

Marketing Oriented Organizational Culture as Prerequisite for TQM Implementation: The Case Study of Serbian Mechanical Industry

Ljiljana Pecić¹, Milan Kolarević²

¹College of Applied Professional Mechanical Studies Trstenik, Serbia

²Faculty of Mechanical and Civil Engineering in Kraljevo, University of Kragujevac, Kragujevac, Serbia

The purpose of this paper is to propose a tool for determining the right moment for introducing radical changes aimed at implementing TQM in a company. As we know, there is a huge number of companies that dismiss benefits of TQM implementation. This is especially important for companies which come from undeveloped countries and countries in transition, as Serbia is. In this paper, a survey questionnaire was used to identify the quality of marketing orientation of organizational culture within 20 companies working within mechanical industry in Serbia. The questionnaire was used for all managerial levels and workers and it proved that there is no big difference in orientation among different levels organizational within a company. According to the fact that Serbia is a country in which consensus economics used to have a long tradition (almost till the end of XX century), these findings are very important to its further development.

Keywords: Organizational Culture, Marketing Orientation, TQM, contractual economy

1. INTRODUCTION

Many studies have supported the positive link between an organization's culture and financial performance. What many leaders do not realize is that behaviour drives organization performance. By modifying their architecture, organization can eliminate or minimize negative behaviours and foster positive ones. The net result of all this research is that focusing on culture is not another leadership fad, it is a good business.

What is organization culture?

From an organization stand point, culture is defined as a prevalent norms, values and behaviours held by the vast majority of employees. A company's culture influences everything it does. It is the core of what the company is really like, how it operates, what it focuses on, and how it treats customers, employees and shareholders. As a lot of researches show, culture is a driver of business performance [1].

Today's business is not about selling or proving customer service. It is well known that business excellence in companies is realized through implementation of the concept of total quality management (TQM). ISO officially defines TQM as a way of managing an organization which aims at continuous participation and co-operation of all its members in the improvement of quality in order to achieve customer's satisfaction, long-term profitability of the organization and benefit of its members, in accordance with requirements of the society.

That is why resources in such cultures are totally utilized [2, 3]. Benefit comes in all segments of business: fewer defects, reduced rework and lead times, lower inventory levels, cost reduction, and higher level of customer satisfaction [4,5].

TQM is a culture in an organization committed to total customer satisfaction through continuous

improvement. On the other hand, the world's most successful business leaders agree that corporate culture, if correctly aligned with the external environment, is the glue that ensures long-term organizational success. Former IBM CEO Lou Gerstner, who led its spectacular transformation from a products company to a service organization, says: "I came to see, in my time at IBM, that culture isn't just one aspect of the game-it is a game"[6].

When we come to the point to identify fundamental strategy of running business, most companies follow an orientation that matches one of the following categories: product-oriented, sales-oriented or market oriented. Nowadays we have a situation that lot of companies have implemented those standards, but they dismissed benefits from implementation- better business results.

We believe that reason for such situation lies in the fact that this implementation did not become a part of daily life and behaviour of employees in the company and that the old way of thinking stood in their habits, even because of the economic situation some good practices become less important and forgotten.

In this paper we are going to try to clarify terms TQM, organizational culture and market orientation and to prove that in Serbian metal industry exists strong organizational culture, but on conservative marketing level, and that level of marketing orientation do not depend of education level, work experience and company, but is the result of long period under contractual economy.

2. LITERATURE OVERVIEW

The organizational culture or what is known as the "organization values and personality" was not given the natural interest before the second half of the twentieth century. The 1970s era had witnessed an increasing interest in this concern and culminated in 1990s.[7].

Between 1990 and 2007 more than 60 research studies covering 7,619 companies and small business units in 26 countries have found that market culture and business performance are strongly related. This positive correlation is identified by more than 35 performance measures, including return of investment, revenue growth, customer retention, market share, new product sales and employee performance [8]. The evidence provides executives with empirical basis for embracing a strong market culture as a means to creating a competitive advantage for their firms and the superior business performance results.

For example, Kotter and Hasket [9] reported that firms with performance-enhancing cultures grew their net income 765 percent between 1977 and 1988, as compared with 1 percent for firms without performance –enhancing culture over the same period.

Nowadays, when world became one global village connected with the modern communication methods, achieving business excellence and good business parameters become impossible for any country and any company which stays in isolation of changes [10].

In the wake of the interest and attention to the organizational culture, the TQM concept emerged, which is one of the most important, pioneer, intellectual and philosophical concepts that gained broad attention by the managerial specialists, professionals, researches and academics, who are, particularly interested in the development and improvement of the production performance of the different organizations [11]. The TQM concept is one in which the thoughts and vision vary, depending on the viewing angle by the researches. But this depends of objectives, which organizations are seeking to achieve. Achieving customer satisfaction through the interaction between all effective parties of the organization is the common for all visions.

TQM is defined as "creation of a remarkable culture in performance, where all the organization's individuals are continuously working to achieve the customer's expectations and the work performance with the achievement of the quality at the best possible level, or with high effectiveness and at the shortest possible time [12]. If we now look on organizational culture as a key to organizational success [13] and achieve TQM business excellence, than market orientation of organizational culture may be defined as "the organizational environment that most effectively and efficiently generates the behaviour necessary for the creation of superior values for buyers [14].

Market orientation is the focus of a firm that treats marketing as a cross-functional responsibility where meeting customer needs is an overriding priority for the entire organization [15]. Day [16] holds that market orientation is a combination of a customer orientation and competitor orientation, while Gallagher et al. [17] have created **6Cs Model of Market Culture** and that model is based on: *creating of superior customer value, profitability, customer insight, cross-functional team approach, collaborative value networks, creiteria for decision making and CEO leadership.*

3. PROBLEM IDENTIFICATION

Lot of companies in the world did not succeed on the road to achieve business excellence and TQM. Now, if we assume that company's culture influences everything it does, it is clear that if you want to achieve TQM business excellence in the era of globalization, you have to be marketing oriented.

For businesses in underdeveloped economies, which are numerous, this is very important. They have to find a way how to get to the market, but simply, problems related to their successful business operations are much more complex. Problems in developing world economies have mainly four-dimensional character [18]:

- lack of quality marketing practices,
- lack of adequate technological equipment,
- lack of adequate financial means, and
- lack of satisfactory management behavior.

For economies in transition, there is another important issue – the noted presence of political and economic instability.

It is clear that for successful implementation, the challenges undertaken in the underdeveloped world economies, especially those in transition, need to have a more comprehensive methodological approach than the ones applied in developed economies.

The following paragraphs deal with evaluating the state of marketing orientation of organizational culture in 20 companies within Serbian mechanical industry: all companies are nowadays independent entities, whereas in the recent past they used to be a part of the giant IHP Prva Petoletka in Trstenik (PPT – the field of hydraulics and pneumatics, which gives to almost all of them the prefix PPT). Nineteen companies are currently undergoing the process of restructuring.

4. DESCRIPTION OF THE COMPANIES SUBJECTS OF THE RESEARCH

Industry of hydraulics and pneumatics Prva petoletka (PPT) in Trstenik is nowadays a complex business system consisting of 18 independent economic entities which are working under the supervision of the Serbian Government and are behaving as elements of a holding (as they used to be one. However, there is a bulk of persisting problems). It was founded on 23rd March 1949, and in 1989 it had the workforce of about 15,000 people and about \$400 million in sales (about \$200 million were exports outside former Yugoslavia). In the late eighties, it was a holding company with 23 mutually interrelated companies, some of which were established to support the system (called internals) and some were solely production units (in the fields both of hydraulics and pneumatics). All companies were directed to each other and acted as supplementary units.

The 1990s brought dramatic changes in economic practice. The great Eastern market broke down, where PPT and had realized the largest volume of its export business. This change was followed by a drastic reduction

of home market. It further caused changes in political and economic systems, as well as social and economic restructuring. Although unprepared, these companies were forced to compete on the global market, where there was no place for consensus economics.

At the beginning of 1996, PPT initiated the project of its total process organization. The aim of this process was to enable a breakthrough on the world market where the best world companies were successfully doing their business. The presented settling in PPT started to produce positive results from the very beginning. (Fig.1) There were some changes in management as already mentioned and the arrival of modern, market-oriented management resulted in obvious business improvement.

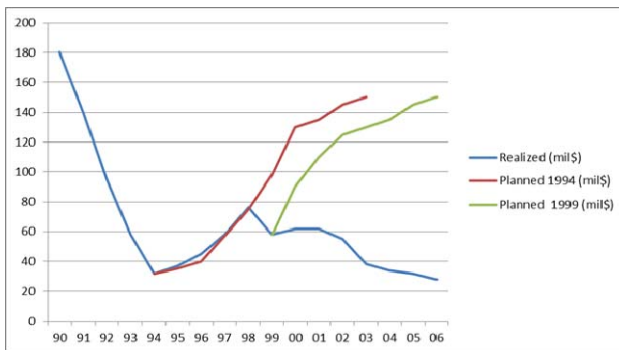


Figure 1: Relations between planned and achieved realization from 1990 till 2006

However, sanctions on Yugoslavia were imposed, the country was bombed and the company suffered the loss of 80 working days in 1999.

At the end of 1999, the change of the CEO was followed by some changes in the top management as well. PPT was restored to former frameworks which shook development results achieved in the initiated recovery process. All activities concerning ISO 9000 implementation and total process organization stopped. Very soon, these measures proved to be wrong. However, it was impossible to correct the error that was made. The trend of changing company leaders continued for a whole decade, which led to organizational and operational chaos in the company.

Such a misfortunate situation did not finish till the end of 2010, when the company was divided into 20 component parts. Although most of these companies had certified QSSs, business operations have been getting ever worse. The greatest paradox was the fact that PPT-Kočna tehnika AD was in the worst position, although only in 1998 it was one of the most successful companies in the mechanical industry of both Serbia and former Yugoslavia (as a recognition of its success, it got an Oscar for quality - the most prestigious reward for quality in former Yugoslavia). At the end of 1998 the PPT system had approximately 12,000 employees, whereas at the end of 2010 it had 4,343 workers and almost the same technology

park (*Energetika* became a public company and *FUD Brus* was facing bankruptcy).

The Serbian Government, aware of the importance of these companies for the industry of Serbia, has launched a project for their recovery and this paper presents the first part of the work methodology called company reengineering, developed with the purpose to help companies implement TQM philosophy and get much better business parameters.

5. THE TOOL FOR IDENTIFYING THE EXISTING MARKETING ORIENTATION OF AN ORGANIZATIONAL CULTURE

In order to identify the present level of the organizational culture in terms of marketing orientation of *in those 20 companies* (taking into account tradition and their business history) and find what the starting point for the project is, it was first necessary to make the appropriate questionnaire, which would provide the answer to the key question: what the direction of our business is. The questionnaire was based on MARK – PLAN questionnaire (Mark-Plan, 2003). This poll list was used to conduct the research in companies, in terms of determining management orientation, i.e. whether it is *production, sales or market*.

The questionnaire was structured in such a way that the answers to previously mentioned issues led to conclusion about the state of organizational culture in terms of marketing orientation. The structure of the questionnaire is given in Table 1 [18], and provided answers are grouped in such a way that they unequivocally point to three possible orientations. The questionnaire was compiled from these 15 questions with the options given in a way that would prevent routine answering. The data collected from anonymous respondents in the interview were: degree of professional education, years of working experience and their occupation.

The structure of questions led to the conclusion that a market-oriented company implies "the way employees behave towards business realization and towards the environment", or "the way the company perceives itself and its environment".

For scoring the survey, the points scale was adopted where a response is scored 0 points for indicating production orientation, 5 points for indicating technological orientation, and 10 points for indicating marketing orientation.

In the context of the survey results, the marketing orientation of a company can be described as:

- advanced (121-150 points),
- barely satisfactory (91-120 points),
- conservative (61-90 points),
- bad (31-60 points), and
- hopeless (0-30 points).

Table 1: The structure of questions

Company orientation/ questions	Production orientation	Sales orientation	Market orientation
1. Which existing problem should be given the highest priority? <i>(problem identification)</i>	Production	Sales	Meeting consumer needs
2. It would be possible to revive the company if... <i>(Vision of fate)</i>	The State provides adequate support	Market behavior becomes more regular	Customer needs are met in a quality way
3. Apart from the CEO, the second most important function in the company is... <i>(identification of the most important role in a company)</i>	Technical Manager	Commercial Manager	Marketing Manager
4. What should special attention be paid to? <i>(How do you see yourself in the future)</i>	Production Performance	Sales Performance	Meeting customers' requirements
5. The basic goal of the company for all employees is gaining...	Quality performance of assigned tasks	Profitability	Long-term perspective
6. From the external point of view, it is very important for the company to develop...	A good relationship with respective power centers <i>(characteristics of a consensus economics)</i>	A good relationship with business partners <i>(lower supply, higher sales)</i>	Quality image in the market
7. From the <i>marketing</i> point of view, it is very important for the company to do...	Active public appearance and promotion	Promotion in the market and attraction of users' attention	Communication with target groups
8. The company <i>communicates with the external public</i> ...	Through formal notices	By providing information to media	By using different means intended to target groups
9. From a managerial point of view, who makes <i>internal public</i> ?	The most influential human factors	Authoritative representatives of interested groups	All employees
10. Management communicates with the internal public through...	Formal notices or posting notices on bulletin boards	The information service	Direct contacts related to specific issues with interested groups
11. Top management of the company consists of...	the members representing current centers of power	experts in specific professional areas	experts in corporate management
12. The primary factor for the successful operation is ... <i>(type of exchange)</i>	Production of quality products and goods	As cheaply buy and produce, and as dearly sell	Quality to meet customer needs
13. The following is a sign of management goodwill...	Highlighting individual contributions generated from operations	Periodical awards and commendations	Adherence to company's mission
14. Achieved success in business is expressed through...	The level of achieved production volume	The range of achieved market presence	The level of gained market position
15. The company would do business more successfully if there is ... <i>(vision of solution)</i>	Better production equipment	Satisfactory current assets	Higher quality of human resources

6. DATA COLLECTION, PROCESSING AND ANALYSIS

6.1 Data collection

The starting point of the research was to collect data using surveys on the representative sample of employees in every company. The survey was conducted in the period from the beginning of December 2010 to the end of March 2011. The number of interviewed workers was 2729 from the total of 3600 employed in those companies. The Workers took questionnaires to the home, and the following day they were left in the boxes, kept by delegated people.

6.2 Data processing

The results gained from processing collected data are presented in Table 2. Data processing was done in the following way: answers of all employees were recorded, and then the percentage for each given response was calculated. Description of the used procedure is given in [18]. Points for each question are obtained by summing-up the product of the number of points that every question bares with the percentage that every answer has gained (percentages are made decimal numbers). The overall number of points for the survey was obtained by adding up the points given to all questions.

Tabel 2: Average Points per Company

Company	Number of respondents	Points
Armature	236	71,25
Cilindri	180	78,67
Energetika	71	59,93
Fud Brus	225	77,40
Hidraulika	237	68,02
Holding	20	64,00
Ind.pneumatika	200	76,15
Inženjering	117	71,28
Ishrana	24	74,79
Kočna tehnika	328	72,65
Namenska	380	67,99
NIC	4	53,75
Obezbeđenje	49	80,71
PPT NP	105	72,57
PPT promet	159	72,45
Remont i energetika	103	76,00
Servoupravljači	171	81,14
TMO	16	74,38
Transport	12	78,33
Zaptivke	92	78,64

The *Prva petoletka* system, i.e. all companies together, won 73 points.

On figure 5 it can be seen distribution of all average points obtained per company, educational level and working experience.

Table 3: Results obtained by educational level

Education Level	percentage of employees	Points
1	0.73%	81,50
2	2.24%	71,07
3	26.53%	75,06
4	43.20%	72,23
5	5.57%	74,01
6	13.01%	73,28
7	8.68%	72,97

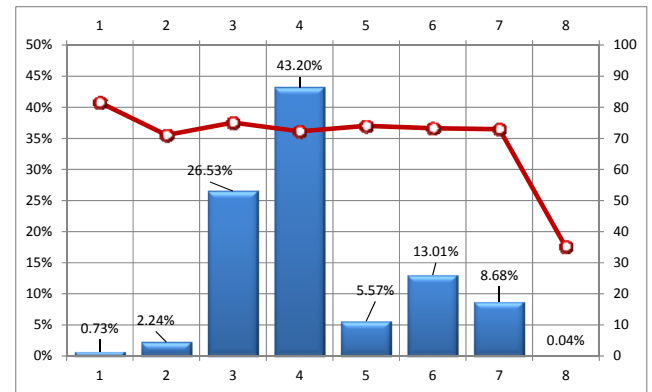


Figure 3: Average points per educational level

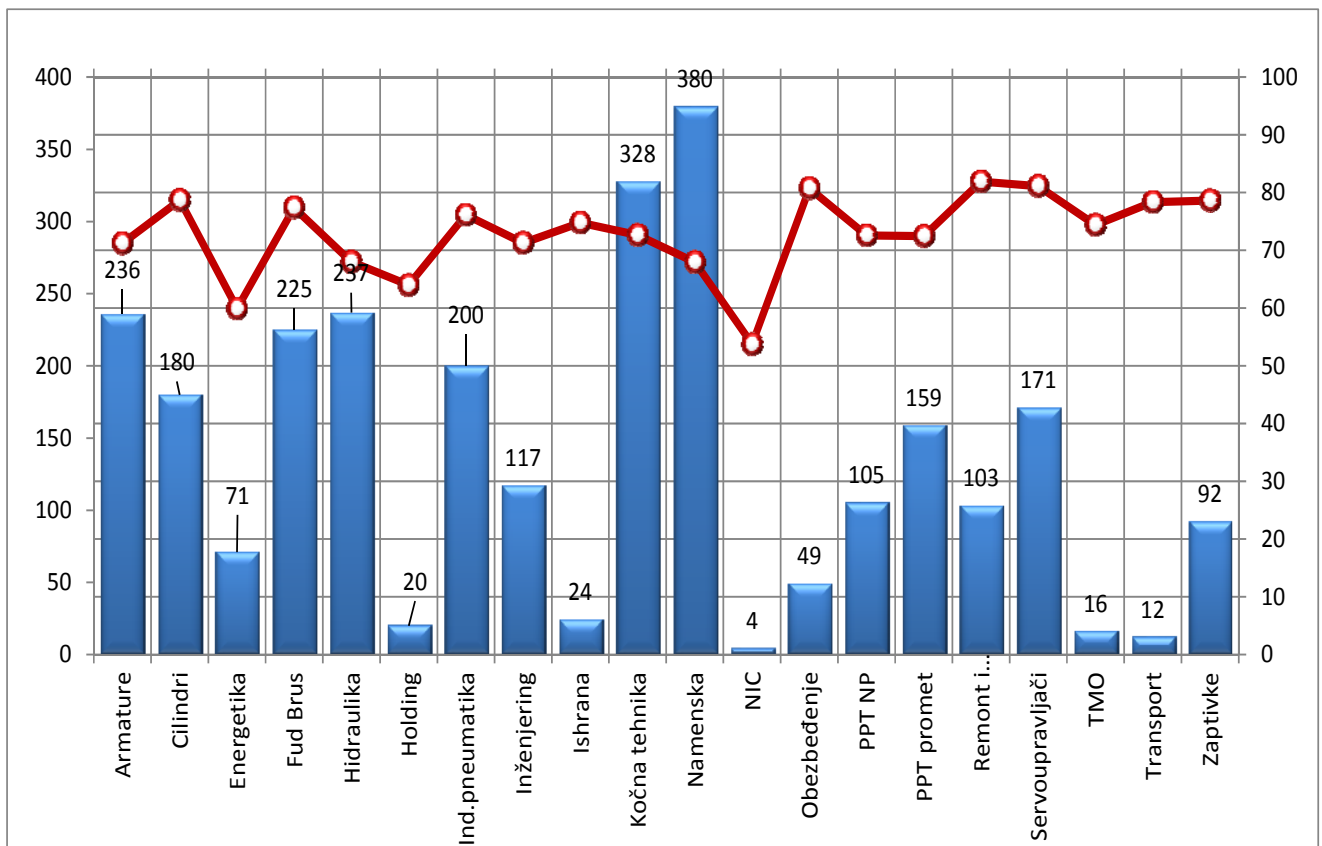


Figure 2: Average points (red line) and number of respondents (blue pillar) per company

Table 4: Results obtained by working experience

Working experience	percentage of employees	Points
0-5	8.72%	71,11
6-10	8.17%	71,12
11-15	10.00%	78,70
16-20	9.78%	76,25
21-25	24.11%	73,22
26-30	28.58%	71,92
31-35	9.75%	73,52
36-40	0.88%	66,46

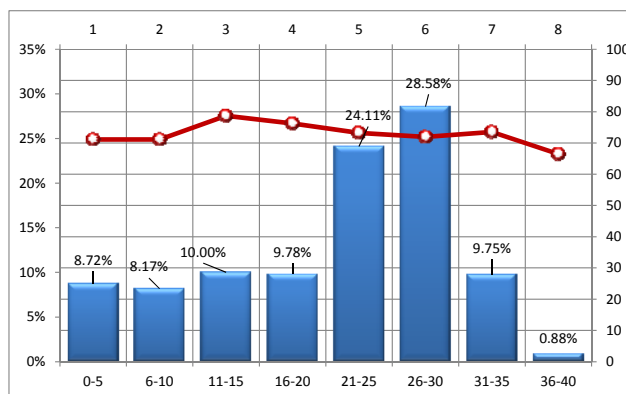


Figure 4: Results obtained by working experience

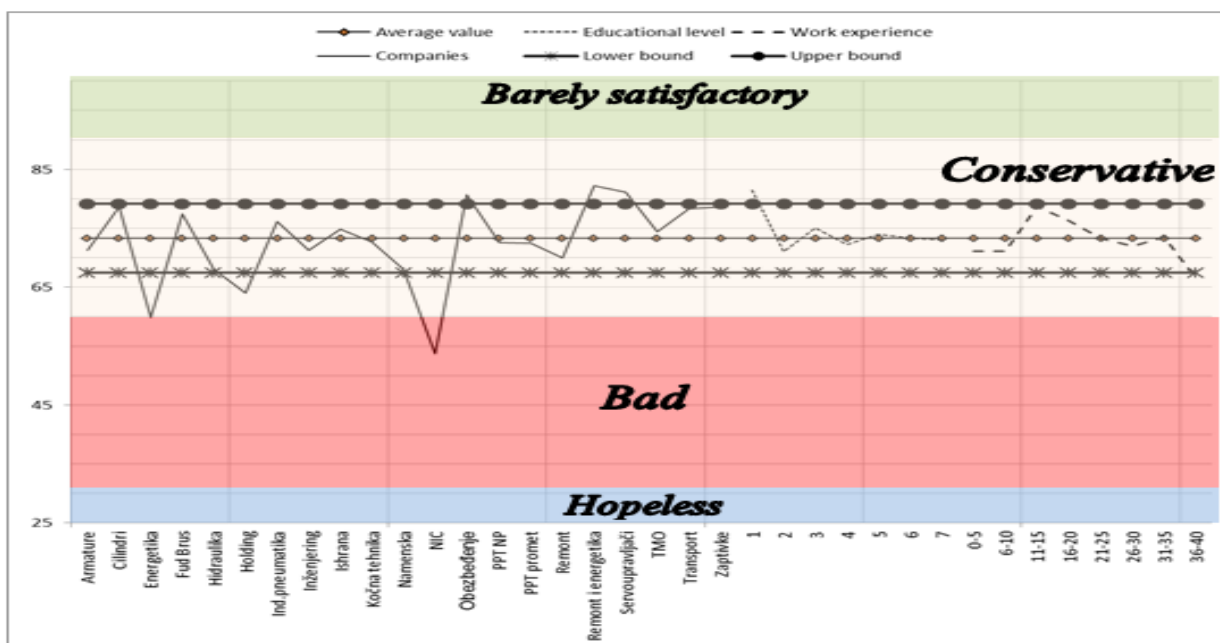


Figure 5: Number of reached points per company, work experience and level of education

6.3 5.3 Data analysis

The given results show that companies have "conservative" marketing orientation of organizational culture (hardly satisfactory level of marketing orientation). Results show that Servoupravljacii has the highest number of points and that company has the best business results. Analyzing points received according to the level of education, it is very disturbing that employees with first level of education have the highest number of points (81,5), while the best educated level has 72,97 points.

The analysis was done by using software Design Expert v.8.0.7.1. After eliminating the rough mistake, the analysis was done by using 2692 questionnaires.

The level of marketing orientation was analysed through dependence of three independent variables:

- **A** – level of education (SSS)
- **B** – years of working experience (GRS), and

- **C** – size of a company (number of employees (NZ))

Main data and coded values are presented in table 5.

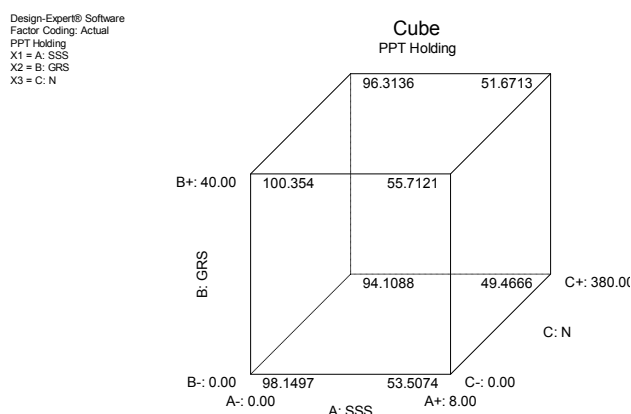


Figure 6: Coded values of analysed variables

Tabel 5: Design Summary

Factor	Name	Type	Min	Max	Coded	Values	Mean	Std. Dev.
A	SSS	Numeric	1	8	-1.00=0.00	1.000=8.00	4.2455	1.3195
B	GRS	Numeric	0	40	-1.00=0.00	1.000=40.00	21.2184	9.0242
C	NZ	Numeric	4	380	-1.00=0.00	1.000=380.00	217.7154	98.9784

Response	Name	Obs	Min	Max	Mean	Std. Dev.	Ratio	Trans	Model
Y1	IHP PPT	2692	30	120	72.72845	18.39110691	4	None	Linear

After ANOVA analysis (Analysis of Variance) enforcement, it has been found that between dependent

variable and analysed variables exist correlation and that it could be described with linear model.

Tabel 6: ANOVA for Response Surface Linear Model

Source	Sum of Squares	Degrees of Freedom	Mean Square	F Value	p-value (Prob > F)	
Model	11552.847	3	3850.949	11.519	< 0.0001	significant
A-SSS	727.575	1	727.575	2.176	0.1403	
B-GRS	161.931	1	161.932	0.484	0.4865	
C-NZ	10414.783	1	10414.783	31.152	< 0.0001	
Residual	898631.653	2688	334.312			
Lack of Fit	527787.936	772	683.663	3.532	< 0.0001	significant
Pure Error	370843.717	1916	193.551			
Corr Total	910184.500	2691				

The Model F-value of 11.52 implies the model is significant. There is only a 0.01% chance that a "Model F-Value" this large could occur due to noise.

The "Lack of Fit F-value" of 3.53 implies the Lack of Fit is significant. There is only a 0.01% chance that a "Lack of Fit F-value" this large could occur due to noise.

Std. Dev.	18.28421097
Mean	72.72845468
C.V. %	25.14038151
PRESS	901299.0534
R-Squared	0.012692863
Adj R-Squared	0.011590958
Pred R-Squared	0.009762248
Adeq Precision	13.83249764

The "Pred R-Squared" of 0.0098 is in reasonable agreement with the "Adj R-Squared" of 0.0116,

"Adeq Precision" measures the signal to noise ratio. A ratio greater than 4 is desirable. Our ratio of 13.832 indicates an adequate signal.

Final Equation in Terms of Coded Factors:

$$n = 73.41058 - 1.58576*A - 0.54681*B - 3.78052*C$$

Final Equation in Terms of Actual Factors ie. final equation of chosen regression model is:

$$n = 79.3237 - 0.3964*A - 0.0273*B - 0.0199*C$$

It can be seen that coefficients of the analyzed variables are negative, which indicates on negative trend, i.e. decrees of depending variable with the growth of each independent variable. The same can be seen from the space diagrams given on figures 7 to 11.

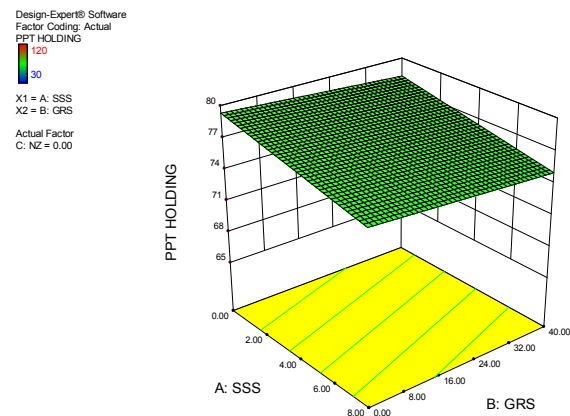


Figure 7: Analysed variable dependence of SSS and GRS for NZ=0

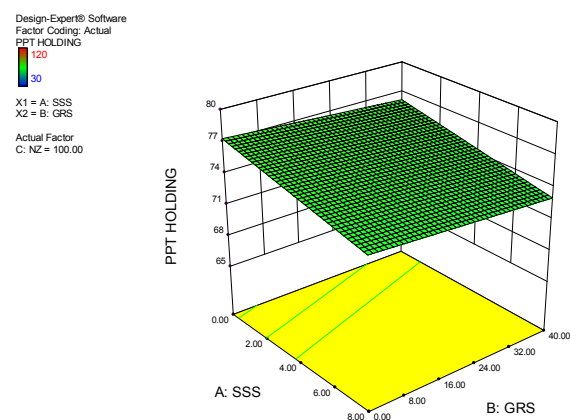


Figure 8: Analysed variable dependence of SSS and GRS for NZ=100

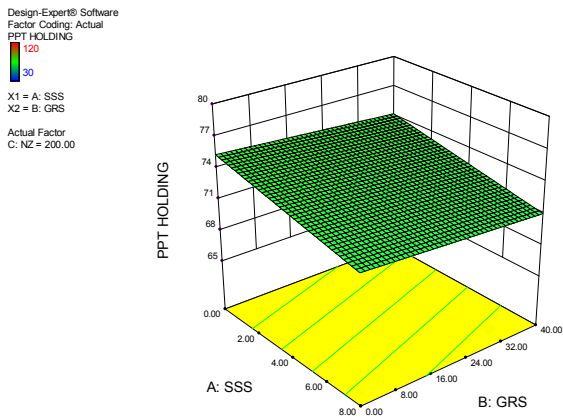


Figure 9: Analysed variable dependence of SSS and GRS for NZ=200

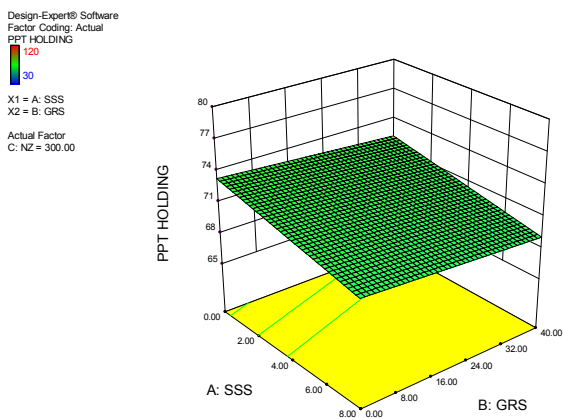


Figure 10: Analysed variable dependence of SSS and GRS for NZ=300

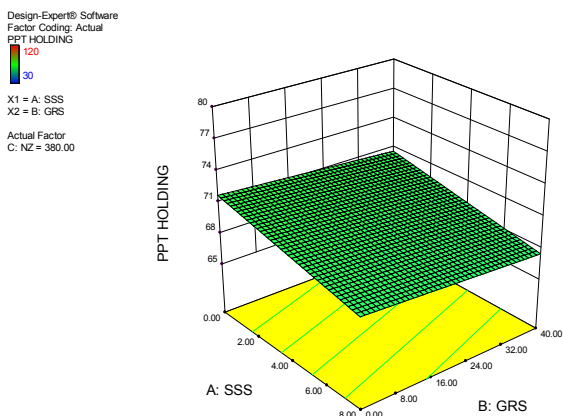


Figure 11: Analysed variable dependence of SSS and GRS for NZ=380

7. CONCLUSION

The aim of the conducted study was to prove that the precondition of a successful implementation of changes leading to TQM is having quality market orientation or having high quality organizational culture that is marketing oriented. Before implementing TQM principles, the organizational culture is to be examined by organizational development practitioners [19]. If there is such an organizational culture in a company,

then it would be possible to establish a complete and balanced business structure with long-term marketing orientation where it would be likely to achieve quality total process organization striving to TQM realization. Otherwise, these ventures are difficult to achieve. For all those companies which found themselves in such a situation, it is necessary to implement the appropriate company re-engineering.

The obtained results become clearer if we know the history of the companies included into the research. A deeper analysis shows that due to the long-lasting presence of consensus economics in Serbia, its principles are still present in thoughts of most employees. A more dangerous fact is that these principles are cherished by top management as well. The analysis has also shown that political influence should be eliminated from business, as it significantly slows the changes and distracts the implementation of changes to be based on scientific thought. This problem could be solved through the process of education of all levels of hierarchy.

The real reason companies such as ex PPT companies are poor business systems nowadays, despite the fact that they got certificates for their QSs in the last ten years, is that they failed in implementing marketing oriented principles, i.e. marketing management into their organizational structures and behavior.

The attitude advocated by the paper is that a successful process organization aiming at implementing TQM could be achieved only with the companies having a complete and totally balanced business structure which is marketing oriented. Any other situation would not give a satisfactory quality of this process. The reason is that the activities contributing to successful satisfaction of market requirements would not be done at a quality level.

REFERENCES

- [1] S.Gallagher, C. Brown and L. Brown, "A Strong Market Culture Drives Organizational Performance and Success," *Employment Relations Today*, pp.25-31(2008)
- [2] A.Gunasekaran, (1999), Enablers of total quality management implementation on manufacturing: a case study", *Total Quality Management*, Vol.40, pp.987-96
- [3] M.A Youssef, J. Boyd, and E.Williams, " The impact of total quality management on firms responsiveness: an empirical analysis", *Total Quality Management*, Vol.7 No.1, pp.127-44, (1996)
- [4] Salegna, G., and Fazel, F.,(2000), " Obstacles to implementing quality", *Quality Progress*, Vol.33, No.7, pp.53-7
- [5] Mosadghrad. A.M, (2006), "The impact of organizational culture on successful implementation of total quality management,
- [6] Gerstner, L.V, (2002), " Who says elephants can 't dance? Inside IBM's historic turnaround, New York: HarperCollins, pp. 181-182

- [7] F.A.Bourini, M. Ghaith, Al- Abdallah and A. Abou-Moghli, "Organizational Culture and total Quality Management", *International Journal of Business and Management*, Vol.8, No.24, pp. 95-106, (2013)
- [8] S.Gallagher, Brown, C. Brown, "A strong market Culture drives Organizational Performance and Success", *Employment Relations Today*, Willey Periodicals, pp. 25- 31, (2008)
- [9] J.P.Kotter and J.L.Haskett, "Corporate Culture and Performance", New York, The Free Press, (1992)
- [10] Al- Farhran, "Organizational Culture and Administrative Development in the Jordanian Public Sector Institutions", *The Jordanian Journal*, Vol 6/1, (2003),
- [11] F.A.Bourini, M. Ghaith, Al- Abdallah and A. Abou-Moghli, "Organizational Culture and total Quality Management", *International Journal of Business and Management*, Vol.8, No.24, pp. 95-106, (2013)
- [12] Zaidan, "Philosophy and Work Entrance", *Total Quality Management*, First Edition,(2009)
- [13] Swais, "Relationship between the Organizational Culture and TQM Application in the Algerian Public Oil Companies (Case Study) " , *Derast, Administrative Sciences*, Vol. 38, No.2, (2011)
- [14] T.J., Peters and R.H.Waterman,"In Search of Excellence", Harper&Rowe, Sydney, (1982)
- [15] S.F.Slater and J.C.Narver, "Market Orientation and the Learning Organization", *Journal of Marketing*, Vol.59/3, pp.63-74, (1995)
- [16] S. G.Day, "Market driven strategy:Processes for Creating Value". New York: The Free Press, (1990)
- [17] S.Gallagher, Brown, C. Brown, "A strong market Culture drives Organizational Performance and Success", *Employment Relations Today*, Willey Periodicals, pp. 25- 31, (2008)
- [18] Pecić, Lj., Klarin,M., Trifunović, D., Dašić, P., "Marketing-oriented organizational culture and implementation of total quality management The case study of Prva petoletka, *Metalurgia International*, Vol. 18 No. 6 pp.121-126, (2013a)
- [19] S. Pool, W., (2000), "The learning organization: motivating employees by integrating TQM philosophy in a supportive organizational culture", *Leadership &Organization Development Journal*, Vol. 21 No.8, pp. 373-8