



HRVATSKO DRUŠTVO MENADŽERA KVALITETE

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**ZBORNIK RADOVA
Proceedings**

18. međunarodni simpozij o kvaliteti

**KVALITETA
KAO STRATEGIJA**

18th International Symposium on Quality

**QUALITY
AS A STRATEGY**

**22. - 24. ožujka 2017.
March 22nd – 24th, 2017
Vodice, Hrvatska/Croatia**



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POLYTECHNIC OF ŠIBENIK

Šibenik, Croatia

E-mail: dekanat@vus.hr

Web: <http://www.vus.hr>

Izdavač/Publisher

Hrvatsko društvo menadžera kvalitete, Zagreb, Hrvatska
Croatian Quality Managers Society, Zagreb, Croatia
Radoslava Cimermana 36a, 10 000 Zagreb
E-mail: info@hdmk.hr
<http://www.hdmk.hr>

Za izdavača/For Publisher

Doc. dr. sc. Miroslav Drljača

Urednik/Editor

Klasifikacija UDK & JEL/*Classification U.D.C. & JEL*
Doc. dr. sc. Miroslav Drljača

Prijevod sažetaka, zaključaka i predgovora/

Summaries, Conclusions and Introductory translation
Ljubica Kolbas, prof.

Korice dizajn/Covering design

Apostol d.o.o., Zagreb

Tisak/Printing

PRINTERA GRUPA
Sveta Nedelja

Naklada/Issue

250 primjeraka/*copies*

CIP – Katalogizacija u publikaciji

CIP zapis dostupan u računalnome katalogu Nacionalne i sveučilišne knjižnice
u Zagrebu pod brojem 000957195

CIP – Cataloguing in publication

*CIP note accessible in computing catalogue in National and University Library
in Zagreb, No. 000957195*

ISBN 978-953-8067-08-2

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JEL – Journal of Economics Literature, EconLit, Pittsburg, USA

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Ekonomski fakultet u Zagrebu,
(Poslijediplomski specijalistički studij Upravljanje kvalitetom)

Medijski pokrovitelji/Media auspices of:

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Turistička zajednica Zagrebačke županije
Visoko učilište Algebra, Zagreb
Zračna luka Zagreb d.o.o., Zagreb

SADRŽAJ/CONTENTS

Tematska cjelina: KVALITETA KAO STRATEGIJA

Thematic unit: QUALITY AS A STRATEGY

1. **Marilyn Dyason** – UK/*Ujedinjeno Kraljevstvo*
Michael Kaye – UK/*Ujedinjeno Kraljevstvo*
The Impact of Global Influences on Organisational Culture and Strategic Quality Management
Učinak globalnih utjecaja na organizacijsku kulturu i strateško upravljanje kvalitetom
Prethodno priopćenje/*Preliminary communication*..... 1
2. **Miroslav Drljača** – Hrvatska/*Croatia*
Kvaliteta kao strategija
Quality as a Strategy
Prethodno priopćenje/*Preliminary communication*..... 13
3. **Luminita Parv** – Romania/*Rumunjska*
Cost Management as a Strategic Business Methodology
Upravljanje troškovima kao strateška poslovna metodologija
Pregledni članak/*Review* 33
4. **Krešimir Buntak** – Hrvatska/*Croatia*
Vesna Sesar – Hrvatska/*Croatia*
Fitim Kurti – Hrvatska/*Croatia*
Measurability of Technological Competence in Terms of Achieving Quality and Strategic Positioning of Organization
Mjerljivost tehnološke kompetentnosti u cilju postizanja kvalitete i strateškog pozicioniranja organizacije
Pregledni članak/*Review*..... 43
5. **Neal R. Baker** – Hungary/*Mađarska*
Thoughts on Quality
Misli o kvaliteti
Stručni članak/*Professional paper* 57

Tematska cjelina: KVALITETA I PROCESNO UPRAVLJANJE OKOLIŠEM
 Thematic unit: *PROCESS MANAGEMENT IN ENVIRONMENT PROTECTION*

6. **Josip Čiček** – Hrvatska/Croatia
Marko Bešker – Hrvatska/Croatia
Miroslav Drljača – Hrvatska/Croatia
 Potreba za revizijom strateških dokumenata zaštite okoliša
 Republike Hrvatske
*The Need for Revision of Strategic Documents of Environmental
 Protection in Republic of Croatia*
 Pregledni članak/Review 63

Tematska cjelina: KVALITETA I UPRAVLJANJE RIZICIMA
 Thematic unit: *QUALITY AND RISK MANAGEMENT*

7. **Miloš Jelić** – Srbija/Serbia
Miomir Stanković – Srbija/Serbia
Suzana Savić – Srbija/Serbia
 Project Management in Emergencies
Projektno upravljanje u vanrednim situacijama
 Pregledni članak/Review..... 81
8. **Marko Bešker** – Hrvatska/Croatia
Josip Čiček – Hrvatska/Croatia
Nataša Markulin Grgić – Hrvatska/Croatia
 Procjena rizika na radu u svjetlu norme ISO 45001 i strateškog okvira
 zaštite zdravlja i sigurnosti na radu za EU 2014 – 2020
*Risk Assessment at Work According to The ISO 45001 Standard and
 Strategic Framework of The Health and Safety Protection for EU 2014-2020*
 Pregledni članak/Review..... 93
9. **Branislava Milovanov** – Srbija/Serbia
Mirjana Stanić – Srbija/Serbia
 Upravljanje operativnim rizicima
Operational Risk Management
 Stručni članak/Professional paper 105

10. **Daniela Tesařová** – Czech Republic/Češka
Eva Jeřábková – Czech Republic/Češka
 Measurements Quality of Finished Surfaces Product From
 Wooden Based Materials
Mjerenje kvalitete završnog sloja proizvoda izrađenih od drveta
 Prethodno priopćenje/Preliminary communication 121

11. **Ivana Carević** – Hrvatska/Croatia
Nina Štirmer – Hrvatska/Croatia
Ivana Banjad Pečur – Hrvatska/Croatia
Bojan Milovanović – Hrvatska/Croatia
Marina Bagarić – Hrvatska/Croatia
 Sustav izobrazbe i certificiranja građevinskih radnika u području
 energetske učinkovitosti u zgradarstvu
*Education and Certification Scheme of Construction Workers in the
 Field of Energy Efficiency of Buildings*
 Pregledni članak/Review 133

12. **Renata Stasiak Betlejewska** – Poland/Poljska
 Ensuring Product and Service Quality in the Construction
 Industry – Reflection
*Osiguranje kvalitete proizvoda i usluga u građevinskom
 sektoru – Razmišljanje*
 Pregledni članak/Review 147

13. **Olga Dmitrievna Ugolnikova** – Russia/Rusija
Alexej Dmitrievich Rizov – Russia/Rusija
 ИННОВАЦИОННОЕ РАЗВИТИЕ МОНОПРОФИЛЬНЫХ
 ТЕРРИТОРИЙ И ОЦЕНКА КАЧЕСТВА УПРАВЛЕНИЯ
 Innovative Development of Not Diversified Territories:
 Assesment of the Quality Management
Razvoj područja jedne industrije: vrednovanje upravljanja kvalitetom
 Pregledni članak/Review 157

14. **Leon Maglić** – Hrvatska/Croatia
Vjekoslav Vuk – Hrvatska/Croatia
 Kontrola kvalitete toplovodnog kotla prema normi HRN EN 303-5:2012
*Quality Control of Heating Boiler According to Standard
 HRN EN 303-5:2012*
 Pregledni članak/Review 169

15. **Krunoslav Škrlec** – Hrvatska/Croatia
 Utjecaj parametara izolacije poda na potrošnju energije u zgradi
*Influence of Parameters of Floor Isolation on
 Energy Consumption in a Building*
 Pregledni članak/Review..... 177

Tematska cjelina: KVALITETA U ZDRAVSTVU I TURIZMU
Thematic unit: QUALITY IN HEALTHCARE AND TOURISM

16. **Ирина И. Корягина** – Russia/Rusija
Нина В. Курылева – Russia/Rusija
М. В. Александров – Russia/Rusija
Наталья. Н. Пануева – Russia/Rusija
Мария В. Жуколина – Russia/Rusija
 ПОДХОДЫ К ОЦЕНКЕ ПАЦИЕНТАМИ КАЧЕСТВА
 ОКАЗАНИЯ МЕДИЦИНСКОЙ ПОМОЩИ В РОССИЙСКОЙ
 ФЕДЕРАЦИИ: ФЕДЕРАЛЬНЫЙ И РЕГИОНАЛЬНЫЙ УРОВНИ
 МОНИТОРИНГОВЫХ ИССЛЕДОВАНИЙ
*Approaches to the Assessment of Patients Quality of Medical Care
 in the Russia Federation: Federal and Regional Levels Monitoring*
*Pristupi ocjeni kvalitete medicinske skrbi koju daju pacijenti u
 Ruskoj Federaciji: praćenje na saveznoj i regionalnoj razini*
 Pregledni članak/Review..... 191

17. **Ana Perišić** – Hrvatska/Croatia
Ivana Beljo – Hrvatska/Croatia
Antonia Živković – Hrvatska/Croatia
 Analiza determinanti vjernosti posjetitelja zaštićenih područja
Analyzing Visitor Loyalty Determinants in Protected Areas
 Pregledni članak/Review..... 209

18. **Ivana Bratić** – Hrvatska/Croatia
Ivana Kardum Goleš – Hrvatska/Croatia
 The City of Šibenik as a Cultural District
Šibenik kao kulturni distrikt
 Pregledni članak/Review 221

19. Ana Perišić – Hrvatska/Croatia Divna Goleš – Hrvatska/Croatia Lucija Lemac – Hrvatska/Croatia Kristina Devčić – Hrvatska/Croatia Usporedba zadovoljstva posjetitelja zaštićenih područja prema učestalosti posjećivanja <i>Comparison of Visitor Satisfaction in Protected Areas Due to Visit Frequency</i> Pregledni članak/Review.....	229
20. Jelena Šišara – Hrvatska/Croatia Divna Goleš – Hrvatska/Croatia Uloga kvalitete u razvoju ruralnog turizma: analiza agroturističkih gospodarstava u Šibensko-kninskoj županiji <i>The Role of Quality in the Development of Rural Tourism: Analysis of Agrotourism in Šibenik-Knin County</i> Stručni članak/Professional paper	239
21. Ivana Bratić – Hrvatska/Croatia The Development of Quality in Tourism Through a Noble Hospitality <i>Razvoj kvalitete u turizmu kroz osobitu gostoljubivost</i> Stručni članak/Professional paper	249
Tematska cjelina: KVALITETA U OBRAZOVANJU I SPORTU <i>Thematic unit: QUALITY IN EDUCATION AND SPORT</i>	
22. Zoran Punoševac – Srbija/Serbia Miloš Punoševac – Srbija/Serbia Regionalni pristup unapređenja znanja kao faktora konkurentske prednosti <i>Regional Approach of Knowledge Improvement as a Factor of Competitive Advantage</i> Pregledni članak/Review.....	257
23. Robert Ulewicz – Poljska/Poland Developing a Quality Culture in the Czestochowa University of Technology <i>Razvoj kulture kvalitete na Tehnološkom sveučilištu Czestochowa</i> Pregledni članak/Review.....	267

24. Marija Boban – Hrvatska/Croatia	
Upravljanje kvalitetom u visokom obrazovanju i analiza rizika	
<i>Quality Management in Higher Education Institutions and Risk Analysis</i>	
Pregledni članak/Review	279

25. Sanja Zambelli – Hrvatska/Croatia	
Miroslav Drljača – Hrvatska/Croatia	
Specifičnosti uvođenja sustava kvalitete u obrazovni sustav	
<i>Specific of Introducing Quality System in the Education System</i>	
Pregledni članak/Review	291

Tematska cjelina: KVALITETA I PROMETNI SUSTAVI

Thematic unit: QUALITY AND TRAFFIC SYSTEMS

26. Nermin Zijadić – Bosna i Hercegovina/Bosnia and Herzegovina	
Fadila Kiso – Bosna i Hercegovina/Bosnia and Herzegovina	
Muharem Šabić – Bosna i Hercegovina/Bosnia and Herzegovina	
Sistem upravljanja i strategija u zrakoplovstvu	
<i>Management System and Strategy in Aviation</i>	
Pregledni članak/Review	309

Tematska cjelina: UPRAVLJANJE ODRŽIVIM USPJEHOM

Thematic unit: SUSTAINABLE SUCCESS MANAGEMENT

27. Stanisław Borkowski – Poland/Poljska	
Renata Stasiak Betlejewska – Poland/Poljska	
Quality Management Elements Analysis in BOST Method	
<i>Analiza elemenata upravljanja kvalitetom primjenom BOST metode</i>	
Pregledni članak/Review.....	339

28. Davor Grgurević – Hrvatska/Croatia	
Krešimir Buntak – Hrvatska/Croatia	
Ana Globočnik Žunac – Hrvatska/Croatia	
Analysis Models of Economic Diplomacy and Croatian Experience	
<i>Analiza modela gospodarske diplomacije i hrvatska iskustva</i>	
Pregledni članak/Review.....	353

29. Dragan Zlatović – Hrvatska/Croatia	
Vesna Jurin Bakotić – Hrvatska/Croatia	
Funkcija jamstva kvalitete znakova razlikovanja u hrvatskom pravu	
<i>Function Guarantees Quality Distinctive Signs in Croatian Law</i>	
Pregledni članak/Review.....	373

30. **Dragana Rošulj** – Srbija/Serbia
Koviljka Banjević – Srbija/Serbia
Aleksandra Nastasić – Srbija/Serbia
 Retrospektiva promena u zahtevima standarda 9001 u odnosu
 na ljudske resurse
*Retrospective of Changes in the Requirements for Human Resource
 According to 9001*
 Pregledni članak/Review..... 395
31. **Vedran Filipović** – Hrvatska/Croatia
Renato Barišić – Hrvatska/Croatia
 Mrežno i organizacijsko povezivanje udaljenih lokacija državnih arhiva
*Network and Organizational Connection of the
 State Archives Remote Locations*
 Pregledni članak/Review..... 407
32. **Zdenko Mondekar** – Hrvatska/Croatia
 ISO 37001:2016 Sustav upravljanja antikorupcijom
ISO 37001:2016 Anticorruption Management System
 Stručni članak/Professional paper 419
33. **Krešimir Buntak** – Hrvatska/Croatia
Ivana Martinčević – Hrvatska/Croatia
Tijan Šebestijan – Hrvatska/Croatia
 Apply of the 8D Method to Increase the Level of Quality Management
 Within the Organization
*Primjenom metode 8D do povećanja razine kvalitete upravljanja
 u organizaciji*
 Stručni članak/Professional paper 429
34. **Gordana Hajduk** – Hrvatska/Croatia
Teuta Tompić – Hrvatska/Croatia
Vesna Šimunić Mežnarić – Hrvatska/Croatia
 Usporedba sustava upravljanja kvalitetom uvedenih u laboratorijima
 Bioinstituta (HRN EN ISO/IEC 17025:2007 I HRN EN ISO 9001:2015)
*Comparison of Quality Management Systems in Laboratories Bioinstitute
 (HRN EN ISO/IEC 17025:2007 I HRN EN ISO 9001:2015)*
 Stručni članak/Professional paper 441

Tematska cjelina: INTEGRIRANI SUSTAV UPRAVLJANJA
Thematic unit: INTEGRATED MANAGEMENT SYSTEM

35. **Juhani Anttila** – Finland/*Finska*

Kari Jussila – Finland/*Finska*

Business – Integrated Quality Management, “Quality Integration”

Poslovno integrirano upravljanje kvalitetom “Integracija kvalitete”

Pregledni članak/*Review*..... 451

36. **Josip Lisičar** – Hrvatska/*Croatia*

Josipa Lisičar – Njemačka/*Germany*

ISO 9001:2015 & ISO 14001:2015 – Smjernice za primjenu integriranog
sustava upravljanja organizacijama

*ISO 9001:2015 & ISO 14001:2015 – Guidelines for the Implementation of
Integrated Management System in Organizations*

Stručni članak/*Professional paper* 495

Through presentation of scientific and expert papers from the scope of management systems by scientists and professionals from the country and from abroad, we want to point out that a more significant promotion of quality as a strategy in all organizations and sectors may considerably contribute to development of competitiveness of economy at the global level.

This time, after many years, we are again in Vodice, a beautiful tourist place of the Croatian Adriatic. We look forward to seeing you, participants from some fifteen countries of the world, who would, with your partaking, make a contribution to development of the concept of quality as a strategy and give us numerous examples of this in your own surroundings.

And thank you for that.

*Miroslav Drljača, Ph.D.
CQMS President and Editor*

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KVALITETA KAO STRATEGIJA
QUALITY AS A STRATEGY

Vodice, Hrvatska/*Croatia*
22. – 24. ožujka 2017.
March 22nd – 24th, 2017

APPLY OF THE 8D METHOD TO INCREASE THE LEVEL OF QUALITY MANAGEMENT WITHIN THE ORGANIZATION

PRIMJENOM METODE 8D DO POVEĆANJA
RAZINE KVALITETE UPRAVLJANJA U ORGANIZACIJI

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Trg dr.Žarka Dolinara 1, 48000 Koprivnica, Croatia/Hrvatska

UDK/UDC: 005.7

JEL klasifikacija/JEL classification: L15

Stručni članak/Professional paper

Primljeno: 22. prosinca 2016./Received: December 22nd 2016

Prihvaćeno: 26. veljače 2017./Accepted: February 126^h, 2017

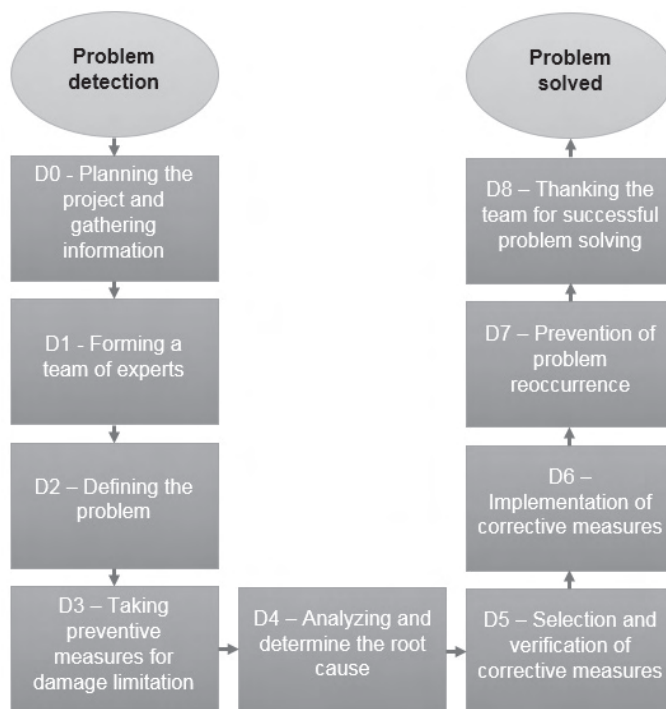
Jezik/Language: Engleski/English

ABSTRACT

The aspiration for quality manage an organization to increase efficiency and effectiveness in business, and ultimately increase the profit and the satisfaction of all interested parties in the environment of the company, lead to the development of different philosophies, systems, methods and tools of quality. The goal of every quality activity on the management of the company it's the decrease of aggravating factors and problems which could affect on customer satisfaction needs. Basing on stated above, the need to develop the method 8D was created, as the fastest and the most effective way to solve nonconformities identified on products or processes, to minimize their harmful activity, find the root cause of the nonconformity and to prevent further appearance. The paper shows a review on the development beginning and application of the 8D method in the American military and in the automotive industry. Each step

8. D7 – Prevention of problem reoccurrence
9. D8 – Thanking the team for successful problem solving.

Figure 1. 8D flow diagram



Source: Tijan Šebestijan, Utjecaj primjene 8D metode na kvalitetu upravljanja organizacijom, Diplomski rad, Sveučilište Sjever, Varaždin, 2016, str. 10.

There isn't a company that can afford delivering nonconforming products/services to their customers. Nonconforming deliveries can bear significant legal and economic consequences. In the end it can lead to customer loss, where the customer will lose trust in the company because of the nonconforming product/service or because the impossibility of prompt and adequate error removal or the repetition of the error and switch to the competition. With the help of the 8D method negative consequences can be avoided on an effective way and the knowledge and awareness in the company can be increased and used on other processes which can lead to a comprehensive increase in business quality and decrease in costs⁹. The 8D method can be used within the or-

⁹ Cf. Isto, str. 6-7.

ganization as a tool for continuous improvement, respectively as a corrective measure for solving nonconformities which appear. The application of the 8D method on products is focused on solving nonconformities which appear on the product and that includes intern sources who find the nonconformity and customer reclamations. The assessment also includes input materials and intermediate goods received from suppliers. Every deviation with input materials is also a reclamation issue which is forwarded to the supplier¹⁰. (Krajnc, Marjanca, 2012. 120)

3. APPLICATION AND AWARENESS OF THE 8D METHOD IN REPUBLIC OF CROATIA¹¹

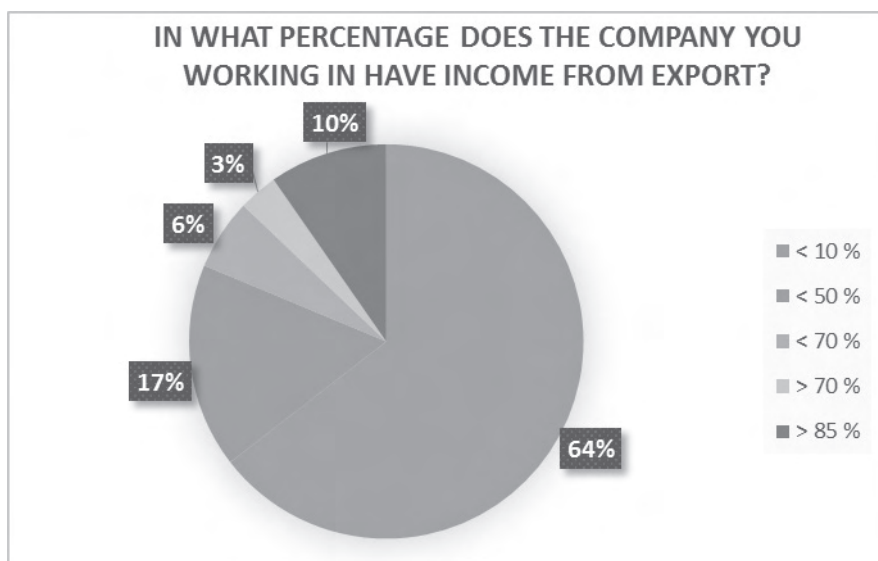
On the management working population in Republic of Croatia, a research was conducted¹², which goal was to determine the awareness of the population with the 8D method, the application of the method and in generally with quality tools, application of the quality management system and the ability to react on customer reclamations. The research was carried out on a sample of 155 subjects. The highest number of subjects, 64% works in small and micro sized companies. According to the National Classification of Activities the highest number of subjects is employed in the manufacturing industry, with a percentage of 20%. The results of the research showed that most of the companies, and that are 100 companies, make less than 10% of their income form international trading, 26 have less than 50% of their incomes from international trading, 9 have less than 70%, 5 have more than 70% and 15 have over 85% of their incomes from international trading. The mentioned is graphically presented on the figure 2.

¹⁰ Marjanca Krajnc, „With 8D method to excellent quality“, Journal of Universal Excellence, October 2012, Year 1, No. 3, 2012, pp 120.

¹¹ Rezultati prikazani u ovom poglavlju preuzeti iz: Tijan Šebestijan, Utjecaj primjene 8D metode na kvalitetu upravljanja organizacijom, Diplomski rad, Sveučilište Sjever, Varaždin, 2016.

¹² Isto, str. 50.

Figure 2. Results according to income percentage from export



Source: Tijan Šebestijan, Utjecaj primjene 8D metode na kvalitetu upravljanja organizacijom, Diplomski rad, Sveučilište Sjever, Varaždin, 2016, str. 52.

“Within the companies who have incomes of international trading, respectively export incomes higher than 85%, there are 8 companies that rank by size into small companies, and that makes an sample of 53,33% from the whole research population. The rest make 6 middle sized companies and one big sized company. Like mentioned before the biggest sample have companies which make incomes from export in less than 10%, and that makes 36 micro sized companies, 30 small sized companies, 10 middle sized companies and 24 big sized companies.”¹³ While determining the geographical position of the companies, the results are that 112 of them, which is 72,26% are placed in the northern part of Republic of Croatia, which make the regions Međimurska, Varaždinska, Zagrebačka and the city of Zagreb. A classification of working positions was made on the basis of listed professions on the Croatian labor exchange and the highest population is employed on positions off Office clerks and CEO, managers and board members and the two make a sample of 58%. The quality management system ISO 9001:2008 (ISO 9001:2015) is used in 71 companies, a that are by size: 8 micro, 27 small, 21 middle and 15 big companies. From the mentioned 71, 15 companies make more than 85% of their income from export which makes 100% in that size category. More

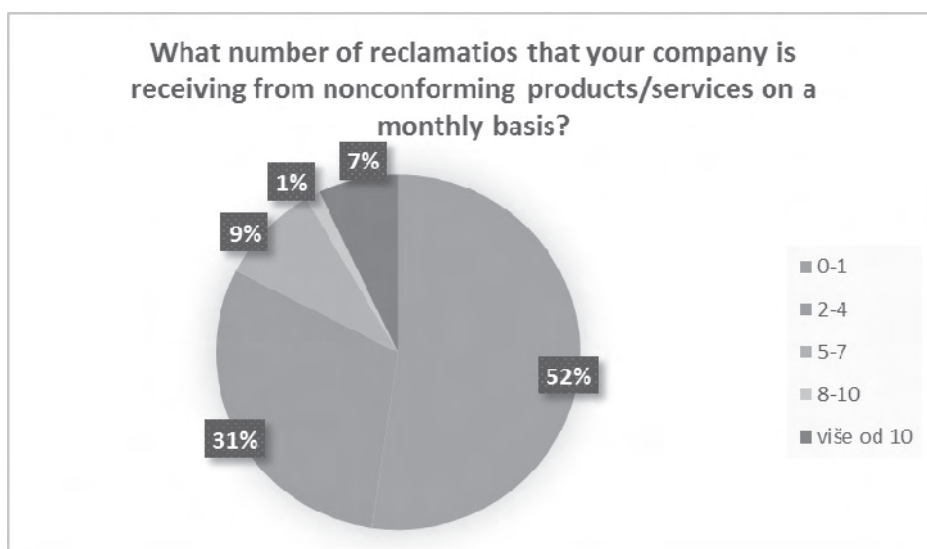
¹³ Isto, str. 52.

than 70% of their incomes make 5 companies what is also 100% in that category. That leads to a conclusion that companies which have the quality management system ISO 9001:2008 (ISO 9001:2015) implemented are far more competitive on the global market in comparison with the ones that doesn't have a quality management standard. Also 51% of the population uses some kind of quality tools in their business and some of the most frequently used are control charts, histograms, check lists and workflow diagrams. From the whole population of 155 subjects, 40 of them are informed with the 8D method, and the highest sample of 10 subjects is employed in the Manufacturing industry. From the mentioned 10 from the Manufacturing industry 8 have implemented the ISO 9001:2008 (ISO 9001:2015) system. From the 40 subjects that are familiar with the 8D method, 19 of them are using the method or at least some aspects of it in their business. Most of the 19, 7 of them are placed in the Manufacturing industry, and 4 of the 7 have incomes from export higher than 85%. That proves that the application of the method increases competitiveness and customer trust in the company on a global level. The companies which are using the 8D method in their business evaluated the method with an average grade of 3,42, where 1 is the lowest grade and 5 the highest. That proves that the users are generally satisfied with the method, but not thrilled. Most of the 19, 13 of them are using the method consider that the method leads to quality improvements and they are using it to solve customer reclamations. While determine the number of received customer reclamations on a monthly level, the most share goes to 0-1 reclamations per month, and in that category goes 81 subjects, and that makes 52,26%. Between 2-4 reclamations monthly receive 47 companies, which makes 30,32%. Between 5-7 reclamations receive 14 companies on a monthly basis and that makes 9,03%. In the category 8-10 reclamations there are 2 companies and that makes 1,29% and in the category more than 10 reclamations there are 11 companies which makes 7,10%. The mentioned is grafically presented on the figure 3.

With companies that have implemented the ISO 9001:2008 (ISO 9001:2015) quality management system, from the 71 in total as mentioned before, 29 of them are receiving 0-1 reclamations on a monthly basis what makes 40,85%. Between 2-4 reclamations are receiving 26 companies, between 5-7 reclamations receive 8 companies, between 8-10 reclamations receives only 1 company, and more than 10 reclamations receive 7 companies. From 19 companies which are using the 8D method, 9 of them receive 0-1 reclamations monthly which makes 47,37%. Between 2-4 reclamations receive 5 companies, between 5-7 reclamations receive 3 companies, between 8-10 reclamations receives only 1 company, and more than 10 reclamations is received

from 1 company. By determining the deadline for solving the received reclamation, 64 companies solve them in 1 working day. In 2-3 working days, 48 companies are solving their reclamations, in 4-5 working days, 22 companies are solving their reclamations, and in more than 5 working days, 21 companies are solving their reclamations. From the 64 subjects that are the most punctual, 24 have implemented ISO 9001:2008 (ISO 9001:2015), and 4 also apply the 8D method in their business. From the 21 subjects who need more than 5 days to solve received reclamations, 12 have implemented ISO 9001:2008 (ISO 9001:2015), and 3 apply the 8D method in their business.

Figure 3. Results of subjects about monthly customer reclamations



Source: Tijan Šebestijan, Utjecaj primjene 8D metode na kvalitetu upravljanja organizacijom, Diplomski rad, Sveučilište Sjever, Varaždin, 2016, str. 61.

When it comes to determining the root cause of the problem, 112 subjects do determine it, while 43 subjects want to just solve the reclamation as soon as possible. From the 112 subjects which are determining, 50 of them solve the reclamation within 1 working day, 60 of the 112 receive 0-1 reclamation on a monthly basis, 16 apply the 8D method in their business and 59 have implemented ISO 9001:2008 (ISO 9001:2015). That leads to the conclusion that the companies that apply the method receive the least reclamations, solve them in the shortest deadline and determine the root cause of the problem. While determining the compensation form which is provided to the customer,

67 companies are offering to correct the nonconformity. From the 67, 19 companies are in the Manufacturing industry. Replacements for a correct product offer 46 companies, and from that, 9 are placed in the Wholesale and retail industry, while 8 are in the Manufacturing industry. Return of funds is carried out from 23 companies, and the most, 4 of them are placed in the Wholesale and retail industry and in the Transport and logistics industry. From 155 subjects, 102 are documenting all received reclamations, 25 document only the ones they find risky for further reappearance and business, and 28 doesn't document the reclamations at all. From the 102 that are documenting all reclamation, 52 of them have implemented the quality management system ISO 9001:2008 (ISO 9001:2015).

4. CONCLUSION

The 8D method is more than a instrumentality which enables to find the problem solution, it's a complete methodical way of thinking which leads to the very essence of the problem, so that it brings not only understanding of the problem, but also of its consequences and reasons of occurrence. Applying the method leads to maximizing the potential in the company. In assistance with team work and using the right quality tools, the negative effects of the problem can be prevented on a prompt and efficient way, the problem is understood, and the root cause can be eliminated so that the prevention of the reappearing of the problem is complete. The research showed that companies which use the 8D method are mostly oriented on the global market, and are making most of their incomes trough international trading which proves the hypothesis H1: the 8D method is more often used from export oriented companies. That is also true for companies who have implemented the quality management system ISO 9001:2008 (ISO 9001:2015). It can be concluded that companies that are aware of the importance of quality management in their processes, have also the highest quality products/services, which consequently is leading to recognition and placement from the same on the international market. Based on the research it can also be concluded that companies which are applying the method in their business, almost always determine the root cause of the problem and receive the least reclamations from their customers, which proves the hypothesis H2: the application of the 8D method decreases the reclamation number received from customers.

Sažetak:

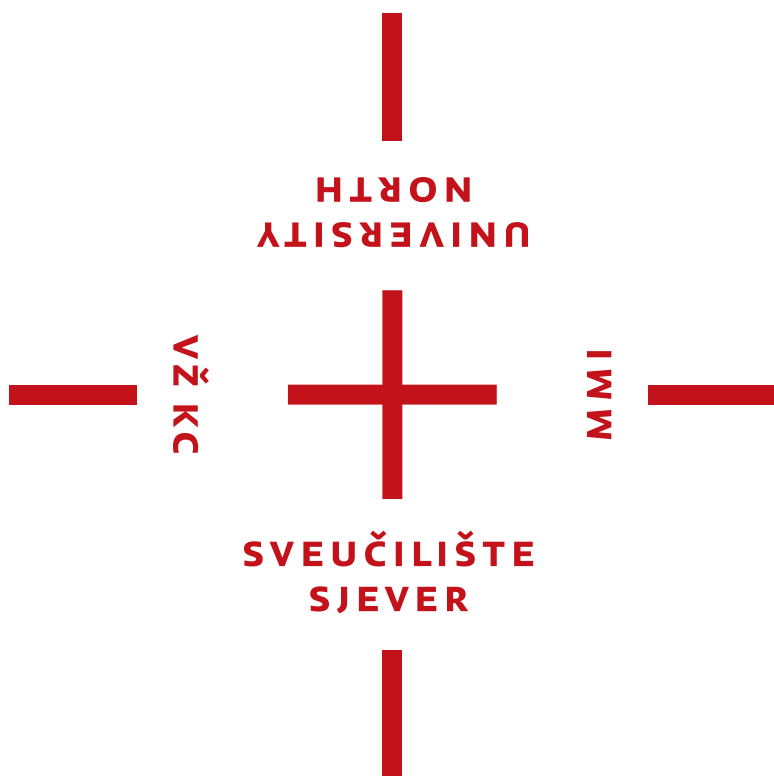
UTJECAJ PRIMJENE 8D METODE NA KVALITETU UPRAVLJANJA ORGANIZACIJOM

Težnja za kvalitetnim upravljanjem organizacijom kao bi se povećala efikasnost i efektivnost u poslovanje, a u konačnici povećati i profit te zadovoljstvo svih zainteresiranih stana u okolini poduzeća, dovela je do razvoja različitih filozofija, sustava, metoda i alata kvalitete. Cilj svakog aspekta kvalitetnog djelovanja na upravljanje poduzećem je smanjenje otežavajućih faktora i problema koji mogu utjecati na zadovoljenje kupčevih potreba. Temeljem navedenoga nastala je potreba za razvojem metode 8D kako bi se na najbrži i najefektivniji način riješile nesukladnosti uočene na proizvodima i procesima, kako bi se minimiziralo njihovo štetno djelovanje, pronašao i uklonio uzrok nastanka nesukladnosti i spriječilo njeno daljnje pojavljivanje u budućnosti. U radu je prikazan osvrt na same početke razvoja i primjene metode 8D u američkoj vojsci i u automobilskoj industriji. Pojašnjen je svaki korak metode pojedinačno kroz opis izvedbe i dijagramski kroz faze provođenja koraka. Provedeno je istraživanje na području Republike Hrvatske o primjeni metode 8D te učincima koje ima na poslovanje poduzeća.

Ključne riječi: metoda 8D, kvaliteta, alati kvalitete, kaizen, uzrok problema, rješavanje problema.

5. LITERATURE

1. Bosanskohercegovački standard BAS EN ISO 9001:2015. TÜV Croatia, Šesto izdanje, Prosinac 2015.
2. Carter, M., *The 8-Disciplines Problem Solving Methodology*, Sixsigma.org Inc. Brea California, USA 92821, 2012.
3. Begley Schade, Martha, „8D Problem Solving Process“, Business Online Learning, 2013.
4. Krajnc, Marjanca, „With 8D method to excellent quality“ *Journal of Universal Excellence*, October 2012, Year 1, No. 3, pp. 118-129. (prikupljeno: 12.01.2016.).
5. Šebestijan, T., *Utjecaj primjene 8D metode na kvalitetu upravljanja organizacijom*, Diplomski rad, Sveučilište Sjever, Varaždin, 2016.



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ISBN 978-953-8067-08-2
CIP 000957195