

Vol. 5, No. 8

UDK 001:65.01

NOVEMBER 2019

IJMBS

INTERNATIONAL JOURNAL OF MULTIDISCIPLINARITY IN BUSINESS AND SCIENCE



M-SPHERE



International Journal of Multidisciplinarity in Business and Science (IJMBS) of M-Sphere

Vol. 5, No. 8, 2019 ISSN 1849-0581

Publisher/Izdavač: Accent & M-SPHERE

M-SPHERE - ASSOCIATION FOR PROMOTION OF MULTIDISCIPLINARITY IN BUSINESS AND SCIENCE

M-SFERA - UDRUGA ZA PROMICANJE MULTIDISCIPLINARNOSTI U POSLOVANJU I ZNANOSTI

Makančeva 16, 10000 ZAGREB, CROATIA, web: www.m-sphere.com.hr / e-mail: info@m-sphere.com.hr

Editorial board/Urednički odbor:

Vesna Babić Hodović, University of Sarajevo - *Muris Čičić*, University of Sarajevo - *Felicite Fairer-Wessels*, University of Pretoria - *Rainer Hasenauer*, Vienna University of Economics and Business - *A. Niyazi Özker*, Balikesir University - *Doris Peručić*, Edward Bernays University College - *Claudia Seabra*, University of Coimbra - *Otilija Sedlak*, University of Novi Sad - *Masaaki Takemura*, Meiji University Japan - *Marija Tomašević Lišanin*, University of Zagreb - *Tihomir Vranešević*, University of Zagreb – *Irena Pandža Bajs*, University of Zagreb - *Slavica Manić*, University of Belgrade – *Miroslav Mandić*, University of Zagreb - *Ivona Vrdoljak Raguž*, University of Dubrovnik - *Drago Ružić*, University of Osijek - *Davor Vašiček*, University of Rijeka - *Kalyani Menon*, Wilfred Laurier University Toronto - *Włodzimierz Sroka*, WSB University Poland - *Mila Gadžić*, University of Mostar - *Danijela Martinović*, University of Sarajevo - *Vedad Silajdžić*, University of Sarajevo - *Marija Bečić*, University of Dubrovnik - *Marija Dragičević*, University of Dubrovnik - *Sandra Janković*, University of Rijeka - *Marina Dabić*, University of Zagreb - *Nikola Živlak*, Donghua University Shanghai

Editor in Chief/Glavni urednik: Tihomir Vranešević

Editors/Urednici: Doris Peručić - Irena Pandža Bajs - Miroslav Mandić

Graphic design and layout/Grafički dizajn: Tvrtko Zelić, www.tvrtkozelic.com

SADRŽAJ/CONTENTS

USING THE E-MARKETING TOOLS IN A POLITICAL CAMPAIGN	5
ŽARKO STILIN, JERKO ŽUNIĆ, IVAN RUŽIĆ	
DISABLE(D) – INCLUSION IN CULTURAL LIFE OF CROATIA	13
LIDIJA IVANDA, SANJA ROCCO	
EXPLORING THE MARKETING STRATEGIES OF KRISHNA CONSCIOUSNESS IN EUROPE	21
KRISZTINA BENCE-KISS, ORSOLYA SZIGETI	
CONVERGENCE AND DIVERGENCE IN HUMAN RESOURCES MANAGEMENT IN SELECTED COMPANIES IN THE SLOVAK REPUBLIC	32
LUKÁŠ SMEREK, MÁRIA SEKOVÁ, MILOTA VETRÁKOVÁ	
REAL OPTIONS APPLICATION IN PRACTICE: A TEXT MINING BASED ANALYSIS	39
VÍVÍEN CSAPI	
THE ROLE OF CENTRAL COUNTERPARTIES ON THE ENERGY MARKET	48
MELINDA FRIESZ, KATA VÁRADI	
PROPOSAL FOR STORAGE APPLICATION IN THE MANUFACTURE USING RFID	57
JURAJ VACULIK, SIMONA MOKRISOVA	
BUSINESS INCUBATION ANALYSIS WITH THE HELP OF REAL OPTION THEORY	64
ALEXANDRA POSZA	
HOW DISRUPTIVE TECHNOLOGIES INFLUENCE THE RETAIL BUSINESS MODELS	73
TAMÁS KOZÁK	

USING THE E-MARKETING TOOLS IN A POLITICAL CAMPAIGN

IZVORNI ZNANSTVENI RAD/ ORIGINAL SCIENTIFIC PAPER

UDK: 324:658.8

JEL: M31 ; D72

Autori/Authors:

ŽARKO STILIN

PH.D. STUDENT

JOSIP JURAJ STROSSMAYER

UNIVERSITY OF OSIJEK

FACULTY OF ECONOMICS IN OSIJEK

zarko.stilin@hep.hr

JERKO ŽUNIĆ

PH.D. STUDENT

JOSIP JURAJ STROSSMAYER

UNIVERSITY OF OSIJEK

FACULTY OF ECONOMICS

OSIJEK

jerko.zunic@tragos.hr

IVAN RUŽIĆ

PH.D. LECTURER

JOSIP JURAJ STROSSMAYER

UNIVERSITY OF OSIJEK

FACULTY OF ECONOMICS

OSIJEK

ivan.ruzic777@gmail.com

ABSTRACT

Election campaigns occurred during the emergence of modern political parties at the end of the 18th century in the United States of America, or in the first half of the 19th century in Europe. They are defined as organized activities whose main characteristic is mass communication. Campaigns are divided into positive, negative and comparative. Positive campaigns tend to gain the confidence of voters by promoting positive characteristics of a political subject. Negative campaigns gain voters' confidence by attacking a rival party or a candidate, while comparative campaigns strive to gain confidence by comparing parties, candidates and political ideology with the competitive party. Political marketing is mostly used in periods prior to and during elections. Aim of each campaign is to gain political public's support, or in other words, to gain the planned number of votes. There are three goals of each campaign: raising voters' turnout in elections, publicizing qualities of a political subject and raising money, as well as recruiting campaign activists. Political subjects tend to influence voters with their programs, which depends on whether the political campaign will be successful or not.

Political marketing in realization of its goals uses numerous techniques and resources. Most common methods that enable propaganda of political marketing are: promotional materials, posters, leaflets, newspapers, newsletters, press advertising, election videos, presentation materials, e-mails, banners, telemarketing... This paper presents the results of a research whose goal was to determine the use of e-marketing tools in electoral campaign by political parties and candidates on the election for Croatian Parliament in 2016. Research was conducted through two parallel courses: an e-mail questionnaire about political parties/participants in elections and a questionnaire/message on Facebook social network to all parties/participants in elections. The main research goal is to determine whether political subjects use e-marketing tools in electoral campaigns. From the scientific point of view, use of e-marketing tools in electoral campaign has not yet been explored. In that sense, this research contributes better understanding of use of e-marketing in political activities. Results can be used to improve e-marketing, as well as a frame for further research and successful political activity.

KEY WORDS: e-marketing, e-marketing tools, electoral campaign, political candidate, political party .

1. INTRODUCTION

The multi-party system indicates a certain competition of individual parties, programs and candidates on the "political market". In the aforementioned context, there is a greater need for political marketing that aids in presenting and selling certain political ideas and political subjects. Of course, political communication exists from the very beginning of political activity. In order to come to power and to lead, it is necessary to present oneself to citizens or voters. Facts mentioned above are the reason for the existence of political programs, platforms and other political documents that are created by political subjects. Political marketing appears as a new tool of political communication that occurs as a consequence of democracy, general voting right and development of means of informing. Electoral campaign is defined as organized activity whose main features are mass communication and timing. During the electoral campaign political subjects present their program and try to reach the voters with the goal of gaining as many votes as possible in municipal, city, county, parliament and political elections. Characteristic of electoral campaign is active approach with high intensity. After the electoral process had finished, political subjects lower the level of communication with voters. Political winners and opposition continue the communication, but with less intensity and with a goal of informing the public about current political events. Success of electoral campaign is assessed by election results.

This paper defines and analyses the use of e-marketing tools in electoral campaign. It is necessary to define the electoral campaign, participants of the campaign, process and tools of communication with voters. Goal of each political subject is to gain and keep the ruling power. Goals of this paper are to define the electoral campaign, e-marketing in the campaign, to conduct a research, draw conclusions and accept or reject the hypothesis of the paper. Beginning of the paper sets a hypothesis: "Political subjects in the Republic of Croatia are not aware of the influence of e-marketing on the electoral campaign". Research will try to determine the use of e-marketing by political subjects during the electoral campaign for elections for Parliament in 2016 in the Republic of Croatia in electoral units IV and VIII. Research is conducted by the author of the paper who used a part of this research for his PhD thesis entitled "Political marketing in digital environment". The paper is based on primary and secondary research. Methods of analysis, questionnaire, interview, compilation and synthesis are used. From the scientific point of view, use of e-marketing tools in electoral campaign has not yet been explored. In that sense, this research contributes better understanding of use of e-marketing in political activities. Results can be used to improve e-marketing, as well as a frame for further research and successful political activity.

2. USE OF E-MARKETING TOOLS IN A CAMPAIGN

In the 21st century, political subjects (political parties and candidates) act as business subjects. Using market information and tools, they affect the molding of the ultimate product they offer on the market. Definitions of political marketing vary, but most of them explains political organization (whether it is a product that is offered, a politician, a candidate or a government) and their relationship with the market or towards the market (whether it is the public in general, citizens, or in a more precise way, membership) (Tomić 2014, 28). Each political subject is oriented towards the voter. The goal of each form of marketing is gaining profits, while from the consumer's point of view, the goal of marketing is to satisfy his needs.

2.1. Political marketing during electoral campaign

Political marketing has its particularities due to which it is categorized into a specific type of marketing. However, the principle of action is similar to traditional marketing. Political marketing uses an aggregate of techniques to research the market, inform about voters, adapt its political program to needs and wishes of voters, to highlight the differences in regard to competition and try to gain profit (winning the elections). The notion connected with political marketing is political communication that refers to:

- all forms of communication used by politicians and other political entities in order to reach specific goals;
- communication aimed at some entities by non-politicians, such as voters and newspaper journalists,
- communication about those entities and their activities that exists as such in reports, introductions, and other forms of media discussions about politics (Bongrand 1997, 8).

Certainly, the term political communication encompasses verbal and non-verbal communication alongside all visual resources used in communication. It is necessary to emphasize that political communication also refers to peers who inform the public about political events and political subjects through media, debates, and other communication channels. Participants of political communications are politicians, journalists and citizens. The most complete definition of political communication is: "Political communication is a mutual/interactive process of exchanging political contents among political entities, during the time of political (electoral) term of office or elections, through communication channels (media), and with the goal of achieving certain effects (Tomić, Spahić and Granić 2008, 37)". The goal of political marketing and communication is to establish a two-way communication with voters. The ultimate goal is to gain votes through gaining confidence, sympathy and support. Of course, political communication occurs continuously without cessation, while political marketing is mostly used during political campaigns. Nowadays all political parties are aware of the importance and effect of the proper use of marketing. Political subjects, depending on their funds and size of political party, use cutting-edge marketing techniques in order to achieve better results in the elections. Largest parties employ marketing experts who help them implement the political marketing process. On the other hand, small political parties independently carry out the marketing process based on party members' knowledge and skills. The beginning of each marketing activity starts with market research. Political market research seeks to recognize the concerns and problems of citizens. After market demands research, political subjects form their product – political program. It is necessary, through marketing, to inform the voters about what political subject can offer and what changes and activities will be carried out once he comes to power.

Contemporary marketing techniques are used to acquaint the candidates with the highest number of voters and to point out their advantages over the competition. One of the biggest advantages of political marketing is to examine the public view on which policies to propose and adopt. Based on the results, the political party selects the candidates who will

represent the party in the elections. During the election campaign, political subjects focus on the market: profile voters, segment the market, and modify their political product. The only correct path to success in the political market is the implementation of a political program. A political party and a candidate must present a viable political program that will bring better living conditions to the individual and community in which the political entity operates. The election campaign is defined as an organized activity characterized by mass communication. It was born at the end of the 18th century in the United States and at the beginning of the 19th century in Europe. The key elements of each election campaign are: rules, candidates, electoral body, problems, resources, and election campaign strategies. Regardless of the type of political elections, prior to the announcement of the candidacy, the rules of competition according to the electoral laws are determined. The rules are defined as: the terms of the candidature, the time of candidacy, the way of calculating the time in office, the electoral threshold, who has the right to vote, who can vote, the way of funding, the use of television time ... The main entities or subjects of the election campaign are political candidates.

In most cases party holder is the most distinguished, and he is the candidate for the highest position that can be won on the elections. Political party, in cooperation with a marketing team, determined the central topic of the campaign, its motto and the biggest difference in regard to their competition. Object of the campaign is electoral body that consists of all persons who have the right to vote. Great difference in market competition in regard to political competition is the possibility of a negative campaign. Almost always a situation occurs in which political parties accuse each other of avoiding actual problems. The most common topics of arguments between the candidates refer to economic politics, social politics and external politics. As in each marketing process, the term resources encompasses people, funds and time. Each political party assesses its resources and plans a budget to be invested into the campaign. Success of the electoral campaign depends on the choice of strategy. According to available literature, there is an explanation about two types of campaign: image and issues campaign. Image campaign is a campaign in which political subjects tend to gain voters' support by promoting positive picture of their qualities in public.

On the other hand, issues campaign is based on the relationship of political subjects towards questions and problems which are perceived to be of highest importance for social life of voters. Political campaign is implemented when there is a continuous thematic link between individual activities of political subjects. Certainly, the goal of electoral campaign is to gain support of political public and to collect a planned number of votes. All competitors, or in other words, political candidates and parties, adopt certain principles on which political competition is based. Those are: principle of integrity, principle of consistence, principle of competitiveness, principle of continuity, principle of positive approach, principle of cooperation, principle of alacrity, principle of feedback, principle of experience and principle of unity of identity. The main feature of political campaigns is to persuade voters to vote for a certain candidate. Goals of each campaign are to publicize the qualities of a candidate, increase voters' turnout and recruiting campaign activists. Political subjects through their campaign strive to affect the voters. Simply defined, electoral campaign is:

1. an activity (planned and organized),
2. of political parties and candidates (party associations, independent lists...),
3. in (pre)election period (prior to and during the political campaign),
4. through application of integrated (marketing) communication (combination of communication channels and election techniques),
5. to present candidates and program (exposure + attention),
6. to build party and personal image (confidence towards the party, competence, fairness and reputation of candidates...),
7. and subsequently to gain voters in order to achieve planned election goals (remain in power, gain power, participate in power...) (Tomić, Spahić and Granić 2008, 43).

Fundamental function of each campaign is to ensure conditions for presenting and promoting political candidates, parties, programs and ideas with the goal of ensuring voters' support. Political subjects strive to mobilize their sympathizers. Strategy with which political subjects wish to participate in electoral campaign depends on resources, knowledge and position of a political party. Key factor are resources. Political party that does not have sufficient funds and cooperation with a team of experts cannot expect success in the elections. Each electoral campaign differs from elections to elections. General strategy of each campaign is identification, presentation of arguments, attacking the opponent, assessment of pre-election government and vision of the future after winning the elections. Successful electoral campaign has predetermined organizational structure. The head of electoral headquarters is defined, and he is the most important person simply due to his main task being execution of the campaign plan. Prior to publicizing the electoral competition, his task is

to find people who will carry out various tasks related to the campaign. Apart from campaign leader, other departments essential for implementation are secretary of headquarters, department for program development, department for research, department for advertising and public appearances, finance department, department for volunteer work, technical service and logistics. As in each great team, success depends on the synergy effect of all team members.

2.2. E-marketing tools in electoral campaign

Depending on the strategy, resources and target market, political subjects define marketing techniques used in the campaign. Marketing tools and techniques through which campaign is implemented are: promotional materials, posters, leaflets, newspapers, newsletters, press advertising, election videos, presentation materials, e-mails, banners, telemarketing, public gatherings, conferences... All methods, regardless of the form, have advertising in common. Political advertising refers to lease and use of advertising space, paid by commercial prices, in order for political parties to present themselves to the mass public. This paper explores and analyzes use of e-marketing tools in campaigns. E-marketing tools in electoral campaign refer to using e-marketing techniques in political marketing. Electronic marketing (e-marketing) is a way of realization of marketing activities of a company (or, in this case, a political subject) through intensive implementation of information and telecommunication (Internet) technology (Panian 2000, 87). Simply put, e-marketing is identical to marketing, apart from a whole process being based on the use of Internet. Nowadays political subjects cannot solely use traditional or just e-marketing; they have to use all communication channels available. Political e-marketing represents an extension of traditional marketing. Nowadays Internet is regarded as an ideal platform for interactive politics.

E-marketing tools inform the population, encourage political participation and open up the possibility to participate in decision-making. The advantage of the e-marketing tool is low cost, 0-24 communication and massive use. Political parties and candidates of the world have realized the importance and role of e-marketing. Nowadays, each political party must have an email address, website, social network profiles, mobile application, Youtube channel ... With the help of the e-marketing tools mentioned above, politicians are implementing the e-marketing process and perfecting their final product with the aims of achieving the goal – winning elections. The specificity of the election campaign in the 21st century is that political subjects cannot allow focus on only one voter segment. They are directed to a complete voter body. This is the advantage of the e-marketing tools. The most common way of communication and propaganda is through paid ads on popular portals, social networks, and apps. In addition to this, they use the online payment option to highlight their actions and programs with the aim of presenting their actions to voters. It is almost impossible not to be part of an election campaign because political subjects use all the mass communication tools available to them. The fact is that after the radio and television, the Internet drastically changed the political campaign.

In the past, political campaign based on touring the state and holding group political gatherings. Nowadays, campaign marketing leader is focused on each person who can vote on the election using e-marketing. The biggest growth of investments into channels of communication during elections is gained by e-marketing. Regardless of the form of channel e-marketing uses, the point is that its influence grows day by day. There was a specific situation that occurred on the last presidential elections in the United States of America according to which the winning campaign of Donald Trump spent 50% of its funds on digital marketing, which refers to radio, television and e-marketing tools. According to the conversation with marketing experts, political subjects opt for e-marketing due to its speed. Digital communication enables quick change and creation of content that is from the very moment of publishing available to a large number of people. Marketing experts insert videos, advertisements and messages of political subjects into all channels of e-marketing: search engines, websites, e-mail, social networks, advertisement engines...

Fundamental tool of e-marketing in electoral campaigns are social networks. They represent groups of users with common interests that are gathered around some Internet service, with active involvement and creation of virtual communities. From the point of view of marketing and political marketing, social networks represent a marketing tool that found wide acceptance with users and marketing experts. The best known social networks are Facebook, Twitter, LinkedIn, Instagram, Pinterest, Google+... Using social networks political subjects are creating a large, free client base which is of crucial importance not only in implementing research activities directed to satisfaction of their needs, but also other marketing activities in the most efficient way. Through social networks political subjects gain an easy approach to potential voters, quick feedback and possibility of forming a long-term relationship. Social networks demand big investments of funds into advertising and educating. Negative comments can appear at any moment, so it is necessary to hire a person in a political subject to do continuous work on a business profile, which lasts 0-24 during the campaign. With the development of Internet, social networks developed as well, and they enable communication and connection among users. Along with the growing popularity of social networks that manifested most through the number of users and their daily activity, the interest of marketing specialists for the use of social networks for advertising purposes also increased. The basics of social networking are sponsored postings.

The advantages of using e-marketing tools in electoral campaign are: sharing information by word of mouth, two way communication, relatively low campaign costs, quick feedback, increase in recognition and increase in web site visits, creating and checking ideas. Apart from social networks, using e-marketing such as banners and advertising on search engines are also popular. Banner represents a graphically shaped advertisement that can be found on web pages and it is defined by its length and width, determined in pixels. It is placed on popular web sites that have a large number of visitors. Web site's owner rents the advertising space and enables advertisers to position the banner on his page. The purpose of the banner is to pique one's interest to click the banner and seek for additional information on a political subject.

2.3. Analysis of e-marketing in electoral campaign

Goal of this research is to analyze political subjects and to elicit an answer to the hypothesis: "Political subjects in the Republic of Croatia are not aware of the influence of e-marketing on the electoral campaign". In the Republic of Croatia most politicians do not have their own campaign, while most political parties rely on voters according to party affiliation. The aforementioned facts result in small investment of resources and energy into contemporary methods of marketing. As it is stated in the introduction, the research was conducted during the pre-election campaign for members of Croatian Parliament in 2016. Research was done on what was used in the electoral campaign by political parties and coalitions, as well as candidates in the political process.

Research was conducted in electoral units IV and VIII with 46 political parties and 476 candidates. Two units mentioned were chosen due to their differences; the first is primarily rural, while the second one is mostly urban; with the goal of comparison according to the characteristic mentioned. Why are e-marketing tools important in a campaign? According to data from the international web side Internet World Stats that contains data on Internet usage, statistics from social media and Internet data of market research for more than 243 individual countries and world regions, the Republic of Croatia in 2017 has 3,13 million Internet users, which represents 74,43% of population. If social networks are analyzed, the Republic of Croatia has 1,8 million Facebook users, which represents 57,4% of citizens who use the Internet. The reason for highlighting the aforementioned data is marketing potential that can be used by political subjects. The research was conducted during the extraordinary parliamentary elections 2016. Main research goals are:

- to determine to what extent and in which way political parties and candidates in a campaign for pre-term elections for Parliament in 2016 used e-marketing tools and
- to ascertain to what extent and in which way political parties and candidates in a campaign for pre-term elections for Parliament in 2016 used the Internet as a means of interaction with voters and their inclusion in a political process.

On 16th of June 2016 Croatian Parliament stated a motion of no confidence (recall) with 125 votes for the Government of Tihomir Orešković. The aforementioned Government served for 146 days, which is the shortest term in modern political history of Croatia. On 16th of July 2016 the President of the Republic of Croatia Kolinda Grabar Kitarović announced the call for pre-term elections (snap elections). After declaring electoral lists, a research was conducted with the aforementioned goals in which content analysis method explored: core functions of Internet pages (World Wide Web and e-mail) of political parties and candidates, as well as use of web 2.0 service (social networks: Facebook, YouTube, Instagram, Twitter, LinkedIn, Pinterest).

E-marketing tools mentioned were analyzed due to their wide use and popularity. Electoral units differ, according to a number of potential voters, in 54.095 voters (electoral unit IV – 329,852 and electoral unit VIII – 383.947). Electoral unit IV includes Virovitica – Podravina and Osijek – Baranja County, while electoral unit VIII includes Istra county and the west part of Primorje – Gorski Kotar County (cities and municipalities: Baška, Cres, Crikvenica, Dobrinj, Kostrena, Kraljevica, Krk, Lovran, Mali Lošinj, Malinska – Dubašnica, Matulji, Mošćenička Draga, Omišalj, Opatija, Punat, Rab, Rijeka, Vrbnik). According to the response, electoral unit IV had 53,86% potential voters, while electoral unit VIII had 51,65% of potential voters. Research was conducted through two parallel courses: an e-mail questionnaire about political parties/participants in elections and a questionnaire/message on Facebook social network to all candidates in elections. Analysis was conducted on whether political parties and coalitions, and individually parties and candidates from those coalitions that went through elections, have a mobile application, Internet page, Facebook profile, Facebook page, Twitter, Instagram, LinkedIn, Youtube channel, Flickr, Pinterest and Wikipedia page. Research was conducted using analysis of the available content and by sending an e-mail. E-mail was sent from the address zarko.stilin@gmail.com on 27 August 2016 on e-mail addresses of headquarters of all political parties who participated in the elections for Parliament in electoral units IV and VIII.

Content of the e-mail:

Dear Sir or Madam,

I am a student of postgraduate PhD study of Management at the University of Josip Juraj Strossmayer in Osijek, Faculty of Economics Osijek, and as a part of my thesis "Political marketing in digital environment" I am doing a secondary research on effects of Internet and social networks campaign on voters' decision and preferential vote. Secondary research, after which the primary research will be conducted using phone questionnaire, is done in two electoral units, IV and VIII, and I will also conduct a research in a campaign for local elections in 2017 in several local government units. Therefore, I have a couple of questions:

Is your party/coalition conducting an Internet campaign on a party website (e-mail, web, application) and/or social networks (Facebook, Facebook page, Twitter, Instagram, LinkedIn, YouTube channel, Flickr, Pinterest, Wikipedia)? Do you have a budget intended for such activities? Do you carry out your campaign only on a national level or specifically for electoral units? Does your party conduct a personalized campaign for candidates on the Internet on the party website (e-mail, web, application) and/or social networks (Facebook, Facebook page, Twitter, Instagram, LinkedIn, YouTube channel, Flickr, Pinterest, Wikipedia)? Are you planning a budget for the Internet campaign and how much will you allocate?

Does any of your candidates in electoral units IV and VIII who use channels (e-mail, web, application) and/or social networks (Facebook, Facebook page, Twitter, Instagram, LinkedIn, YouTube channel, Flickr, Pinterest, Wikipedia) conduct a personalized campaign online?

I would like to thank you in advance for participating in the research and for your affability.

Žarko Stilin

Only two coalition lists and one party replied to the aforementioned e-mail. The e-mail itself wanted to explore: if political parties communicate via e-mail with public and what is the communication like, if they possess tools of political e-marketing and channels of communication (mobile application, Internet website, Facebook profile, Facebook page, Twitter profile, Instagram profile, Pinterest, LinkedIn profile, Youtube channel, Flickr, Wikipedia). Apart from most political subjects not responding to the e-mail, the answers are incredibly contractive and do not cover all the questions posed in the e-mail. From this research, one can conclude that political parties do not communicate with the interested public and do not read e-mails, which is devastating because they should fight for each potential voter during the electoral campaign. The next area of research is analysis of e-marketing channels used. Out of all analyzed political parties, only one party had made a mobile application that was used to promote candidates for prime minister. The application has a name "Vjerodostojno", which was the topic of the campaign lead by Croatian Democratic Union (HDZ). The application positioned HDZ as an innovator on the political market of Croatia, which supports the hypothesis that use of new e-marketing channels depends on resources of the political subject. HDZ is a political party that is a leader on the Croatian political market of many years standing. Hence the biggest number of members and the biggest number of elections won. It is necessary to emphasize that HDZ is the first political party in Croatia that started its own web page. Primary idea is to use the application to communicate with younger audience and to start the interaction with the mentioned voting body. It is interesting that none of the coalitions had a common web page, while in 2011 the winning coalition (Kukuriku) had their own common web page. The most commonly used e-marketing tool is the Internet web page, owned by 40 out of 46 analyzed political parties. After Internet web page, Facebook social network follows.

Out of 46 political subjects observed, 37 subjects used a Facebook page, while two political parties used a profile. Common feature of all Facebook profiles and pages is active communication that is manifested through posting statuses and answering comments below statuses. It is necessary to emphasize that Facebook profiles and pages were made for the entire Croatia, but not for an individual electoral unit. The number of followers on the page ranges from 50 to 17.268. However, the largest number of political subjects communicates with a small part of potential voters. 29 parties have less than 20.000 followers. From the mentioned fact one can conclude that profiles are not updated actively, but were started in the time of campaign, which results in a small number of followers. Other e-marketing tools in the Republic of Croatia are neither present nor recognized. Certain political subjects made Twitter and Instagram profiles, but they were not actively involved in them nor used them. After Facebook, the most popular social network is Youtube. On the most popular social network for video content exchange, 25 out of 46 researched political parties possessed a profile/channel. The third part of research dealt with immediate contact of all candidates who have a Facebook profile. The goal was to elicit answers about using political e-marketing tools from one side, and determine the use of those tools by sending replies from the other side. The results were discouraging. Out of 476 candidates, only 25 candidates replied. The answers were laconic and extremely illiterate. However, more than 50% of candidates lead individual campaigns for preferential voting. In conclusion, candidates did not take the role and importance of social networks as channels for political communication and promotion seriously. Their communication was based on acquaintances and personal friends from whom they sought the preferential vote.

3. CONCLUSION

Parliamentary democracy supposes a certain competition among individual parties, programs and candidates on a sort of “political market”. There arose the need for marketing activity that aids better “sales” of certain ideas, parties and individuals. Marketing is defined as a process that ensures selling products or services in a way that satisfies consumer’s needs. The terms e-marketing and e-marketing tools are defined as realization of marketing activities with implementation of information and telecommunication (Internet) technology. The main goal of each e-marketing tool is to get to know, attract and keep Internet users for a longer period of time. There is no difference between a political party and a business subject. Political subjects are voter-oriented. According to the definition, political marketing has a goal of contributing the adequacy of one candidate in relation to his potential body of voters. The main participants in political marketing are political subjects: political parties, candidates, media and citizens. In realization of its goals political marketing uses various techniques and resources. Using marketing tools refers to leasing and using advertising space. Contemporary political campaign invests more and more into reaching the voters via digital channels. The biggest e-marketing tools advantages are mobility, speed and data availability. After analysis of theoretical background, a research was conducted. Research goal was to analyze political subjects and reach an answer to the hypothesis: “Political subjects in the Republic of Croatia are not aware of the influence of e-marketing to an electoral campaign”.

The research was conducted in IV and VIII electoral unit on 46 political parties and 476 candidates through three parallel courses: the analysis of web content, an e-mail questionnaire sent to political parties/participants in elections and a questionnaire/message on Facebook social network to all candidates in elections. The conducted research adopted the hypothesis. Political subjects and candidates in the Republic of Croatia do not efficiently use e-marketing tools in their campaign. Of course, political parties and candidates cannot disregard the popularity of e-marketing, hence starting their web pages and social networks profiles. There is an impression that the aforementioned activities were carried out because they are obvious. Market research did not notice a strategic campaign and a marketing process implemented through e-marketing tools. Discouraging is the fact that candidates do not reply to messages during elections and do not lead individual campaigns through which they could accomplish fulfillment of personal goals. The conclusion is how political e-marketing did not reach its potential on the political market of the Republic of Croatia. The hypothesis mentioned is supported by the fact that using e-marketing tools in electoral campaigns is an uncharted territory. Results can be used to promote political marketing and use of e-marketing tools, as well as serve as a framework for further research to marketing experts and political subjects

LITERATURE

1. Bongrand, M. (1997) *Politički marketing*, Beograd: Plato.
2. Panian, Ž. (2000) *Internet i malo poduzetništvo*. Zagreb: Informator.
3. Stilin, Ž. (2018) *Politički marketing u digitalnom okruženju*. PhD thesis. Osijek: University of Josip Juraj Strossmayer in Osijek.
4. Tomić, Z. (2014) *Politički marketing*. Mostar/Zagreb/Sarajevo: Synopsis.
5. Tomić, Z., Spahić, B. & Granić, I. (2008) *Strategija izbornih kampanja*. Mostar/Zagreb/Sarajevo: Synopsis.

KORIŠTENJE ALATA E-MARKETINGA U POLITIČKOJ KAMPANJI

SAŽETAK

Izborne kampanje se javljaju nastajanjem modernih političkih stranaka krajem 18. stoljeća u Sjedinjenim Američkim Državama, odnosno u prvoj polovici 19. stoljeća u Europi. Definiraju se kao organizirane aktivnosti čije je obilježje masovna komunikacija. Kampanje se mogu dijeliti na pozitivne, negativne i usporedne. Pozitivne kampanje povjerenje birača nastoje ostvariti promicanjem pozitivnih karakteristika političkog subjekta. Negativne kampanje povjerenje birača nastoje ostvariti napadima na suparničku stranku ili kandidata, dok usporedne kampanje pokušavaju dobiti povjerenje birača uspoređivanjem stranke, kandidata i političke ideologije s konkurentnom strankom. Politički marketing se najviše koristi u vremenu prije i za vrijeme izbora. Cilj svake kampanje je pridobiti potporu političke javnosti, odnosno dobiti planirani broj glasova. Postoje tri cilja svake kampanje: povećanje odaziva na izbore, objavljivanje kvaliteta političkog subjekta i prikupljanje novca, te regrutiranje aktivista kampanje. Politički subjekti svojim programom nastoje utjecati na birače, o kojima ovisi hoće li izborna kampanja biti uspješna ili ne.

Politički marketing u realizaciji svojih ciljeva koristi brojne tehnike i sredstva. Najčešće metode preko kojih se odvija propaganda političkog marketinga su: promotivni materijali, plakati, letci, novine, newsletteri, oglašavanje u tisku, izborni spotovi, materijali za prezentaciju, e-mailovi, banneri, telemarketing... U ovom su radu prikazani rezultati istraživanja čiji je cilj bio utvrditi korištenje alata e-marketinga u izbornoj kampanji od strane političkih stranaka i kandidata na izborima za Hrvatski sabor 2016. godine. Istraživanje je provedeno kroz dva paralelna pravca: anketni upitnik e-mailom političkim strankama/sudionicima izbora i anketnim upitnikom/porukom na društvenoj mreži Facebook svim kandidatima/sudionicima izbora. Glavni istraživački cilj je utvrditi koriste li politički subjekti alate e-marketinga u izbornoj kampanji. Sa znanstvenog stajališta, korištenje e-marketinga u izbornoj kampanji nije istraženo područje. U tom smislu, ovo istraživanje doprinosi boljem razumijevanju primjene e-marketinga u političkom djelovanju. Rezultati mogu biti korišteni u svrhu unaprjeđenja e-marketinga, ali i poslužiti kao okvir za daljnja istraživanja i uspješno političko djelovanje.

KLJUČNE RIJEČI: e-marketing, alati e-marketinga, izborna kampanja, politički kandidat, politička stranka.

DISABLE(D) – INCLUSION IN CULTURAL LIFE OF CROATIA

PRETHODNO PRIOPĆENJE/PRELIMINARY COMMUNICATION

UDK: 316.7-056.26(497.5)

JEL: Z10 ; D78

Autori/Authors:**LIDIJA IVANDA**

PH.D. CANDIDATE

ARS SEPTIMA D.O.O., AO TEATAR ERATO, ZAGREB

SCHOOL OF BUSINES

ZAGREB, CROATIA

lidija@ars7.hr

SANJA ROCCO

MSC

ZAGREB SCHOOL OF BUSINES

ZAGREB, CROATIA

sanja.rocco@pvzg.hr

ABSTRACT

Disability is not only a medical problem, but rather a complex phenomenon that reflects the interaction between the features of the body and the intellect of a person on the one hand, and the characteristics of the society in which he or she lives, on the other. Overcoming the disadvantages faced by people with disabilities requires interventions that will remove all kinds of barriers, from avoiding social prejudices to architectural adaptations and redesigning products. The paper deals with the problem of developing public, with special emphasis on Croatia, which in this case involves not only increasing the number of potential associates and end-users in the cultural industry process but also sensitising general public for others, focusing attention on its invisible, forgotten or ignored part of the disabled. Disabled people do not have special needs; their needs and their right to culture are equal to the needs and rights of all – they just need to be adjusted.

KEY WORDS: disability, inclusion, culture, prejudices, rights.

1. INTRODUCTION

Audience development, which includes an increase of the number of potential associates and end users in the process of cultural industry, as well as the sensitisation of the public to people who are different or differently abled by directing attention to the invisible, forgotten, or ignored part – persons with disabilities, is part of business thinking, and civic consciousness and awareness raised by the authors of this paper, as well as by active participants in creating, designing, producing, and consuming cultural programmes in film, theatre and TV production, as well as in visual communication of projects and products in culture.

The first chapter of this article provides an overview of the basic terms and most important legislation essential to understand and enforce the rights of persons with disabilities, particularly the ones related to culture. Due to the formal and legal basis for gaining rights for persons with disabilities in culture, greater emphasis is placed on legislative provisions, and in order to understand disability and to strive towards more contemporary social models of interpreting disability, some definitions were taken from scientific and professional sources.

The analysis of the current state in the Republic of Croatia and the City of Zagreb, in the second part of the article, lists the acts and pieces of research carried out in the field of culture, as well as a comparable overview of the examples in the rest of the world. Due to the specificities of certain levels and conditions of persons with disabilities, attention will be confined to the part of the population of persons with disability that is able, to some extent, to perform everyday activities, such as visiting the theatre and other cultural institutions. This group includes the following persons: persons with physical disabilities, visually impaired or blind persons, deaf or hard hearing persons, persons with moderate intellectual disability and persons with mild intellectual disabilities. The article highlights the situation in which game design plays an important role in adjustment. Ever since the end of the twentieth century, there have been strong initiatives of development and application of inclusive design – from the concept and adjusting the physical environment to various persons with disabilities to adjusting the products. In that way, when analysing cultural contents, by using architectural and design solutions, we can enable access to cultural institutions and other cultural facilities, but we are also able to adjust the cultural content to persons with disabilities in a way that they can more easily consume them.

Blind people and those with the visually impaired can experience art through audio description, but there are also 3D printed artworks and tactile tours in some famous world museums. The subtitles of theatre plays are a great way to make plays accessible for the deaf and the hearing impaired. However, with the circumstances of the theatre life in Croatia with its never-ending struggle for funding, such initiatives are bound to stay on the level of individual efforts of specialised associations, and the legislation is slow to follow. The research conducted for the purposes of this paper on a small sample of persons with cerebral palsy has discovered that the biggest shortcoming of the satisfactory enjoyment in culture by persons with disabilities is indeed the lack of sufficient adjustment.

Furthermore, the paper puts forward a project idea and realisation of an investigative documentary film under the working title *Disable(d) Prejudice – Year(s) After*. There are eleven persons with cerebral palsy in the film, all of whom perform in a play called *I am*. The concept of the play is based on a collection of the most common experiences of participants in their respective surroundings. The performers are young people of various age and profession, who decided for this project to become amateur actors and speak publicly about their hardships and discrimination they face, but also about their ambitions and wishes.

A part of the project was a research carried out in the form of a poll, in order to determine the impact of the project on its participants – persons with disabilities. The final part of the paper provides a few positive examples from the world and proposals that would help to increase the active participation of persons with disabilities in cultural life.

2. UNDERSTANDING DISABILITY – THE HISTORY

Disability as a condition was first taken seriously in the Western world after World War I, after which there was a greater need for professional care of the survivors. Much later, in the first decades of the United Nations (UN), first initiatives were undertaken to adopt attitudes and policies towards persons with disabilities, the protection of their rights, and the prevention of discrimination (Ingstad, Reynolds White, 1995, p 3). However, it was only in 1981 that a year was proclaimed the International Year of Disabled Persons (IYDP) by the UN (1981), which was when disability was for the first time placed in the global context, with the questions arising of how to view disability in a multicultural world. The fact that disability is a matter of utmost importance was further emphasised by the fact that soon after, a whole decade was proclaimed the United Nations Decade of Disabled Persons (UN General Assembly resolution, 1983). Standard Rules on the Equalization of Opportunities for Persons with Disabilities were adopted by the UN General Assembly on 20 December 1993 (Resolution 48/96). The first Croatian translation of the rules was published by Croatian Association of the Deaf and Hard of Hearing in 1995.

Coleridge (2000, p. 23) states that the term disability was culturally defined in western culture, because most other cultures do not acknowledge it, nor does it define it in that way. The author thereby reminds us that most world cultures, founded on very different mythological/religious systems, are unfair towards various shortcomings of people, connecting them to some sort of (deserved) punishment, targeted marking, intentional testing, or, simply, intended fate.

Buljevac (2013) points to the harmful practice which was present in the USA from mid-nineteenth century to the last victim of the so-called ugly laws in 1974, which attempted to preserve the quality of life of a local community by forbidding certain people with “mutilated or disgusting” deformations from appearing in public, particularly when begging. The same sources also lists examples of harmful practice and laws enforced during the Third Reich: The Nazis would carry out organised media campaigns which were followed by mass murders of persons with disabilities; photographs in daily newspapers and propaganda sports, back then the means of mass communication, showed persons with disabilities as dangerous, unworthy, and humiliating for the society, and citizens were encouraged to report such persons and fulfil their civic duty – cleanse the society of the unworthy. The common features of all cultures which directly or indirectly determined how physical disabilities will be viewed were religion and literature.

A disability theoretician, Davis (1995, p. 41), having analysed various literary works, believes that if a disability appears in a novel, it is rarely its central topic. It is unusual to have the central figure disabled, although minor characters, such as Tiny Tim (C. Dickens, *The Christmas Carol*) are disabled so as to invoke pity or, in the case of Esther Summerson’s scars (C. Dickens, *Bleak House*), to disappear as if cured by love. In the era of visual media, literature has had a much greater impact in its adapted versions: film, television, and theatre. There have been numerous theatre plays, movies, and television series whose main characters had some form of disability or were in any way discriminated against for simply being different. However, they were not necessarily negative characters: *The Little Mermaid*, *The Hobbit*, *X-Men*, *Phantom of the Opera*, *The Ugly Duckling*, *Black Swan*, *The Hunchback of Notre-Dame*, *Game of Thrones*, *Snow White* and *The Seven Dwarfs*, *The Elephant Man*, and many others. Persons with disabilities were largely ignored in the media, and if they did appear, there were either superheroes or victims of fate.

The Convention on the Rights of Persons with Disabilities (CRPD, UN, 2006) defines persons with disability as “those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others” (UN, 2008). It entered into force on 3 May 2008 after the being signed by 20 countries. The Republic of Croatia was one of the first four European countries to sign and ratify the CRPD.

According to the official website of the World Health Organisation (WHO), disability is an umbrella term covering impairments, activity limitations, and participation restrictions. An impairment is a problem in body function or structure; an activity limitation is a difficulty encountered by an individual in executing a task or action; while a participation restriction is a problem experienced by an individual in involvement in life situations. Such problems of human functioning were categorised (The International Classification of Functioning, Disability and Health – ICF) through three connected areas: a) impairments – changes in body functions or body structure, such as blindness, reduced mobility, b) activity limitations – difficulty performing activities such as movement or feeding, and c) participation restrictions – problems of any aspect of living, such as employment or transport discrimination.

The Ombudsperson for Persons with Disabilities in the Republic of Croatia organised in 2009 a debate on the term persons with disabilities. The conclusion supported the use of the unambiguous term from the so-called Sheraton Declaration and the proposed amendments to the Constitution of the Republic of Croatia, adopted in 2010. The unambiguous term refers to the term persons with disabilities – adults because the word idea of a person should be placed first. The same applies to children with disabilities because the treatment and application of various therapy procedures can lead to an improvement of the condition. These terms have met with general approval as they avoid labelling persons according to their disability and their most important features, and because they emphasise the need of the environment and society to make certain adjustments to the abilities of the persons with disability.

The term handicapped is used for the relationship between persons with disabilities and their environment, that is, the lack thereof or reduced ability of equal participation in community life (Mihanović, Tadić & Trputeć, 1999). The usual handicap that persons with disabilities experience are asserted by people in their immediate surroundings or social norms and expectations. Equalising the ability is a “process with which different systems of society and environment, such as services, activities, informing, and documenting become available to everyone, especially to persons with disabilities” (Mihanović et al, 1999). Various terms will stay matters of discussion and debates as long as members of minorities or any other stigmatised groups that are in an unfavourable position are equalised completely with all other society members, that is, until the stigmas completely disappear. Disability is a natural phenomenon, and such attitude in behaviour, writing and speaking will change not only our perception of persons with disabilities, but also help such persons to build more self-confidence and self-respect in order to build up own identity.

Unfortunately, recent times have been marked with a new term – ableism. It shares a similar connotation with racism and sexism, based on the belief that a minority – persons with disabilities – is inferior to the dominating majority – persons without disabilities (Buljevac, 2013). Koppers (2014, p. 24) believes that the term ableism is useful when considering the medical estimation of the quality of life. Furthermore, he defines ableism as a concept that encompasses the social devaluation of persons with disabilities – a word used in a similar way as the words racist, homophobe, or misogynist.

Taking into consideration the various definitions of disability and persons with disabilities, it must be emphasised that various types of diseases are also a form of reduced or complete lack of ability to perform usual activities, albeit temporal ones (persons with disabilities of the one with terminal outcome), so disability should be viewed through a prism of permanent state. Moreover, it must be remembered that every person, sooner or later, at a certain stage of life, will experience some sort of operational difficulties and reduced ability.

3. DISABILITY IN NUMBERS

According to an extensive World Health Report (WHR) from 2011 produced by the WHO, and based on population census estimates for 2010, more than one billion people or 15% of the world’s population live with some form of disability and the number is on the rise compared to the estimates from 1970, when the number was around 10%. The improvement in health care and living conditions has resulted in the prolongation of life expectancy and in the increase of the entire population and with it the persons with disabilities. The aforementioned report states that the number of persons with disabilities is constantly on the rise due to several reasons: world population is becoming older, and the elderly have a higher risk of disability, but globally there is an increase of chronic illnesses related to disability, such as diabetes, cardiovascular and mental diseases. The WHR quotes the results of the World Health Survey (WHS), and the results of the Global Burden of Disease (GBD), which claim that there are around 785 million or 15.6% of adult persons with

disabilities. WHS estimates that around 110 million persons with disabilities have significant operational difficulties, whereas GBD states that 190 million have a severe form of disability (this term is used for conditions such as quadriplegia, severe depression or blindness. According to the same source, disability ranges in its dependence on health conditions, individual's characteristics, and the surroundings. In the new, reviewed report (2019/01/12), the WHO states that there are around one-billion people with disabilities worldwide.

According to the Croatian Health and Statistical Yearbook for 2017, there are 500,724 persons with disabilities in the Republic of Croatia, 302,684 of which are male, 198,040 are female, and 27,160 are children under the age of 15 with developmental difficulties. Integrating persons with disability into society, encouraging and affirming them as creators of culture and users of culture services is one of the more important guidelines of activities by the Ministry of Culture of the Republic of Croatia. Particularly supported are the investments intended for removing architectural barriers meaning that today museums, galleries, and theatres cannot be granted projects without adhering to the standards of accessibility. Despite the legislative requirements, the numbers from 2018 fail to show significant progress. According to The Central Government Portal of the Ministry of Construction and Physical Planning, from a total of 145 museums, only 37 were in 2015 completely accessible, 22 partially, while 86 museums remained completely inaccessible.

In the Operational Report for 2014., by The Ombudsperson for Persons with Disabilities in the Republic of Croatia, the research on the disability access to cultural contents in libraries and theatres revealed the following: the questionnaire was sent to 148 art organisations and theatres, and 24 theatres and 24 art organisations responded; the responses show that 10 theatres are completely accessible, 10 are partially accessible, meaning that they only have 1 entrance accessible, while 7 theatres are completely inaccessible, 12 of them do not have access to the scene, and 12 of them do. Authors would like to point out that most of the art organisations and theatre ensembles of the independent scene do not have their own building or hall for performing activities.

The Strategy of Cultural and Creative Development of the City of Zagreb (for period from 2014 to 2020) includes a planned increase of accessibility of culture and art and supporting all the activities that contribute to the interaction of culture and the marginalised and socially endangered citizens. The indicators of that plan are: an increase in the number of visits and the improvement of the disability accesses to 80% by the year 2020, and the number of projects that include socially endangered and marginalised groups. Projects would contribute substantially to achieving these goals are "Inclusive film and theatre projections" (acquisition of wireless headsets for the blind and visually impaired) and programme which would stipulate at least one play performed in a year for persons with disabilities.

There are several independent and amateur cultural groups and festivals dealing with various aspects of disabilities in Zagreb:

- Dlan Association, which deals with theatre, visual arts, and the deaf
- New Life (Novi život), a theatre for the blind and visually impaired persons, which has a permanent programme on the Vidra stage
- The Blind in Theater – BIT International Festival
- Equal Opportunities Festival
- Children's Rights Festival.

Seeking design solutions, a new general trend in making products, services and information more accessible to those with any kind of disability results in a better overall design, benefiting both the abled and disabled, but mostly in developed countries. New terminology has been coined to describe more inclusive design processes, including terms such as accessible design, barrier-free design, and assistive technology. Universal design is a relatively new approach that has emerged from these models and describes the design elements of buildings, products, and environments that allow for the broadest range of users and applications. Schrot (2009) points out that designing information systems is another area where the needs of the disabled are increasingly being taken into account.

In order to create a more inclusive, multi-sensorial approach in architecture (both in its design and experience), since the 70's when these initiatives began, some researchers and practitioners have developed participative methodologies. Designers are making efforts to include disabled people in the process of co-creation, given the challenge of end-users' inclusion into the design process in general, the variety of adaptations different disabilities require on both, spatial and functional levels.

4. DISABLE(D) PREJUDICE – YEAR(S) AFTER PROJECT

Disable(d) Prejudice – Year(s) After is a research documentary film based on the idea by the author of the project, Lidija Ivanda, about a group of persons with cerebral palsy, amateur actors who in 2013 staged a play called I Am about their experience of living with disabilities. The film shows the process of developing the play, produced by Erato Theatre, and it explores the impacts of the project on three levels: on the level of the participants – persons with disabilities, what has changed since then in their respective private lives, on the level of the audience – how the audience responded to the play, did it change their prejudice on disabilities, and on the level of the interest and possible role of the media – to what extent to may such projects be developed and change social consciousness.

Firstly, the play investigates how working on the play and its performance reflects the individual's' perception of their own respective disability and performing capacities: Has the experience been painful or relaxational, how did working on the play change their lives and their attitudes towards their own disability, and are they ready for new performances?

The second level of the research refers to the impact the play has on the audience. The aim of the project was to gather information on the perception of young people from the viewpoint of their peers and what they thought about the performance and performers, and if their attitudes about persons with disabilities have changed having watched the play, and what they might do to change prejudice against persons with disabilities in their surroundings.

At the same time, the project aimed to explore the media: How much attention is paid to this and other similar projects, how do media treat persons with disabilities that participate in such projects, what are the potential mutual cooperations between science, culture, and media, etc.

The long-term goals of the projects are: a) public and international presentation of the documentary film (festivals, teaching and educational institutions, television) with the aim of raising awareness of the persons with disabilities, b) raising awareness of the need for continuing development and professional training of educators and teachers, c) inclusion into the teaching and educational system, d) encouraging new projects, in which persons with disabilities will participate. The ultimate objective is diverting the attention of the entire public towards the problems that persons with disabilities face, as well as towards the need for their inclusion into everyday social activities.

Only the first level of the research has been realised by 2019.

4.1. Research methods and results of the first research level

During the first part of the filming, in May 2015, the team of Erato Theatre conducted a survey among the participating actors. The participants had already been chosen for the project by some criteria, according to its purpose and main idea: the age (approximately between 20 and 30 years) and Cerebral Palsy (CP) as their diagnosis. That is why we can say that the sample for qualitative research was purposive.

CP is the most common cause of severe neuromotor deviations in childhood. It indicates a group of permanent, but changeable disorders in movement and/or body posture and motor functions. It is caused by brain damage that occurred during pregnancy, in the process of delivery, or before 5 years of age. CP is not a disease, but a permanent condition that can change during a person's life.

The questionnaire consisted of eleven questions, out of which the first four questions were general (age, gender, education and professional occupation). Most of the questions in the questionnaire were closed-ended, except the question 9 – about suggestions to increase the number of visits to cultural events and number 10 – about the influence of participation in the performance/project on their life.

There were 4 male and 7 female participants. The education profile included one doctoral student, three BA degree students, three who completed secondary education, and four administrative assistants (3-year secondary education).

When asked about their favourite leisure activities (more than one response was available), they were most interested in theatre (6), exhibitions and concerts (4), and sports (2).

The frequency of visits to cultural events, according to their answers, was mostly several times a year (5 answers), then once a month (4), and there was also one answer "At least once a week", and one "When given an opportunity".

The main reasons for not consuming cultural programs were: the lack of money (4 answers), technical/architectural obstacles (4), the lack of time (3), unsuitable and unattractive contents (1), the lack of peers who share the same interest

(1), and the lack of will except for concerts (1). One respondent specifically pointed out in his comments that he was negatively affected by the public/environment.

When asked: “What are your suggestions to increase the number of visits to your cultural backgrounds?”, the majority of respondents, four of them, suggested removing of architectural barriers. This was followed by other comments:

- better program and cultural content offer, especially in smaller cities
- reduced ticket prices
- higher personal income
- safe transportation
- a more decent environment, and
- better advertising in smaller communities.

When asked to describe the influence of the participation in the performance on their personal life, the answers were:

“The perception of the public environment has changed.”

“The perception of my own personality has changed”

“The play was an opportunity to express my own opinion about the prejudice and exchange of experiences.”

“It is necessary to talk about it.”

“I talk more freely about the obstacles and difficulties I face”

“I’m very excited to play in the theatre.”

“The performance helped me to look at the situation better, not to surrender and to hunt my dream.”

Although the documentary film had many successful screenings at national and international festivals, and the project has raised public interest, the plan for further development of the project as well as research is, unfortunately, stagnating due to lack of funding and support by relevant institutions.

4.2. Some positive examples

One of the priorities of the Europe Union (EU) Work Plan for Culture 2011–2014 (Council of the European Union, 2010), adopted by the European Commission, is a reconstruction of the system of funding to equalise (50-50) the financing of employees and infrastructure with investments in the projects of cultural and creative industries. Authors want to point out that, according to the Strategy of the City of Zagreb, 80% of the City’s culture budget goes to salaries and overhead expenses, and merely 20% for independent production (0.098%) and institutional programmes.

EU Work Plan for Culture 2015–2018 recommends other forms of funding, such as public and private partnerships, cultural trust funds, angel investors, crowdfunding, sponsorships, donations, EU funding and other funds, all of which would ensure at least removing the architectural and technical obstacles of accessibility to cultural contents. The EU culture programme finances, among others, the Unlimited Access and Disability Arts International organisations, which include British Council, VoArte (Portugal), and the Croatian Institute for Movement and Dance. The aim of this cooperation is the inclusion and promotion of diversity in performing arts an exchange of the best practice among European art organisations.

A successful example of interdisciplinary cooperation between science and art, that is, education and rehabilitation sciences and museums is the Typhological Museum in Zagreb. It was founded in 1953 in order to “gather experts of various profiles and specialities to establish communication that promotes sensibility in the public, breaks down barriers, embraces diversity and does all that with a lot of love” (Bosnar Salihagić, 2011, p. 50). Typhological Museum in Zagreb is the only state-owned museum in the world that deals with persons with disabilities. At the same time, in Great

Britain, there is Graeae Theatre, a professional theatre with permanent repertoire in their own space with persons with disabilities as artists of the ensemble.

Across the Atlantic, there is the National Theater of the Deaf – NTD in the USA, which has been in operation since 1967, and in 2001 it started a professional development programme for deaf actors. In 2004, the programme was introduced as a study programme at Gallaudet University in Washington, DC. Among non-governmental associations that promote and represent a full inclusion of “diseased” artists and artists with disabilities on all levels of production in film, theatre, and television, the one that stands out is Inclusion in the Arts, with its special programme Disability in Entertainment and Arts Link (DEAL). DEAL is an association of artists and professionals founded with the aim of helping writers, directors, producers, technicians, television and studio directors, casting directors, and artists with disabilities in every stage of the creative process – from the initial concept to production, marketing, and distribution. The co-author of this paper, Lidija Ivanda, attended a presentation «Inclusion in the Arts», held by Sharon Jenses, the director, and Christina Bruno, a lawyer. The presentation was held as a part of the International Visitor Leadership Program entitled “Promoting Social Changes Through the Arts” in USA in 2013. Ms Ivanda shared her experience of working together with Mia Kraljević (a person with Down syndrome) who acted in the movie «Lea and Daria».

A positive example of great cooperation between science and media is mentioned in the report by WHO in 2011, the most important parts of which are quoted below:

In India, home to two-thirds of the world’s people affected by leprosy, the BBC World Service Trust – in partnership with two Indian broadcasters, Doordarshan TV and All-India Radio – launched a 16-month campaign on leprosy. The campaign stressed that leprosy is curable, that drugs to cure it are available free throughout India, and that people affected by leprosy should not be excluded from society. The central messages of the campaign were: leprosy is not hereditary, leprosy is not caused by bad deeds in a previous life, leprosy is not spread by touch.

The campaign used 50 television and 213 radio programmes in 20 languages, and 85 000 information posters. More than 1700 live drama shows, 2746 mobile video screenings, and 3670 public events or competitions were performed in remote areas. Independent market surveys conducted before, during, and after the campaign found: Radio and TV spots were heard and/or seen by 59% of respondents which amounts to 275 million people. The number of people who had thought that leprosy is transmitted by touch dropped from 52 to 27% and the number of people who had thought that leprosy is contagious dropped from 25 to 12%. The number of people who had known that leprosy was curable increased from 84 to 91%. In rural areas that have health care services where the media campaign did not run, the number of respondents that had thought that leprosy was medically curable was 56%, but with respondents that saw the staged plays reported 82%. The percentage of the people that claimed they would sit next to a person with leprosy, in rural areas, was 10% lower than at respondents that have seen the play.

5. CONCLUSION

Disability is not only a health issue, but it is also a complex phenomenon that reflects the interaction between bodily characteristics and person’s intellect, on the one hand, and the characteristics of the society in which that person lives, on the other. Overcoming hardships persons with disabilities face demands actions that would remove all types of barriers. In a declarative manner, by adopting international acts and passing laws and declarations, the Republic of Croatia has included persons with disabilities into community life in all its segments. However, the prevailing opinion, ignoring and prejudice still remain greatly present in society.

Physical barriers are the easiest to remove by applying simple designer solutions or new technologies. Special movie projections and specially adapter plays and cultural programmes are most welcome contents that can be offered to the marginalised and the stigmatised groups, although these steps are not inclusive. Children with disabilities and persons with disabilities do not have any “special” needs. Their needs and their right to experience culture (among other things) are equal to the needs of everyone – the culture only needs to be adapted. The aim and aspiration of every community must be a model of human rights in which all society members will feel equal, with the possibility of complete inclusion in the social life of the society.

LITERATURE

1. Bosnar Salihagić, Ž. (2011) Cultural heritage institutions as a corrective for respecting differences. In: Prstačić, M. (ed.) *Art and Science in Life Potential Development*. Zagreb: Znanstvena knjiga. p. 50.
2. Buljevac, M. & Knežević, M. (2013) Visibility of physical impairment in social interactions. *Hrvatska revija za rehabilitacijska istraživanja*, 49(3), pp. 129-138.
3. Council of the European Union (2010) *Work Plan for Culture 2011-2014 - Conclusions of the Council and of the representatives of the governments of the member states, meeting within the Council* [online]. Brussels, 18 and 19 November 2010. 3046th Education, Youth, Culture and Sport Council meeting. Available at: https://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/educ/117795.pdf. [Accessed 27-6-2018].
4. Ingstad, B. & Reynolds White, S. (1995) *Disability and culture*. Berkeley: University of California Press.
5. Koppers, P. (2014) *Studying Disability Arts and Culture: An Introduction*. New York: Palgrave Macmillan.
6. Lansdown G. (2009) *Vidi me, čuj me: Vodič za uporabu Konvencije UN-a o pravima osoba s invaliditetom i promicanje prava djece* [online]. UNICEF: Save the Children. Available at: https://www.unicef.hr/wp-content/uploads/2015/09/Vidi_me_cuj_me.pdf. [Accessed 27-6-2018].
7. Lukić, D. (2014). Theater Facing Performative "Obstacles" – Theater Practice and Disability. *Scena, časopis za pozorišnu umetnost*, 1(4), pp 108-113.
8. Poljičanin T & Benjak T (eds.) (2015) *Hrvatski zdravstveno-statistički ljetopis za 2014. godinu [Croatian Health Service Yearbook 2014]* [online]. Zagreb: Croatian Institute of Public Health. Available at: https://hzjz.hr/wp-content/uploads/2015/05/ljetopis_2014.pdf. [Accessed 11-11-2019].
9. Schelings, C. & Elsen, C. (2017) A Method for Architectural Inclusive Design: the Case of Users Experiencing Down Syndrome. *International Journal on Advances in Life Sciences*, 9(3&4), pp. 151-162.
10. Schrott, H. (2009) Design for Disabled [online]. WIPO Magazine, 5/2009. Available at: https://www.wipo.int/wipo_magazine/en/2009/05/article_0009.html. [Accessed 7-12-2018].
11. Smedley, T. (2015) Children's TV pretends disability doesn't exist [online]. *The Guardian*. Available at: <https://www.theguardian.com/sustainable-business/2015/jul/28/childrens-tv-representation-disability-nickelodeon-disney-bbc>. [Accessed 27-6-2018].
12. WTO (2011) *World Report on Disability* [online]. WTO & World Bank. Available at: http://whqlibdoc.who.int/publications/2011/9789240685215_eng.pdf?ua=1. [Accessed 1-12-2018].

Internet Sources

1. www.eglas.hr. [Accessed 30-5-2015].
2. www.graeae.org [Accessed 28-6-2015].
3. www.ntd.org [Accessed 28-6-2015].
4. www.who.int [Accessed 7-7-2015].
5. www.zagreb.hr [Accessed 17-9-2015].
6. <http://posi.hr> [Accessed 27-6-2018].

OSOBE S (IN)VALIDITETOM - INKLUZIJA U KULTURNI ŽIVOT HRVATSKE

SAŽETAK

Invaliditet nije samo medicinski problem, već složeni fenomen koji odražava interakciju između obilježja tijela i intelekta osobe s jedne strane te karakteristika društva u kojem on ili ona živi, s druge strane. Prevladavanje nedostataka s kojima se suočavaju osobe s invaliditetom zahtijeva intervencije koje će ukloniti sve vrste prepreka: od izbjegavanja društvenih predrasuda do arhitektonskih prilagodbi i redizajniranja proizvoda. Rad se bavi problemom razvoja publika, s posebnim naglaskom na Hrvatsku, što u ovom slučaju podrazumijeva ne samo povećanje broja potencijalnih suradnika i krajnjih korisnika u procesu kulturne industrije, već i senzibiliziranje javnosti za druge i drugačije, s naglaskom na nevidljivi, zaboravljeni ili zanemareni dio osoba s invaliditetom. Osobe s invaliditetom nemaju posebne potrebe; njihove potrebe i njihovo pravo na kulturu jednake su potrebama i pravima svih - samo ih je potrebno prilagoditi.

KLJUČNE RIJEČI: invaliditet, inkluzija, kultura, predrasude, prava.

EXPLORING THE MARKETING STRATEGIES OF KRISHNA CONSCIOUSNESS IN EUROPE

PRETHODNO PRIOPČENJE/PRELIMINARY COMMUNICATION

UDK: 658.8:233(4)
338.48-6:2(4)

JEL: M31 ; Z12

Autori/Authors:**KRISZTINA BENCE-KISS**

PhD

FACULTY OF ECONOMICY, KAPOSVÁR UNIVERSITY

KAPOSVÁR, HUNGARY

bence.krisztina@ke.hu

DR. ORSOLYA SZIGETI

ASSOCIATE PROFESSOR

FACULTY OF ECONOMICY, KAPOSVÁR UNIVERSITY

KAPOSVÁR, HUNGARY

szigeti.orsolya@ke.hu

ABSTRACT

The aim of this paper is to analyze and identify the marketing activities of different communities devoted to Krishna consciousness in Europe, and to develop a model based on these findings to interpret the system devotees have built up throughout the years to gain more followers of the religion. Krishna consciousness is well-known for the marketing efforts of the community; however, the research literature is limited so far concerning the activities they apply in order to reach a wide audience. In 2016 and 2017 a qualitative research was carried out including observations and interviews in five European villages in Hungary, Belgium, the Czech Republic and Germany. The research identified a pattern of a two-step marketing process in all of the four communities. In the first step the communities are promoted as touristic destinations, focusing mainly on tourism and its cultural motives. Here the devotees apply a wide range of methods, such as online media, fliers and organize numerous festivals and cultural events to attract people. In the second phase tourists - who have already taken the first step towards Krishna consciousness by visiting the villages – are informed about the essence and most important teachings of the religion and they can experience many aspects of it via interactive programs, which increases involvement and understanding. The model created contributes to analyzing and understanding the marketing activities of Krishna consciousness more in details. In the long run it can also be extended to other religions, therefore makes the analysis and development of marketing concepts of other religious groups also possible.

KEY WORDS: religious marketing, krishna consciousness, marketing of religions, religious tourism, online marketing.

1. INTRODUCTION

Krishna consciousness is one of the best known religions of their promotional activities, which were initiated by devotees stopping pedestrians on the streets, telling them about the teachings of their Lord Krishna. Nowadays ISKCON (International Society for Krishna consciousness) has numerous churches, villages and visitors' centers all over the world, hosting a large number of festivals, and engaging themselves in charitable activities, while communicating actively online and using the social media. Apparently their system works, as they are able to raise the attention of more and more people in countries far away from India, having barely no cultural similarities with the homeland of the religion (Bence, 2014; Wuaku, 2012). Surprisingly enough, only a few researches have studied the marketing activities and strategy of Krishna consciousness so far, even though the understanding of the processes and activities going on could provide a better overlook on the mechanisms and best practices of religious marketing.

This paper has two main aims. The first one is to analyze and identify the marketing activities of different communities devoted to Krishna consciousness in Europe; and the second one is to form a model based on these findings to interpret the system devotees have built up throughout the years to gain more followers of the religion.

In this paper the literature of marketing religions is discussed, followed by the introduction of the methodology applied. In the main body of the paper four countries and case studies are introduced based on the analysis of five villages devoted to Krishna consciousness.

2. LITERATURE REVIEW

Marketing of religions had been a topic of research only in the past few decades (Iannaccone, 1990), and different researchers have taken various approaches on it. The marketing strategies of religious communities – and also the way of studying them – varies a great deal in many aspects. In this paper religion is understood as set of beliefs, values, norms and traditions and even a state of mind, which are offered to the potential devotees by different churches and religious groups; and which are highly characterized, but not solely defined by the products and services offered by the church; based on Iannaccone (1990, 1992, 1995, 2016), Iyer et al, 2014; Kuran, 1994; and Shaw and Thomson, 2013.

Abela (2014) directed the concept of religion towards being more abstract and intangible than the definition above suggests; like a household commodity, claiming that the marketing of religion falls into the category of social marketing. Social marketing means those forms of marketing activities, where the focus is not on selling a product or service, but on spreading certain ideas, beliefs or worldviews among the public, which ‘may involve modifications in their attitudes, values, norms, and ideas’ (Brenkert, 2002, p. 16). This definition fits religion as well, which suggests that social marketing may be applied to market religions. Fine (2009) also included religions in his book of Marketing the Public Sector, and proposed an expanded marketing model of the 7P’s of social marketing, changing three of the original 7Ps: ‘people’, ‘process’ and ‘physical evidence’ are replaced by ‘producer’, ‘purchaser’ and ‘probing’.

Table 1. The difference between the 7Ps of service marketing and social marketing

7P of service marketing	7P of social marketing
Product	Product
Price	Price
Place	Place
Promotion	Promotion
<i>People</i>	<i>Producer</i>
<i>Process</i>	<i>Purchaser</i>
<i>Physical evidence</i>	<i>Probing</i>

Source: own edition based on Fine (2009) and Kolos & Kenesei (2007)

The social marketing approach focuses on the intangible part of religion by including the human side of both parties: producer and purchaser. This model raises the attention to the importance of the churches offering religious services and the nature of people potentially receiving it; however, probing or market research is less applicable to religions than the 7P of service marketing. Another weakness of the social marketing approach is the lack of the focus on physical evidences, which play important role in characterizing religions (e.g. design of churches and sacred items). Bence, 2014; Hashim & Hamzah 2014; Iyer et al, 2014; Kuran, 1994; and Shaw & Thomson, 2013 took a different approach and focused especially on the resemblance of religions to services, services provided by religious organizations; and different product categories as the material and tangible realizations of the services and the religion. This approach has also been justified by many researchers, claiming religions do have some common features with services in many aspects, such as being intangible, not measurable, perishable and pretty heterogeneous as well; and if we consider religious services themselves, then we can clearly see that applicability of the services marketing models (Bence, 2014; Hashim & Hamzah 2014; Iyer et al, 2014; Kuran, 1994; Shaw & Thomson, 2013).

However, the marketing of religion is a sensitive topic: ‘present and potential consumers’ meaning members and potential members of the church may regard promotion inappropriate for a religious organization - which is supposed to be non-profit - to engage in commercial activities. According to the researches many of the people generally think that churches doing marketing and for-profit activities – even though it is usually necessary for their survival – undermines the credibility and the sacredness of a church (Attaway, Boles & Singley, 1997; McDaniel 1986; McGraw, Schwartz & Tetlock, 2011). In the past years the general attitude has slightly changed, and also the clergy and church members are more accepting towards a certain level of commercial activity, which aims to provide the survival of the religious group, but according to McGraw et al (2011) a lot depends on the strategy itself. Marketing strategies will work well, if people cannot misunderstand the aims of it: when it suggests that the church is seeking for material benefits, people are more likely to strongly oppose it. If the aim is visibly good, such as renovating a church or supporting a charitable case, the public is likely to accept that there are problems even churches cannot solve without money (Ann & Devlin, 2000; Bence, 2014; McDaniel 1986; McGraw et al, 2011).

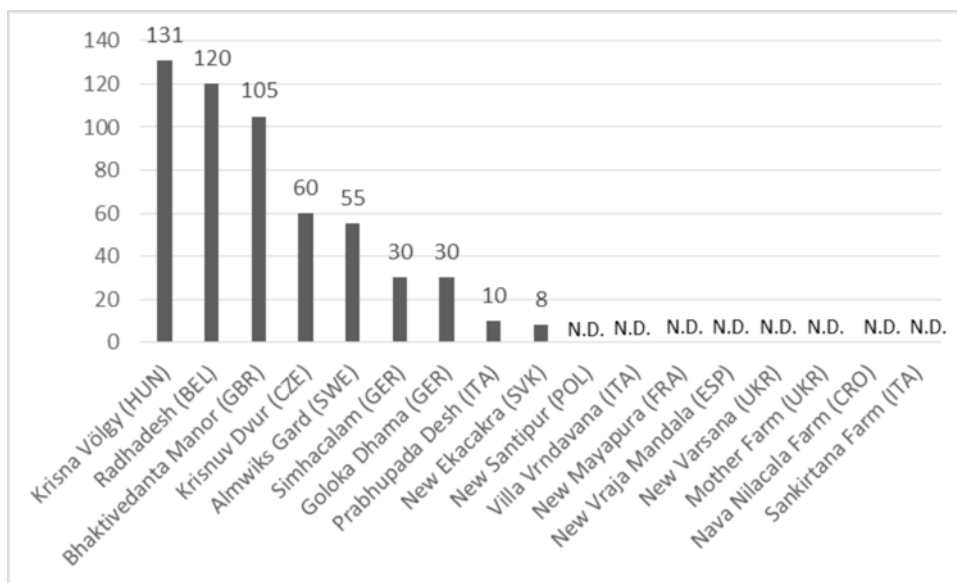
3. METHODOLOGY

The desired outcome of the research is to identify a model suitable to describe the marketing activities applied by communities devoted to Krishna consciousness in Europe. The primary reason for choosing this religious group was a previous research (Bence, 2014), which has shown that in Hungary devotees of Krishna consciousness apply the tools of marketing consciously and openly; therefore stand out among other religions in the country. The level of consciousness and the range of the tools applied raised the interest towards an international analysis and comparison of the marketing activities of communities devoted to Krishna consciousness. The study focuses on the activities of European communities, since this is the continent, where we may find numerous groups in different countries established approximately at the same time and under similar conditions, which provides a good basis for analyses.

The number and location of the devotees of Krishna consciousness in each country is really hard to determine, as many of them practice their religion at home, without any church connections. According to the database of the International Society for Krishna consciousness there are 30 countries in Europe, where there is at least one religious center or temple of Krishna consciousness - which suggests a certain level of organized religious activity in these places; so presumably there are also marketing activities on these places. After studying the database, the sample was selected based on the presence of marketing activities in each location. The first minimum requirement of being part of the research was to have online presence. Since most of the religious centers have at least a basic web page, this criteria was easily fulfilled. Following the identification of the potential subjects of the research, an analysis of the websites was carried out to get an overview on their level of online presence. The analysis has shown that larger variety of marketing activities were to be found in those countries, where not only a center or temple, but also a village existed, so this was introduced as a second filter when choosing the sample (ISKCON, 2018).

By 2018 we register eighteen villages devoted to Krishna consciousness in different European countries, giving home to variable number of devotees, as Figure 1 shows. The initial data inquiry, beginning in 2016, was sent back by representatives of seven out of the eighteen villages; these are the ones for which population data is shown in Figure 1.

Figure 1. Population of the villages devoted to Krishna consciousness in Europe



Source: Own edition based on the data provided by the villages

So far, as Table 1 indicates, four out of the seven villages were visited with an aim of field research, which included personal visits in each of the villages, documented by photos and notes on the facilities available and the special characteristics of the area. Table 1 shows the most important general data on the four villages in Hungary, Belgium, the Czech Republic and Germany.

Table 2. The five villages analyzed in the research

Village	Country	Founded	Population	Main profile	Facilities available
Krisna Völgy	HUN	1993	131	Tourism and organic products	<ul style="list-style-type: none"> • Temple • Restaurant • Guest house • Gift shop • School • Cowshed center • Bio garden • Apiary
Radhadesh	BEL	1980	120	Tourism and cuisine	<ul style="list-style-type: none"> • Temple • Restaurant • Guest house • Gift shop • Bakery • Museum • Bookshop • University
Krisnuv Dvur	CZE	1990	33	Flour and biscuit production	<ul style="list-style-type: none"> • Temple • Flour-mill • Cowshed center • Apiary
Simhachalam	GER	1980	30	Guest house	<ul style="list-style-type: none"> • Temple • Restaurant • Gift shop • Guest House • Cowshed center
Goloka Dhama	GER	1998	30	Volunteers	<ul style="list-style-type: none"> • Temple • Restaurant • Gift shop • Guest House

Source: Own edition based on the observations and interviews

The method chosen for the research was qualitative due to the small size of the sample; being so few villages in Europe. Also, the initial aim of the research is to discover and understand the marketing strategies of the communities devoted to Krishna consciousness and to get a better insight into their practices, which requires qualitative research techniques. Following the initial inquiry for data and the analysis of the online appearances; the second stage of the research consisted of a field research in each of the villages, which took place in the years 2016 and 2017. The field research consisted of two essential elements: the first part was made up of semi-structured observations in each of the villages, searching for common patterns in physical appearance, ideas and marketing activities, while the second stage consisted of semi-structured in-depth interviews in each of the communities with people involved in the marketing processes. This paper introduces the findings of the semi-structured observations, which included a visit in the temple of the village, a general overview of the whole village area, visit in the facilities such as the restaurant, guest house and gift shop, participation in a guided tour – if available – and collection of the fliers and printed materials available in the visitors' center (Malhotra & Simon; 2009).

During the field research the main goal was to observe and identify the main marketing tools applied by each of the communities in order to find similarities or differences in their activities. Notes were taken of each facility and marketing tool applied by the religious communities of each country, including the villages; and the data collected through observation were summarized in a database. After the data collection the molecular model – created by Shostack (1977) and applied by Srinivasan (2012) – was used to evaluate and summarize the most important characteristics of each country. Shostack and Srinivasan used the molecular model to visualize the good and service elements of certain products, which owned both tangible and intangible characteristics. This research applies an altered molecular model (based on the original work of Shostack) in order to distinguish and visualize the marketing activities of communities devoted to Krishna conscious and to identify the subject of each marketing activity (Shostack, 1977; Srinivasan, 2012).

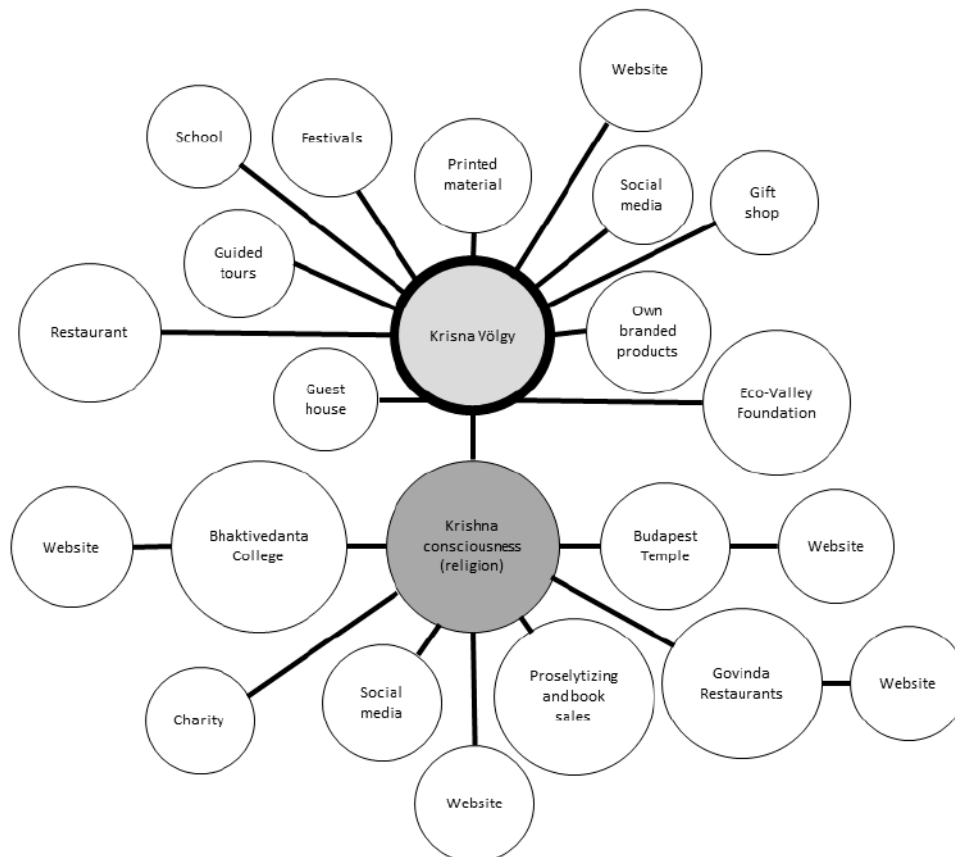
In the following molecular models of the marketing activities of the five communities in four countries are drawn, in order to visualize their main characteristics. The four molecular models represent one country each, based on the initial online marketing analysis and the observations and documentation carried out during the research. During the in-depth interviews the data collected through observations was validated and clarified. The molecular models contain all the means the devotees apply to make people get to know and understand their religion.

4. RESEARCH RESULTS

After carefully analyzing the methods devotees use to promote the religion it became clear that some things have not changed in the past decades: the traditional way of promoting the religion was talking to people on the streets and selling books, ever since the appearance of the religion in the Western World in the 1960's (Kamarás, 1998). These methods are still visible nowadays, and they could be found in all the countries examined as well. However, marketing

and technology have developed a lot in the past fifty years, and people devoted to Krishna do consciously apply these methods in order to fulfill the most important goal set by their spiritual leaders: to spread the teachings of Krishna. The analysis had also shown that the 7Ps – of both service and social marketing – are cannot be satisfactorily used in order to analyze the marketing of Krishna consciousness: while aspects like probing and price are not so significant in the case of religions, some elements characteristic of marketing Krishna do not fit into any of the Ps. In the following section the cases of four countries are analyzed, identifying the differences and highlighting the uniform features within the four contexts, with an aim of building a model, which fills in the gaps identified in the former ones.

Figure 2. Marketing model of Krishna consciousness in Hungary.



Source: Own edition based on the observations and interviews

The first country – and community – analyzed was Hungary, where the former research of 2014 (Bence 2014) had shown an interesting phenomenon: even though there is a religious center in Budapest and the religion operates an own website and a Facebook page of 7969 likes, most of the activities and communication are directed towards the village, Krisna Völgy. The website and the Facebook page provide general information about the religion and the events happening in the country. The website gives an overview on the philosophy of Krishna consciousness and the lifestyle of devotees, but directs the visitors towards Krisna Völgy. The Facebook page gives insight into the past events and most important festivities, some happening in the Budapest Temple, and Bhaktivedanta College, but the majority of the pictures and posts focus on Krisna Völgy as well.

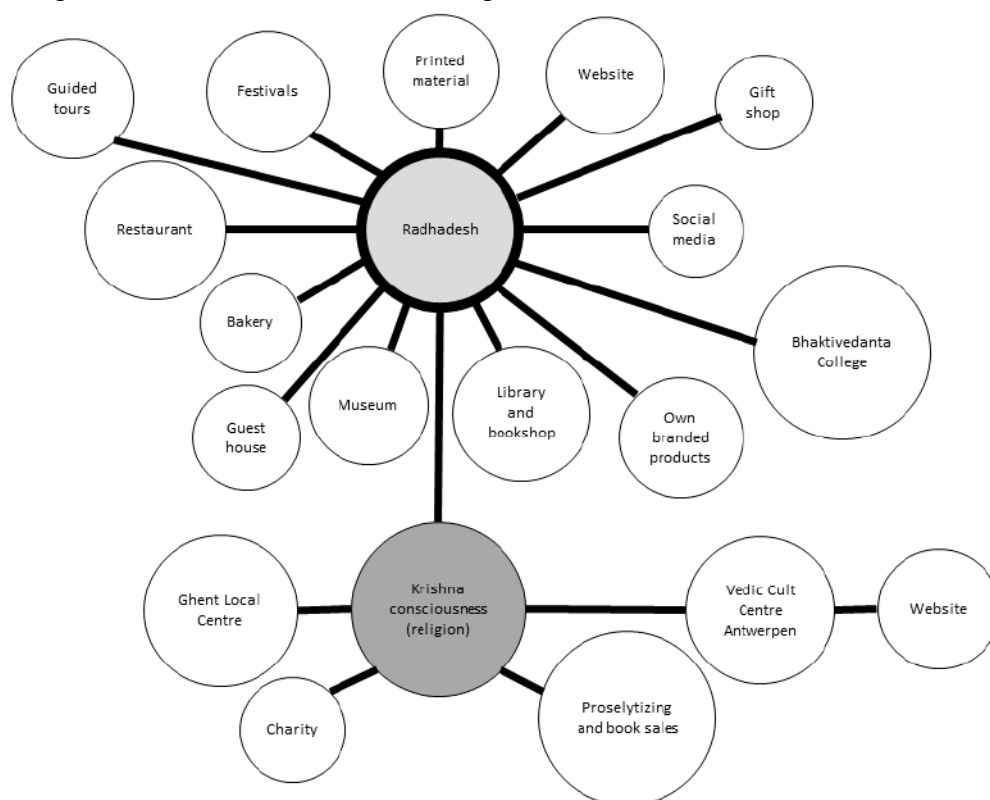
There are Govinda Restaurants also operating in some cities of Hungary (in Budapest, Eger, Debrecen), providing vegetarian food for eating on the spot and take-away. In Hungary there is one central website, where one may find all the restaurants and their offers. In their case – obviously - the content needs to focus on the menu and vegetarian or vegan nutrition, and not so much on Krishna consciousness, so they represent only a small segment of the life devoted to Krishna. However, the site redirects to other institutions of the country: Krisna Völgy, the temple in Budapest and the university in Budapest.

A great achievement of the Hungarian community was to establish a school and a university operated by the religion. There is a Gurukula in Krisna Völgy, where the local children can learn, but so far there had been no precedent of hosting a student from outside the community, so this does not have such a big promotional value at the moment. On the other hand at the Bhaktivedanta University in Budapest education focuses mostly on theology and yoga practices and it is open to the public as well. This means a powerful way of spreading valuable knowledge about Krishna consciousness – though the audience is pretty much limited to those, who are already interested in the religion and the lifestyle as well.

As we could see, many of the online platforms direct people towards Krishna Völgy, the village near Somogyvámos, which has a strong online presence including social media. In Krishna Völgy visitors – after paying an entry fee - can meet devotees, participate in guided tours, eat in the canteen, sleep in the guest house and take part in certain worships and festivals, which provide a glimpse into the daily life of Krishna-conscious people. Visitors can buy souvenirs and organic comestible products and soaps labeled with the Krishna Völgy brand. Since the foundation of Krishna Völgy there are more and more different festivals, where special programs, such as dance exhibitions, traditional weddings, yoga workshops and food tastings attract hundreds of people a day. The biggest of these is the Fair of Krishna Völgy, but numerous other sacral events take place as well. In the past years the number of thematic camps increased as well, which include yoga, cooking, meditation and lifestyle coaching.

The community operates a modern, informative, up-to-date website in multiple languages, focusing primarily on tourism and events. The main focus of the page is not the religion itself, but on the cultural experience and the traditional events of Krishna consciousness. The community in Krishna Völgy is active on Facebook (12.938 likes) and Instagram as well, where they mainly post still life photos or scenes of the daily life of the community, which is a little bit more introductory to Krishna consciousness, but still does not create the feeling of marketing the religion at all. Also, if we look at the more promotional activities in social media, they exhibit Krishna Völgy as touristic destination, not as a religious center in the first place. Printed materials are available in the community and are spread in tourist offices, so they are also primarily used for attracting visitors to the community, providing information about the upcoming programs and opportunities.

Figure 3. Marketing model of Krishna consciousness in Belgium



Source: Own edition based on the observations and interviews

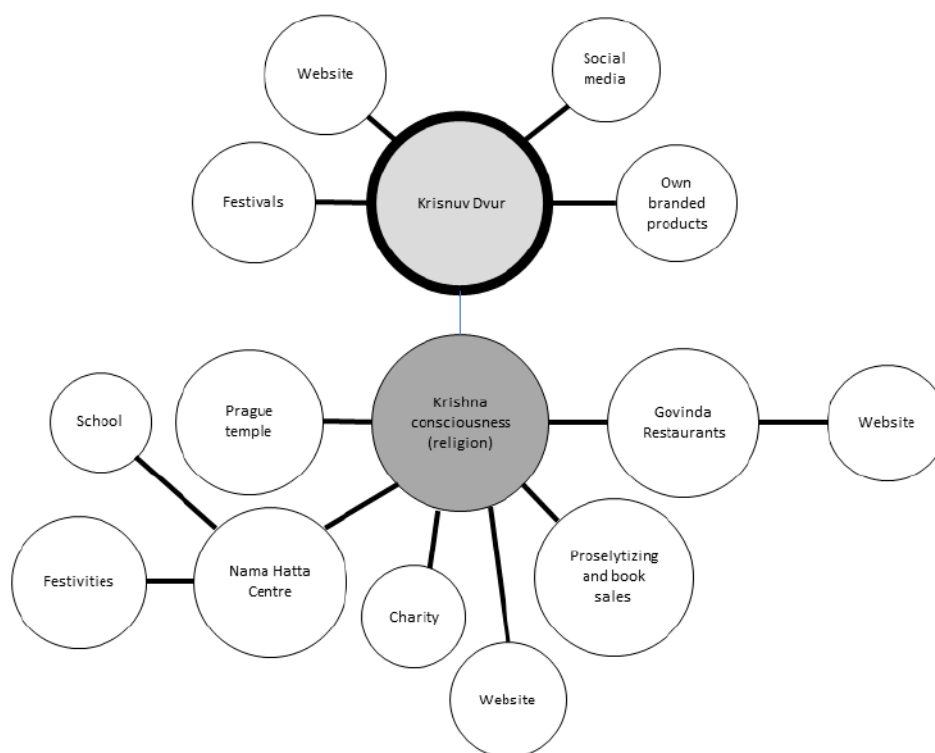
Belgians on the other hand do not maintain a national site at all, the only web pages available are those of Radhadesh, the village and the cultural centers in two other cities. In Belgium there is no separate temple, but two cultural centers in Ghent and Antwerp serve the same purpose as the temples, while fulfilling the aim of a gathering point and an event location as well. These facilities also operate their own websites with general information on the religion; they primarily promote cultural programs, festivities organized by the institution, events and learning opportunities concerning Krishna consciousness and bhakti yoga.

In Belgium Govinda Restaurants are not spread yet, the only one is in Radhadesh at the moment so they are missing from the model as a separate unit.

Just like in Hungary, in Belgium there is also a Bhaktivedanta University, where education focuses on theology and yoga practices, but the Belgian one is an integrated part of Radhadesh, far from the capital, so while in Hungary people interested in yoga and Eastern religion may participate without difficulties, in the case of Belgium the audience is more restricted to those, who are already familiar with the religion; and also moving to the countryside to gain admission requires more sacrifice, which limits the number of applicants even further.

It was visible that the online communication of Krishna consciousness in Hungary focuses a lot on Krisna Völgy. This phenomenon is far more emphasized in the case of Radhadesh, as the website of the village serves as the official site of the Krishna conscious community in Belgium as well. This site provides a general introduction of the religion in general and informs about the village and the upcoming events too. The Belgian community is also active on Facebook (13.161 likes) and Instagram, applying the same guidelines as Krisna Völgy: they enhance the beauty and attractiveness of the place and aim to involve more people in the programs. Just like Krisna Völgy, Radhadesh is also prepared to host many tourists at a time: there are guided tours available, where devotees tell people about their daily life in the community and explain the core of Krishna consciousness briefly. Visitors may eat in the restaurant of Radhadesh, buy pastries in the bakery and stay overnight in the guest house and buy souvenirs, sacred items and Radhadesh-branded fudges in the gift shop. If people would like to get more involved in the religion, they may look at the Museum of Sacred Arts and gain more information in the bookshop and the library, but for Radhadesh it is also true, that both in online and offline communication they emphasize that Radhadesh is an interesting cultural experience and a good place to visit and people get more exposed to the religion only during their visit, especially the guided tours.

Figure 4. Marketing model of Krishna consciousness in the Czech Republic



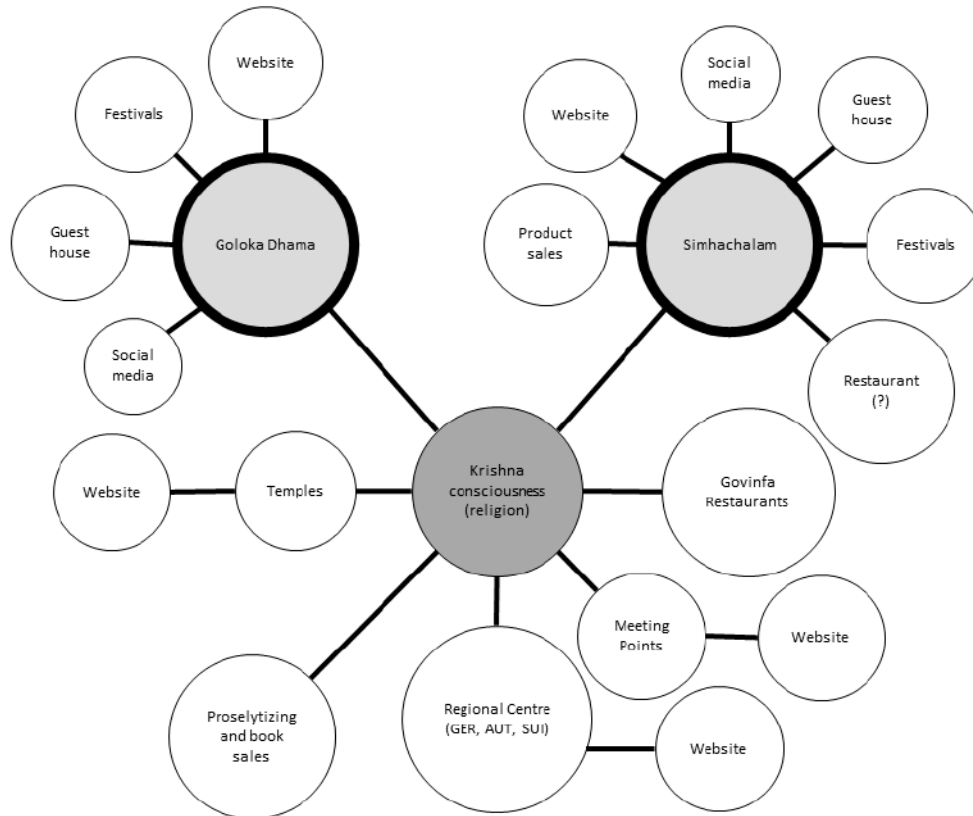
Source: Own edition based on the observations and interviews

Just like Hungary, the Czech Republic also operates a dedicated web page of Krishna consciousness, but here too, the site contains only basic information about the national community and redirects to other local pages. There is also a temple in the capital, serving as religious center, just like in the case of any other religions, operating together with the only Govinda restaurant of the country. Besides this, in the Czech Republic there is also a small cultural center called Nama Hatta Centre in Lutotin, on the Eastern side of the country, where a Gurukula weekend school and an event location may be found as well. However, the school is not equal to the primary school of Hungary, this one teaches some basics, but the audience is limited so far.

Krisnuv Dvur in Figure 4 is visibly less developed both in terms of marketing and infrastructure than the other two villages, however, the village serves the same aim in many senses. The devotees of Krisnuv Dvur are also operating a website (which is available only in Czech language) and are active on Facebook, though their page is less popular as the previous two communities (1850 likes), and they do not own an Instagram profile. However, the website and the Facebook page generally follow the same structure and strategy as Krisna Völgy and Radhadesh, though a bit less actively: the website provides general information about the location and the visiting opportunities, while on Facebook life scene pictures and videos and events are posted continuously. Though in the case of Krisnuv Dvur there is no strong marketing activity directing people towards visiting the community yet, there are possibilities to go around the area, where information boards indicate what the visitors can see, and though there is no dedicated guest house, staying overnight is also possible. There are no official guided tours, however devotees take the time to lead people around and talk about the community and the religion upon request.

However, Krisnuv Dvur is still more developed than it seems at first sight: besides being the supplier of organic, high quality flour for local bakeries in the Czech Republic, they also sell a wide range of Krisnuv Dvur branded cookies and biscuits in the area, which also carries the name of the community and the reputation of the religion.

Figure 5. Marketing model of Krishna consciousness in Germany



Source: Own edition based on the observations and interviews

Simhachalam and the model of marketing Krishna consciousness in Germany (Figure 5) stands a bit out of the line of the other communities, which can be related to multiple reasons. First of all, one could be the fact Germany is significantly larger than any of the countries studied above. The large geographical distance may cause that the general structure of the religious community is slightly different, more decentralized and operating more than one villages, temples and religious centers. Traditional forms of promoting Krishna consciousness, such as proselytizing, selling books and doing charity services do also happen, just like in any other countries. But in Germany there is not only one, but two farming communities, and Simhachalam and Goloka Dhama. Unlike in the previous cases, Germany operates a Regional Centre in Burg Hohenstein, which is also partially responsible for the communities in Austria and Switzerland. This is however the only one of the four countries analyzed, where we can speak about a dedicated authority to manage, support and supervise communities, temples and devotees in the country. Also, there are numerous temples in bigger cities all over the country, and there is a network of meeting points – centers or common rooms, where devotees may meet, gather, share experiences and organize events. All of these entities have their own websites, providing information about the upcoming programs and opportunities. These hubs are maintained primarily for present devotees, but other people interested in the programs are also welcome to the events, so these also have a certain level of marketing value.

Many Govinda Restaurants exist in the country, and as it may be expected, their number is far larger than in the countries studied before, but schools or universities cannot be found in this Germany yet.

However, if we take a closer look at the two farming communities and the marketing activities concentrated around them, we can recognize exactly the same pattern as in Hungary, Belgium or the Czech Republic. Both Simhachalam and Goloka Dhama have websites, though they are not so much focused on tourism, as we could see in the case of Krishna Völgy and Radhadesh; they are more dedicated to devotees around the area, to offer a gathering point and daily worships. However, the worships and the daily events, as well as the festivals are open to the public too – and the latter are also promoted, at least locally. Both Simhachalam and Goloka Dhama welcome passers-by to join for a meal in their canteen, but there is no visible promotion of it, and the canteen cannot actually be called a restaurant, since it is just the kitchen and the place where the locals eat, but guests are also welcome. In both communities there is also a small guest

house to welcome visitors, who are usually devotees from other areas. The possibilities to stay overnight are open to civilians as well, but they are not promoted except for the website, so, according to the manager of the guest houses, the arrival of guests, who are not devotees is pretty accidental. As the leader of the guest house emphasized, at the moment the community has no real capacity to promote itself to the larger public. Simhachalam is basically prepared for hosting a limited number of visitors, and there is an intention to follow the example of Krisna Völgy and Radhadesh, but they still have a long way to go – and there is also a necessity of a good leader with a vision and a strategy to reach this goal. Goloka Dhama is in the same situation; at the moment not yet ready for enhanced touristic activity, but they are developing in product sales. This part of marketing has been declining in Simhachalam in the previous years. A decade ago candles produced in the community were the main profile, but since then it had stopped, so now the only products are Indian pre-prepared items and non-branded cookies, which are produced locally, but they are also sold irregularly.

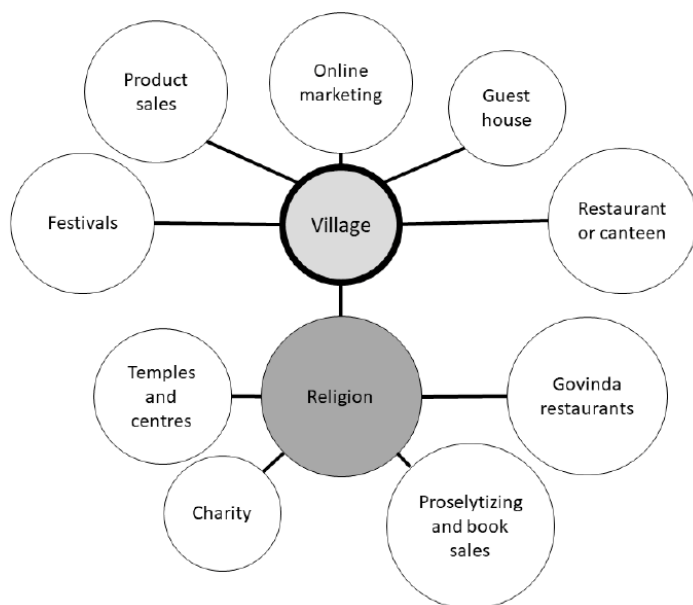
The Facebook page of Simhachalam is the most followed of all the communities examined (17.640 likes), however, the contents here are pretty different from the above mentioned ones, they are mostly only broadcasting the daily worships and events, for which the audience is more likely to be present devotees than people curious about the religion. The leaders of the village do have the intention to focus more on the touristic aspects both in online presence and marketing activities – this is also visible in the promotion of certain festivities and events – but at the moment their knowledge, capacities and resources do not make it possible. The Facebook page of Goloka Dhama – though far less followed (4.768 likes) is also restricted mostly to daily worships and promoting events.

5. CONCLUSION

After analyzing the five villages in four countries, we could see that the most significant similarity of the four models is the presence of a village or a farming community in each of the countries, and the intensive marketing activities concentrated around them, especially in Hungary and Belgium.

So if we take a look at the big picture, we can see that the villages analyzed are representing Krishna consciousness, trying to make it more understandable and tangible to the wide public. Most of the marketing activities are directed towards attracting people to these locations instead of the religion itself. At the moment not all the communities are able to follow this pattern as Krisna Völgy and Radhadesh do it, but the smaller communities look at these villages as the examples for best practices, so they are also working on following the same path. Figure 6 introduces the summarized model based on the findings of the analysis of four countries.

Figure 6. Summarizing model of the two-step marketing model



Source: Own edition based on the observations and interviews

We could see that in all of the countries there are some forms of marketing directed towards the religion, such as proselytizing on the streets, selling books and engaging in charity activities. Some countries also operate a web- or Facebook page for the religion and some institutions, such as temples, schools and cultural centers, but in most of the cases these communication channels serve to direct people towards the villages, which are primarily marketed as touristic

destinations. This is the most important characteristic of marketing Krishna consciousness, which does not fit into the 7Ps, as the villages are more than the physical evidences of the religion. Villages devoted to Krishna consciousness serve both as the focal point of the marketing activities attracting people towards the religion; and the most important mean of introducing people to Krishna consciousness. This suggests that there is a two-step marketing process in focus, where in the first step the religion is not expressed; the aim is attracting the audience to a touristic destination based on cultural motives. Only after this does the religion appear in a more expressed way, and people will get familiar with it without even realizing that they are involved in a promotional process. This practice makes the marketing activities less visible, just like precious researches suggested; and the audience experiences it more as a learning process than promotion, while they are provided with the same information, just by different means. During the research the village itself and all the physical evidences and tools supporting touristic activity in the communities (such as guest houses, restaurants, museums, guided tours and branded products transmitting some aspects of life devoted to Krishna consciousness) were identified as elements of the toolbar devotees apply to enhance the recognition of the religion.

Numerous limitations and implications are inherent in this paper, also due to the early phase the research is still in. First of all the sample at the moment is really small, which was suitable for initially finding the patterns and crucial areas to focus on; however, the aim of the author is to carry out a comprehensive analysis of communities devoted to Krishna consciousness in Europe. For this a thorough research of the European communities is required, including those countries, where no villages or farming communities exist at the moment. However, this research implies the need for the application of a model studying the marketing of Krishna consciousness, which contributes to the theoretical background of studying religious marketing. The model should be tested on all the countries, where there is a possibility of two-step marketing, meaning that these villages exist; also extending worldwide, to be able to justify the validity of the model. Further analysis should cover the case of those countries, where Krishna consciousness is present, but there are no villages to act as the core of the marketing strategy.

Furthermore, the identification of the two-step marketing model of Krishna consciousness in Europe raises the need for the measurement of the efficiency of this model. This research has already revealed that there are significant differences among the different countries and communities in terms of the acceptance and recognition of the religion, therefore further research should also investigate if there is a relationship between the general acceptance and knowledge of the religion, the two-step model and the marketing activity of the communities in the second step, upon attracting tourism to make people more aware of Krishna consciousness. These questions require a carefully designed quantitative research in order to provide trustworthy data applicable for further analysis and conclusions. When tested and validated, the model may support the development of those countries, where Krishna consciousness is not widespread yet and the foundation of more villages may be urged, which can contribute to the income and acknowledgement of the religion. This model may provide support for other new religious movements as well, which strive with gaining more followers in Europe or in other countries with cultures differing from that of their origin.

LITERATURE

- Abela, A. V. (2014.) Appealing to imagination: Effective and ethical marketing of religion. *Journal of Business Research*, 67, pp. 50-58.
- Ann, S. & Devlin, J. F. (2000) American and British clergy attitudes towards marketing activities: A comparative study. *Service Industries Journal*, 20(4), pp. 47-61.
- Attaway, J. S., Boles J. S., & Singley R. B. (1997) Exploring Consumers' Attitudes toward Advertising by Religious Organizations. *Journal of Marketing Management*, 13 (Fall/Winter), pp. 71-83.
- Bence, K. (2014) *Appearance of marketing in religion – someone, who admits it* [online]. Master's Thesis. Budapest: Corvinus University of Budapest. Retrieved from: Corvinus TDK és Szakdolgozat Gyűjtemény.
- Booms, B. H., & Bitner M. J. (1981) Marketing strategies and organization structures for service firms. In: Donnelly, J. H. & George W. R. (eds.) *Marketing of Services*. Chicago: American Marketing Association, pp. 47-55.
- Brenkert, G. G. (2002) Ethical challenges of social marketing. *Journal of Public Policy & Marketing*, 21(1), pp. 14-25.
- Fine, S. H. (2009) *Marketing the public sector – Promoting the causes of public and non-profit agencies*. New York: Routledge.
- Hashim N. & Hamzah M. I. (2014) 7P's: A literature review of Islamic marketing and contemporary marketing mix. *Procedia - Social and Behavioral Sciences*, 130, pp. 155-159.
- Iannaccone, L. R. (1990) Religious practice: A human capital approach. *Journal for the Scientific Study of Religion*, 29(3), pp. 297-314.
- Iannaccone, L. R. (1992) Religious markets and the economics of religion. *Social Compass*, 39(1), pp. 123-131.
- Iannaccone, L. R. (1994) Why Strict Churches are Strong. *American Journal of Sociology*. 99(5), pp. 1180-1211.
- Iannaccone, L. R. (1995) Voodoo economics? Reviewing the rational choice approach to religion. *Journal for the Scientific Study of Religion*, 34(1), pp. 76-89.
- Iannaccone, L. R. (2016) Rational Choice: Framework for the scientific study of religion. In: Young, L. A. (ed.) *Rational Choice Theory and Religion: Summary and Assessment*. New York: Routledge, pp. 25-44.
- Iyer, S., Velu, C. & Mumit, A. (2014) Communication and marketing services by religious organizations in India. *Journal of Business Research*, 67, pp. 59-67.
- International Society for Krishna Consciousness (2018) *Farm and Rural Communities* [online]. Available at: <http://centers.iskcondesiretree.com/farm-and-rural-communities>. [Accessed 6-9-2018]
- Kolos, K. & Kenesei, Z. (2007) *Szolgáltatásmarketing és – menedzsment [Service marketing and management]*. Budapest: Alinea Kiadó.
- Kuran, T. (1994) Economics and the Economics of Religion. *Journal of Institutional and Theoretical Economics*, 150(4), pp. 769-775.
- Malhotra, N. K. & Simon, J. (2009) Marketingkutató [Marketing research]. Budapest: Akadémiai Könyvkiadó.
- McDaniel, S. W. (1986) Church Advertising: Views of the Clergy and General Public, *Journal of Advertising*, 15 (March), pp. 24-29.

20. McGraw, A. P., Schwartz, J. A. & Tetlock, P. E. (2011) From the commercial to communal: reframing taboo trade-offs in religious and pharmaceutical marketing. *Journal of Consumer Research*, 39, pp. 157-173.
21. Shaw, D. & Thomson, J. (2013) Consuming spirituality: the pleasure of uncertainty. *European Journal of Marketing*, 47 (3/4), pp. 557-573.
22. Shostack, G. L. (1977) Breaking free from product marketing. *The Journal of Marketing*, 41(2) pp. 73-80.
23. Srinivasan, R (2012). *Services Marketing – The Indian context.* ; PHI:Learning Private Limited.
24. Wilson, T. D., Centerbar, D. B. & Kermer, D. A. (2005.) The pleasures of uncertainty: prolonging positive moods in ways people do not anticipate. *Journal of Personality and Social Psychology*, 88(1), pp. 5–21. DOI: 10.1037/0022-3514.88.1.5.
25. Wuaku, A. K. (2012.) Selling Krishna in Ghana's religious market: proselytising strategies of the Sri Radha Govinda Temple community of Ghana. *Journal of Contemporary African Studies*, 30, pp. 335-357.

ISTRAŽIVANJE MARKETING STRATEGIJA SVJESNOSTI KRIŠNE U EUROPI

SAŽETAK

Cilj ovog rada je analizirati i identificirati marketinške aktivnosti različitih zajednica posvećenih svjesnosti Krišne u Europi, te razviti model zasnovan na tim nalazima za tumačenje sustava koje su zagovornici izgrađivali tijekom godina kako bi stekli više sljedbenika religije. Svijest Krišne je poznata po marketinškim naporima zajednice; međutim, literatura je za sada ograničena u pogledu aktivnosti koje primjenjuju kako bi dosegli široku publiku. U 2016. i 2017. godini provedeno je kvalitativno istraživanje, uključujući promatranja i intervju u pet europskih sela u Mađarskoj, Belgiji, Češkoj i Njemačkoj. Istraživanje je identificiralo obrazac prema kojem se marketinški proces odvija u dva koraka u sve četiri istraživane zajednice. U prvom koraku zajednice se promoviraju kao turističke destinacije, usredotočujući se uglavnom na turizam i njegove kulturne motive. Ovdje zagovornici primjenjuju širok raspon metoda, poput internetskih medija, letaka i organiziraju brojne festivale i kulturna događanja kako bi privukli ljude. U drugoj fazi turisti - koji su već učinili prvi korak prema svjesnosti Krišne posjećujući sela - informiraju se o suštini i najvažnijim učenjima religije i mogu doživjeti mnoge aspekte putem interaktivnih programa, što povećava uključenost i razumijevanje. Stvoreni model doprinosi detaljnijoj analizi i razumijevanju marketinških aktivnosti svjesnosti Krišne. Dugoročno se može proširiti i na druge religije, pa je stoga moguća i analiza i razvoj marketinških koncepata drugih religijskih skupina.

KLJUČNE RIJEČI: religijski marketing, svjesnost krišne, marketing religija, vjerski turizam, internet marketing.

CONVERGENCE AND DIVERGENCE IN HUMAN RESOURCES MANAGEMENT IN SELECTED COMPANIES IN THE SLOVAK REPUBLIC

PRETHODNO PRIOPČENJE / PRELIMINARY COMMUNICATION

UDK: 005.96(437.6)

JEL: M12

Autori/Authors:

LUKÁŠ SMEREK

ASSISTANT PROFESSOR
MATEJ BEL UNIVERSITY IN BANSKÁ
BYSTRICA
FACULTY OF ECONOMICS
SLOVAKIA
lukas.smerek@umb.sk

MÁRIA SEKOVÁ

ASSOCIATE PROFESSOR
MATEJ BEL UNIVERSITY IN BANSKÁ
BYSTRICA
FACULTY OF ECONOMICS
SLOVAKIA
maria.sekova@umb.sk

MILOTA VETRÁKOVÁ

PROFESSOR
MATEJ BEL UNIVERSITY IN BANSKÁ
BYSTRICA
FACULTY OF ECONOMICS
SLOVAKIA
milota.vetrakova@umb.sk

ABSTRACT

The current stage of our society's development is characterized by the escalating effects of globalization worldwide. It is also significantly reflected in personnel work in the companies. Working in an international environment is demanding and requires collaboration among people of different cultures. Local policies used and accepted in domestic enterprises is gradually changing - it is internationalized. There are also changes in the approaches of multinational companies to human resources management. The purpose of the paper is to present the views of experts on international human resources management, assessed by several authors, and to adopt evaluation opinions. We assume that the differentiated approaches of the multinational (parent) company to the subsidiaries influence the degree of convergence and divergence in management. The theoretical knowledge will be supported by the results of the survey conducted in 2018 in 271 companies in Slovakia selected on the basis of their international scope and long-term performance. The expected result is to verify the dependence between the chosen approach to human resources management and the competence of subsidiaries in designing and implementation of standards, norms and directives using the Pearson chi-square test.

KEY WORDS: multinational companies, human resources management, convergence, divergence.

1. INTRODUCTION

The increasing pace of globalization and the greater movement of capital to exploit labour costs and skills have placed increasing pressures on systems with a high resource investment level (Lucio et al. 2014). Aim of this pressure is to ensure the required level of human resources in the company. Slovakia is a country dominated by small and medium-sized enterprises (99.9%) owned by legal and natural persons (Slovak Business Agency, 2017). Micro-enterprises with up to 9 employees predominate (97.1% of the number of enterprises), 2.3% are small enterprises and 0.5% are medium-sized enterprises. The number of large enterprises reached 0.1% of the number of enterprises. Excluding self-employed entrepreneurs, 2.1% of entrepreneurial subjects are actively involved in international business, the majority of enterprises are small and medium sized. The main reason for the development of business on an international scale is to achieve higher efficiency and compete globally (Zhang, Edwards, 2007). One of the advantages and disadvantages at the same time is the acquisition of joint capital with another entity abroad. In the case of an agreement with a foreign partner, the advantage is to obtain not only financial resources but also the experience of international business, participation in international activities, the disadvantage could be the parent company's access to the management of local companies (subsidiaries), decision-making on the share of the achieved business results, convergence or divergence in management. International business changes the policy and workplace management system that are used in domestic enterprises because managers and employees of a multinational companies must think and act globally. Human resources management is becoming international, respecting the different legal systems and different values of national cultures, but also commonly accepted standards and adopted rules.

The paper deals with the clarification of international human resources management according to several authors, whose opinions are evaluated and compared with the results of the survey conducted in 2018 in 271 companies in Slovakia.

We believe that the differentiated approaches of multinational companies in the management of subsidiaries influence the degree of convergence and divergence. We evaluate the views of human resources managers working in human resources management companies and, using Pearson's chi-square test, we verify the dependence between the chosen approach to HRM and the competences of subsidiaries in developing and implementing standards, norms and directives.

2. THEORETICAL ASPECTS OF INTERNATIONAL HUMAN RESOURCES MANAGEMENT

Since 1997, at the Faculty of Economics, Matej Bel University in Banská Bystrica, we systematically examine the management of human resources in domestic enterprises in Slovakia and in multinational companies (Vetráková et al., 2007). The VEGA Research Project, "Formation of organizational culture and management system of enterprises with international presence in intercultural environment", solved in 2014-2016, have confirmed the initial assumptions about a deepening competitive global environment that leads companies to change organizational culture and management. Global, geocentric-oriented companies are gradually moving from ethnocentric and polycentric management to borderless management. We are currently solving another VEGA Research Project "Convergence and Divergence in International Human Resources Management", whose scientific goal is to examine the views of managers of selected companies in Slovakia on the advantages and disadvantages of working in a multinational company and to propose a flexible system of international human resources management, taking into account the convergence and divergence.

The strategic priority of managerial work in multinational companies is the development and stability of enterprises in a global competitive environment. The increasing variability of the conditions in which enterprises operate implies greater flexibility in human resources management and preparedness for change. The study of human resources in international space is addressed by many authors (Balakrishnan, Srividhya, 2007; Kramar, 2014; Bierema, Callahan, 2014; Armstrong, Taylor, 2014; Ehnert et al., 2016). They associate the objective of international human resources management with the ability of managers of multinational companies to find, recruit, employ and stabilize people with competencies to work in an intercultural environment who can contribute to the creation of values and performance of the company.

Among the criteria for selecting employees who are interested in working in a multinational company, Deresky (2014) particularly highlights the prerequisites for working with people of different cultures, previous experience of living and working abroad, understanding the culture of a foreign country, and controlling the foreign language. There are employees of various groups working in multinational companies. This includes host country nationals, expatriates and third country nationals. By comparing human resources management processes in domestic enterprises and multinational companies, the international human resources management is more extensive and also addresses activities related to administrative services and care for expatriates and their family members, international taxation, international and local labour laws, and values, translation services, training for work in the international environment (Dvořáková et al., 2012, Sojka, 2016). A more heterogeneous structure of employees of a multinational company encourages the competitiveness and performance of the company. The consequence is the employment of talented and competent employees, better career development opportunities and their higher stabilization than in domestic enterprises. Cross-cultural training helps to develop a more cosmopolitan outlook and gives managers a deeper understanding and appreciation of value and norms as well as appropriate and acceptable behaviours in the company (Pinnington, Debrah, Rees, 2014).

The heterogeneity of employees requires the adoption of certain common rules that respect equal opportunities and diversity management. Similarly to Cooke (2014), we are of the opinion that while maintaining the productivity and competitiveness, this goal must be achieved with employment ethics and corporate social responsibility in mind. From the point of view of the creation and subsequent maintenance of competitive teams, working in an intercultural environment, the adaptation and development of employees is important. It helps to facilitate the new employee's orientation in a new social environment and to familiarize him/her with the organizational culture and procedures. The content of training for work in a multinational company are not only cultural differences, but also the legislative, social and political system of the foreign country, the economic and business environment. It is also important to accept the hierarchical division of power in company and avoiding uncertainty from the employees' side. Employees as members of different cultures may have different approaches to performing specific tasks.

The necessity to deal with selected employees or groups of employees whose knowledge, experience and prerequisites for future development are a guarantee of future successful progress and a competitive advantage comes to the foreground. Managers who make decisions about human resources often ignore the latest trends in human resources development and evaluation (Fitz-Enz, 2010). Human resources are evaluated only in terms of costs and are looking for ways to reduce these costs, which is unlikely to be labelled as strategic business behaviour. The prerequisite for a successful human resources management is the sensitivity to national differences and habits, competence, adaptability and flexibility of managers and employees working in an intercultural environment (Robbins, Coulter, 2004). Caligiuri (2006) identified

the key management tasks of management in a multinational company: working with employees of different cultures (1), interacting with external and domestic customers from different countries (2), controlling and managing communication at a workplace in a foreign language (3), management of work of employees of different nationalities (4), development of a strategic business plan on a global scale in connection with individual organizational components (5), monitoring and management of the budget in a multinational company (6), negotiation and communication with people working in various organizational parts of the company (7), management of foreign business partners (8) and risk management in a multinational company and its parts (9).

The functionality of a multinational company is influenced by the internal communication link of all organizational components (Thomas, Lazarova, 2014). The role of the parent company is to inform employees abroad of trends, changes, innovations, new work practices, be interested in performance, achieved results, problems in the operation, but also satisfaction/dissatisfaction of employees and customers. On the other hand, it is essential for the parent company to allow subsidiaries' managers to communicate with the head office in case of any issues that may affect the present and the future of the company. At the same time, it is necessary to create informal communication structures that will strengthen relations between the management of the headquarters and the subsidiaries.

Consequence of globalization processes, in terms of cooperation to achieve global strategic goals, is the pressure on multinationals to form global associations rather than national units, (Armstrong, Taylor, 2014) in terms of cooperation to achieve global strategic goals. This supports the convergence of human resources policies and practices and weakens their divergence. International human resources management is influenced by various types of competitive strategies of multinational companies (Barlett, Ghoshal, 1998). Multinational companies' approaches to international human resources management influence the degree of convergence (strategic standardization) or divergence (strategic localization) in the attitudes and policies of the parent company to subsidiaries. The natural interest of the parent company is the convergence associated with the creation and application of uniform rules and practices in human resources management (ethnocentric approach). Divergence is the opposite of convergence, and its nature is in the application of human resources management practices that correspond to local conditions and national culture with a polycentric approach. Complete convergence or divergence is virtually absent in practice. The ethnocentric or polycentric approach was characteristic of human resources management at the start of the formation of multinational companies. Successively, due to the economic development of different locations (regions), legislation, labour market specificities, certain human resources management activities in the same multinational company have converged and others have diverged. With the development of globalization and the mutual recognition of cultural and institutional differences, the implementation of a regiocentric or geocentric (global) policy of international human resources management is applied (Isidor et al., 2011).

In international human resources management, taking into account the economic, political, social and legislative situation of a country, convergence based on standardization of procedures and/or divergence associated with acceptance of management differences is preferred. Managers of multinational companies are becoming more sensitive to the state administration, the local labour market, public opinion and regulations. Management approaches applied in the parent company are adapted to the conditions of foreign affiliates, as unified procedures and standards can not be implemented in all countries (Harzing, Pinnington, 2015). The emergence of mutual co-operation is the formation of a commonly accepted organizational culture, the search for common values and goals (Guirdham, 2011).

Huczynski and Buchanan (2010) point out that convergence and divergence, despite some common features, can not be confused with centralization and decentralization in human resources management. Centralization is the concentration of authority and responsibility in the hands of top management executives, and decentralization means the dispersion of authority and responsibility for decision-making in human resources management for lower-level managers in the company's organizational hierarchy.

All activities that are part of international human resources management lead to one main goal. Managing human resources in an intercultural environment, in order to ensure the development of the company, must act effectively and rationally in matters affecting employees, exploiting their abilities and potential in the interests of both individuals and company (Szarková et al., 2010, Dessler, 2012, Mura et al., 2017). Taking into account the specificities of the intercultural environment enables a more efficient and better use of human potential and a more efficient work in a multinational company, thus contributing to the provision of better services and the growth of competitiveness on the international market. Multinational companies have also successfully established themselves in Slovakia, and have contributed in terms of labour productivity, modernization, application of new top technologies, organizational culture and management system in terms of interculturality, growing production and economic growth in the country, whose pace of year-on-year growth has been in the top five countries of the European Union in recent years (Kosir, 2016).

3. RESEARCH METHODOLOGY AND RESULTS

The subject of the study is the development of international human resources management, a joint culture including the position of internationally active human resources departments and the specificities of work management, with emphasis on advantages and disadvantages of convergence/divergence, centralization/decentralization of multinational companies.

The object of the survey are the human resources management processes of selected enterprises of multinational companies in Slovakia with many years of work experience belonging to the group of successful enterprises.

For testing if the presence of centralization/decentralization is somehow dependent on used approach to human resources management in multinational companies the chi-square test of independence was used. This type of statistical testing is applied when the independent variable and dependent variable are both categorical. The null hypothesis (H_0) in chi-square tests is that there is no relationship between the independent and dependent variables. The alternative hypothesis (H_1), on the other hand, predicts that there is a relationship (Härdle, Simar, 2012). The result are shown in table 1.

Table 1. The dependence of approach to HTM and centralization/decentralization

Crosstab					
			Cent./Decent.		Total
			Centralization	Decentralization	
Approach	Ethnocentric	Count	115	26	141
		Expected Count	108.2	32.8	141
	Polycentric	Count	38	12	50
		Expected Count	38.4	11.6	50
	Transnational	Count	55	25	80
		Expected Count	61.4	18.6	80
Total	Count	208	63	271	
	Expected Count	208	63	271	

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.714a	2	0.095
Likelihood Ratio	4.621	2	0.099
Linear-by-Linear Association	4.680	1	0.031
N of Valid Cases	271		

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 11,62.

Source: Own processing

We verified the hypotheses at the significance level $\alpha = 0.05$. The obtained p-value must exceed this value in order for the null hypothesis to be accepted. As can be seen in table 1. Our obtained p-value is 0.095, which is greater than 0.05. Therefore, we accept the null hypothesis that leads us to the conclusion that the approach to human resources management in multinational companies and the presence of centralization/decentralization are not statistically dependent.

Similarly, we used chi-square test of independence for testing if the presence of convergence/divergence is somehow dependent on used approach to human resources management in multinational companies that was used. We verified the hypotheses at the significance level $\alpha = 0.05$. The p-obtained value must exceed this value in order for the null hypothesis to be accepted. The results are shown in table 2.

Table 2. The dependence of approach to HTM and convergence/divergence

Crosstab						
			Convergence/Divergence			Total
			Convergence	Divergence	Combination	
Approach	Ethnocentric	Count	69	14	58	141
		Expected Count	55.7	17.7	67.6	141
	Polycentric	Count	19	6	25	50
		Expected Count	19.7	6.3	24	50
	Transnational	Count	19	14	47	80
		Expected Count	31.6	10	38.4	80
Total		Count	107	34	130	271
		Expected Count	107	34	130	271

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13,935a	4	0.008
Likelihood Ratio	14,376	4	0.006
Linear-by-Linear Association	10,816	1	0.001
N of Valid Cases	271		

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 6,27.

Source: Own processing

As can be seen in table 2, our obtained p-value is 0.008, which is lower than 0.05. Therefore, we reject the null hypothesis that leads us to the conclusion that the approach to human resources management in multinational companies and the presence of convergence/divergence in such companies are statistically dependent.

The chi-square test showed us that there is a statistically significant relationship between two variables, but it is quite weak. For judging such strength, we used Cramers' V. Cramer's V equals 0 when there is no relationship between the two variables, and generally has maximum value of 1, regardless of the dimension of the table or the sample size. This makes it possible to use Cramer's V to compare the strength of association between any two cross classification tables. Tables which have a larger value for Cramer's V can be considered to have a strong relationship between the variables, with a smaller value for V indicating a weaker relationship. The results of Cramer's V test are in table 3.

Table 3. The relationship between the approach to international human resources management and the degree of convergence and divergence in management

Symmetric Measures			
		Value	Approximate Significance
Pearson Chi-Square	Phi	0.227	0.008
	Cramer's V	0.160	0.008
N of Valid Cases		271	

Source: Own processing

Table 3 shows that Cramer's V value is 0.16, which represents weak, but acceptable association between observed variables. This means that there is some relationship between the approach to international human resources management and the degree of convergence and divergence in management. By examining table 2, the nature of the relationship between the approach and use of convergence, divergence or combination can be determined. There is a strong predominance of convergence in companies that apply the ethnocentric approach, while companies with polycentric or transnational approach are more inclined to combination of convergence and divergence. Pure divergence has the weakest representation among the surveyed companies. As we stated in theoretical part, complete convergence or divergence is virtually absent in practice. That's why we claim, that the combination of both will be the most likely choice of multinational companies' managers in international human resources management in the future.

4. CONCLUSION

Based on the review of the secondary sources, we can conclude the following findings. Managers of multinational companies are becoming more sensitive to the state administration, the local labour market, public opinion and regulations than those in domestic enterprises. Management approaches applied in the parent company are tailored to the conditions of foreign affiliates, as unified procedures and standards can not be implemented in all countries. In multinational companies, there is pressure to create global units in order to achieve the objectives. This supports the convergence of human resources policies and practices and weakens their divergence. In international human resources management, taking into account the economic, political, social and legislative situation of different countries, convergence based on standardization of procedures and/or divergence associated with acceptance of management differences is preferred even if complete convergence or divergence is virtually absent in practice. The ethnocentric or polycentric approach was characteristic of human resources management at the start of the formation of multinational companies. Gradually, given the economic development of different locations (regions), legislation, labour market specificities, certain human resources management activities in the same multinational company have converged and others have diverged. With the development of globalization and the mutual recognition of cultural and institutional differences, the implementation of a regiocentric or geocentric (global) policy of international human resources management is applied.

Based on the analysis of the questionnaire responses, we claim that the chosen approach to human resources management in the surveyed companies with foreign participation does not affect the level of centralization or decentralization, i.e. concentration of authority and accountability in the hands of top executives of the company versus the dispersion of authority and responsibility for decision making in human resources management the managers of the lower levels of the company's organizational hierarchy depend on other factors. On the other hand, the results show that the chosen approach has some influence on the level of convergence and/divergences in the formation of personnel strategies and policies, or the application of specific standards, guidelines and procedures. This dependence is relatively weak, but not negligible. This means that the approach to managing human resources is one of a number of factors (for example personality of the manager, legislative environment in the country, strength of national culture and others).

Other factors could be the subject of our next investigation. In the future, we would also like to conduct similar research to see if the managers of multinationals really decide to prefer a combination of convergence and divergence in international human resource management. In addition, further research in this area will focus on multinational companies based in Slovakia, which are ranked in the CEE TOP 500 ranking. The subject of the investigation will be to determine the manner of mutual communication and the extent of allocated powers between the parent company and its subsidiaries, which may or may not have an impact on the achieved results of operations. We will compare our findings with practices in domestic enterprises that do not achieve as good economic results as the above mentioned MNCs placed in the CEE TOP 500. The result should be a proposal for better management of human resources in domestic enterprises with the aim of increasing their competitiveness.

LITERATURE

1. Armstrong, M. & Taylor, S. (2014) *Armstrong's Handbook of Human Resource Management Practice*. London: Kogan Page.
2. Balakrishnan, L. & Srividhya, S. (2007) *Human Resource Development*. Mumbai: Himalaya Publishing House.
3. Bierema, L. & Callahan, J. L. (2014) Transforming HRD: A Framework for Critical HRD Practice. *Advances in Developing Human Resources*, 16(4), pp. 429-444. DOI: 10.1177/1523422314543818.
4. Branham, L. (2005) *The 7 Hidden Reasons Employees Leave: How to Recognize the Subtle Signs and Act Before It's Too Late*. New York: Amacom.
5. Caligiuri, P. M. (2006) Developing global leaders. *Human Resource Management Review*, 16(2), pp. 19-22.
6. Cooke, F. L. (2014) Equal Opportunity and Diversity Management in the Global Context. In: Harzing, A. W. & Pinnington, A. H. (eds.) *International Human Resource Management*, 4th edition. London: SAGE Publications, pp. 468-497.
7. Deresky, H. (2014) *International Marketing Managing Across Borders and Cultures*. New Jersey: Prentice Hall.
8. Dessler, G. (2012) *Human Resource Management*. Boston: Pearson Publishing.

9. Dvořáková, Z. et al. (2012) *Řízení lidských zdrojů*. Praha: C. H. Beck.
10. Ehnert, I., Parsa, S., Roper, I., Wagner, M. & Muller-Kamen, M. (2016) Reporting on Sustainability and HRM: a comparative study of sustainability reporting practices by the world's largest companies. *International Journal of Human Resource Management*, 27(1), pp. 88-108. DOI: 10.1080/09585192.2015.1024157.
11. Fitz-Enz, J. (2010) *The New HR Analytics: Predicting the Economic Value of Your Company's Human Capital Investments*. New York: Amacom.
12. Guirdham, M. (2011) *Communication Across Cultures at Work*. Basingstoke: Palgrave Macmillan.
13. Harzing, A. W. & Pinnington, A. H. (2015) *International Human Resource Management*. London: SAGE Publications.
14. Härdle, W. K. & Simar, L. (2012) *Applied Multivariate Statistical Analysis*. Berlin: Springer.
15. Huczynski, D. A. & Buchanan, A. A. (2010) *Organizational Behaviour*. Harlow: Pearson Education.
16. Isidor, R., Schwens, C. & Kabst, R. (2011) Human resource management and early internationalization: is there a leapfrogging in international staffing? *International Journal of Human Resource Management*, 22(10), pp. 2167-2184.
17. Kosír, I. (2016) Pozitíva a negatíva etablovania nadnárodných spoločností na Slovensku. In Vetráková, M. et al. (eds.) *Formovanie organizačnej kultúry v podnikoch pôsobiacich v interkultúrnom prostredí*. Banská Bystrica: Belianum.
18. Kramar, R. (2014) Beyond strategic HRM: Is sustainable human resource management the next approach? *International Journal of Human Resource Management*, 25(8), pp. 1069-1089. DOI: 10.1080/09585192.2013.816863.
19. Lucio, M. M. et al. (2014) *International Human Resource Management: An Employment relations perspective*. London: SAGE Publications.
20. Mura, L., Ključnikov, A., Tvaronavičienė, M. & Androniceanu, A. (2017) Development Trends in Human Resource Management in Small and Medium Enterprises in the Visegrad Group. *Acta Polytechnica Hungarica*, (14)7, pp. 105-122. DOI: 10.12700/APH.14.7.2017.7.7.
21. Pinnington, A. H., Debrah, Y. A. & Rees, Ch. J. (2014) *Training and Development: Developing Global Leaders and Expatriates. International Human Resource Management*. London: SAGE Publications.
22. Slovak Business Agency. (2017) *Prehľad základných ukazovateľov o SBA 2016 Slovensko [Overview of basic indicators of SBA 2016 Slovakia]* [online]. Available at: <http://www.sbagency.sk>. [Accessed 10-12-2018].
23. Robbins, S. P. & Coulter, M. (2004) *Management*. Praha: Grada Publishing.
24. Sojka, L. (2016) *Medzinárodný manažment ľudských zdrojov*. Prešov: Fakulta manažmentu, Prešovská univerzita v Prešove.
25. Szarková, M. et al. (2010) *Personálny marketing a personálny manažment*. Bratislava: Ekonóm.
26. Thomas, D. C. & Lazarova, M. B. (2014) *Essentials of International Human Resource Management: Managing People Globally*. London: SAGE Publications.
27. Vetráková, M. et al. (2007) *Hodnotenie prínosu zamestnancov*. Banská Bystrica : EF UMB.
28. Zhang, M. & Edwards, C. (2007) Diffusing „best practice“ in Chinese multinationals: The motivation, facilitation and limitations. *International Journal of Human Resource Management*, 18(12), pp. 2147-2165.

KONVERGENCIJA I DIVERGENCIJA U UPRAVLJANJU LJUDŠKIM POTENCIJALIMA U ODABRANIM PODUZEĆIMA U SLOVAČKOJ REPUBLICI

SAŽETAK

Trenutačna faza razvoja našeg društva je okarakterizirana brzorastućim efektima globalizacije širom svijeta. Također, to se značajno reflektira i u radu osoblja u poduzećima. Raditi u internacionalnom ozračju je zahtjevno i zahtijeva suradnju između ljudi različitih kultura. Lokalne politike koje se koriste i koje su prihvaćene u domaćim poduzećima se postepeno mijenjaju – internacionaliziraju se. Jednako tako, postoje promjene u pristupima upravljanju ljudskih potencijala od strane multinacionalnih poduzeća. Svrha ovog članka je prezentirati mišljenja stručnjaka o međunarodnom upravljanju ljudskim potencijalima, ocijenjenom od strane nekolicine autora, i usvojiti evaluacijska mišljenja. Pretpostavka je da različiti pristupi multinacionalne tvrtke majke prema svojim podružnicama odnosno tvrtkama kćeri utječu na stupanj konvergencije i divergencije u upravljanju. Teorijsko znanje će biti poduprto rezultatima istraživanja provedenog u 2018. godini među 271 poduzeća u Slovačkoj odabranih na osnovi opsega njihova međunarodna poslovanja i dugoročnog učinka. Očekivani je rezultat da će se potvrditi, koristeći Pearsonov Hi-kvadrat test, međuovisnost odabranog pristupa upravljanju ljudskim potencijalima i kompetencije podružnice u kreiranju i implementaciji standarda, normi i direktiva.

KLJUČNE RIJEČI: multinacionalna poduzeća, upravljanje ljudskim potencijalima, konvergencija i divergencija.

REAL OPTIONS APPLICATION IN PRACTICE: A TEXT MINING BASED ANALYSIS

PRETODNO PRIOPĆENJE/PRELIMINARY COMMUNICATION

UDK: 336.764.2

JEL: G13 ; G31

Autor/Author:**VIVIEN CSAPI**

ASSISTANT PROFESSOR

UNIVERSITY OF PÉCS

FACULTY OF BUSINESS AND ECONOMICS

PÉCS, HUNGARY

csapiv@ktk.pte.hu

ABSTRACT

In the last 40 years real options theory has been, with its empirical findings and qualitative reasoning a constant driver of strategy research, whether if it dealt with market entry timing, choice of organizational forms, foreign direct investments, or the cooperation vs. competition trade-off. Yet, the understanding and application of real options still comes with challenges not even in the strategy field, but also in its original discipline of investments. With this paper I tried to build a strategic framework for the application of real options, with the aim of giving the theory a strategy based logic and trying to solve the chaos of the case-by-case type of application of research and practice. To confirm the stability of the framework, after showing the process of real option creation, valuation and management, I conducted a more than 1000 article based literature survey. This shows that the strategic direction is a must for practitioners and researchers also, and highlights future research areas like the portfolio based approach of real options, or a need for a general valuation model.

KEY WORDS: real options theory, discounted cash-flow, valuation, strategic management.

1. INTRODUCTION

The real options theory applies option valuation techniques to capital budgeting decisions. A real option itself is the right, but not the obligation, to undertake certain business initiatives (deferring, abandoning, expanding, staging, or contracting a capital investment project). Most investment decisions share three important characteristics. First, the investment is partially or completely irreversible. Second, there is uncertainty over the future rewards from the investment. Third, some flexibility about the timing of the investment usually exists. These three characteristics interact to determine the optimal decisions for any investor (Dixit –Pindyck, 1994).

Since its first application in the 1970s, the real options (RO) valuation method has been proposed as an analytic tool for all types of investment problems—from natural-resource investments and new products to start-ups, acquisitions, factories, information technology, patents and more. Not only investment opportunities but also the capital structure of a firm can be analysed by real options theory (Mauer – Triantis, 1994). Trigeorgis (1996) applied real options to analyse credit risks of financial institutes. Real options theory also applies to social life. Strange examples are the applications in assessing the waiting value in a marriage (Strobel, 2003) and estimating the probability of suicide risk in the old age population (Lo – Kwok, 2004).

Economists were quick to realise that options theory - created for analysing financial options - can offer notable added value for decisions about real investments (Black–Scholes, 1973; Merton, 1973). The field caught first moderate attention of academics in the 80s and 90s; widespread dissemination, however, was yet to come. In the mid 90s, real options provided the transition from restrained, specialised interest in options theory to the mainstream generally accepted by science and practice itself (Borison, 2005).

This study contributes to the current literature by providing a detailed and complex overview of the evolution of real options in valuation theory and practice, embracing a period of more than 40 years. The author combined the information given in literature to come up with a real option framework that enhances academic and real world application. Furthermore, the author extends the existing literature by first conducting an empirical investigation of the most cited real options literature from 1977 to 2017, identifying 987 articles, than narrowed down the scope of research to the most recent works, and analysed 951 studies available in Google Scholar, using text mining technique.

In the following chapters the basics of real option theory will be presented through a unique and specific strategic application lens: the process of identifying real options, the types of real options, the real option value drivers and finally the available valuation models. The aim of the study is to highlight the potential of the real option theory as a decision support tool, its advantages and disadvantages and give advise to future users how to incorporate real option theory into a strategic framework. The text mining research attempts to explore the existing real-life applications with the aim of identifying the most significant research directions of its first 40 years and pointing to those areas, where only limited progress has been made, but would require further focus due to their relevance.

2. REAL OPTION THEORY

The expression real options was first used by Stewart Myers in 1977, when he investigated the possibilities of applying options pricing in the non-financial, primarily real estate investment valuation domain, by which he meant flexibility and as an added value, the phenomenon of deferred learning. A real option can be considered the option to defer and adjust investments and production decisions with the purpose of reducing and dispelling uncertainty (Triantis, 2000). A real option is the right, but not the obligation, to take an action (e.g., deferring, expanding, contracting or abandoning) at a predetermined cost called the exercise price, for a predetermined period of time - the life of the option. A real option is a certain kind of flexibility that is embedded in a real asset or company. Flexibilities can be identified along the lines of two dimensions: concentrating on timing, and along project size.

How to take embedded flexibilities into account varies across companies. Triantis and Borison (2001) offer a categorization. According to them there is the opportunity for companies to include real options into their decision making process as a way of thinking, as a qualitative tool; there are the identified real options which can be assessed quantitatively, in this case we consider real options as an analytical tool; and the third level of application is to consider real options as a strategic process, which identifies and effectively searches for new embedded flexibilities. As shown in Table 1 the strategic management application of real options starts with the identification of existing (shadow) options, which have emerged from previous strategic decisions of the company; after that comes the identification of attainable real options (through research and development, contracts etc.). This step, and the valuation of real options, is built basically on individual competencies. Based on the organizational and behavioural characteristics, the company starts to manage the portfolio of real options which leads to a, mostly intuition based, decision about the exercise of the option (Trigeorgis-Reuer, 2017).

Table 1. Strategic real options management

1. step Identification of ROs	2. step RO valuation	3. step RO management	4. step RO Exercise
Strategic analysis	Strategy building and election	Application	Strategic decision
Identification of shadow options	Identification of value determinants	Interactions between real options	Market entry, or exit
Identification of single options	Choosing the right valuation method		Staging
Identification of complex real options	Valuation		Switch of input and/or output parameters
Ranking of real options			Timing etc.
Individual competencies		Organizational, behavioural characteristics	Intuitions

Source: Own construction based on (Hommel - Pritsch, 1999; Pritsch - Weber, 2003, Trigeorgis-Reuer, 2017).

2.1 Types of real options

One may distinguish a relatively narrower and a more diverse categorization of real option types depending on the degree of freedom project operators are given when managing the asset or project. Table 2 shows the basic stand-alone

types of real options according to the dimensions of flexibility and strategic use (Copeland – Keenan, 1998), whether they are meant to open new opportunities (growth options); or learn through them about the market, the customers, etc. (learning options); or for risk management purposes (insurance options).

Table 2. Real option types according to flexibility and strategic aspects

	Timing flexibility	Operational flexibility
Growth options		(1) Growth options
Learning options	(2) Delay options (3) Abandonment options (4) Staging options	(5) Pilot options;
Insurance options	(6) Switch down/on options	(7) Option to contract/expand (change size) (8) Option to change input/output mix (9) Outsourcing options

Source: Own construction based on (Trigeorgis, 1996; Amram – Kulatilaka, 1998; Benaroch, 2002; Copeland – Antikarov, 2003).

According to the real option for growth, a given investment may be the precursor or basis for starting a chain of interconnected projects, thereby opening up future growth prospects (for instance, the implementation of new projects, new processes; new market penetration; strengthening of base competencies) (Kester, 1984). Insurance options uncover the possibility to respond to unfavourable demand or price developments for management in the shape of shutting down, as well as and/or operative adaptation.

In contrast with growth options, insurance real options provide protection for a company against potential loss risks in a manner whereby they can avoid dips in their cash-flow (Copeland – Howe, 2002).

A real option to learn enables the investment decision to be postponed, abandoned reducing the risk of management, making irreversible decisions, based on incomplete information and thus suffering unfavourable consequences. The higher the uncertainty surrounding the decision, the more company executives prefer deferring project implementation, maintaining the option to implement the project at a future date (Myers, 1977). Since activities that determine the availability of production or later production cannot be postponed indefinitely, the deferral strategy frequently goes hand in hand with a next level of exercising management flexibility, i.e. splitting the decision into consecutive stages (staging real option) (Trigeorgis, 1996).

2.2 Real options and valuation

The use of option theory for valuing investments is based on the shortcomings of the traditional discounted cash-flow (DCF) based approaches. The classic DCF models are applied for several different valuation problems, such as company valuation (Copeland et al 2000, Damodaran 2002, Fernandez 2002, Takacs 2007a, 2015b), examination of stock pricing problems (Takacs 2007b, 2014), and even for valuing specific objects, like brands (Fernandez 2005, Takacs 2011, 2015a). These traditional models all assume a passive management approach (Kogut – Kulatilaka, 1994); they make the implicit assumption whereby a project will begin immediately and operate continuously until the end of anticipated useful life even if the future is uncertain. As a consequence, discounted cash-flow procedures disregard the added value that can be incorporated in a project by means of the management's flexible adaptation and innovation, i.e. they systematically underestimate the value of investment projects (Dixit – Pindyck, 1994; Trigeorgis, 1993; Kemna, 1993; Kumar, 1995; Van Putten – MacMillan, 2004). The undervaluation of investment alternatives may lead to underinvestment, and to losing competitive position (Dean, 1951; Hayes – Abernathy, 1980). An efficient project valuation procedure takes both uncertainty and active decision-making – essential to the success of a strategy – into account (Luehrman, 1998b).

A real option resembles a financial option in many ways. The investment opportunity in a project can often be seen as a call option on the present value of the expected cash flows from the investment. Similarly, an option to abandon a project is analogous to a put option on the project's value. The exercise price is the salvage value of the equipment. However, real options are more complex than financial options. Table 3 shows the real option value drivers connected to the, in Table 2 introduced types of real options. The author collected the interactions between value drivers and basic types of financial vs. real options. (For instance the increase of upside volatility (σ) *ceteris paribus* increases the value of the option, while this increase results in higher capital costs with a consequence of lower current value (S) of the underlying project).

Table 3. Real option value drivers and the interaction between value drivers; where (1)-(2)-...etc. is the number of real option type from Table 2

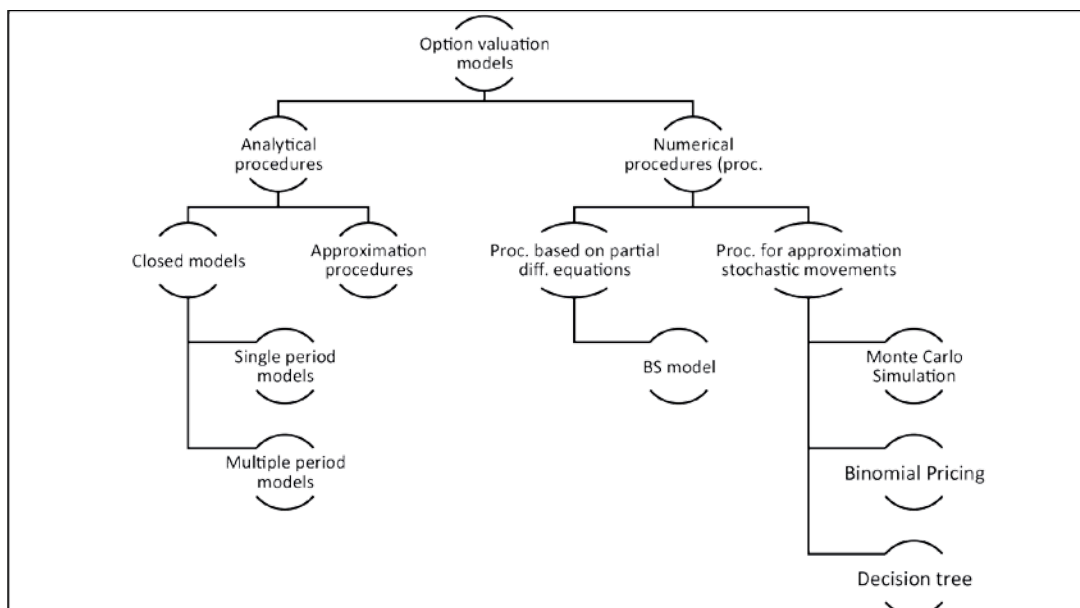
Value drivers; [drivers that determine their value]	CALL OPTION TYPE OF REAL OPTIONS [(1)-(2)-(4)-(5)-(6b)-(7b)-(8)]	PUT OPTION TYPE OF REAL OPTIONS [(3)-(6a)-(7a)-(8)-(9)]
Time (t); [d]	+	+
Strike price (X); [d; σ]	-	+
Current value (S); [d;t; σ ;r]	+	-
Risk free interest rate (r);	+	-
Uncertainty, volatility (σ)	+	+
Dividend (d); [S]	-	+

Source: Own construction

The next difference between financial and real option is that the underlying assets of real options are not tradable. Non-tradable real assets may earn a return below the equilibrium rate of return expected in the financial market. The rate of return shortfall necessitates a dividend-like adjustment. In option pricing, we mostly apply a risk-neutral valuation, by using the certainty-equivalent or risk-adjusted growth rate, which is equal to the actual growth rate minus an appropriate risk premium.

Figure 1 shows the systemic sorting of real option valuation methods. These valuation procedures may have unique pros and cons in the given decision situation. This is why it is important to contemplate which method is best suited for providing decision support to the given project. The most important requirements of valuation procedures include transparency, accuracy of valuation, the versatility of the valuation process, lowest possible complexity, along with the least possible preliminary skill requirements on behalf of those who will apply them. Amram & Kulatilaka (2000) distinguished market risks and private risks in relation with real option value. Market risks are risks captured in the price fluctuations of traded securities and private risks are risks that can not be captured with these price fluctuations. The value of real options can be influenced by market risks, by private risks or by a combination of them both. When market risk can be separated from private risk, option-pricing models can be used to value the part of real options that are influenced by market risk. However, it is not always possible to separate market risk from private risk. Dixit and Pindyck (1994) advise the practitioners to use decision analysis to value real options influenced by private risks, but decision analysis can be very complex and time-consuming. Copeland and Antikarov (2001) came up with the Market Asset Disclaimer, the MAD assumption. The MAD assumption assumes that the present value of the underlying asset is equal to the value of the project without flexibility. This assumption is often followed by the assumption that the value of the underlying asset behaves as a Geometric Brownian motion through time. The method based on the MAD assumptions makes it possible to calculate the value of real options influenced by all risk types.

Figure 1. Classification of option valuation models



Source: Own construction

The most commonly used methods from Figure 1 are the binomial pricing, the risk adjusted decision tree analysis and the Black-Scholes (BS) model. The binomial option pricing model, which is a discrete model for valuing European and American options, was created by Cox, Ross, and Rubinstein in 1979. A binomial tree can be seen as a special case of dynamic programming, in which the decisions are binary. The state variable can either go up or go down by a specific multiplicative factor in the next step of the tree. Afterwards the value of the option can be determined by working backwards from maturity. This model is mathematically simple compared to the Black-Scholes model (Cox et al, 1979). The major drawback of the binomial model is its quite slow process, especially when calculating many prices in a short period of time as well as the large number of required inputs, which are the expected future prices at each node (Damoradan, 2005).

The risk-adjusted decision tree allows for multiple decisions and uncertainties over time. The basic principle is that objective probabilities are used instead of risk-neutral probabilities. Therefore, the model can also incorporate private risks that cannot be diversified (Borison, 2003). Decision analysis tells us to assign subjective probabilities to the risks based on subjective judgment. Applied in a risk-adjusted decision tree, objective probabilities (i.e. probabilities withdrawn from the market) are assigned to market risks.

The Black-Scholes formula is a result of contingent claim analysis under strict assumptions. The six items in the first column of Table 3 are exactly the drivers of the option value in the Black-Scholes formula. These parameters are difficult or, in some cases, impossible to estimate accurately (Majd and Pindyck, 1987).

Theory and practice has split into two in answering the question about which – Cox, Ross and Rubinstein’s (1979) binomial pricing or Fisher – Black and Myron – Scholes’ model published in 1973 – proves more useful. Practitioners tend to favour the BS model for the most part (Courtney et al., 2001), while the majority of academic publications apply and recommend the binomial procedure. Without a doubt, the BS model surpasses the binomial procedure regarding the requirement of simple applicability (Amram – Kulatilaka, 1999); at the same time it is important to note that the complex modelling of real options relies on programming languages and, consequently, assumes a relatively high level of methodological know-how (Dorner, 2003). This is the very complexity that makes adapting the BS formula’s rigid structure and assumptions impossible as it were in the case of tangibles (Copeland–Antikarov, 2003), i.e. the binomial procedure proves dominant in the field of model transparency. Although the binomial procedure often loses out to the BS model in terms of precision, its results qualify as sufficiently accurate for value-driven corporate governance and easy to illustrate, and this option of graphical representation improves model transparency and accessibility.

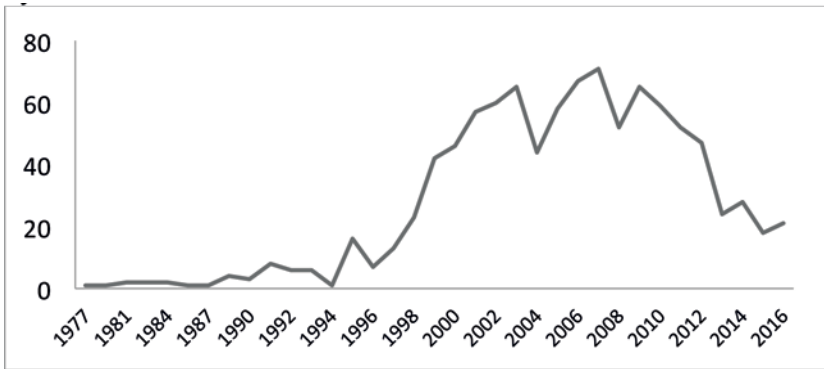
2.3 Pros and cons of real options valuation

Using the option framework to evaluate strategic real options requires much effort, as not all of the required information is easy available. The problem lies in the imprecise nature of the analogy between financial and real options. Given the non-standard and non-financial aspect of real options, coupled with market incompleteness, the pricing of real options is more complicated. Even if we believe in the exact analogy between financial and real option by ignoring the limitations, the estimation of the option value drivers is not an easy task. Real options techniques are regarded by practitioners, as “black boxes”, due to the sophisticated mathematics and the consequent lack of transparency and simplicity (Teach, 2003). But thanks to the increasing power of computers, commercial software vendors offer many user-friendly applications of complex real options and enforce application in complex situations also.

3. RESEARCH

While analysing the existing literature, the author started a Publish or Perish® search, with the aim of identifying the most cited 1000 real option studies from 1977 to 2017 (see results in Figure 2). According to the results yearly 42 studies are published in this field, almost 195,000 citations were made on this papers with an H-index of 89.

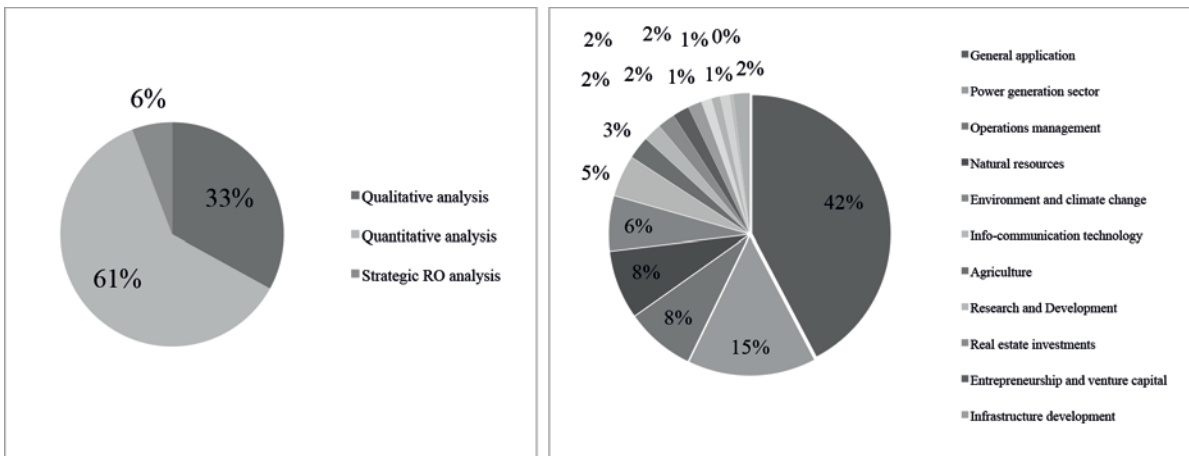
Figure 2. Yearly distribution of the most cited studies from 1977-2017



Source: Own construction

To analyse the current key areas of research and practice, the author identified 1101 studies through a Google Scholar search, with a filter of the keyword “real options” and a time frame of 2012-2017. From these studies 968 were English language studies, and therefore the objects of a conducted keyword and abstract based literature survey. The aim of the research was to identify the relevant fields of application, the potential research gaps, and through highlighting the industry and discipline focus giving researchers and practitioners a guide of potential application. The first step was to determine the focus of research. In the previous chapters the author built a strategic framework of application (qualitative, quantitative, strategic real options application), this was the first dimension of the conducted research, the second dimension introduced an industry and an identifiable discipline focus.

Figure 3. Results of the Strategic and field of application analysis



Source: Own construction

Based on the first dimension of the research we can state that the studies focus mostly (61.2%) on the quantitative application and use real option theory to value embedded flexibilities, while 33% of them use options logic as a qualitative assessment of opportunities to hedge against downside risk or to take advantage of upside potentials (See Figure 3 and Table 4). Only 5.8% of the research objects look at real options as a tool of strategy. If we analyse the findings through the lens of the strategic real options management framework introduced in Table 1, future research directions show up. We can state that the studies are rarely concentrating on shadow options, options that can be derived from previous strategic decisions, a few of the studies aim to help practitioners understand how real options can be obtained or created, and the low percentage rate of strategic real option analysis highlight the need for a more complex, portfolio aspect of flexibilities with an organizational and behavioural focus.

Table 4. Real options (RO) literature survey results according to decision categories and field of application

		RO THINKING	RO AS AN ANALYTICAL TOOL	RO IN STRATEGY
		Qualitative analysis	Quantitative analysis	Strategic RO analysis
		100.0%	61.2%	5.8%
General application	42.3%	38.0%	39.2%	100.0%
Power generation sector	14.9%	7.7%	20.1%	0.0%
Operations management	8.0%	9.8%	7.8%	0.0%
Natural resources	7.9%	3.7%	10.9%	0.0%
Environment and climate change	6.3%	9.1%	5.4%	0.0%
Info-communication technology	4.8%	6.1%	4.5%	0.0%
Agriculture	2.6%	2.7%	2.7%	0.0%
Research and Development	2.1%	3.0%	1.8%	0.0%
Real estate investments	2.0%	2.4%	2.0%	0.0%
Entrepreneurship and venture capital	1.9%	5.1%	0.4%	0.0%
Infrastructure development	1.6%	1.7%	1.6%	0.0%
Engineering	1.2%	2.7%	0.5%	0.0%
Pharmaceutical industry	1.0%	1.7%	0.7%	0.0%
Innovation	1.1%	2.7%	0.4%	0.0%
M&A transactions	0.4%	0.0%	0.7%	0.0%
Other	1.9%	3.7%	1.1%	0.0%

Source: Own construction

The second focus of the research was to determine the field of application, whether it is an industry or a discipline in which the theory is applied. As Table 4 indicates, the number of the application areas exceeds 16, despite summing every field, which occurred in less than 5 articles in the “other” category. Table 4 sorted the fields according to relevance from high to low. 42.3% of the studies use real options theory for valuation and modelling purposes in a general decision making process. 39.2% of these use actually a valuation model, while 38.00% of them take flexibility qualitatively into account. The strategic application of real options appear only in 5.8% of the research objects as it was mentioned before, and all of them examine real option theory’s role in strategy only in general, without taking industry specific circumstances into account. The next few application fields in line are basically the industries and disciplines which can be characterized with project irreversibility, opportunity of granting exclusivity by rights, patents, uncertainty and project embedded flexibility, like the power generation sector, operations management, natural resource projects, environment and climate change related investments, ICT investments etc. An interesting finding that in case of operations management and among them the most commonly appearing supply chain related studies and the environment and climate change related, on corporate social responsibility concentrating works use dominantly the qualitative real options logic, while most of the quantitative applications can be connected to power generation projects and natural resource investment decisions. As Table 4 indicates in case of analytical application the results concentrate around the most dynamic industries, with a large amount of money at stake during the execution of a flexibility embedded investment; while the qualitative applications are highly fragmented.

4. SUMMARY AND CONCLUDING REMARKS

After the introduction of real options by Myers (1977) numerous studies proved the viability of the real options logic. While the majority of them used the option valuation method to value project embedded flexibility, we can find studies that concentrate on the improvement of the theory from a methodological, a strategic, an organizational or behavioural aspect, but there isn't any finding available that would show researchers or practitioners a map of application. The research results clearly confirm the critique of practitioner against the theory. There isn't a general, universally accepted real option framework or model that could be applied with adjustments to industry or discipline specific circumstances. The application, especially the qualitative applications stick to the case-by-case method. Although we must state from the results that digging deeper into the general results, which total up to 42.3% of the analysed studies, 7% of them deal with the critique of real options application, and 93.00% of them work on optimization and model perfection responding to the practitioner needs. As a conclusion of the research, based on the number of application fields and involved disciplines, whether it was a business discipline, or for example engineering, we suggest that researchers and practitioners consider real options analysis and the real option framework as an operational, viable and efficient tool of decision support. According to the central premise of the real option theory, the focus of managerial decisions is to recognize, create and reduce (not to enforce) the options that increase flexibility, and reduce uncertainty. If we are able to recognize, create and apply real options with this dual endeavor, not only will we improve our resilience to risks, but also increase shareholder value in the long run.

Real options are potentially a more effective way for managers to allocate their company's capital and maximize shareholder wealth by dealing with uncertainty and reducing risk. Although real options theory has not become a generally accepted paradigm for investment theory, it is vital for the decision-makers of high-profile, strategic issues to take project embedded flexibility into account. The present study attempted to synthesize the first 40 years of real option research and practice, with the aim to show the diversity of existing applications, to serve the understanding of practitioners, and to identify research gaps. In order to provide empirical support for the conclusions drawn during the presentation of the structured strategic framework, the author conducted a text mining based literature survey, which resulted in clearer view of future research tasks and practical implications. We can expect from the next decade the spread of strategic and portfolio based applications and a research focus around a general valuation method.

LITERATURE

- Amram, N. & Kulatilaka, N. (1999) *Real options: Managing strategic investment in an uncertain world*. Boston: Harvard Business School Press.
- Benaroch, M. (2002) Managing information technology investment risk: A real options perspective. *Journal of Management Information Systems*, 19 (2), pp. 43 – 84.
- Black, F. & Scholes, M. (1973) The pricing of option and corporate liabilities. *Journal of Political Economy*, 81(3), pp. 637-654.
- Borison, A. (2005) Real options analysis: Where are the emperor's clothes. *Journal of Applied Corporate Finance*, 17(2), pp. 17-31.
- Courtney, H., Kirkland, J. & Viguier, P. (2001) Strategy under uncertainty. *Mckinsey Quarterly*, December 2001, pp. 5-14.
- Copeland, T. E., Koller, T. & Murrin, J. (2000) *Valuation: measuring and managing the value of companies*. NetLibrary, Inc. New York: Wiley.
- Copeland, T. E. & Howe, K. (2002) Real options and strategic decisions. *Strategic Finance*, 83(10), pp 8-11.
- Copeland, T. E. & Keenan, P. T. (1998) How much is flexibility worth? *Mckinsey Quarterly*, No. 2, pp.38-49.
- Copeland, T. E. & Antikarov, V. (2003) *Real options: A practitioner's guide*. London: Texere.
- Cox, J, Ross, S. & Rubinstein, M. (1979) Option pricing: a simplified approach. *Journal of Financial Economics*, 7(3), pp. 229-263.
- Damodaran, A. (2002) *Investment valuation*. 2nd edition. . New York: Wiley.
- Dean, J. (1951) *Capital Budgeting*. New York: Columbia University Press.
- Dixit, A. K. & Pindyck, R. S. (1994) *Investment Under Uncertainty*. Princeton: Princeton University Press.
- Dörner, W. (2003) *It-Investitionen: Investitionstheoretische Behandlung von Unsicherheit*. Hamburg, 2003.
- Fernandez, P. (2002) Company valuation methods: The most common errors in valuations. *IESE Working paper University of Navarra*, No. 449.
- Fernandez, P. (2005) Discounted cash-flow valuation methods: examples of perpetuities, constant growth and general case. *Working paper University of Navarra* , No. 604.
- Hayes, R. & Abernathy, W. (1980) Managing our way to economic decline. *Harvard Business Review*, July-August, pp. 138-149.
- Hommel, U. & Pritsch G. (1999) Marktorientierte Investitionsbewertung mit dem Realoptionsansatz. *Finanzmarkt und Portfoliomanagement*, 13(2), pp. 121-144.
- Kemna, A. (1993) Case studies on real options., *Financial Management*, 22(3), pp.259-270.
- Kogut, B. & Kulatilaka N. (1994) Operating flexibility, global manufacturing and the option value of a multinational network. *Management Science*, 40(1), pp. 123 – 139.
- Kumar, R. L. (1995) An options view of investments in expansion-flexible manufacturing systems. *International Journal of Production Economics*, 38, pp. 281– 291.
- Lo, C.F. & M.Y. Kwok (2004) Contingent claims analysis approach for modeling suicide risk in later life. In: *8th Real Options International Conference*, Montreal, Canada.
- Merton R. C. (1973) Theory of rational option pricing. *Bell Journal of Economics and Management Science*, 4(1), pp. 141-183.
- Myers, S. C. (1977) Determinants of Corporate Borrowing. *Journal of Financial Economics*, 5(2), pp. 147–176.
- Majd S. & Pindyck R. (1987) Time to build, option value, and investment decisions. *Journal of Financial Economics*,18(1), pp. 7-27 .
- Mauer, D. C. & Triantis A. J. (1994) Interactions of corporate financing and investment decisions: A dynamic framework. *Journal of Finance*, 49(4), pp. 1253-77.

27. Pritsch, G. & Weber, J. (2003) Die Bedeutung des Realloptionsansatzes aus Controlling-Sicht, In: *Reale Optionen: Konzepte, Praxis und Perspektiven Strategischer Unternehmensfinanzierung*. Hrsg. U. Hommel, M. Scholich, P. Baecker, Berlin U. A., pp. 143-172.
28. Strobel, F. (2003) Marriage and the Value of Waiting. *Journal of Population Economics*, 16(3), pp.423-430.
29. Takacs A. (2007b) The relationship between value and stock price in case of Hungarian quoted companies. *Hungarian Statistical Review*, 85 (10-11), pp. 933-964.
30. Takacs A. (2007a) The Practical application of discounted-cash-flow- based valuation methods. *Studia Universitatis Babeş-Bolyai Oeconomica*, 52(2), pp. 13-28.
31. Takacs A. (2011) Brand valuation from a financial point of view. *The Hungarian Journal of Marketing and Management*, 45(4), pp. 27-36.
32. Takacs A. (2014) The Relationship between appraised company values and future stock prices in the international banking sector. *International Research Journal of Finance and Economics*, 2014 (118), pp. 113-123.
33. Takacs A. (2015a) *Company valuation in the Hungarian accounting system*. Second edition. Budapest: Perfekt Publishing.
34. Takacs, A. (2015b) The explanatory power of appraised brand values on stock prices in the financial services sector. *International Journal of Business Excellence*, 8(3), pp. 298-311.
35. Triantis, A. & Borison, A. (2001) Real options: State of the practice. *Journal of Applied Corporate Finance*, 14(2), pp. 8–24.
36. Trigeorgis L. (1996) *Real options: Managerial flexibility and strategy in resource allocation*. Boston: MIT Press.
37. Trigeorgis, L. & Reuer, J. J. (2017) Real options theory in strategic management. *Strategic Management Journal*, 38(1), pp.42–63.
38. Teach, E. (2003) Will Real Options Take Root? Why Companies Have Been Slow to Adopt the Valuation Technique, CFO Magazine, July 01
39. Triantis, A. J. (2000) Real options and corporate risk management. *Journal of Applied Corporate Finance*, 13(2), pp. 64-73.
40. Trigeorgis, L. (1993) The Nature of option interactions and the valuation of investments with multiple options. *Journal of Financial and Quantitative Analysis*, 28(1), pp. 1–20.
41. Van Putten, A. B. & Macmillan, I. C. (2004) Making Real options really work. *Harvard Business Review*, 82(12), pp. 134-141.

PRIMJENA TEORIJE STVARNIH OPCIJA U PRAKSI: ANALIZA NA TEMELJU IZVAĐENIH TEKSTOVA

SAŽETAK

U zadnjih 40 godina teorija stvarnih opcija je sa svojim empirijskim dokazima i kvalitativnim uporištem bila konstantan pokretač strateškog istraživanja, bilo da se radilo o tempiranju ulaska na tržište, odabiru organizacijske forme, stranim direktnim investicijama, ili o odluci između kooperacije i kompeticije s obzirom na njihove nedostatke i prednosti. Međutim, razumijevanje i primjena stvarnih opcija još uvijek predstavlja izazove ne samo u području strategije, nego i u njihovoj originalnoj disciplini, tj. području investicija. Namjera autora je bila pomoću ovog rada pokušati ponuditi strateški okvir za primjenu stvarnih opcija, sa ciljem podupiranja teorije logikom temeljenom na strategiji te pokušati riješiti problem kaotičnosti primjene istraživanja i prakse metodom od slučaja do slučaja. Kako bi se potvrdila stabilnost okvira, nakon prikaza procesa kreiranja stvarnih opcija, njihova vrednovanja i upravljanja njima, provelo se istraživanje i zahvatio uzorak od više od 1000 članaka povezane literature. To prikazuje koliko je strateško usmjerenje obavezno za praktičare, ali i istraživače, i ističe područja vrijedna istraživanja u budućnosti poput primjene stvarnih opcija temeljene na portfoliju, i potrebu za općim modelom vrednovanja.

KLJUČNE RIJEČI: teorija stvarnih opcija, diskontirani novčani tokovi, vrednovanje, strateški menadžment.

THE ROLE OF CENTRAL COUNTERPARTIES ON THE ENERGY MARKET¹

PREGLEDNI RAD/REVIEW PAPER

UDK: 620.9(1-773)

JEL: Q40

Autori/Authors:

MELINDA FRIESZ

RISK ANALYST, PHD-STUDENT
KELER CCP LTD., CORVINUS UNIVERSITY OF BUDAPEST
BUDAPEST, HUNGARY
melinda.szodorai@gmail.com

KATA VÁRADI

ASSOCIATE PROFESSOR
CORVINUS UNIVERSITY OF BUDAPEST
BUDAPEST, HUNGARY
kata.varadi@uni-corvinus.hu

ABSTRACT

Market structures, behaviors, and trading practices are affected by the required regulations aiming to make the market safe and transparent; therefore another crucial goal for regulators is to clear certain OTC (over-the-counter) derivatives and commodities through central counterparties. As a result of the risk-sharing mechanism of the central counterparty, some participants may express overconfidence about the security provided to avoid default. We analyzed the importance of central counterparties and the systemic risk these infrastructures bear and what are consequences of failure and near failures. After presenting the biggest fails and near in history, we focus on the energy market and the struggles regulators, and the system's participants face. In 2018 the electricity market was hit by distress, where central counterparties had a significant role in managing the stress. The situation was similar to the failures that occurred in the past caused by speculative positions. We analyzed this event by presenting the effects of developing countries.

Overall, the welfare effects of a central counterparty can be both negative and positive. Our results also identify critical pitfalls policymakers should take into account when considering a seemingly harmless intervention in the markets.

KEY WORDS: central counterparty, clearinghouse, energy market, regulatory frameworks, market infrastructures.

1. INTRODUCTION

Our paper focuses on the analysis of the central counterparty's presence on the energy market. We, therefore, analyze the welfare effects of a central counterparty. The importance of central counterparties is undoubtedly essential in the smooth functioning of the market, but the pitfalls policymakers should be taken into account when considering a seemingly harmless intervention. We will also point out the importance of the understanding of market participants' strategies in order to help decision-makers in future procedures and to simplify decision making.

Since 2008 the role and the systematic importance of the central counterparties gradually became essential on the financial markets. On the one hand, the sub-crisis regulators have implemented several steps aiming to handle and to mitigate systemic risk. The main areas are preventive measures to avoid shocks, resolution frameworks and firewalls against spillover effects (Kiff et al., 2010):

One of the tools for achieving these goals was to strengthen the position of central counterparties (CCPs) and force the markets participants to trade also on the over-the-counter (OTC) markets through a central counterparty. On the other hand, the interconnectedness yet appears among countries, therefore, uncertainty, and arisen risks shall be managed

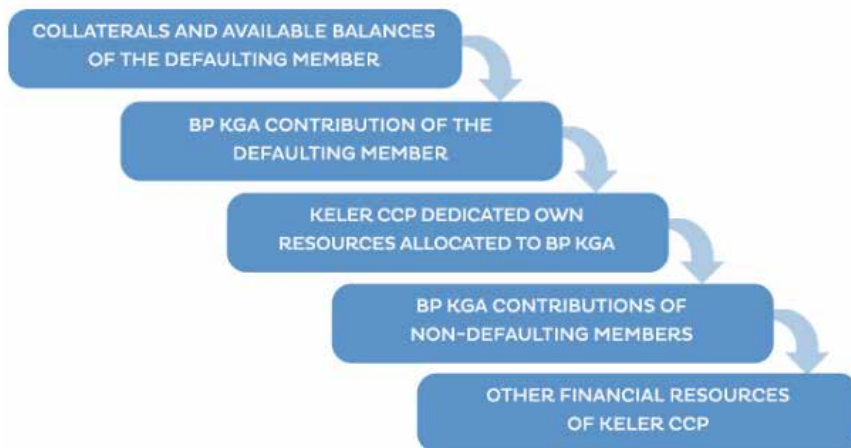
Bilateral relationships that prevailed between two counterparties are now by being settled through central counterparties, assuring the markets to be more secured. This guarantees the trade's fulfillment in case one of the trader's default. (Szanyi et al., 2018). Clearinghouses, or central clearing counterparties, play a critical role in the smooth functioning of financial markets both in over-the-counter and in exchange-based markets for stock and commodity too. The CCP becomes a "central" party between traders, becoming a buyer to the seller, and a seller to the buyer, a process called novation. The two parties are, therefore, no longer exposed to each other, but only to the CCP, which provides insurance

¹ The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of KELER CCP Ltd. Assumptions made in the analysis are not reflective of the position of any entity other than the authors. This publication/research has been supported by the European Union and Hungary and co-financed by the European Social Fund through the project EFOP-3.6.3-VEKOP-16-2017-00007, titled "Young researchers from talented students – Fostering scientific careers in higher education"

against bilateral default risk (Biais et al., 2016). Central clearing is now mandatory for standardized derivatives in most countries, as regulators expect it to prevent market breakdowns or financial contagion (Duffie et al., 2014).

In order to fulfill this role and to avoid the domino effect, CCPs must have a “default waterfall” to cover the losses arising from a defaulting member. EMIR requires the establishment of this pre-funded default fund, and it also imposes the order of exhaustion of the waterfall elements. (EMIR, Article 48.) An example of a default waterfall system:

Figure 2. KELER CCP’s default waterfall system



Source: <https://english.kelerkszf.hu/Risk%20Management/Trading%20Platform/Default%20waterfall/> (accessed: 28.01.2019)

EMIR and the RTS regulations regulate the elements of the guarantee systems. Regulators’ primary objective is that the margins determined by the CCP shall be prudent, stable, and reproducible by market participants. The methodologies applied are complex and rigid, so it may impose a burden on the market participants and thus, pill out members of the clearing system due to their inability to meet their contributions to the default fund.

Central counterparties do mitigate counterparty risk and are prepared to withstand under “extreme but plausible market conditions.” However, a new risk arises in current circumstances, namely the default of the CCP itself. The default of a CCP, however, becomes a systemic risk, triggering the collapse or at least weakening the resilience of an industry or economy. Duffie (2015) claims that in the case of this event, it would have dramatic effects on financial stability.

In the case of commodity markets a considerable drop in the availability of the good cause significant fluctuation and price peaks. Energy is a special kind of commodity, as it cannot be stored, consumption is seasonal, and it depends highly on the weather. This dependency is proved by the cases we are about to analyze. The most prominent lesson to be learned by the CCPs besides accepting the uncertain weather condition that affects the availability of goods is speculative behavior, and the increased risks traders are willing to take.

First, we will present three fails and three near of CCPs since 1973, pointing out the main lessons learned. The second main part of this paper contains significant issues regarding energy markets, pointing out the regulatory struggles to obtain liberalized markets. The last part analyzes the effects of near fail events in developing countries, followed by the conclusion.

2. CASE STUDIES ON FAILED AND NEAR FAILED CCPS

In our paper, we will present the three events the system faced since 1973 and we will also discuss a few near fails. Many may think that these rare events took place in the money market, but all were related to the commodity markets. From the CCPs point of view, soothing the adverse effects of the market volatility and managing them properly, can be challenging. The range of the products a CCP can clear is broad; it is not limited to money market products only.

2.1 The failure of the Caisse de Liquidation des Affaires et Marchandises (CLAM), Paris, 1974

Bignon and Vuillemeys (2017) analyzed the fail of the French CCP from 1974. The CLAM was a market for cocoa, coffee, and sugar futures, being the only CCP on the Paris Commodity Exchange. 1970-1974 was a turbulent period all over the world: the oil crisis and the stock market crash were all major events that put the expansion to rest. In one year timeframe, the price of the sugar has been multiplied by six, peaking from 1,300 to 8,100 FRF/ton.

Meanwhile, several countries experienced shortages of sugar and “a combination of structural and exceptional factors, which created widespread expectations of a long-lasting sugar shortage” (Bignon, 2017). Two primary drivers were identified that led to the closure of the market. A registered broker named Nataf had a sizeable long position that reached 56% of the total opened position of CLAM. The positions were held on diversified retail investor’s account, but as prices started to drop, Nataf and the account holders faced large variation margin calls.²

The second issue was that a number of investors stopped responding to margin calls from Nataf or other brokers. “Once it appeared that Nataf would fail on its variation margin calls, it was clear that the CLAM would not be able to find counterparties to liquidate defaulted exposures and return to a matched book.” (Bignon, 2017)

All in all, the unmet margin calls were the leading cause that led to the breakdown of the CLAM due to the sharp drop in sugar prices on the futures exchange. The CCP’s mistake was that it not increased the margin requirements as a response to the higher market volatility. The high level of concentration against Nataf Trading House was not managed properly; authorities should have ordered the reduction of such exposure of one single party. Lacking transparency in the loss-allocation also aggravated the clearing house’s situation. Researchers point out the lack of proper risk management as well. Severe distortions were identified as soon as sugar prices collapsed and the concentration level had a large negative impact as well. It is also shown that “the interests of the CCP and those of the member in distress became closely aligned, which induced the CCP to delay the declaration of default and attempt manipulation of settlement prices.” (Bignon, 2017) Conflicts between managers and the supervisor leading to misreporting, as well as between managers and creditors (risk-shifting), was challenging to mitigate only by regulations (Bignon, 2018).

2.2 The failure of the Malaysian Kuala Lumpur Commodity Clearing House (KLCE), Kuala Lumpur, 1983

In 1983 the Malaysian Kuala Lumpur Commodity Clearing House was closed down. The reason is similar, the margin calls were not met after a crash in palm oil futures prices on the KLCE. Concentration is present too since six large brokers had accumulated huge positions. The price volatility generated tremendous losses that ended with the default of the counterparties. The dedicated task force reported poor management and unwieldy rules leading to the default of the entity.

The crisis was ignited when Chinese millionaire Loo Cheng Ghee - the Kentucky Fried Chicken franchise holder for Malaysia and Singapore - tried and failed to corner the palm oil futures market by legally selling short. Before speculation began to, contract defaults and trading suspensions paralyzed the market. Despite the warning of the Palm Oil Refiners Associations’ regarding possible speculations and market manipulation, KLCE claimed to watch but not take actions. Loo Cheng Ghee and his traders increased their trading activity, and although the crisis seemed to be outlined, it did not warrant the declaration of emergency powers. Instead, the exchange agreed to hefty increases in good-faith deposits. After a few days, the exchange invoked emergency regulations limiting trading and forcing brokers to identify non-exchange members. Lee’s brokers defaulted as well the next day and were suspended. (Robinson, 1987)

We can highlight again the lack of proper timing of involves by the supervising authority and delayed response to the market volatility of the clearinghouse. The suspension of trading was delayed as well, aggravating the situation. Reports show a sloppy trade confirmation and registration resulted in long delays in sorting out who owed what to whom (Kiff, 2019).

2.3 The failure of the Hong Kong Futures Exchange (HKFE), Hong Kong, 1987

In 1987 worldwide stock markets experienced great falls followed by the crash at Wall Street. The Hong Kong stock market was also hit by the crash. The Hang Seng Index fell losing 11.1% of the market capitalization and was closed for the next four days. The crisis was mainly due to the lack of monitoring in maintaining initial margins, the destructive characteristic of the market system, and some lack of proper knowledge of contracts. The CCP did not respond appropriately to the fluctuating process on the market. It only required its member firms to deposit their net margins instead of gross margins. The protection to either its member firms or investors was way below the expected level. Some steps were taken; “people were prohibited from short selling shares.” but due to the illusions of bullish³ market lead traders to speculation. HKFE needed the government to provide loans for a bail-out. (Lui Ho-chung, 1992).

“During a four-day market closure initiated by the stock exchange, clearing member performance failures were of sufficient magnitude to overwhelm the solvency of the guarantor of the clearing house’s trades.” In this case, researchers

² Variation margin is the collateral exchanged to cover the gains or losses associated with the change in the price of a centrally cleared or bilaterally margined contract. On a periodic basis – often daily – collateral is exchanged to reflect the change in mark-to-market of a deal or portfolio of deals.

³ People, longing index futures, could not short index constituent stocks in the stock market to hedge their risk. Their long positions in futures market were totally speculative.

also point out the dramatic loss in confidence. The Hong Kong government put in place a resolution plan, this being the only known example in the CCP world (Cox, 2015).

2.4. Near fails of CCPs

Near fail defaults may seem less exciting, but these events are too pointing out the discrepancies of the system. Two entities faced near fails in October 1987. The Chicago Mercantile Exchange (CME) and the Options Clearing Corporation (OCC) faced difficulties in collecting the margins from the market. The primary lesson for CME was that they should change their policy because clearing members retained too much discretion over the timely payment of margin, leading to a critically small amount of time for the clearinghouse.

In the case of the OCC, the issue again was the high level of concentration. The exposure towards a large clearing member that had difficulties in meeting its requirements in the form of margin calls was great. The member reached out to an emergency loan from its bank in order to avoid suspension and default (Kiff, 2019).

Since the 1987 crash, there were no significant issues among clearing houses with such tremendous stress to cover. Along with the resilience from the regulatory side, technology helped the automatization of the payment system, so institutions are on the path to mitigate arising risks.

In 2018 the electricity market was hit by distress. We can call the event a near fail but also a test to the current systems that occurred on the energy market. The issues in this case were similar: the member could not meet its margin requirements, so the member was declared in default. In the previous years, the Norwegian trader Einar Aas earned millions of kroners by speculative trades that ended with success. In 2018 he bet that the spread between the Nordic and German power would narrow. Carbon emission allowances, the best performing commodity during the period, were on a tear. This helped push up the German market, while at the same time, wetter weather forecasts sunk the Nordic next-year contract. His positions were massive compared to the liquidity on the market (Paulsson and Hotler, 2018). On the same day, he has been declared defaulted for not meeting the margin requirements.

From the Nasdaq Clearing point of view, the defaulted portfolio contained a significant spread position between Nordic and German Power that was negatively impacted by extraordinary fluctuations. By not meeting the margin calls, within 48 hours all of the positions had been closed through an auction, but the losses to be covered exceeded the defaulting member's collateral and default fund contribution. New capital needed to be injected and the Nasdaq Clearing has decided to increase margin levels too. (Nasdaq, 2018). The Swedish Financial Supervisory Authority is investigating the situation as well.

As these major events show, transparency and cooperation among parties is a crucial element to avoid exacerbating systemic risks that CCP fails may cause. As previously mentioned, energy is also subject of the clearing activity, but due to its unique characteristics, CCPs shall deal with these peculiar aspects in order to mitigate uncertainties. The sector went through several reforms in the past years that affected its "economic performance in terms of techno-economic efficiency, investments, the sector's technological improvements and sector's environmental productivity" (Corsatea, 2018). The main concept is the harmonization and liberalization of markets which.

3. THE LIBERALISATION OF ENERGY MARKETS

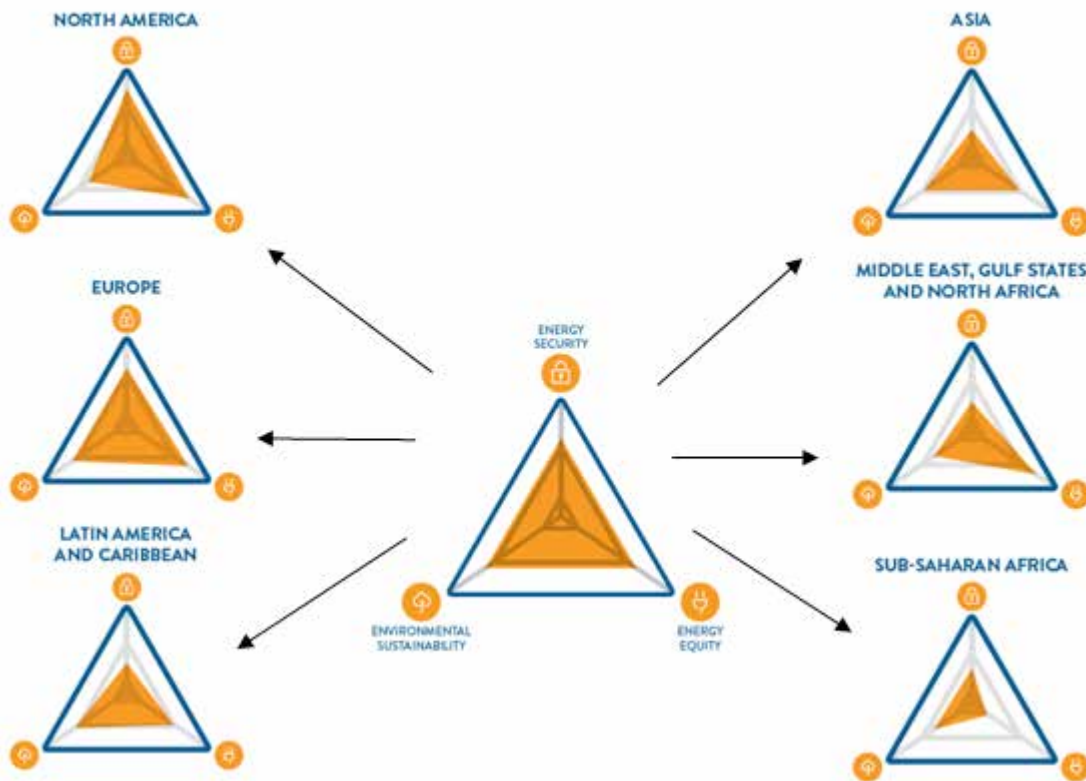
3.1. World energy markets overview

The energy market has some critical issues globally in terms of both high uncertainty and competitive environment for energy providers aiming to achieve sustainable energy consumption. Climate concerns also arise. Based on the World Energy Council's 2017 annual report on the energy, it is clear that the move towards the decarbonization of energy is the biggest single driver behind the energy transition. Technology is the solution to the world's energy problem. The future, therefore, relies on advances in electric storage and renewable energy. "The rapid implementation of renewable energy capacity across the globe, (...), means that there is a degree of certainty about the future role of renewable energy in the global energy mix." (WEC, 2018a)

In order to measure the energy performance of the countries, the World Energy Council uses an Index named Energy Trilemma Index on along three dimensions: **Energy Security** (active management of primary energy supply from different resources, reliability of energy infrastructure, and ability to meet current and future demand), **Energy Equity** (accessibility and affordability) and **Environmental Sustainability** (achievement of supply- and demand-side energy

efficiencies and development of energy supply from renewable and other low-carbon sources). “The Trilemma concept implies that positive growth in each dimension needs to take account of and offset any consequential effects. Unmanaged consumption growth can lead to unbalanced systems. Rapid decarbonization can impact the security of supply.” (WEC, 2018b). The Energy Trilemma Index report shows the following structures from around the world:

Figure 2. Energy Trilemma Index and the performance of regions – 2018.



Source: World Energy Trilemma Index, 2018.

The report shows that many countries are managing the balance successfully, Europe being the closest to the ideal balance.

3.2 The European Union’s energy policy endeavors

In the last decades, electricity markets of the European Union’s countries have undergone major changes. The deregulation of electricity markets stimulated investments in the production and distribution of energy (Cevrone et al., 2014). Market liberalization is expected to give opportunities and to encourage entrepreneurship. It is not surprising that this liberalization process is complex and difficult (Tönurist et al., 2015).

The elimination of customs duties, quantitative restrictions, and physical and technical barriers among the European Union members made possible the free movements of the four fundamental freedoms of the market. Electricity is also a tradable form of good, so its free movement is achieved through the single market. Since 1996 measures have been adopted to harmonize and liberalize the EU’s energy market. Moreover, the establishment of the internal energy market is a main priority for the European Union. The purpose is to offer a more consumer-centered electricity market with market-based supply prices and also to increase competition as a result of the high level of interconnection capacity. With this step achieved the concentration at national and regional levels could be reduced (Costa-Campi, 2018).

The primary purpose, therefore, is the creation of single energy market that results in the harmonized energy prices and the higher quality of services (Correlje and Van der Linde, 2006; Glachant, 2009). In order to achieve the targets proposed by the Treaty on the Functioning of the European Union, various rules and regulations have been established on both European and regional levels. The “Clean Energy for All Europeans” program is one of the most important initiatives that propose, among others, legislative changes regarding energy efficiency, renewable energies or design of the electricity market.

To achieve the balance above, the EU has developed various action plans and made significant steps to secure energy supply and a competitive environment for energy providers (e.g. European Energy Security Strategy and Resource-

Efficient Europe). The aim is also to obtain sustainable energy consumption, too. Currently, the protection of investments aiming to achieve a functioning and an integrated market is governed by specific acts, including the Energy Charter Treaty, . (Jaś-Nowopolska, 2018). Moreover, Costa-Campi et al. (2018) bring to reason via an empirical study showing that “the increase of FDI is mainly due to the reduction in price dispersion.”

Researchers point out that gains in efficiency are typically associated with the adoption of technologies, while technology improvements are associated with innovation. (Corsatea, 2018). Nicoletti et al. (2003) point out the inequalities in technology among markets, that cause problem.

The several changes in this field that aim to liberalize the market, but also to make the trading system safer, requires the flexibility and the co-evolution of technological and business model innovations to comply with policy and system regulation (Foxon, 2011). Hall and Roelich (2016) examine the ‘complex value’ as a key concept in understanding business model innovation in the energy sector. The process of complex value identification poses a challenge to energy researchers, commercial firms, and policy-makers in liberalized markets.

It is indisputable that the cooperation among the countries is crucial in order to maintain a smooth functioning energy market. Energy and power exchange markets are developing as well, but several other challenges appear when looking into the specifics of the commodities. Electricity is difficult to store in large quantities. It shall be consumed as it is generated. This fundamental property creates many challenging problems in both the generation and delivery of electricity. Electricity sources are limited, and to supply them with the least waste possible, the physical networks and infrastructures shall be reliable as well (Nguyen et al., 2012). The seasonality of energy consumption is undeniable as well as large fluctuations in prices on the exchange (Grabara and Kot, 2017; Kolcun, 2018). Felsmann et al., (2018) shows the issues in pricing stemming from bureaucracy.

4. CENTRAL COUNTERPARTIES IN DEVELOPING REGIONS

The common regulatory framework available for the European CCPs is proposed by the European Securities and Markets Authority (ESMA). Firms wanting to offer CCP services in the EU must seek authorization under the European Market Infrastructure Regulation (EMIR). CCPs become the focal point for derivative transactions, thus increasing market transparency and reducing the risks inherent in derivatives markets (ESMA, 2019).

There are two possible models on the energy market for CCPs. One model is the classic one, presented in the first section when the legal entity interposes itself between the counterparties to the contracts traded on one or more markets. Another model, when the CCP has been approved by the clearinghouse for clearing of principal transactions and client transactions on behalf of the CCP’s clients, thus becoming a so-called general clearing member (GCM). There is no novation by the GCM during the clearing of transactions; however, it has joint and several liabilities for financial settlement by the market both towards the clients and the clearinghouse. The CCP contributes to the default fund of the clearinghouse, but its clients have no such obligation. Although these central counterparties do not guarantee the physical delivery in case of any goods or commodities, the cash side of these transactions is assured. As mentioned before, a member’s default losses that exceed its initial margins and default fund contribution are absorbed first by the CCP’s equity capital, and then by the default fund contributions of surviving members on a pro-rata basis. (Capponi et al., 2018). This means that if stress hits the system that requires further liquidity, all members are required to increase their contribution towards the clearinghouse.

The capital may drop below the minimum level due to the increased contribution. In this case, the supervising authority shall be announced. Because CCP’s have a vast and diversified client base and a high number of assets cleared, their default may have a systematic impact on not just the commodity being short on the market, but other segments may be affected as well. If the commodity prices on the international market increase as an aftermath of these events, we can say that other parts of Europe would not remain unaffected, but mayor crashes can be handled in time with proper risk management.

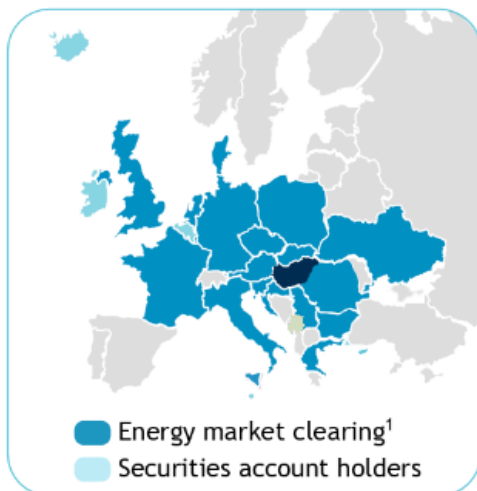
4.1 The central counterparty in Hungary

The Hungarian CCP, KELER CCP, licensed under EMIR, is the leading clearing house in the Central Eastern European region. Apart from the Hungarian capital markets, clients can reach all major European energy markets through a single and harmonized connection. (KELER CCP, 2019)

⁴ EEX, EPEX, HUPX, PXE, SEEPEX, AXP/BELPEX, Powernext, CEGH

Along with the parent company (KELER CSD), the group's geographical coverage in Europe is significant. KELER CCP it offered clearing services to 138 direct and indirect clients from 23 countries.

Figure 3. KELER Group's geographical coverage



On the energy market, the Hungarian clearinghouse is a general clearing member, the European Commodity Clearing (ECC) is the central counterparty performing the novation. In this role KELER CCP has non-clearing members that trade on the markets cleared by ECC, KELER CCP is responsible towards ECC for the risks they take. The ECC determines the collected margin requirements, but due to the additional risks taken, the Hungarian party is also entitled to collect additional margins from its members. (KELER CCP, 2019)

This model is beneficial from the small energy traders' point of view too. Via KELER CCP, they have the opportunity to connect to international energy markets while counterparty risk is mitigated. Becoming a direct member of huge clearinghouses may be unaffordable for smaller traders due to the high level of mandatory default fund contribution rate. KELER CCP contributes to the default fund of ECC, but the non-clearing members have no such contribution obligations.

KELER CCP took the act to the significant price fluctuations, and increases as the international trading market of carbon quotas, the rate of the collective guarantee fund contribution has risen suddenly and steeply on the pan-European markets (KELER CCP, 2018a). Due to the fast action of the CCPs all over Europe, the event that took place in Norway, overall it did not affect the market negatively. The sufficient capitalization combined with a transparent regulatory framework not only the Hungarian, but all other CCPs managed to pass the turmoil.

4.2 Overregulation

The presence of inflexible and extreme overregulation is as dangerous as no regulation at all. Capponi et al. (2018) demonstrate that sharing the pool of default funds creates dependency among members. By examining externalities they conclude, that "when members take excessive risk to earn potentially higher returns, a negative externality arises" and that "the degree of the externality links directly to the size of the default fund. A higher default fund contribution, although more costly, can mitigate the externalities by incentivizing members to take safer investments."

However, there are always speculators on the market, who cause distress. If the trading on the international market becomes more expensive as a result of risk mitigation or distress avoidance step and act way over the requirements, smaller – not necessarily riskier – members of the system may not be able to afford the membership fees and contribution. This kind of measure would be a step back from achieving a balanced system and proper distribution of energy.

5. CONCLUSION

Market infrastructures, such as central counterparties aim to improve the transparency of markets and control the excessive risk-taking of speculators. CCPs beneficial presence on the different markets is undeniable. Smoothing the flows and enhancing transparency is a key to diminish risks in order to protect the market from distress and its spillover.

As shown through the case studies, a new risk, the systemic risk appears. Regulators aim to minimize potential events occurring from this latter risk by assessing rigorous regulations. However, regulators shall also take into consideration that way too strict policies may put an excessive burden on market participants, phasing them out from the system, which increases the imbalance between regions.

Regulators aim to promote and to obtain innovative business models that reduce carbon footprint, energy costs, and manage system risks. A multidisciplinary view is indispensable to handle such a complex system. We pointed out that the well-balanced policy framework encourages investment while taking a step to sustainable energy consumption, and also fine-tuning financial parts is not easy to achieve.

Energy markets give opportunities for traders to buy and sell energy in case of shortage or excess. In order to achieve well balanced and stable energy markets, the regulatory framework shall be stabilized. In well-regulated market liquidity and efficiency is expected to increase, moreover, social welfare can be obtained, too.

LITERATURE

- Biais, B., F. Heider, & M. Hoerova (2016) Risk-sharing or risk-taking? Counterparty risk, incentive, and margins. *Journal of Finance*, 71(4), pp. 1669–1698.
- Bignon, V. & Vuillemeys, G. (2016) The Failure of a Clearinghouse: Empirical Evidence [online]. SSRN. Finance Meeting EUROFIDAI - AFFI, Paris December 2016. Last modified 2018. Available at: <https://ssrn.com/abstract=2862673>.
- Szanyi, C., Szodorai, M. & Váradi, K. (2018) A supplement to the regulation of anti-cyclical margin measures of clearing activities [online]. SSRN. Available at: <https://ssrn.com/abstract=3242078>.
- Capponi, A., Wang, J. & Zhang, H (2018) Central clearing and the sizing of default funds [online]. SSRN. Available: <https://ssrn.com/abstract=3290397>. DOI: 10.2139/ssrn.3290397.
- Cevrone, A., Santini, E., Teodori, S. & Romito, D. (2014) Electricity price forecast: a comparison of different models to evaluate the single national price in the Italian energy exchange market. *International Journal of Energy Economics and Policy*, 4(4), pp.744-758.
- The European Commission (2013) Commission Delegated Regulation (EU) NO 149/2013 [online]. *Official Journal of the European Union*. L 52/11. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32013R0149>.
- Correlje, A. & C. Van der Linde (2006) Energy supply security and geopolitics: A European perspective. *Energy Policy*, 34(5), pp. 532–543.
- Corsatea, T. D., & Giaccaria, S. (2018) Market regulation and environmental productivity changes in the electricity and gas sector of 13 observed EU countries. *Energy*, 164, pp.1286–1297. DOI: 10.1016/j.energy.2018.08.145.
- Costa-Campi, M. T., Paniagua, J., & Trujillo-Baute, E. (2018) Is energy market integration a green light for FDI? *Energy Journal*, 39, pp. 39–56.
- Cox, R. T. (2015) Central counterparties in crisis: The Hong Kong futures exchange in the crash of 1987 [online]. *Journal of Financial Market Infrastructures*, 4(2), pp. 73–98. Available at: www.risk.net/type/journal/source/journal-of-financial-market-infrastructures.
- Duffie, D. (2014) Resolution of Failing Central Counterparties [online]. *Working Papers- Stanford Graduate School of Business*, No. 3256. Available at: <https://www.gsb.stanford.edu/faculty-research/working-papers/resolution-failing-central-counterparties>.
- European Securities and Markets Authority. Available at: <https://www.esma.europa.eu/policy-rules/post-trading/central-counterparties>. [Accessed 29-1-2019].
- Felsmann, B., Mezósi, A., & Szabó, L. (2018). Market versus bureaucracy – Price regulation in the electricity retail sector. Conference, the importance of János Kornai's research for understanding the changing role of the state in the economy, Budapest, Corvinus University of Budapest, 21-22 February, 2018.
- Foxon, T.J. (2011) A coevolutionary framework for analyzing a transition to a sustainable low carbon economy. *Ecological Economics*, 70(12), pp. 2258–2267.
- Grabara, J. & Kot, S. (2017) Smog - Are power plants guilty? *Proceedings of the 9th International Scientific Symposium on Electrical Power Engineering, Elektroenergetika 2017*, pp. 26-29.
- Hall S, & Roelich K. (2016) Business model innovation in electricity supply markets: The role of complex value in the United Kingdom. *Energy Policy*, 92 (2016), pp. 286–298.
- Jaś-Nowopolska, M. (2018) The influence of the energy charter treaty on the European energy market. *International comparative jurisprudence*, 4(2), pp. 237–256. DOI: 10.13165/j.icj.2018.12.001.
- KELER CCP. Available at: <https://english.kelerkszf.hu>.
- KELER CCP (2017) KELER CCP annual report [online]. Available at: <https://english.kelerkszf.hu/Key%20documents/Financial%20Reports/Annual%20Reports>.
- KELER CCP (2018a) Capital increase at KELER CCP [online]. Available at: <https://english.kelerkszf.hu/kszfnews/?id=888112>.
- KELER CCP (2018b) Client information – KELER CCP Fee Schedule, Available at: <https://english.kelerkszf.hu/kszfnews/?id=894308>.
- Kiff, J. (2019) History of Central Counterparty Failures and Near-Failures [online]. *The OTC space*. Available at: <https://www.theotcspace.com/content/history-central-counterparty-failures-and-near-failures-derivative-primer-7>. [Accessed 29-1-2019].
- Kiff, J., Dodd, R., Gullo, A., Kazarian, E., Lustgarten, I., Sampic, C. & Singh, M. (2010) Making Over-the-Counter Derivatives Safer: The Role of Central Counterparties [online]. *Global Financial Stability Report 2010*. Available: https://www.researchgate.net/publication/43763064_Making_Over-the-Counter_Derivatives_Safer_The_Role_of_Central_Counterparties. [Accessed: 29-1-2019].
- Kolcun, M. & Rusek, K. (2018). Analysis of prices for electricity at the Polish power exchange. *Polish Journal of Management Studies*, 17(1), pp. 155–164.
- Lui Hu-chung, O (1992) *Hong Kong futures exchange & the development of options on the Hang Seng index* [online]. MBA Project Report. Hong Kong: Chinese University of Hong Kong. Available at <https://core.ac.uk/download/pdf/48541870.pdf>. [Accessed 29-1-2019].
- Nasdaq Business (2018) Nasdaq Statement Regarding Member Default [online]. *Nasdaq*. Available at: <https://www.nasdaq.com/about/press-center/nasdaq-statement-regarding-member-default>. [Accessed: 29.01.2019].
- Nguyen, D., Negnevitsky, M., Groot, M., (2019) Walrasian market clearing for demand response exchange. *IEEE Transactions on Power Systems*, 27 (1), pp. 535–44.
- Nicoletti G & Scarpetta S. (2003) *Regulation, productivity and growth: OECD evidence*. *OECD Economics Department Working Papers 2003*, pp. 347.
- Paulsson, L. & Hotler, M. (2018) Phantom Trader Who Blew Hole in World's Oldest Power Market [online]. *Bloomberg*. Available at: <https://www.bloomberg.com/news/articles/2018-09-15/phantom-trader-who-blew-a-hole-in-world-s-oldest-power-market>. [Accessed 29-1-2019].

30. European Commission (2017) Proposal for a directive of the European Parliament and of the Council on common rules for the internal market in electricity [online]. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52016PC0864R%2801%29>.
31. The European Parliament (2012) Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories [online]. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32012R0648>.
32. Robinson, S. (1984) Traders shunning Kuala Lumpur Commodity Exchange pressuring government to re-establish credibility. *United Press International*. Available at: <https://www.upi.com/Archives/1984/09/09/Traders-shunning-Kuala-Lumpur-Commodity-Exchange-pressuring-government-to-re-establish-credibility/5435463550400>. [Accessed 29-1-2019].
33. Tõnurist, P., Besten, D., Xinhui, Yu P. & Paplaityte, D. (2015) Market Liberalization and Innovation in the Energy Sector: The Case of Belgium and the Netherlands. *Administrative Culture*, 16 (2), pp. 83- 116.
34. World Energy Council (2018a) *World Energy Issues Monitor 2017*. Available at: <https://www.worldenergy.org/publications/2017/world-energy-issues-monitor-2017>. [Accessed 29-1-2019].
35. World Energy Council (2018b) *The Energy Trilemma Index 2018*. Available at: <https://www.worldenergy.org/wp-content/uploads/2018/10/World-Energy-Trilemma-Index-2018.pdf>. [Accessed at 29-1-2019].

ULOGA SREDIŠNJIH DRUGIH UGOVORNIH STRANA NA ENERGETSKOM TRŽIŠTU

SAŽETAK

Tržišne strukture, ponašanja i trgovačke prakse su pod utjecajem nužnih regulacija koje imaju za cilj učiniti tržište sigurnim i transparentnim, stoga još jedan ključan zadatak regulatora je očistiti određene OTC (over-the-counter) izvedenice i robe putem središnjih drugih ugovornih strana. Kao posljedicu mehanizma podjele rizika koje nude središnje druge ugovorne strane neki sudionici mogu iskazivati pretjeranu pouzdanost u jamčenu sigurnost od promjene zadane vrijednosti, tj. od neizvršenja novčanih obaveza. Analizirali smo važnost središnjih drugih ugovornih strana i sistematski rizik kojeg te infrastrukture nose sa sobom kao i posljedice štete i moguće štete. Nakon predstavljanja najvećih financijskih šteta i bliskih šteta u povijesti fokusirat ćemo se na energetska tržišta i prepreke s kojima se regulatori i sudionici u sistemu suočavaju. U 2018. tržište električne energije zahvatile su nevolje, pri čemu su središnje druge ugovorne strane imale značajnu ulogu u upravljanju proizašlim stresom na financijskom tržištu. Situacija je nalikovala štetama iz prošlosti koje su uzrokovala spekulacijske pozicije. Analizirali smo taj događaj kroz prikaz učinaka zemalja u razvoju.

Općenito, ekonomski učinci središnje druge ugovorne strane mogu biti podjednako i negativni i pozitivni. Rezultati također ukazuju na kritične zamke koje bi donosioci politika trebali uzeti u obzir kada razmatraju naizgled bezopasne intervencije na tržištu.

KLJUČNE RIJEČI: središnja druga ugovorna strana, klirinški zavod, energetska tržišta, regulatorni okviri, tržišne infrastrukture.

PROPOSAL FOR STORAGE APPLICATION IN THE MANUFACTURE USING RFID

PREGLEDNI RAD / REVIEW PAPER

UDK: 658.785:621.396.44

JEL: L63 ; L91

Autori/Authors:**JURAJ VACULIK**

PROF., ING, PHD.,

FACULTY OF OPERATION AND ECONOMICS OF
TRANSPORT AND COMMUNICATION, UNIVERSITY OF
ZILINA, DEPARTMENT OF COMMUNICATION, AIDC
LABORATORY, ŽILINA, SLOVAKIA
juraj.vaculik@fpedas.uniza.sk

SIMONA MOKRISOVA

ING

FACULTY OF OPERATION AND ECONOMICS OF
TRANSPORT AND COMMUNICATION, UNIVERSITY
OF ZILINA, DEPARTMENT OF ROAD AND URBAN
TRANSPORT, ŽILINA, SLOVAKIA
simca.mokrisova@gmail.com

ABSTRACT

The paper focuses on the software part of RFID technology to identify the stored material in manufacture plant. Application of RFID technology for the automatic identification of materials and packaging in the manufacturing company. This will ensure the possibility of tracking the flow of material and locating the stocks with their subsequent inventory.

In the time of solution was to create a database containing information about materials and packaging for the purpose. Part of the application is suggest of usability of RFID. In its practical use and design of databases for the company with the creation of a software application using the AMP middleware, which connects the hardware part needed for the functioning of RFID with the created databases. The result is the automatic recording of information about the material and its placement in transparent databases that will replace the existing localization system. Thanks to the introduction of automatic material flow tracking using RFID, it is possible to reduce the cost of material identification and marking as well as storage.

KEY WORDS: RFID technology, automatic identification, storage systems, process line, middleware.

1. INTRODUCTION

The paper is devoted to the introduction of RFID technology for automatic identification of material and packaging in the manufacturing plant. Through this technology, it is possible to track the flow of material and locate inventories with their subsequent inventory. The intent of introducing RFID technology into a company is to reduce the cost of storing and destroying degraded, long-term stored goods. In our case, the company manufactures corrosion products and the current warehouse system is making losses for this very reason. The problem is that the current system does not take into account the date of production of individual components. Components are stored during manufacture, and if the production date is not tracked, workers choose from the warehouse the materials first found in the warehouse and corrode material stored there for longer. Each year, there are several thousand costs for liquidation and, of course, the costs of material devaluation.

By automatically recording the production date and the place of storage of the individual components, a simpler orientation in the warehouse will be made easier and will prevent unnecessary long-term storage, thus greatly reducing the company's costs.

The work is based on previous research in the field of SCM systems (2009), RFID tagging (2010), middleware support (2013, 2014), storage system (2014), EPC standard (2015), and more within our university's laboratory AIDC LAB.

The main aim of the solution was to create a design of the system, e, g, databases and their linking with control software that combines RFID hardware with other elements. Several variants of the solution have been created so the company can choose which option is best suited to it. At the same time, the databases created three middleware application assemblies that loaded the identifiers and automatically written the data from them to the created databases. After the creation of all software elements, the necessary testing of the system under laboratory conditions took place.

2. THEORETICAL BASIS

In practice, we are constantly meeting the pressure of accelerating and simplifying almost all processes in our lives. One of the most advanced means of speeding, simplifying processes and saving costs is by automatic identification systems where RFID is also included. Unfortunately, this technology is relatively little used mainly because of the high initial costs and general ignorance of the benefits and use of RFID in different spheres of life.

At present, RFID technology is mainly used in industries such as logistics, stock level monitoring, entry control, trade, health, banking, and more,

Within logistics, RFID can be used for each phase of the distribution chain, enabling real-time tracking of the order, tracking the production phase of the product, helping to reduce the number of defective products, reducing the cost of subsequent complaints, and so on.

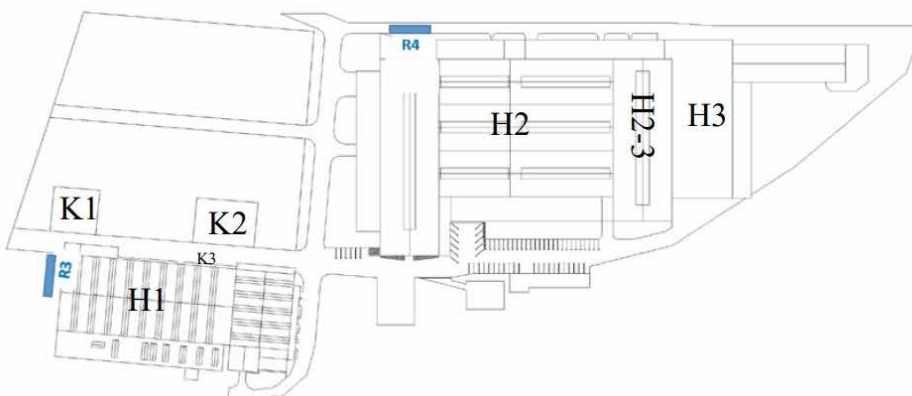
Monitoring inventory level with RFID with a customized data sharing inventory system allows accurate inventory counting within minutes, highlighting the lack of inventory and thus avoiding costs associated with not delivering components to production, and also preventing the purchase or supply of goods that are in stock quantity, which prevents the storage of excess goods.

The essence of introducing RFID is to ensure zero variations between the system's registered quantity of goods in the warehouse and the actual amount by ensuring that each shift of material within warehouses and between halls will be recorded by RFID. The material will be automatically logged into the system to prevent hundreds of thousands of euro losses due to material damage due to corrosion when the material is stored in the warehouse. Initially, the RFID system should be applied mainly to the output areas of warehouses or production halls. Later, the system could be applied so that the material can be tracked in the halls as well, so that specific material positions can be determined.

2.1 Analysis of the sole problem

Currently, the site is being renovated and expanded. In most cases, there is no information on possible new storage areas or production halls. For this reason, we must consider the original layout of halls and warehouses, and so it was not possible to test the system under actual operating conditions. The underlying operation is illustrated in FIG. 1

Figure 1. Plant deployment diagram



Source: Authors.

We typed problem spots and recorded them on the site map. These locations represent the passage of material through the "door" of the premises. Each transition between the objects must be recorded due to the location of the material and the boxes in the area. Since localization will be performed automatically, the locations will contain antennas to read the signal received from the identifiers. The rooms K1, K2 and K3 are warehouses and rooms H1, H2, H2-3 and H3 are production halls. The green points show the proposed location of the antennas, and the red lines show the flow of material across the entire production site illustrated in FIG. 2.

Figure 2. Design of antenna placement

Source: Authors.

These locations will be used to create databases, application assemblies, and test the functionality of the entire system.

2.2 Processing of material

The company does not want to be named, so we call it XYZ, it is a leading supplier of innovative automotive parts that has branches around the world. In cooperation with the most important car groups such as BMW, Opel and others strived to permanently reduce fuel consumption and emission levels through lightweight automotive components. The company came up with the requirement to make the storage and identification of the goods of the selected branch more efficient, namely the plant for the production of control stabilizers, MSBS only. The processing procedure is as follows:

- **Order of goods** - input raw material - rods and pipes are ordered by the material owners on the basis of the condition in the internal system. In case of doubt ask for an inventory of the material in the warehouse and in the production. The largest quantity is ordered from the ITSW plant.
- **Packaging and Material Delivery.** In the ITSW stock, in addition to spring springs, rods and tubes for MSBS are processed. The finished parts are fixed in the ITSW plant in bundles with different sizes and pieces of pieces. In one bundle, approximately 50-250 tubes or rods are fixed. Each of the packages is assigned its own IDENT with the label and description of the goods stored in it
- **Income and identification of goods in the plant** is carried out by means of a barcode. Upon entering the warehouse, each parcel scans, recording its acceptance into the internal database. IDENT is a package assigned either to an ITSW plant or to receiving a shipment in a R4 warehouse
- It is not necessary to know the **manufacturing processes** as such, but it is important to know which processes in the production process are being loaded and that the new IDENT is created. Since the production lines are always set for a certain type of operation and the change of setting can take 6 hours, it is necessary to produce a larger quantity of the material currently set, even though the excess material has to be temporarily stored.

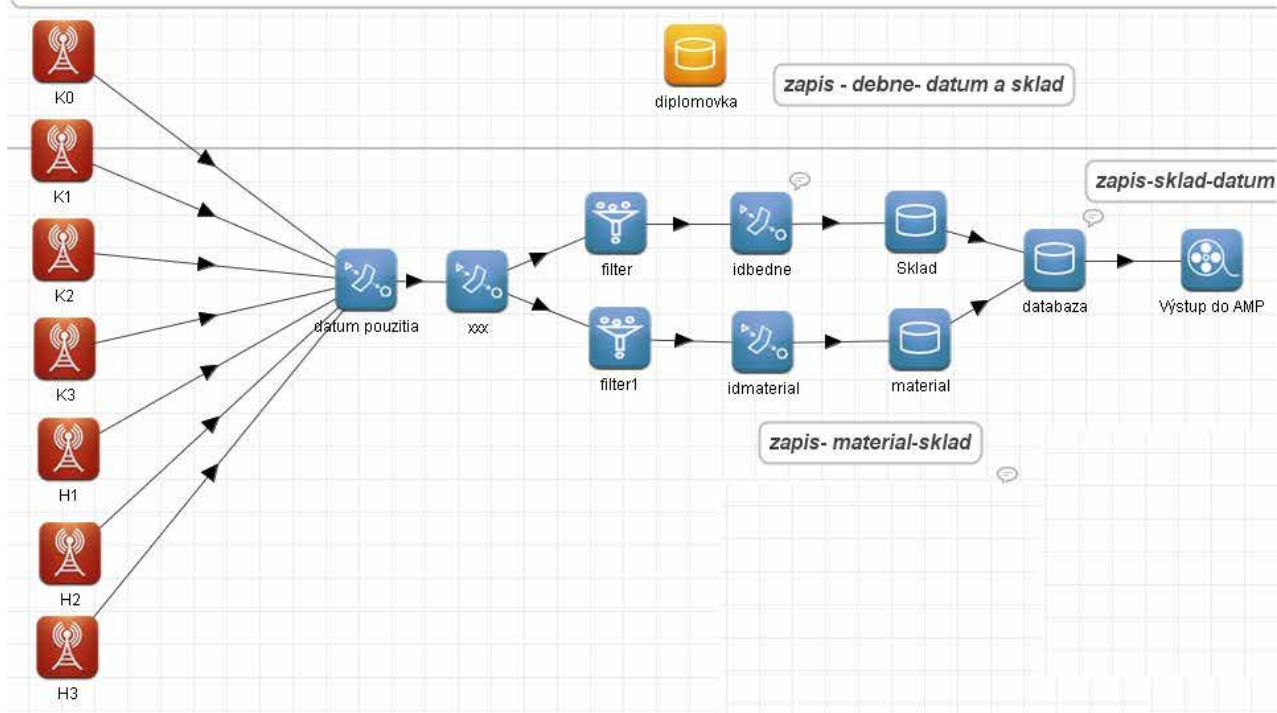
3. SOLUTION DESIGN

Several application modules have been created and integrated into one main module. Their logic involvement, configuration and progress of all application assemblies is as follows:

- the date of loading is recorded,
- the identifiers are filtered according to the start number,
- they are assigned a specific naming - box / material,
- the location of the identifier is recorded,

- according to the filtering, the data are recorded and recorded,
- data is automatically overwritten in the database.

Figure 3. First part of application - general input



Source: Authors.

Input is a processor (K0-H3 in FIG. 3) that modifies reader devices - antennas. As long as we have multiple antennas, we've tagged the inputs with names of warehouses and production halls to know where the identifier was loaded. The practice can be dealt with, for example, IP address, and so on.

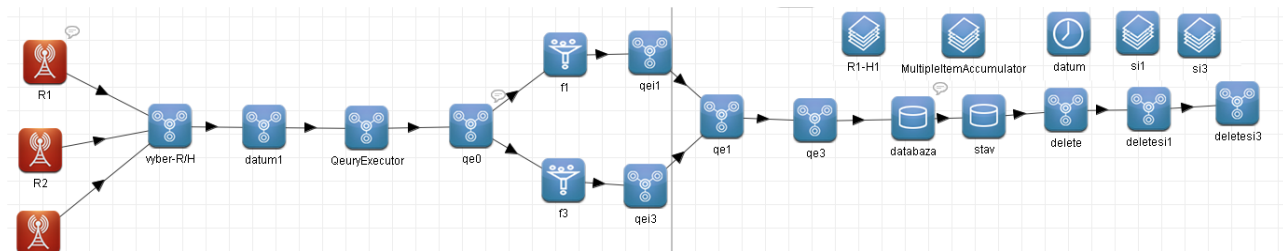
As we know, antennas are able to read multiple identifiers at once. In order to be able to write relevant data to individual databases, identifier filters need to be used. Simple filters based on data filtering by the initial character were used. In our case, the identifiers begin with 1 for box 3 for the material. This filtering created a branch in an assembly that ends with entries in the appropriate databases.

Other processors allow you to write filtered data. When the filter clears an identifier starting with 1, the idbox clearly determines that it is a box and sends the data to the corresponding processor. The second filter then records the identifier of the specified material, and the processor uniquely names the material and moves the next processor.

It is a processor that records all data collected so far and moves them to MySQL where they are embedded in the database. Subsequently, all data is automatically rewritten in the database. At the query.sql command line, the *UPDATE boxes were set to SET Status = 0, Stock = ?, Last_add_post =? Where tag = ?*. This means that we want to update the data in the database boxes by reading the appropriate identifier that passes through the filter and then assigning it the name of the warehouse that is automatically recorded with value of /reading/input. The input is in this case the name of the antenna that reads the identifier and the name is taken from the name of the RFID gateway processor. The same goes for entering the date, but in this case the data is taken from the processor's date of use. When we retrieve the data, we have defined that the state should be automatically 0, because if only the debug identifier itself is loaded and it does not mate with the material it is clear that the box is empty.

The task of this processor is to write data to multiple item accumulator. The processor reads all the data from the input path and moves them to the filters. MERGE means that the processor combines responses to queries from previous messages. The data is collected for the purpose of later linking the material identifier to a single record. (FIG. 4)

Processor *SingleItemAccumulator* stores an item removed from incoming messages in the object's accumulator. SingleAccumulator combine filtered data into individual branches and write them into memory. The following processor draws on it.

Figure 4. Input from mobile readers (R1, R2, R3)

Source: Authors.

After creating the application assemblies, we tested their performance. It turned out that it was possible to link all application sets with databases created in MySQL. The system automatically moves information between the middleware and the database. Database outputs are data in a format defined directly for business needs. At the same time, it would be advisable to link the created databases to the internal ones so that the material data can be populated into the created databases.

3.1 Suggested processing method

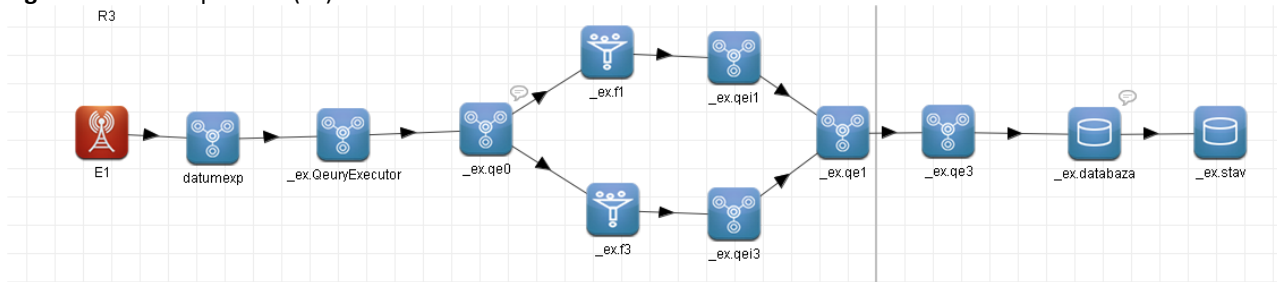
When creating a system of automatic material flow identification using RFID, it was necessary to find out how to achieve minimal human intervention in the system with minimal error rate. The biggest problem was how to record or box when entering the production halls and storehouses empty or full. The solution is that the boxes will have their own identifiers and the material will have another. We have defined the H2-3 intermediate as a storage reserved exclusively for empty boxes and named K0. Logically, it is clear that empty boxes should be located only in this space, but that empty boxes are emptied during the production steps. This means that blank boxes can be found anywhere throughout the company. This problem can only be solved by manually loading the identifier and the material identifier in the production halls when the identifier is stuck on the document. Automatically, the state changes from 0 to 1. At the same time, a problem that would otherwise arise from pairing at the crossing points through the main antennas will be solved. If the two identifiers were not handwritten manually and would not be matched, the system would read the X box identifiers and the material at the same time, and would not be able to assign the material in which the transport box is.

When creating an automatic material flow identification system using RFID it is important to monitor the status of transport boxes, which will be defined in the database as follows:

- Status 0 - Empty,
- Status 1 - Full,
- Status 2 - Shipped,
- Status 3 - Repair,
- Status 4 - Discarded.

Since the number, flow and state of transport boxes are not controlled within the warehouse, the draft is recorded using the status and date of the last use. This will make it possible, in the long run, to correct the costs of storing surplus and repaired boxes. As a result of boxes' flow tracking, it should be that K0 warehouse does not contain boxes whose date of last use was more than one year, it will be more efficient to redistribute the material between less and more of the used boxes, thereby extending their lifetime while recording repairs and with more repairs it will be able to consider whether it would not be more efficient to discard the given bill. At the same time, the output will be an effective tracking of exported debts and their return to the business, which could reduce the cost of purchasing new boxes.

Tracking box status will be performed automatically for status 0 and 1 by tracking the material tags and the box flow itself. Upon switching to the K0 warehouse, the value 0 will automatically be set using the IP address of the given antenna because only empty shipping boxes can be placed in this warehouse. When the box leaves the K0 store and is filled in one of the halls, a material tag will be placed on the box. This ensures that when passing through the antenna of any store or hall, it will be loaded with the respective antenna along with the box tag. As soon as the hand reader retrieves these two identifiers, the status will be overwritten in the status 1-full.

Figure 5. Part of expedition (E1)

Source: Authors.

The last assembly (FIG. 5) is for mobile reader at export point. The assembly was created to automatically rewrite the status in the box database. Significant change compared to assembly 2 is in the processor *_ex_state* only. There we have defined that we want to update the boxes database, automatically change the status to 2 and write the date of this change and the warehouse from where it was shipped. Again, it is necessary that the hand reader is not used for other purposes in order to automatically record the state of the reader.

3.2 Result of solution

By creating databases and linking hardware, automatic identification of the material, its flow, and ultimately the required localization in the warehouse has been achieved. The system worked in the test version, so when the reconstruction in the company ends, it will probably be necessary to adjust the designs according to the new site layout and test them in real conditions. All suggestions, whether hardware or software, have been properly tested and fully functional, so we do not expect the system to be malfunctioning in the real production environment. After testing the technology using the available features, it will be possible to ascertain the effectiveness of the established process

Created suggestions will be provided to the logistics department to assess their benefits. If logistics management has accepted the proposals, it will be necessary to contact the PHP programmer who will create the final user interface and perform the other necessary tasks. It will also be necessary to contact specific hardware vendors in order to create a bid and find out the actual initial costs of implementing the technology into the company. Then, with the offer, the proposal can shift the company's lead.

4. CONCLUSION

In the future, technology could be introduced to a point where it would be possible to locate the material directly in the production hall or in the warehouse. At the same time, a stand-alone shipping database could be created to give the company an overview of shipments and returns.

Statistics on the use of shipping boxes, their service life, and the number of repairs should be created. Likewise, it would be possible to find out how much time the average warehouse stock spends in stores, whether it is necessary to store the volumes at which they are currently in stock or whether it would be more efficient to set up production lines and thus reduce their volume and time spent in stock. It is understandable that it is difficult to obtain the basis for the optimization and sustainability of the horseshoe processes by the slight extensions given by the process and application of machine learning and artificial intelligence technologies. Opportunities for improving the system and detecting its effectiveness are endless, and with every advance in technology, these possibilities multiply.

The direction of further research will be focused on the area of closer digitization in the form of a digital twin and simulation of production and processable lines with a sustainability aspect.

LITERATURE

1. Kolarovszki P. & Vaculík J. (2014) Middleware – software support in items identification by using the UHF RFID technology. In: *Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering*, 131, pp. 358-369. DOI: 10.1007/978-3-319-11569-6_28.
2. Kolarovszki P., Vaculík J. (2014) Intelligent storage system based on automatic identification. *Transport and telecommunication*, 15(3), pp. 185-195.
3. Morišová S. (2016) *Aplikácia RFID na skladovanie vo výrobnom podniku*. Bakalárska práca, Katedra cestnej a mestskej dopravy. Žilina: Žilinská univerzita.
4. Morišová S. (2018): *Návrh aplikácie na skladovanie vo výrobnom podniku prostredníctvom RFID*. Diplomová práca Katedra cestnej a mestskej dopravy. Žilina: Žilinská univerzita.
5. Vaculík J., Michálek I. & Kolarovszki P. (2009) Principles of selection, implementation and utilization of RFID in supply chain management. *Promet – Traffic & Transportation*, 21(1), pp. 41-48.
6. Vaculík J., Tengler J. & Kolarovszki P. (2012) *Praktikum z RFID middleware skriptum*. Žilina: Žilinská univerzita v Žiline.
7. Vaculík J. & Michálek I. (2010) RFID item level tagging. *Perner's Contacts*, 5(2), pp. 99-105.
8. Vaculík J., Tengler J., Maslák O. (2015) Application of EPC standards and mobile networks services to enhance the quality of postal service. *Transport and telecommunication*. 16(1), pp. 48-60.

PREPORUKA ZA PRIMJENU RFID TEHNOLOGIJE PRI SKLADIŠTENJU U PROIZVODNJI

SAŽETAK

Članak je fokusiran na softverski dio RFID tehnologije koji identificira skladišteni materijal u proizvodnom postrojenju. Primjena RFID tehnologije za automatsko identificiranje i lociranje materijala i pakiranja u proizvodnom poduzeću. To će osigurati mogućnost praćenja tijeka materijala u procesu i lociranje robe u inventaru.

Rješenje je tokom vremena kreirati bazu podataka koja uključuje informacije o materijalima i pakiranju u tu svrhu. Primjena i korištenje RFID tehnologije tu može pomoći. Pri primjeni u praksi i kreiranju baze podataka za poduzeće treba kreirati i softversku aplikaciju koristeći AMP middleware koji povezuje hardver potreban za funkcioniranje RFID-a s kreiranim bazama podataka. Rezultat je automatsko bilježenje informacija o materijalu i njegovoj lokaciji u transparentnim bazama podataka koje će zamijeniti postojeći sistem lociranja. Zahvaljujući uvođenju automatskog bilježenja tijeka materijala kroz korištenje RFID tehnologije moguće je smanjiti troškove identifikacije i obilježavanja materijala kao i skladištenje.

KLJUČNE RIJEČI: RFID tehnologija, automatska identifikacija, sistemi skladištenja, linije procesa, middleware.

BUSINESS INCUBATION ANALYSIS WITH THE HELP OF REAL OPTION THEORY¹

PREGLEDNI RAD/REVIEW PAPER

UDK: 005.13

JEL: L26 ; O32

Autor/Author:

ALEXANDRA POSZA

ASSISTANT LECTURER

UNIVERSITY OF PÉCS, FACULTY BUSINESS AND ECONOMICS

PÉCS, HUNGARY

poszaa@tkk.pte.hu

ABSTRACT

The start-up companies' evaluation needs to start with the analysis of the business incubation process. Business incubation has the potential to apply real options that support the identification and exploitation of possible new businesses and can be the new start-ups' source of success. The incubator could be described as an entrepreneurial firm that creates real options by selecting new, young or emerging ventures and it could exercise these real options by monitoring and coaching the participants through different development stages. The business incubators' intensive business support activities are comparable to the realization of investment projects characterized by a high degree of uncertainty and decision-making flexibility, which are carried out by companies operating in a dynamic market environment. The aims of the paper are to systematically review the literature on business incubation and its process and to find the real options that can generate value creation and higher efficiency through exploring and analyzing the activities, programs and incubation process of selected Hungarian incubators.

KEY WORDS: real option theory, business incubation, flexibility, uncertainty.

1. INTRODUCTION

Most of the ventures fail during the early stages of their development (Watson et al., 1998; Zacharakis et al., 1999) and it can derive from the entrepreneurial process (Berger, 2015; Eftekhari, 2014) or the lack of management expertise and under-capitalization (Roure – Keeley, 1990). According to the academic literature, business incubators can help to decrease the number of venture failures and increase the survival rates (Ryan - Wright, 2009; Klostermann – Kraus, 2010, Ayatse et al., 2016). The business incubators provide a physical office space with business advice for the entrepreneurs and offer an incubation program that leads them through the incubation process (Munkongsujarit, 2016). The business incubator's main goal is to stimulate business creation (Bruneel et al., 2012), support entrepreneurs and small companies in creating new businesses, workplaces and establish an entrepreneurial society (Mian, 1996; Colombo – Delmastro, 2002; Aerts et al., 2007; McAdam – McAdam, 2008; Salem, 2014). In many cases, the business incubation process is in the focus of the research but we can only see few cases when real option theory gets in the picture. Hackett – Dilts (2004b, 2008) showed how to see the incubation process through the lens of real option theory. According to their research, this article connects the business incubation process and real option theory and identifies real options in the business incubation process.

The first section reviews the literature of the business incubation and incubation process models. In the following section, I introduce the real option theory with its main characteristics and advantages. In the third section, the connection between business incubation and real option theory is showed with the help of different types of real options because my perception is that using real option theory is one of the best approaches to understand and evaluate the business incubation process. In the fourth section, the Hungarian business incubators' business incubation programs and their selection are analyzed. The last section concludes the paper with a discussion of the results.

¹ „ SUPPORTED BY THE ÚNKP-18-3 NEW NATIONAL EXCELLENCE PROGRAM OF THE MINISTRY OF HUMAN CAPACITIES”

2. THE BUSINESS INCUBATION

The majority of business incubators are considered on one hand as a tool of economic development, the economic situation of a particular region (Mian, 1997; Thierstein - Wilhelm, 2001; Klostermann - Kraus, 2010), as an instrument for innovation, job creation (Carree - Thurik, 2010), urban regeneration, and the placing of university innovation on a business basis. On the other hand, they are considered as an organization for incubating new, fast-growing companies (Hackett - Dilts, 2004). The responsibility of the business incubator is to develop a collaboration that supports incubators in accessing information, thereby contributing to the development of competencies through the learning process. The ultimate goal of the incubation process is to develop the survival of the incubated and turn the business idea into a successful business (Bergek - Norrman, 2008).

The business incubation literature can be divided into two major groups (Akcomak, 2009). One of them deals with the theory and models of the business incubators and seeks answers to questions such as how they are created, their purpose or how they are managed (Smilor - Gill, 1986; Allen - McCluskey, 1990; Nowak - Grantham, 2000; Grimaldi - Grandi, 2005; Aernoudt, 2004; Lelebici - Shah, 2004; Becker - Gassmann, 2006). The other major group focuses on evaluating incubators, including factors that can be described as characteristics of a successful business incubator (Mian, 1996; Colombo - Delmastro, 2002; Aerts et al., 2007; McAdam - Mcadam, 2008).

Several authors attempted to define business incubators from different aspects. According to Hannon (2003), the business incubation process supports the recognition and exploitation of the creation of new businesses and must first consider the environment where the new entrepreneurial idea and the business itself can be developed with the help of business support resources. According to Al-Mubarak and Busler (2013), business incubation can be defined as an economic and social program that provides intensive support to start-up companies, preparing them for business creation and accelerating their development and success through their business support program. Moreover, Ayatse et al. (2017) see it as a unique institutional agreement that focuses on the development of entrepreneurial culture within a community.

Many authors believe that incubators also contribute to reducing the risk of corporate failure (Klostermann - Kraus, 2010). They are also recognized as one of the start-up companies' main sponsors (Smilor - Gill, 1986), attributing a network mediation role between incubated and surrounding environment (Bergek - Norrman, 2008). In many cases, we encounter start-up success stories, but most start-ups are unable to take full advantage of their potential. Founders often lack the managerial skills or the resources to make their innovations viable (Bøllingtoft - Uihøi, 2005). This niche was filled by business incubators with providing a supportive environment for new businesses. In addition to financial support, incubators also provide additional services to the business, such as networking and entrepreneurial support, which differentiate the incubator concept from a simple start-up investor (Carayannis - Von Zedtwitz, 2005). The literature differentiates four types of incubator such as for-profit, non-profit, university and corporate private incubators from different aspects (Kuratko - LaFollette, 1987; Allen - McCluskey, 1990; Grimaldi - Grandi, 2005). The business incubator typology is one approach of mechanism of the business incubators and the business incubation models are also in the middle of the business incubation research that is introduced in the following section.

2.1. Business incubation process and models

The business incubation models and the process itself influence the activity of incubators as well as incubatees and this complex structure should be analyzed to ensure the effective and efficient management and value creation.

There are several examples of modeling business incubation in the literature (Campbell et al., 1985; Smilor, 1987; Nowak - Grantham, 2000; Lalkaka, 2000; Bergek-Norman, 2008). They follow different aspects and show diverse specifications of the business incubation process. The business incubation models are differently specified and some of them illustrate the whole business incubation process, while others highlight only some parts of the process, not going into details. From another point of view several models focus on the structure of the business model (Smilor, 1987; Nowak - Grantham, 2000), others put the emphasis on the process of the model (Campbell et al., 1985; Lalkaka, 2000; Hackett - Dilts, 2004; Bergek - Norrman, 2008). In my paper, I show three incubation models. At first, the process-oriented model of Campbell et al. (1985) is reviewed because it is the baseline of the other two analyzed business incubation models. After that, they are followed by Smilor's (1987)'s structural model and finally Hackett - Dilts's (2004) model because of its real option focus.

Campbell et al. (1985) created the first business incubation process model that supports the transformation of ideas and proposals into a viable company through various activities in the business incubator. The model describes four value-creating activities that can contribute to the performance of participating companies. Value-creating activities include assessing business needs, selection and monitored the application of business services, funding, and access to the incubator social network. The disadvantage of the model can be that it does not take into account the lack of skills of potential entrepreneurs and environmental constraints, which may come to the fore during the incubation process and prevent the creation of a

viable business (Moreira - Carvalho, 2012; Ayatse, et al., 2017). It also does not include the criteria required for participation in the incubation process (Moreira - Carvalho, 2012). To eliminate the problem of selection, Merrifield (1987) established a set of criteria based on the three issues to be decided, which tried to filter out potential businesses in a simple way. In the subsequent literature, Bergek - Norrman (2008) distinguishes two important variables that are necessary for a successful business: the business idea and the entrepreneur when applying the selection strategy.

Smilor (1987) extended the Campbell model, which already includes an external approach. In his incubator model, he looked at the process as a system that provides the incubation of the new company, structure and credibility, and key resources to the incubatees. Besides internal support systems join to the private sector, to universities, to government and non-profit organizations appears in the model as a value-creating activity, which, according to Smilor (1987), shows the incubator as a transformation mechanism. The aim of these two support systems for businesses is to become companies that generate profits, contribute to economic development, create jobs and successful products through the incubator. External factors were also emphasized by Bergek - Norrman (2008), who also incorporated mediation in the process as a way to connect the external environment with the incubation. Hackett - Dilts (2004b) also developed the model of Campbell (1985) in their holistic incubation model. Their approach also focuses on the results applying the so-called "black box" approach. The "black box" reveals the features seen by external observers but ignores internal details.

The incubation process starts with the selection of candidates, followed by a checking phase and supporting resources until they go through the various stages of development (Moreira - Carvalho, 2012; Ayatse, et al., 2017). During the analysis, the incubation process model is traced back to the incubators' aims. According to Aernoudt (2004), the main purpose of incubation is to create successful companies that leave the incubator as viable economic actors standing on their own feet within a reasonable time. The purpose of the incubator is to formulate the output requirement expected by the incubators.

The incubation model that is shown in Figure 1 is intended to illustrate the business incubation process that starts with the analysis of the potential incubatees in the so-called pre-incubation phase. Then the incubation process is presented, in which inputs are collected that are involved in the incubation process and help the incubatees to reach the post-incubation phase. In the next chapter, the real option theory and the different types of real options are applied to analyze the different stages of the incubation process, which looks at the incubator as a set of projects.

Figure 1. Business incubation process model



Source: own construction

The pre-incubator does not only appear as a phase of the process but, according to the literature, appears as a facility that offers an opportunity for early-stage start-up companies that did not formulate their business plan yet to set up a prototype development and an entrepreneurial team. The difference between a pre-incubation incubator and a business incubator is determined by the level of development of the incubated business. The business incubator has already established a service for start-up companies that are still in their early stages (Kirby, 2004). According to Deutschmann (2007), the similarity between the pre-incubator and the business incubator is providing the participants physical infrastructure, consultation, and training, but the difference is that the participants of the business pre-incubator are in the planning phase and are offered free services.

Colombo - Delmastro (2002) pointed out that the process of selecting incubatees influences the quality of candidates. It was found that the selection of the candidates on the basis of their educational attainment and previous work experience attracted companies into Italian science parks with better human capital compared to other companies.

Pre-incubation support helps to strengthen the business plan, business model and team before a company enters the incubation process. Pre-incubation programs also serve as a filter for the selection process of incubators and help entrepreneurs to reduce risk and make an informed decision to start a new business and prevent future failure (CIE, 2014). The pre-incubation phase begins with an innovative idea and the business incubator analyzes, evaluates and filters these ideas in order to proactively identify potential entrepreneurs (Zhang et al., 2014). At this stage, managerial skills, desirable goals, financing, the business idea, the recognized opportunities, and the available technology are at the forefront.

After successful selection, the start-up company will get into the incubation process and it will have recourse to different services. These services include physical infrastructure, facilitation-based services, participation in training, business consulting, administrative services, access to financial support and access to the incubator's expert network. Eventually, through these services, business incubator can transform a business proposal into a successful and viable enterprise.

In the post-incubation phase, the incubator determines specific output requirements and, on this basis, it evaluates the results achieved during the incubation process, i.e. the possible marketability and success of the ideas and young enterprises. According to some literature sources, the output requirements of the post-incubation phase include profitability; economic development, contribution to the development of the region; job creation; product success; visible and viable business; industry competitiveness; global networks and product / process development (Wiggins - Gibson, 2003; Stephens - Onofrei, 2012). According to Virtanen - Kiuru (2013) the selection process (pre-incubation) should also be taken into consideration in the analysis of the performance in the post-incubation phase since those enterprises that were expected to grow in the future tend to perform well after the development process.

It is important to emphasize that the post-incubation phase is not part of business incubation, it would rather mean a range of services provided by the incubator, such as monitoring, access to mass production, managerial capacity expansion and the possibility of network development (Kusuma et al., 2015).

The business incubation process models help the business incubator and its stakeholders to understand the complex process and to identify the value-creating activities but in my opinion, they do not put emphasis on the optimal order or timing of different services. Considering flexibility can indicate a better way of service utilization and business development. With real option theory, the incubator and its participants can also exploit the embedded uncertainty of the business incubation process.

3. THE REAL OPTION THEORY

When defining real options it is important to clarify what we mean by 'option' and by 'real'. The option means in this context more than a simple alternative or possibility. The real option is a right, but not an obligation, to buy or sell the underlying asset for a prescribed price at a predetermined time (Copeland - Antikarov, 2001). The term "real option" was used at first by Myers (1977), who geared the corporate value to the company's investment strategy, and for that, he differentiated two groups: the real assets and the real options. He called the market values irrespectively of the company's investment strategy real assets, and those kinds of options that enable them to obtain real assets under favorable conditions real options. According to Kogut and Kulatilaka (2001), "the real option is an investment in physical assets, human resources and organizational capabilities, which provides an opportunity to respond to possible future events." (Kogut - Kulatilaka 2001, p. 3). In this definition, the authors emphasize the value creation ability of real options alongside investment opportunities. This definition suggests that certain real options are specific for the company since both human resources and organizational capabilities bring the uniqueness of the company to the fore.

Real option theory deals with the management of uncertainty through the challenges of today's economic environment and the rapidly changing business environment (Dixit - Pindyck, 1994). In the world of real options, uncertainty has a value in terms of managerial skills (Boyer et al., 2003). Many strategic investments create new, feasible options that can be seen as a combination of a cash flow series and an option set (Amram - Kulatilaka, 1999). When discussing real options, one has to start with recognizing that the future investment decision is characterized by asymmetry, because it only happens if it is favorable for the decision-maker.

The right embodied in the option can be created in different ways, like with contracts, such as patents, or with preferential access to investment opportunities, for example through equity investment. Rights can be created also based on company-specific knowledge, for example through a learning by doing process or through research and development. Optional decision-making asymmetry including the right to act without obligation appears also in company outputs in the presence of uncertainty. For example, the owner of an option to buy an investment can access top-side options, upholding the buy-in or upside potential, while limiting the downside losses without enforcing the downside loss option at a disadvantage (Trigeorgis - Reuer, 2017).

Unlike the traditional view that insecurity retains investments, according to the real option theory decision-makers respond proactively to uncertainty. Real options specifically allow companies to delay or change future investment decisions when market conditions change, enable the company to limit losses and seek benefits in the event of positive developments resulting from uncertainty (Bowman - Hurry, 1993; McGrath, 1997, Trigeorgis, 1996). In the case of uncertainty, the inherent managerial deliberation and the resulting asymmetry in corporate payouts move the option value, lower downside losses, and improve corporate performance.

The basic assumption of real option theory is that the future uncertainty of corporate risk or corporate return will influence investment decisions in strategic assets. Greater uncertainty encourages the company to create more options that provide flexible solutions or time-shift potential for the company (Bhattacharya et al., 2014).

The critical factor in the application of real options is information security, which is a unique feature of the related markets. Dynamic effects, often unforeseen events and conditions characterize the market of information security (Petratos, 2008).

The real option theory has appeared in different areas of management and decision-making, and the focus has shifted from a clean assessment process to decision-making and optimization. The purpose of applying the real option approach is to create value in corporate decision-making by capturing the full value of company potential (Boyer et al., 2003). Investments discussed in the real option approach are related to sequential investment decisions (Dixit - Pindyck, 1994). In the literature, we can see a number of sectors and areas where real option theory is applied, such as natural resources, research and development, and information technology. In contrast, there are only a few cases where the business incubation process and start-up companies were at the center of real option analysis.

3.1. Typology of real options

Many real option typologies can be found in the literature (Trigeorgis, 1996; Copeland - Keenan, 1998; Amram - Kulatilaka, 1999; Amram - Kulatilaka, 1999; Hommel - Pritsch (1999); De Neufville, 2004) and I would highlight Trigeorgis's (1996) categorization as a basis for several subsequent typologies, which distinguishes option to defer, staged investment options, option to alter, option to switch, growth options, option to abandon, multiple interacting options.

The value of the option to defer arises from providing the opportunity to shift the investment decision over time in order to obtain additional information that can correct or reduce the existing uncertainty. The option to abandon is the abandonment of a whole or a part of the project, the final rejection of the investment if the market situation becomes less favorable (Rózsa, 2004). Some options can be applied in case of persistent or significant improvement or deterioration in market conditions. The option to expand may mean expanding the capacity of the project or extending key competencies to new products, services, distribution channels. Option to expand may be valuable in industries where the volatility of market demand is high. It is common in natural resources, consumer goods, and facilitation planning. As for the option to contract the flexibility lies in that capacity or its focus can be reduced in adverse market conditions. In the case of a staged investment option investments or decision-making are carried out in stages, which may reduce the existence of upside potential, but protects against downside risks. Each stage of the project will be evaluated afterward, and the management of the company can decide posteriorly on the continuation or rejection of the project. The staging option can be evaluated as a multiple interacting option. Staging options are in R&D intensive industries such as biotechnology, the pharmaceutical industry, and capital intensive industries that require high uncertainty and long-term development, such as power generation plants and venture capital financing (Scialdone, 2007).

The growth option allows keeping early-stage investments open for future growth opportunities. The growth option is similar to the option to expand, but the difference between the two lies in the position within the corporate strategy. Growth options provide project-wide flexibility, while the option to expand and staged investment options appear as an option within the project. Growth options are found in all industries, typically in the case of infrastructure-based high-return projects, such as R&D and strategic acquisitions (Scialdone, 2007). Shut down and restart options can be considered as insurance options, so that management can decide to stop production under unfavorable market conditions, but does not rule out the possibility of rebooting (Csapi, 2018). Multiply interacting options include the combinations of the above described. These options can be independent of each other but can also be in close contact. In this case, the option value is also embedded in the underlying asset (Takács, 2008).

4. THE APPLICATION OF REAL OPTION THEORY IN THE BUSINESS INCUBATION PROCESS

The activities of incubators are comparable to investment projects of companies that operate in a dynamic market environment. Companies can also have a project portfolio with a high degree of uncertainty, which may at the same time contribute to the company's value creation (Kuratko - LaFollette, 1987). Dimpfel et al. (2002) suggest that real options can be applied in case of flexibility, uncertainty, and irreversibility. According to Moreira - Carvalho (2012), there are two questions about Hackett - Dilts (2004b) incubation model that the real option theory answers: which factors should be taken into account when selecting possible incubatees and whether predefined criteria contribute to the economic results of incubation? According to Hackett - Dilts (2004b), the incubator's performance depends on the incubator's ability to create options and the selection performance typifies the capacity of the incubator.

Consequently, the operation of incubators is in line with the methodology of the real option theory. Therefore identifying and applying real options can also have great potential for incubators.

As mentioned above real options are valuable in case of a high degree of uncertainty, which clearly shows that it is the most significant in the first stage of the corporate life cycle (Kuratko - LaFollette, 1987). Selecting companies with high growth potential are already in itself an uncertain process (Dee, 2011).

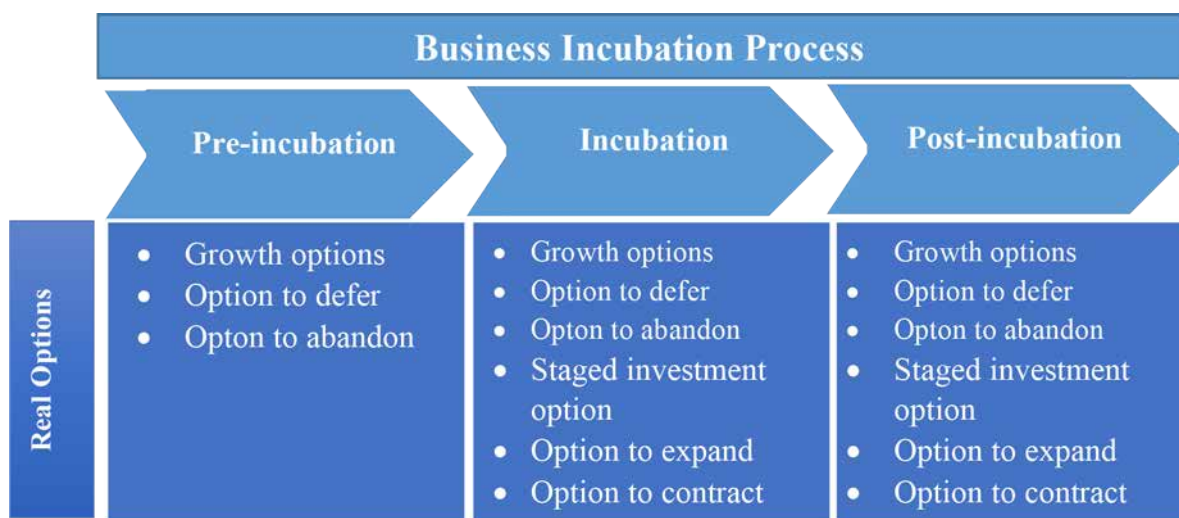
The business incubation process through the lens of real option theory defines the incubator as an enterprise that creates real options through the systematic selection of new, young businesses for entering the incubator, and then exercises these real options in the course of controlling and mentoring these incubatees at different stages of development while providing resources to them. Each decision node in the incubation process modifies the chance to the survival of the incubatees, depending on how the option was exercised (Hackett, 2004). This approach of the incubation process resembles sequential processes, which are common in pharmaceutical and venture capital investments. In the business incubation process, stages should also be used to determine certain decision nodes.

The first decision node evolves at the selection of potential participants. An option arises whether to involve a company in the incubation process or not. The previously defined variables can be used to examine the option. Once a company gets in the decision-making process, the idea or business moves through a series of stages. Each decision point should cohere to the output requirements so that the final decision stage could end in market launch or rejection.

The real option theory, like other theories, does not take full account of the process-oriented nature of incubation. For that reason, the “black box” approach of incubators was developed (Ahmad, 2014). Many authors, such as Bergek - Norrman (2008) reject black-box incubation models that focus exclusively on results. In addition, the mediation capacity in their incubation process model appears as a way to put incubatees on the market, which is also necessary to reduce uncertainty.

Based on the business incubation process model presented in the previous chapter, the types of real options are identified inherent in the business incubation process that could be exercised by the incubator (Figure 2). The complete business incubation process can be interpreted as a staging option in which the business incubator can decide to continue or to reject the project after the completion of each stage.

Figure 2. Real options in the business incubation process



Source: own construction

In the pre-incubation phase, companies are selected for the incubation process, the incubator has to decide on the incubation or rejection of the given business based on the available information and the selection criteria. In some cases the incubator can use an option to defer, i.e. postpone decision making, thereby reducing the risk of making a decision based on incomplete information and thus by chance suffer loss. Entry into the incubation process may include a strategic growth opportunity for the company, a growth option that can be the starting point for projects and future growth opportunities. Furthermore, when analyzing entry into the business incubator, under unfavorable circumstances it can decide to reject the project, to exercise the option to abandon.

During the business incubation process, the various services and facilities include options to defer, discard options, which can be exercised at each decision node. The use of services that support the development of a particular business idea depends on the advancement or needs of the incubatee. Real options are available to the incubatees as well, they can also choose from the services offered to them, and to decide to exercise, reject or even postpone these options. Nevertheless, it is also possible to use staging options that provide decision flexibility after each stage of the business incubation process. In the business incubation stage, real options may appear that offer the incubatees the opportunity also to contract/expand or grow. With response to market demand, they can stop projects and then reactivate them in case of favorable conditions or even decide to expand or contract them.

In the post-incubation phase similar real options, that were mentioned in the incubation process, can be identified, exercised or rejected as well. In addition to evaluating the outputs as for the incubator staging options and options to defer may emerge.

5. ANALYSIS OF THE HUNGARIAN BUSINESS INCUBATORS BUSINESS INCUBATION PROCESS

In this study, I examined the activities of Hungarian incubators with the help of secondary research. With collecting information available also to potential participants my aim was to get a comprehensive view of the business incubation process of the Hungarian incubators, primarily focusing on selection and offered services. I analyzed eight business incubation programs based on the information disclosed on their websites. I would have liked to involve such business incubators in the analysis that are currently accepting candidates, offering complex service portfolios, funding and social network for their participants. The information provided on the websites is different in point of quality and quantity, but this can be related to the size and experience of the business incubator.

Similarly to other countries, more and more business incubators and accelerators have been established in the past few years in Hungary due to the growing number of startups and state subsidies. Significant growth has been observed across the country for both for-profits, non-profit and university incubators. In addition to business incubators, potential entrepreneurs can already apply for incubation and accelerator programs offered by banks as well (e.g. OTP Bank Startup Program, MKB Fintechlab, Start it @K&H).

Most of the selected incubators are specialized in one or a few industries. The most common areas are the IT sector, infocommunications, and life sciences but there are business incubators with general focus as well. If we examine the geographical focus, almost all incubators designate a target market (international market or/and domestic market) and we can find business, non-profit and university incubators not only in Budapest but in many other cities of the country (e.g. Szeged, Debrecen, Győr, Miskolc, Pécs). All of the analyzed business incubators have a capital investor background, and some incubators are able to provide startup related state funds to their supported project. Generally, each incubator accepts 10-20 projects a year. In addition, several business incubators have a connection with university incubators that also can contribute to the development.

In the case of the Hungarian incubators, we can differentiate three groups based on their strategic direction according to BDO (2014) report. The first group of incubators selects their participants with lengthy, multiple round selection process because with this method they want to ensure that successful companies leave the business incubator at the end of the incubation process. Business incubators belonging to the second group are looking for motivated potential participants with high growth potential, in this case, a broad spectrum of knowledge and social network is typical. The third group builds on the potential of the project and personal contact significantly matters by the admission to the incubator. Therefore the selection is less formalized and confidence is much more important.

According to the secondary research the business incubators select projects in a multi-stage process that starts with filling out an application form or handing in a one-pager and that is followed by interviews and presentations. The selection takes a few weeks, but it is more common to reach an agreement in 2-3 months. The project evaluation criteria include generally the existing team and professional background, motivation, product or service competitiveness, business model, project scheduling, milestones, business plan, and resource requirements. If the project meets the minimum requirements set by the business incubator, the project owner can enter into the business incubation program, where one of the first steps is to prepare a business incubation plan that includes goals, operational tasks, customized services, project schedule, milestones, financial plan and conditions for capital investments and depending on the business concept and its maturity the services chosen by the participants. In the case of an analyzed incubator, even a change of plan can be requested by the participants. According to BDO (2014), the team and its preparedness are much more important than the idea itself and motivation plays a major role in the selection process.

The services offered by the business incubators are different and vary from each other but mentoring, funding, social networking and providing infrastructure are common. In addition, business modeling, back-office services, participation in educational programs, training and workshops, investments and financial consultancy and coaching are also available in certain incubation programs.

As for a summary of business incubators in Hungary are conducting a well-considered selection process and offering a wide range of services to participants that support the development of the business concept. They could be more interesting to applicants if they provided more information about their incubation process and the relation between their output requirements and the selection process.

6. CONCLUSION

Business incubation is one of the most important mechanisms to help supporting start-up companies to survival and growth in the competitive business environment. There is a growing interest in business incubators among start-ups due to their promise of high growth potential and opportunity for success. The successful business incubation process can lead to well-performing start-up companies that can react to the market demand and manage the challenges of the rapidly changing business environment. Through the analysis of the business incubation process (and in the pre-incubation stage), the participants can identify their business strengths and weaknesses and find the appropriate services that can contribute to business development.

The real option approach can help to identify the main decision points and challenges of start-up businesses. In my study, I tried to identify the real options that can be found in each stage of the business incubation process, how they can be exercised or rejected by both the incubator and the incubatees in order to give an adequate response to the progress opportunities at decision nodes. The topic has many further analytical opportunities, including qualitative assessment, the possibility of quantitative analysis, its applicability through practical examples, and its ability to create value through the processes of business incubators. In my future research, I would also like to identify the value-added activities with the help of primer research from the perspective of real option theory.

LITERATURE

- Aernoudt, R. (2004) Incubators: Tool for entrepreneurship? *Small Business Economics*, 23, pp. 127–135. DOI: 10.1023/b:sbej.0000027665.54173.23.
- Aerts, K., Matthyssens & P., Vandenbempt, K. (2007) Critical role and screening practices of European business incubators. *Technovation*, 27(5), pp. 254-267. DOI: 10.2139/ssrn.870244.
- Ahmad, A. J. (2014) A mechanisms-driven theory of business incubation. *International Journal of Entrepreneurial Behaviour & Research*, 20, pp. 375–405. DOI: 10.1108/IJEBR-11-2012-0133.
- Akomak, S. (2009) *Incubators as tools for entrepreneurship promotion in developing countries. UNU-MERIT Working Paper Series*, No. 054, UNU-MERIT, Maastricht Economic and Social Research and Training Centre on Innovation and Technology, Maastricht.
- Allen, D.N., McCluskey, R. (1990) Structure, policy, services, and performance in the business incubator industry. *Entrepreneurship: Theory and Practice*, 15(2), pp.61-77.
- Al-Mubarak, H.A. & Busler, M. (2013) Business Incubation as an economic development strategy: A literature review. *International Journal of Management*, 30(1), pp. 362-372.
- Amram, M. & Kulatilaka, N. (1999) *Real options: managing strategic investment in an uncertain world*. Boston: Harvard Business School Press.
- Ayatse, F.A., Kwahar, N. & Iyortsuun, A.S. (2017) Business incubation process and firm performance: an empirical review. *Journal of Entrepreneurship Research*, 7(2), pp. 1-17. DOI:10.1186/s40497-016-0059-6.
- Becker, B. & Gassmann, O. (2006) Gaining leverage effects from knowledge modes within corporate incubators. *R and D Management* 36, pp. 1–16. DOI: 10.1111/j.1467-9310.2005.00411.x.
- Bergek, A. & Norrman, C. (2008) Incubator best practice: a framework. *Technovation*, 28(1-2), pp. 20-28. DOI:10.1016/j.technovation.2007.07.008.
- Bhattacharya, M. & Wright P. M. (2004) Managing human assets in an uncertain world: Applying real options theory to HRM. *The International Journal of Human Resource Management*, 16(6), pp. 929-948. DOI: 10.1080/09585190500120574.
- Bøllingtoft, A. Ulhøj, J. P. (2005) The networked business incubator – Leveraging entrepreneurial agency? *Journal of Business Venturing*, 20(2), pp. 265–290. DOI:10.1016/j.jbusvent.2003.12.005.
- Bowman, E. H. & Hurry, D. (1993) Strategy through the option lens: Are integrated of resource investments and the incremental-choice process. *Academy of Management Review*, 18(4), pp. 760-782. DOI:10.2307/258597.
- Boyer, M., Christoffersen, P., Lassere, P. & Davlov, A. D. (2003) Burgundy report: Value creation, risk management, and real options. *Centre for interuniversity research and analysis on organisations*. Available at: https://www.researchgate.net/publication/4816345_Value_creation_risk_management_and_real_options. [Accessed 10-2-2018].
- Bruneel, J., Ratinho, T., Clarysse, B. & Groen, A. (2012) The evolution of business incubators: comparing demand and supply of business incubator services across different incubator generations. *Technovation*, 32(2), pp.110-121. DOI: 10.1016/j.technovation.2011.11.003.
- Campbell, C., Kendrick, R. C. & Samuelson, D.C. (1985) Stalking the latent entrepreneur: Business incubators and economic development. *Economic Development Review*, 3(2), pp. 43-49.
- Carayannis, E. G., von Zedtwitz, M. (2005) Architecting GloCal (global-local), real-virtual incubator networks (G-RVINS) as Catalysts and accelerators of entrepreneurship in transitioning and developing economies: Lessons Learned and best practices from current development and business incubation. *Technovation* 25, pp. 95–110. DOI:10.1016/S0166-4972(03)00072-5.
- Carree, M. & Thurik, A. (2010) The Impact of Entrepreneurship on Economic Growth. In: Acs, Z. & Audretsch, D. (eds.) *International Handbook of Entrepreneurship Research*. 2nd edition. London: Springer, pp. 557-594. DOI:10.1007/0-387-24519-7_17.
- Cleantech Incubation Europe (CIE) (2014) *Cleantech Incubation Policy and Practice*. Available at: <http://cleantechincubation.eu/wp-content/uploads/2012/07/CleantechIncubation-Practice-and-Practice-Handbook-June-2014.pdf>. [Accessed 22-3-2018].
- Colombo, M.G., & Delmastro, M. (2002) The effective are technology incubators? Evidence from Italy. *Research Policy*, 31(7), pp. 1103-1122. DOI:10.1016/S0048-7333(01)00178-0.
- Copeland, T. E. & Antikarov, V. (2001) *Real options: A practitioner's guide*. Knutsford: Texere.
- Copeland, T. E. & Keenan, P. T. (1998) How much is flexibility worth? *Mckinsey Quarterly*, 1(2), pp. 38-49.
- Csapi, V. (2018) A reálopciók első 40 éve. *Budapest Management Review*, 49(9), pp. 34-45.
- De Neufville, R. (2004) *Uncertainty Management for Engineering Systems Planning and Design: Monograph draft for Engineering Systems Division* [online]. Available at http://web.mit.edu/deweck/www/PDF_archive/4%20Other%20Major%20Pubs/4_6_ESD2004_uncertainty.pdf. [Accessed 12-10-2018].
- Dee, N.J., Livesey, F. & Gill, D., Minshall, T. (2011) *Incubation for growth: A review of the impact of business incubation on new ventures with high growth potential* [online]. London: NESTA. Available at: www.nesta.org.uk/library/documents/Incubationfor-Growthv11.pdf.
- Deutschmann, M. (2007) What difference a pre makes: University business preincubators in Germany. *A National Survey. Working Paper*, Report No. 5, Leuphana University Lüneburg.
- Dimpfel, M., Habann, F. & Algesheimer, R. (2002) Real options theory, flexibility, and the media industry. *The International Journal on Media Management*, 4(4), pp. 261-272. DOI:10.1080/14241270209390007.
- Dixit, A. & Pindyck, R. (1994) *Investment under uncertainty*. Princeton: Princeton University Press.
- Eftekhari, S. (2014) Entrepreneurial failure: Distinct perceptions among founders, employees, and investors [online]. Available at: https://www.ike.aau.dk/digitalAssets-230/230890_perception_of_failure.pdf. [Accessed 19-10-2018].
- Grimaldi, R. & Grandi, A. (2005) Business Incubators and New Venture Creation: An Assessment of Incubating Models. *Technovation*, 25(2), pp. 111-121. DOI:10.1016/S0166-4972(03)00076-2.
- Hackett, S. M. (2004) *Real OPTIONS and the option to incubate: An exploratory study of the process of business incubation*. Dissertation executive summary. Available at: <http://ssrn.com/abstract=1260438>. [Accessed 16-10-2018].
- Hackett, S. M. & Dilts, D. M. (2004a) A real option-driven theory of business incubation. *Journal of Technology Transfer*, 29, pp. 41–54. DOI: 10.1023/b:bjot.0000011180.19370.36.
- Hackett, S. M. & Dilts, D. M. (2004b) A systematic review of business incubation research, *Journal of Technology Transfer*, 29(1), pp. 55–82. DOI:

- 10.1023/b:jott.0000011181.11952.0f.
34. Hannon, P. D. (2003) A conceptual development framework for management and leadership learning in the UK incubator sector. *Education Training*, 45(8/9), pp. 449-460. DOI: 10.1108/00400910310508847.
 35. Hommel, U. & Pritsch G. (1999) Marktorientierte Investitionsbewertung mit dem Realoptionsansatz. *Finanzmarkt und Portfoliomanagement*, 13(2), pp. 121-144.
 36. Kirby, A. D. (2004), Creating Entrepreneurial Universities in the UK: Applying Entrepreneurship Theory to Practice. *Journal of Technology Transfer*, 31(5), 599-603. DOI: 10.1007/s10961-006-9061-4
 37. Klostermann, L. & Kraus, S. (2010) *Der Erfolg von Inkubatoren/ Technologie- und Gründerzentren in Deutschland und den USA*. Wertschöpfungsmanagement im Mittelstand: Tagungsband des Forums der Deutschen Mittelstandsforschung, pp. 217-238, Gabler, Wiesbaden. DOI: 10.1007/978-3-8349-8638-2_12.
 38. Kogut, B. & Kulatilaka, N. (2001) Capabilities as real options. *Organization Science*, 12(6), pp. 744-758. DOI:10.1287/orsc.12.6.744.10082.
 39. Kuratko, D. F. & LaFollette, W. R. (1987) Small Business Incubator for Local Economic Development. *Economic Development Review*, 5(2), pp. 49-55.
 40. Kusuma, C., Sutopo, W., Yuniaristanto, H. S. & Nizam, M. (2015) Incubation scheme of the university spin-off to commercialize the invention in Sebelas Maret University. In: *Proceedings of the International MultiConference of Engineers and Computer Scientists*, Vol. 2., IMECS 2015, March 18-20, Hong Kong.
 41. Lalkaka, R. (2000) *Manual on Technology Business Incubators*. Paris: United Nations Educational, Scientific & Cultural Organization.
 42. Leblebici, H. & Shah, N. (2004) The birth, transformation and regeneration of business incubators as new organisational forms: Understanding the interplay between organisational history and organisational theory. *Business History*, 46(3), pp. 353-380. DOI: 10.1080/007679042000219175.
 43. McAdam, M. & McAdam, R. (2008) High Tech start-ups in university science park incubators: The relationship between the start-up's lifecycle progression and use of the incubator's resources. *Technovation*, 28, pp. 277-290. DOI: 10.1016/j.technovation.2007.07.012.
 44. McGrath, R. (1997) A real options logic for initiating technology positioning investments. *Academy of Management Review*, 22(4), pp. 974-996. DOI:10.5465/amr.1997.9711022113.
 45. Mian, S. A. (1996) Assessing value-added contributions of university technology business incubators to tenant firms. *Research Policy*, 25(3), pp. 325-335. DOI:10.1016/0048-7333(95)00828-4.
 46. Mian, S. A. (1997) Assessing and managing the university technology business incubator: An integrative framework. *Journal of Business Venturing*, 12(4), pp. 251-285. DOI:10.1016/s0883-9026(96)00063-8.
 47. Moreira, A.C. & Carvalho, M.F.S. (2012) Incubation of new ideas: Extending incubation models to less-favored regions. In: Burger & Helmchen, T. (2012) *Entrepreneurship – creativity and innovative business models*. Rijeka: InTech. DOI:10.5772/36705.
 48. Munkongsujarit, S. (2016) Business incubation model for startup company and SME in developing economy: A case of Thailand. In: *Proceeding of PICMET'16: Technology Management for Social Innovation*. pp. 74-81.
 49. Myers, S. C. (1977) Determinants of Corporate Borrowing. *Journal of Financial Economics*, 5(2), pp. 147-175. DOI:10.1016/0304-405x(77)90015-0.
 50. Nowak, M. J. & Grantham, C. E. (2000) The virtual incubator: Managing human capital in the software industry. *Research Policy*, 29(2), pp. 125-134. DOI: 10.1016/S0048-7333(99)00054-2.
 51. Petratos, P. (2008) Real option applications to information security. *Communications & Strategies*, 70, pp. 15-25.
 52. Roure, J. B. & Keeley, R. H. (1990) Predictors of success in new technology based ventures. *Journal of Business Venturing*, 5(4), pp. 201-220. DOI: 10.1016/0883-9026(90)90017-N.
 53. Rózsá, A. (2004). Stratégiai beruházások reálopciók megközelítése. *Budapest Management Review*, 35(2) pp. 53-61.
 54. Ryan, F. & Wright, A. (2009) An examination of the experiences of campus incubation companies in Irish institutes of technology. *Irish Business Journal*, 5(2), pp. 71-86.
 55. Salem, M. I. (2014) The role of business incubators in the economic development of Saudi Arabia. *International Business & Economics Research Journal*, 13(4), pp. 853-860. DOI: 10.19030/iber.v13i4.8694.
 56. Scialdone, P. (2007), *Valuing managerial flexibility: Challenges and Opportunities of the real option approach in practice*. Göttingen: Cuvillier Verlag.
 57. Smilor, R. W. & M. D. Gill Jr. (1986) *The new business incubator: Linking Talent, technology, capital and know-how*. Lexington: Lexington Books.
 58. Smilor, R. W. (1987) Commercializing technology through new business incubators. *Research Management*, 30(5), pp. 36-41. DOI:10.1080/00345334.1987.11757061.
 59. Stephens, S. & Onofrei, G. (2012) Measuring business incubation outcomes. *Entrepreneurship, and Innovation*, 14(4), pp. 277-285. DOI:10.5367/ijei.2012.0094.
 60. Takács A. (2008) Reálopciók: a jövőbeli lehetőségek értékelése. *Közgazdász Fórum*, 11(12), pp. 47-55.
 61. Thierstein, A. & Wilhelm, B. (2001) Incubator, Technology, and innovation centres in Switzerland: Features and policy implications. *Entrepreneurship & Regional Development*, 13(4), pp. 315-331.
 62. Trigeorgis, L. (1996) *Real Options: Managerial Flexibility and Strategy in Resource Allocation*, Cambridge: Mass.: MIT Press.
 63. Trigerorgis, L. & Reuer, J. J. (2017) Real options theory in strategic management. *Strategic Management Journal*, 38, pp. 42-63. DOI: 10.1016/S0742-3322(07)24001-X.
 64. Virtanen, M. & Kiuru, P. (2013) Post-incubation performance – Are the post-incubation firms high impact firms? In: *8th International Council for Small Business World Conference*, June 20-23, 2013, Ponce, Puerto Rico, At Ponce, Puerto Rico.
 65. Watson, K., Hogarth-Scott, S. & Wilson, N. (1998) Small business start-ups: Success factors and support implications. *International Journal of Entrepreneurial Behavior & Research*, 4(3), pp. 217-238.
 66. Wiggins, J. & Gibson, D. V. (2003) Overview of US incubators and the case of the Austin Technology Incubator. *International Journal of Entrepreneurship and Innovation Management*, 3(1-2), pp. 56-66.
 67. Zacharakis, A. L., Meyer, G. D. & DeCastro, J. (1999) Differing perceptions of new venture failure: A matched exploratory study of venture capitalists and entrepreneurs. *Journal of Small Business Management*, 37(3), pp. 1-14.
 68. Zhang, L., Wang, F., Sahli, H. & Cornelis, J. (2014) *Incubators collaboration models*. Brussels: ETRO-Vrije Universiteit Brussel.

ANALIZA POSLOVNE INKUBACIJE POMOĆU TEORIJE STVARNIH OPCIJA

SAŽETAK

Evaluacija startup poduzeća, tj. poduzeća u razvoju mora početi s analizom procesa poslovne inkubacije. Poslovna (poduzetnička) inkubacija sadrži potencijal za implementiranjem stvarnih opcija koje podržavaju identifikaciju i iskorištavanje mogućih novih poslovanja i može biti novi izvor uspjeha startup poduzeća. Inkubatora se može opisati kao poduzetničku tvrtku koja kreira stvarne opcije putem selekcije novih, mladih poduzeća i poduzeća u nastajanju i može upotrebljavati te stvarne opcije putem praćenja i podučavanja sudionika tijekom raznih faza razvoja. Aktivnosti potpore u poslovanju od strane poslovnih inkubatora se mogu usporediti s realizacijom investicijskih projekata koji su okarakterizirani visokim stupnjem nesigurnosti i fleksibilnosti donošenja odluka, koje poduzimaju poduzeća koja djeluju u dinamičkom tržišnom okruženju. Ciljevi ovog članka su sistematički razmotriti i procijeniti literaturu o poslovnoj inkubaciji i njenom procesu, kao i doći do stvarnih opcija koje generiraju stvaranje vrijednosti i veću efikasnost pomoću istraživanja i analize aktivnosti, programa i inkubacijskog procesa odabranih Mađarskih inkubatora.

KLJUČNE RIJEČI: teorija stvarnih opcija, poslovna inkubacija, fleksibilnost, nesigurnost.

HOW DISRUPTIVE TECHNOLOGIES INFLUENCE THE RETAIL BUSINESS MODELS

STRUČNI RAD/PROFESSIONAL PAPER

UDK: 339.37.004.738.5:339

JEL: L81

Autor/Author:

TAMÁS KOZÁK
ASSOCIATE PROFESSOR
BUDAPEST BUSINESS SCHOOL BUDAPEST
kozak.tamas@uni-bge.hu

ABSTRACT

The first innovation in the history of retail well known to us was the emergence of department stores. The second, the mail order service was connected to the introduction of catalogues. The third is the spread of discount stores, and internet commerce is obviously the fourth disruptive innovation, where the scale and the speed of the change differentiated from the previous phases. Majority of countries are ahead to illustrate how the traditional retail business models are being transformed by the disruptive technology. The retail sector is traditionally characterised by a way of thinking in long term, and the manifestation of evolution was accompanied by change drives business models. The new forms and channels of trade strengthened the managements' attention to the future and the local (domestic) companies also took up developing more conceptual plans. These changes will bring about shifts in customer power, shifts in households' wealth, and buyers' knowledge. Only in being knowledgeable about these changes and the speed in which this is occurring can we ensure that advances in product and market knowledge and technology reach all and benefit all. The research summarises the innovation patterns of retail trade because this will help the in the other parts of the world to pose the right questions. Today many even among the managers of the sector feel that we are witnessing changes that do not only modify the presently known operating models but also fundamentally rewrite the business models. These trends and business developments and effects on project-oriented retail business model are explored in the presentation and research.

KEY WORDS: retail, business development, project, e-commerce, disruptive.

1. INTRODUCTION

The fourth modern upset is something other than innovation driven change (Schwab, 2015). Or maybe, it is controlled with problematic advancement to emphatically affect retail enterprises and segments, for example, instruction, wellbeing and business. In instruction, with the past modern insurgencies, the focal point of training changed (Anderson, 2012). With advance toward large scale manufacturing in the second mechanical unrest and government sanctioned testing. Training is benefit situated and with the move into the third modern insurgency we come to see understudies under a client learning model. Presently in the fourth modern transformation, advances truly obscure the lines between physical, computerized and organic circles. Disruptive development advances into advanced education in which it reclassifies the ordinary ways colleges convey their substance to understudies. New methods of educational modules and instructing emerge, and the center changes from methods of educate to methods of learning. Elective educational modules are as a rule always created. Problematic advancement additionally reshapes how organizations work. The retail segment – particularly in the Eastern European markets – is customarily described by a state of mind and style of the executives that utilization the occasions of the close past and center its assets on present procedures. At the back of it is the sudden improvement describing the previous 20-25 years, which constrained and regularly made arranging in systems superfluous tool (Kozák, 2017). This specific sign of advancement was joined by sweeping working models. It didn't bolster the advancement of either medium- or long haul methodologies, particularly not ones deliberately and mutually created with proficient mechanical consultants.

2. DISRUPTIVE ENTERPRISE ENVIRONMENTAL FACTORS

Disruptive Enterprise natural variables give setting inside which to web based retail companies work. Venture ecological components outside to the association incorporate administrative or different guidelines and controls that apply to the performing association. Retail venture ecological variables incorporate the structure, culture, frameworks, and

geographic location(s) of the association. Asset related disruptive retail factors incorporate the innovation and assets accessible for task to web based business advancement, for example, documentation of the aptitudes and capacities of inward and preapproved outside assets. These elements may incorporate a retail asset the board, or obtainment the board, or quality administration framework. The components' effects and restrictions forced by big business natural variables curve mulled over amid arranging and as the work is completed.

Procedures, Procedures, and Policies Over time, associations create or receive procedures, techniques, and approaches for tasks. Tasks may prescribe changes or approaches to build the proficiency of these procedures and strategies, yet they are commonly claimed by the undertaking the board office or other administration in charge of hierarchical administration.

Hierarchical Knowledge Repositories are other kind of authoritative process perspective is authoritative information stores, which incorporate innovations on numerous aspects of undertakings. Authentic learning bases are kept up and refreshed by each task, and made open to whatever is left of the association as part of the recorded data storehouse. It tends to be utilized to design and oversee future undertakings, in this manner enhancing the procedure of task the board and staying away from difficulties experienced by the ventures.

3. PLAN-DRIVEN VERSUS CHANGE-DRIVEN BUSINESS MODEL

An actual existence cycle is a movement of stages through a progression of formative stages. The existence cycle is the playing out association's or division's strategy for overseeing business advancement. It is the consistent breakdown of what you have to do to create the expectations of the business.

The business improvement life cycle for a specific task is chosen dependent on elements, for example, the sort of item being created, the retail association's inclinations. Business advancement life cycle cycles can be either plan driven or change driven. Inside a venture life cycle, there are commonly at least one stages. These stages are by and large alluded to as the improvement life cycle of a business advancement life cycle. The advancement life cycle is utilized to guarantee that the normal or arranged after effect of each stage is accomplished. A case of an advancement life cycle for an online shop programming venture may incorporate the accompanying life cycle phases research, plan, code, test, and execute.

Plan-Driven Project Life Cycle Plan-driven tasks have prescient advancement life cycles (here and there alluded to as cascade or customary plan of action) that require degree, timetable, and cost to be resolved in detail right off the bat in the life of a venture before the work starts to create the undertaking expectations. For instance, a retail shop development venture would normally be overseen utilizing a prescient life cycle.

Change-driven administrations utilize iterative, gradual, or versatile (coordinated) advancement plans of action, and attempt to make early getting ready for change extension, timetable, and cost. Steady and iterative life cycles include early arranging of abnormal state scope sufficiently adequate to take into consideration starter evaluations of time and cost; change or advancement degree is created somewhat more with every emphasis.

A steady improvement life cycle conveys a total, usable segment of the item for every emphasis. For instance, a retail shop constructs a site utilizing a gradual life cycle would include organizing client's prerequisites into emphases that convey a completely working bit of the site toward the finish of every emphasis. With an iterative improvement life cycle, the entire idea is worked in progressive dimensions of detail to make the final product. To fabricate the site referenced in the past section utilizing an iterative life cycle, making arrangements for the primary emphasis would concentrate on wanting to make a model of the whole site. After the essential skeleton of the site is manufactured, each progressive cycle would be intended to include more detail until an entire and completely working site is accomplished.

Note that an undertaking may utilize a mix of gradual and iterative life cycles all through the business improvement. Versatile improvement life cycles include a settled calendar just as settled expenses. Extension is extensively characterized with the comprehension of voice of clients, that it will be refined for the duration of the life of the business improvement (Min - Kim, 2018). The client's necessities are reported and organized in a build-up, which can be balanced as the business advancement advances. Work is arranged in short augmentations to enable the client to change and reprioritize prerequisites inside the time also, cost requirements. For instance another online shop programming improvement undertaking may pursue a versatile methodology, utilizing stages that may incorporate abnormal state plausibility, structure, and arranging pursued by short, iterative periods of point by point configuration, coding, testing, and discharge.

In coordinated situations, the retail administrators are in charge of clearing up client stories With the client so they can design the release~ and iteration~, hold surveys and refresh the business advancement data utilizing apparatuses, for example, Kanban sheets and burndown outlines. In a deft domain, the undertaking proprietor job can be filled by

somebody from the business who is in charge of working with the dexterous group to organize highlights and capacities (Parker, 2016). This individual may likewise:

- Attend audits and acknowledge the expectations exhibited.
- Be a hazard proprietor.
- Participate in stage door audits.
- Be included with administration.
- Identify issues.
- Document exercises learned.
- Provide master judgment.

In light-footed or change-driven-plan of action, work to build up the result of the venture is separated into cycles and discharges. Deft discharge arranging gives an abnormal state plan that incorporates the recurrence of discharges and the quantity of emphases that will be finished.

4. NEW TYPES OF ORGANIZATIONS

Most work done in associations can be portrayed as either operational or venture work. Operational work is continuous work to help the business and frameworks of the association, though venture work closes when the undertaking is shut. It possibly observed cases where the genuine issue is, that retail administrator is endeavouring to oversee progressing (operational) work, for example, buying merchandise, or she is dealing with an EDI (Electronic Data Interchange) framework improvement.

Despite the fact that these are two unmistakable territories of work, they are firmly associated. At the point when an undertaking is done, the expectations are progressed to continuous business tasks so the advantages of the venture work can be joined into the retail association (Piotrowicz – Cuthbertson, 2019). A fruitful change may require representative preparing or acclimations to operational procedures. For instance, the calculated representatives should figure out how to utilize the EDI framework and modify their procedures to consolidate it into their everyday purchasing work so the advantages can be figured it out. In the violent condition where the contenders weight wind up more grounded and more grounded, the critical volume of work can be characterized such a venture type work (Grewala, at al., 2017). An ever increasing number of inner necessities incorporate strategies and methods in regards to portfolio, program, and business advancements, which help to guarantee that these undertakings are inside the key arrangement of the association and that they add to the conveyance of explicit advantages or esteem. Each association is unique, and administration is intended to help the explicit culture and properties. Venture administration incorporates the system inside the advancement work is performed over the association. It might include the creation or requirement of procedures and arrangements concerning territories, for example, business hazard, assets, interchanges, and change the executives. A business advancement is incorporated into portfolio dependent on potential rate of return, vital advantage, arrangement with corporate methodology and different variables which basic to a retail organization achievement. The key point to comprehend is that all endeavours in the association whether they are a piece of undertaking, program, portfolio, or operational work-ought to be guided by the association and bolster its vital objectives. This implies any progressions to the authoritative system will require changes to the association's portfolios, projects, ventures, and operational work, - both continuous endeavours and future activities. For instance, if an undertaking no longer align with the hierarchical procedure, the venture might be changed mid-course to bring it into arrangement, or it might be ended (Piotrowicz – Cuthbertson, 2019). One of the essential types of impact is the means by which the organization is composed. The authoritative structure will direct who the undertaking director goes to for help with assets, how interchanges must be taken care of, and numerous different parts of business improvement the board.

Functional order is a typical, customary hierarchical structure. Utilitarian associations are assembled by zones of specialization inside practical zones, for example, bookkeeping, advertising, or deals.

Matrix frame is an endeavour to augment the qualities of both the useful and task situated structures. The representative reports to two administrators: the task supervisor and the practical chief (for instance, the business director). Correspondence goes from colleagues to the two administrators. Staff individuals do extend work notwithstanding ordinary departmental work.

In an undertaking focused, or project based organization, the whole organization is sorted out by business advancement, and the venture chief has control of the task. Staff are relegated and answer to a venture director (Ries, 2011). Representatives finish just task work, and when the venture is finished, they don't have a division to return to. Individuals should be allotted to another undertaking or land a position with an alternate business. This sort of association can likewise be alluded to as composite or half breed.

5. CONCLUSION

As it was expressed over, the essential errand of exchange as a calling can be outlined in four points: the right item, at the correct place, at the correct cost what's more, at the correct time ought to be accommodated the client. Comparable terms can be found in the vocabulary of present-day retail exchange just acclimated to the necessities of the advanced and omni-channel dispersion demonstrate. It isn't the nature and capacity of exchange that has changed, however is vital qualities. Today – and particularly later-on – the measurements of determination, value, closeness (comfort) what's more, experience will decide the operational- system. Closeness implies attainable quality, that shopper clients must be come to at the point when and where they simply are. Cell phones have achieved genuine changes here, yet this might be supplanted by wearable with time. The achievements of the as of now completely talked about client venture must be made noticeable also, open. "Discover me, attempt me, get me." – this is the reinterpretation of the conventional choice tree hypothesis. These days it might appear to be outlandish, yet advertising specialists think about the straightforward, class based practice obsolete. Present day clients don't need to pick and get one classification after the other. They trust retailers with setting up an important determination (Pantano – Timmermans, 2014). This will achieve changes in the relationship of providers furthermore, merchants from one perspective, and will interface players contending with one another on the other hand. The plans of action, operational components known for a considerable length of time have been turned upside down, and it has normally prompted disruptive.

LITERATURE

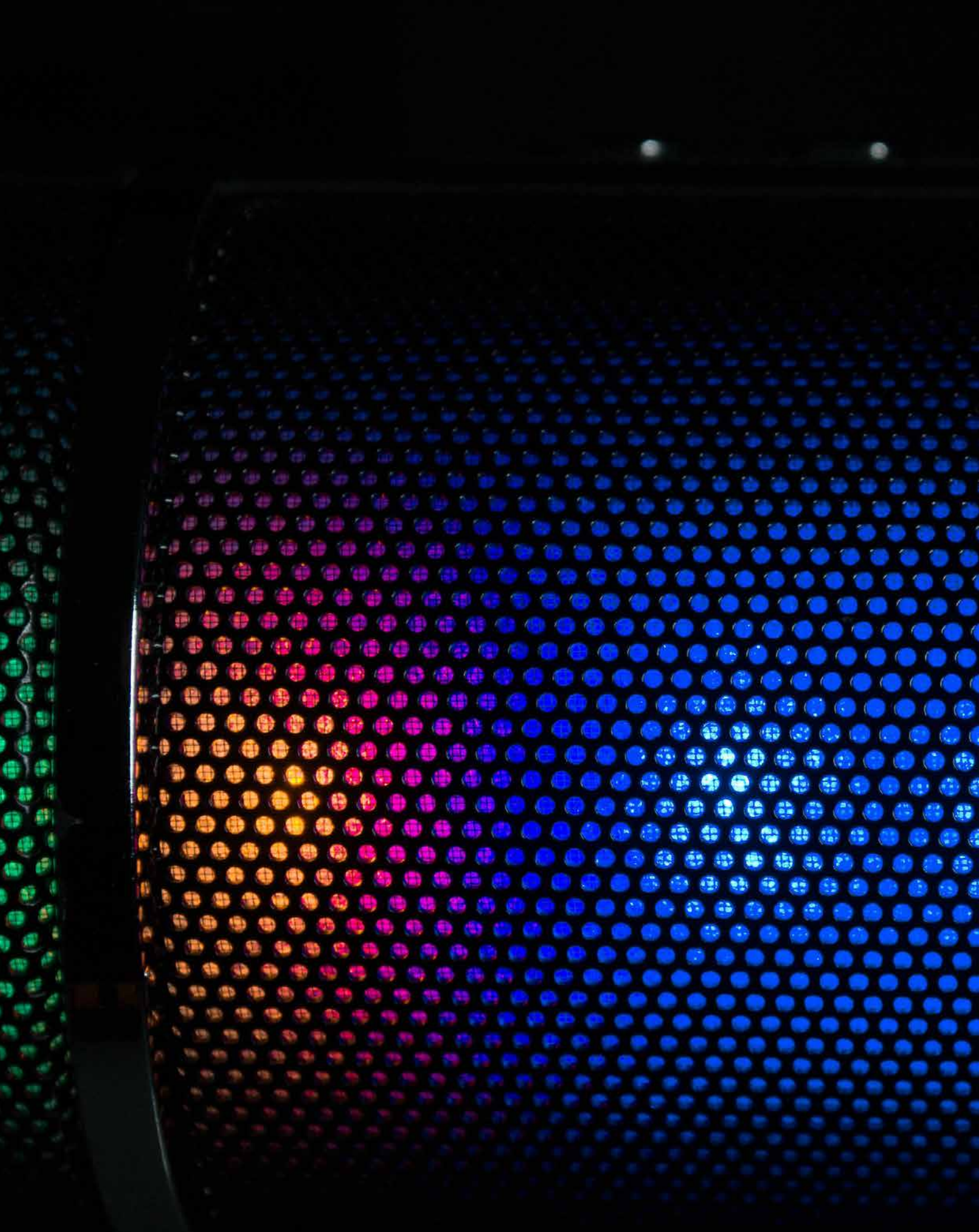
- Anderson, C. (2012) *Makers: The new industrial revolution*. New York: Crown Publishing
- Kozák Á. (2017) *Digital Map*. GFK.
- Xu, M., David, J.M. & Kim, S.H (2018) The fourth industrial revolution: Opportunities and challenges. *International Journal of Financial Research*, 9(2), pp 18-21.
- Grewal, D., Roggeveen, A.I. & Nordfält, J. (2017) The future of retailing. *Journal of Retailing*, 93 (1), pp 1–6.
- Ries, E. (2011) *The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses*. New York: Crown Business.
- Parker, G. G., Van Alstyne, M. W. & Choudar, S. P (2016) *Platform revolution: how networked markets are transforming the economy and how to make them work for you*. New York: W. W. Norton & Company.
- Pantano, E. & Timmermans, H. (2014) What is smart for retailing? *Procedia Environmental Sciences*. 22. pp. 101–107.
- Ismail, S. (2014): *Exponential organizations*. New York: Diversion Books.
- Schwab, K. (2015) The fourth industrial revolution: What it means and how to respond [online]. *Foreign affairs*. Available at: <https://www.foreignaffairs.com/articles/2015-12-12/fourth-industrial-revolution>.
- Piotrowicz, W. & Cuthbertson, R. (eds.) (2019) *Exploring omnichannel retailing: Common expectations and diverse realities*. Cham: Springer Nature.

KAKO DISRUPTIVNE TEHNOLOGIJE UTJEČU NA MALOPRODAJNE POSLOVNE MODELE

SAŽETAK

Prva inovacija u povijesti maloprodaje koja nam je poznata je pojava robnih kuća. Druga, usluga naručivanja poštom, je bila povezana s uvođenjem kataloga. Treća je širenje diskontnih trgovina, a Internet prodaja je logično četvrta disruptivna inovacija, kod koje se opseg i brzina promjene razlikovala od prethodnih faza. Većina zemalja koje su već ispred u korištenju Internet prodaje služe kao primjer kako se tradicionalni poslovni modeli u maloprodaji transformiraju pod utjecajem disruptivne tehnologije. Maloprodajni sektor je tradicionalno okarakteriziran dugoročnim načinom razmišljanja pri poslovanju, a ostvareni napredak slijedi iz poslovnih modela pokretanih promjenama. Nove forme i novi kanali prodaje potaknuli su upravitelje na još veću okrenutost budućnosti te su se lokalna (domaća) poduzeća također okrenula kreiranju još razrađenijih planova. Te promjene će izazvati pomake u moći kupaca, pomake u prihodima kućanstva, i u znanju, to jest informiranosti kupaca. Jedino ako smo upoznati s tim promjenama i s brzinom kojom se one odvijaju možemo osigurati da napredci u znanju o proizvodima, tržištu i tehnologiji dosegnu sve i budu na korist svima. Istraživanje sažima inovacijske obrasce maloprodaje budući da će to pomoći ostalim dijelovima svijeta da postavljaju prava pitanja. Danas čak i među direktorima sektora postoji osjećaj da svjedočimo promjenama koje ne samo da modificiraju trenutno postojeće operativne modele nego fundamentalno brišu stare i stvaraju nove poslovne modele. Ti trendovi i razvoji u poslovanju i učinci na poslovni model maloprodaje koji je orijentiran na projekte su istraženi u ovom istraživanju i članku.

KLJUČNE RIJEČI: maloprodaja, razvoj u poslovanju, projekt, e-trgovina, disruptivne tehnologije.



M-SPHERE

