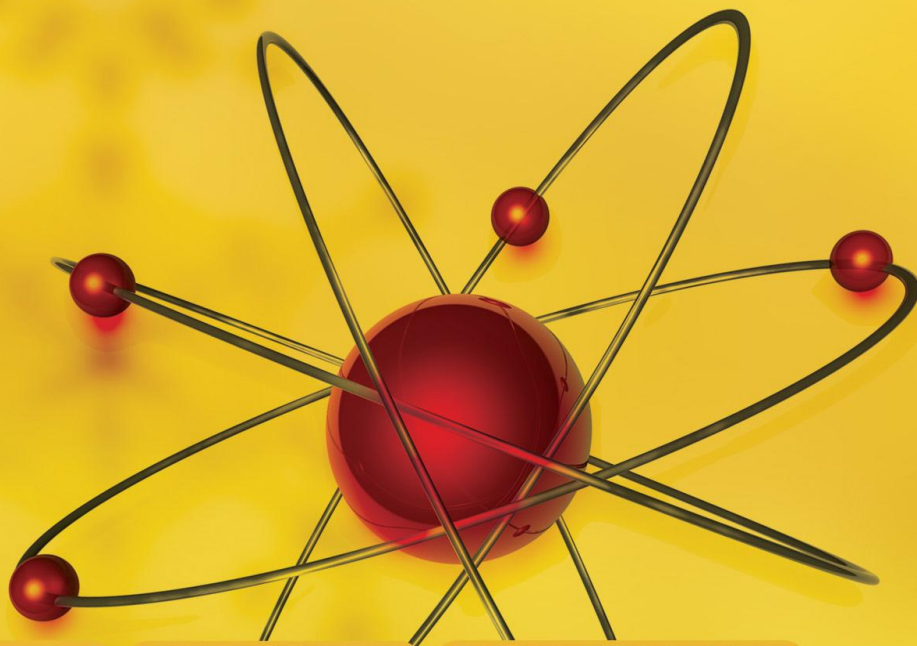
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